The New Frontier: A Review of
*Changing Cultural Practices: A Contextualist
Framework for Intervention Research*

by A. Biglan

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Cultural design is a crucial frontier for the science of behavior, and one that may prove to be central to the survival of the human (and other) species. Skinner (1987 and elsewhere) suggested that behavior is selected at three levels: the genetic, the operant, and the cultural. Geneticists and molecular biologists work at the first level; behavior analysts work primarily at the second. Cultural analysis and cultural design apply at the third level.

Although sociology (a discipline currently in serious trouble) and anthropology (in which agreement on an empirical paradigm is far from established, Harris, 1979) can provide valuable data for cultural analysis, these fields typically do not view the world through a selectionist lens, nor are they, in general, “activist.” For example, professional values among anthropologists suggest that they should ordinarily study phenomena as they lie. Behavior analysts in recent years have become increasingly interested in work at the third level, particularly in cultural analysis (e.g., Glenn, 1988, 1991; Glenn & Malagodi, 1991; Lamal, 1991; Malagodi, 1986), and have suggested potential links between cultural anthropology and behaviorism (see also the special section of *The Behavior Analyst* on behavioral anthropolo-

gy, Vol. 11, pp. 159–203). Cultural analysis so far has relied primarily on interpretive and conceptual approaches (which have a respected place in behavior analysis; e.g., Morris, 1992; Skinner, 1953).

“Acting to save the world” (Skinner, 1987), however, requires a step beyond conceptual analyses that seek to understand the interlocking contingencies and metacontingencies that shape and maintain cultural practices within organized groups (*cultural entities*, Glenn, 1993). What is required is a technology for *changing* such practices by altering those interlocking contingencies, an area in which only limited work has been done. It is this gap that Biglan’s book begins to fill.

Behavior analysts have done considerable applied research that might be viewed as cultural design (see, e.g., many of the contributions in Greene, Winett, Van Houten, Geller, & Iwata, 1987, and much of the work in organizational behavior management). However, these efforts generally have not been conceptualized as changing cultural practices. If cultural analysts approach the systemic exchanges that occur in organized groups (from a family, to a village, to an organization, to a nation) within a coherent conceptual framework, focusing on practices and the interlocking contingencies that shape and maintain them, perhaps it will be possible to develop and apply more effective strategies for beneficial cultural change.

If phenomena at Skinner’s third level of selection are organized differently than those at the second, we may also

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need different conceptual and practical tools to deal with them adequately. Just how different is a crucial question. Skinner stated that, "I see in [cultural evolution] no new behavioral process. I think operant conditioning explains the discovery of new practices and their transmission to other (especially younger) members of a group" (1988, p. 38). If he was right, although we may need new strategies and tools to specify (e.g., Mattaini, 1996) and change cultural practices and the interlocking contingencies within which they are embedded, it may not be necessary to search for additional basic principles.

Thus it is reasonable to begin parsimoniously, as Biglan generally does in his book. Because the work is thoroughly grounded in what we already know, one might ask whether there is anything really new here. I believe there is, and will return to this question after reviewing the content of the book in some detail.

The terms *changing cultural practices* and *cultural design* may present practical issues, because readers who are unfamiliar with the specialized behavior-analytic literature sometimes interpret these phrases as suggesting that ethnic traditions need to be changed, and perhaps even changed by outsiders who know better. The issue here is, of course, terminological. In our literature, *culture* refers to "the contingencies of social reinforcement maintained by a group" (Skinner, 1984, p. 74). Every group (but not random aggregates)—a family, a street gang, a multinational corporation, the MTV generation, persons living in New York City—constitutes a culture in this sense (and individuals participate in multiple, interlocking cultures). Most people would agree that some of the practices of those cultures could be usefully modified.

Although behavior analysts understand the terminology in this way, not everyone else does, and cultural design requires wide participation and cooperation, both in selecting goals and im-

plementing effective technologies. If the language puts off those whose support is needed to advance the discipline and ensure its social utility, scientists who pursue cultural design may eventually need to consider a more expansive vocabulary. On the other hand, using potentially provocative language may result in attention for the work that might not otherwise emerge.

