

BEHAVIORAL AND CULTURAL CLASSIFICATIONS: REPLY TO MATTAINI

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Mattaini's (2004) comments are thought-provoking indeed. Before addressing some of his points, we would like to step back and reflect on the task of developing a science of culture that is consistent with, and makes use of, the concepts and principles of behavior analysis.

A fundamental task in any science is to classify individual objects or events so that the functional relations between classes can be described in scientific generalizations: principles and laws. The principles and laws are verbal constructions that allow us to return to the empirical phenomena and classify them in new ways, facilitating prediction and control. So concepts such as operant, discriminative stimulus, and reinforcement have opened the door for humans to behave in ways not previously possible.

Even when scientific classifications exist, everyday terms may still be useful; but the two types of terminology should not be confused. For example, an applied behavior analyst might target "self help skills" and identify specific behaviors belonging to that class. *Self-help skills* is not a scientific category but is a way to group behaviors that are alike because they allow individuals to take care of their own daily needs. The behaviors we classify as "self help skills" do not enter into functional relations with any other class. The membership of the targeted behaviors in the scientific class *operants* is what guides intervention, not their membership in the non-scientific class *self-help skills*.

The concept operant is a scientific classification because the term includes any behavior that enters into certain kinds of functional relations with classes of environmental events. The topographical characteristics of the behaviors of interest are irrelevant to the classification *operant*. The same operations can be employed to change self-help, academic, or social behaviors so long as they are members of the scientific class *operant*.

Are the scientific classifications of behavior analysis necessary to do cultural analysis? We think so. Are they sufficient? We think not. We would like to elaborate on this answer using Mattaini's description of an intervention to reduce violent behavior in a school. He targeted the violent behavior of many children. The operant contingencies supporting violent behavior, as well as nonviolent alternatives, included antecedents and postcedents comprising the behavior of other people in the school. So Mattaini intervened on multiple behaviors of those people as well. The scientific category of all the behaviors Mattaini intervened on is *operant*.

Mattaini's multiple and related behavioral interventions may have resulted in a very different environment for everyone in the school – one with