The Call for a New Science

Biglan begins by pointing out that we know a great deal, for example, about how to raise healthy children or how to teach more effectively. Few of these practices, however, have been widely adopted by existing cultural entities, be they families, schools, clinics, or governments. What is missing, he asserts, is a "science of cultural practices" (p. 12), which could tell us how to go beyond intervening in individual behavior to focus on changes in incidence and prevalence on a sociocultural level. What is needed might go beyond a science of cultural practices to a more ambitious "science of cultural design" (see below), but Biglan's arguments are well presented and persuasive. His call for empiricism is likely to resonate with behavior analysts, and his emphasis on the need for precision is critically important. It is one thing to say that teachers often teach badly as a result of the contingency matrices within which they are embedded, but it is a qualitatively different matter to actually specify the interlocking contingencies involved in those matrices with precision. A single volume can provide only a bare beginning, but this book is quite valuable and, perhaps even more important, is likely to catalyze further work.

In chapter 2, the author seeks to ground his work in functional contextualism, a philosophical framework that has been extensively discussed by Hayes (e.g., Hayes, Hayes, & Reese, 1988), as well as by Biglan himself elsewhere. Biglan, Hayes, and others contrast contextualism with other

philosophical systems (in particular, with mechanism and organicism), relying heavily on the taxonomy developed by the philosopher Stephen Pepper (1942). These discussions have been highly visible (and controversial; see Hocutt, 1994) for the last decade in behavior analysis. Certainly, behavior analysts increasingly recognize the importance of "context" to meaningfully deal with complexity (Baer, Wolf, & Risley, 1987), and contemporary empirical and conceptual work has increasingly helped to specify what is meant by context (e.g., Sidman, 1994).

This material raises two questions in the context of this volume, however. The first is whether scientists are likely to be much better at doing philosophy than philosophers are at doing science—an open question, I believe. More central to our purpose here is whether this philosophical layer contributes substantively to specifying the interlocking contingencies involved in changing cultural practices. Clearly, context is crucial to this work; it is not entirely clear that contextualism is. On the other hand, the framework may have helped the author to think in a more (dare I say) "organic" way about webs of transactional events, and thereby to advance to a new conceptual level. Perhaps it will help some readers as well.

The Tools of the Science

Chapter 3 provides an elegant introduction to the basic principles of the science of behavior, rooted firmly in selectionism. Experienced behavior analysts will find little new here, but for other readers this material is crucial to following the remainder of the book, and they are likely to find the manner of presentation engaging. Discussions of establishing operations and the matching law are particularly well done. Biglan also attempts to connect his work with the extensive literature on attitude change. This is, overall, valuable material, and Biglan takes pains to explicate behavior-analytic re-

definitions of the terms involved. Still, this section may overemphasize what behavior analysts would generally see as reified hypothetical constructs.

Also in chapter 3, Biglan presents the most accessible elaboration of relational frame theory that I have so far read. The author frequently returns to relational framing in subsequent chapters, and does the reader a real service by clarifying its theoretical underpinnings. It should be noted (and Biglan does so) that the empirical evidence supporting relational frames remains sparse, and questions like the relative adequacy and comprehensiveness of relational frames versus stimulus equivalence are far from resolved (e.g., Dymond & Barnes, 1995; Sidman, 1994).

Prevention and intervention strategies commonly overemphasize changes in antecedents, an inherently weak approach. Given that cultural practices are, by definition, selected by consequences maintained by the members of the group, effective cultural design requires, I suspect, a much heavier emphasis on changes in consequences than on changes in antecedents. For example, contrast the probable effectiveness of teaching someone to "just say no" with embedding the person firmly in a social network that richly reinforces remaining drug-free. Consequences can participate in relational frames, but there is much yet to be learned about how to effectively ensure that they do so in complex natural environments. This is important work that needs to be completed before placing too heavy a reliance on approaches that are emerging from these constructs.

In chapter 4, Biglan discusses the analysis of cultural practices. As might be expected, given the far more limited attention this area has received as contrasted with the analysis of individual behavior, this chapter is somewhat more preliminary than the previous one. The author emphasizes the need to look at social problems epidemiologically, with particular focus on incidence, which is the frequency within

a defined population in a given unit of time of a behavior (e.g., rape or driving while intoxicated), and the prevalence within a defined population of certain behavioral patterns (e.g., literacy or drug addiction). He also clarifies the importance of identifying and influencing classes of actors with the power to change contingencies associated with cultural practices. The chapter includes extensive discussion about the actions of groups. Although the author explains that he is concerned here with the "interlocking or coordinated behavior of two or more people," frequent mention of the actions of groups or organizations left this reader somewhat uncomfortable with a metaphor at risk of becoming reified.

The author also presents the central concepts from Harris's (1979, 1989) cultural materialism, a school of anthropology that many behavior analysts have found to be congenial. He also discusses in detail Glenn's (1991) concept of the metacontingency. This is material that readers should be aware of in order to contact the existing behavior-analytic literature in this area, but some caution may be indicated. Harris's work includes a wide array of theoretical constructs, some of which appear to be inconsistent with behavior analysis, and many of which may not be necessary to a science of cultural analysis and design. The construct of metacontingency is probably most useful for understanding the selection of behavior within formal organizations that have explicit outcome goals and in which feedback loops between outcomes and practices are in place. For analyzing events within many other cultural entities, however, emphasizing interlocking contingencies (also extensively discussed by Glenn in several publications) may be more helpful.

Analysis is valuable, but by itself it does not lead to change (in the computer field, "analysis paralysis" is viewed as an occupational hazard). In chapter 5, the author presents a preliminary elaboration of strategies for actively changing cultural practices. The

material in this chapter is the core of the volume. Overall, it is tightly conceptualized and well presented. Biglan suggests that the intervention agent begin by specifying the target practice (and offers some guidelines for doing so); then he or she should analyze the context of that practice and identify intervention options. Next, one identifies other cultural practices that support or oppose the desired practice, analyzes their context, and develops intervention options. Such a nested, iterative approach could continue as far as necessary, and may be essential for changing practices involved in densely interlocking contingencies.

A science of cultural design needs to do at least this much, and probably also needs to go beyond the analysis of simple practices to incorporate an analysis of transactional scenes involving multiple practices (e.g., what happens in a classroom, or how a family resolves conflict) and sequences of such practices and scenes. Simple practices and scenes, the interlocking contingencies within which they are embedded, and organized sequences among all of these are the components of a culture. Consistent with Biglan's earlier argument, an adequate science of cultural design will also need to achieve a high level of precision with regard to antecedents and consequences associated with interlocking practices and scenes at the basic levels of discriminative stimuli, establishing operations, equivalence relations, concurrent schedules of multiple consequences, and so forth. This single volume, given its ambitious scope can provide only a first glimpse into the enormous technical issues involved, but it succeeds in providing a highly valuable beginning.

Chapter 5 also discusses specific strategies for modifying targeted, supporting, and opposing practices, ranging from tax incentives to the use of media. The strategies themselves are not new, of course. Rather, the contributions of these sections are in showing how they fit within an overarching framework of cultural design. Biglan

provides both practical and conceptual guidance for organizing the change of cultural practices, a theme to which he returns in the final chapter.

Changing cultural practices inevitably involves important ethical questions, a topic that Biglan addresses openly and thoroughly in chapter 6. Although he recognizes the ubiquity of coercion in cultural affairs, the author specifically, and I believe rightly, eschews its use in working to change practices. He also frankly acknowledges that even positive control can be used to exploit (e.g., state lotteries), and presents a vision of an alternative approach to changing human behavior. His emphases on inclusion, empowerment, and the need to establish supports for ethical practices explicitly are particularly valuable. This chapter should probably be required reading for those involved in social planning, organizing, advocacy, or cultural design from whatever theoretical framework they may come.

Examples of Changing Cultural Practices

Although the chapters in the first section provide many illustrations, chapters 7 through 10 offer extended, detailed examples of the type of analysis Biglan suggests. Each offers an analysis of one targeted set of practices (tobacco use, child-rearing practices, sexist practices, and environmentally harmful practices), and presents or suggests strategies to change them. The extent of empirical support for these analyses varies substantially among the chapters. They become successively more speculative, but each is grounded in what data are available. In chapter 7, Biglan describes an extensive community-level intervention project to reduce smoking among youth that he and his associates have been conducting for several years. He provides a detailed description of the multilevel approach, as well as a summary of outcome and impact data. The program is clearly rooted in the analysis of targeted, sup-

porting, and opposing practices as outlined in previous chapters, and provides an elegant example of the state of the art for community practice.

Extensive data are available that could guide efforts to improve child-rearing practices, the focus of chapter 8. Given the powerful supports for existing practices (in schools, families, and the media), and how deeply embedded these supports are in the larger culture, the obstacles to large-scale implementation of the strategies proposed here are substantial. One of the strengths of *Changing Cultural Practices* is its emphasis on working in small, defined communities, in which a concerted effort on the part of multiple classes of actors may be realistic. An issue long debated among community organizers and advocates is the endurance of changes in a small community if many of the contingencies imposed on the community are engendered by the larger (unchanged) environment. Because child rearing is an essential (*infrastructural*, in Harris's terms) function of society, it is not surprising that the practices of many cultural entities tightly interlock in this area. This is a particularly challenging but essential area for scientific focus.

Chapters 9 and 10, which consider approaches for changing sexist and environmentally harmful practices, provide extensive documentation of the extent of these problems and evidence for why they should be regarded as high-priority change targets. As the author notes, there is little solid research available regarding effective prevention of sexist behavior. In keeping with the model developed in earlier chapters, in chapter 9 Biglan provides a plausible analysis of the issues, targets specific practices, and proposes a program of research that could lead to the testing and refinement of effective community-level preventive strategies. In the next chapter on environmental issues, Biglan summarizes an immense and complex aggregation of data. He also presents a plausible, if challenging, outline of actions that could be

taken. Unfortunately, some valuable work by behavior analysts and others on changing practices like recycling and reducing energy consumption was not cited here.

The Methods of a New Science

Throughout the book, Biglan emphasizes the importance of an empirical stance. Although conceptual and historical analyses can provide plausible hypotheses about how the world works, as intervention agents attempt to make changes in practices, they face an ethical responsibility to demonstrate that they are doing no harm, are making efficient use of necessarily limited resources, and are gradually improving the efficacy of their approaches. Chapter 11 provides a valuable introduction to research strategies and designs that are required to fulfill these mandates. Much of this material will be familiar to behavior analysts, but may not be for other potential audiences.

Biglan argues in agreement with behavior analysts that single-case designs have major advantages for community intervention research (the "case" here being the discrete community). Some may prefer the more generic term *interrupted time series* designs, which Biglan also uses. Behavior analysts tend to avoid correlational research, often for excellent reasons, but this chapter also considers the possible utility of correlational methods for a science of cultural design. Such methods may be particularly useful when the investigator examines relationships between potentially manipulable environmental antecedents and consequences and practices of interest. These studies may be valuable for identifying plausible contingent relations, which, of course, ultimately should be experimentally tested. Cultural analysis and design research necessarily deal with aggregate data, including incidence and prevalence. In pursuing this work, investigators will be required to use descriptive and inferential statistical tech-

niques. This chapter lightly touches on these matters.

One caveat, should the field come to rely heavily on techniques like factor analysis and structural equation modeling, is that cultural analysts will want to be cautious about the interpretation of the "underlying" or "latent" constructs that such procedures may extract and elaborate. What exactly are we measuring with a score on an aggregate construct of "parental monitoring," for example? If we are measuring rate of occurrence of members of an equivalence class, well and good. If it is something else, we must carefully and critically determine what the events or conditions being measured might be. Still, thoughtful experimentation with statistical techniques that may be of value should certainly be pursued.

In Conclusion

In his final chapter, Biglan sketches a strategy for developing a science of cultural practices. He notes that three developments are critical to a beginning. The first is that scientists begin to analyze social issues in terms of cultural practices and their context. Inducing scientists to do so, of course, requires that certain interlocking contingencies be established, and the author provides a useful preliminary analysis of what these might be and how they might be introduced. Second, initial efforts must demonstrate social utility; third, funding to support these efforts is required. Clearly, the cultural design community is faced with a classic bootstrap situation in which progress in one of these three areas may be required to achieve increments in the others. A few well-publicized successes would help immensely.

This volume does not advocate the adoption of new behavioral principles or even technologies. So, one might certainly ask if there is anything really new here. There is. The principal advance here is conceptual. Thinking about patterns of events that occur

within organized groups as cultures (in Skinner's sense) opens new analytic and intervention options. Old problems of how to introduce and maintain change, whether for an individual embedded in multiple cultural entities or for classes of actors within common scenes, may find new solutions couched in terms of identifying and stabilizing required interlocking contingencies. In providing new rules that may come to govern scientific practices, *Changing Cultural Practices* makes an important contribution to the development of a comprehensive science of cultural design.

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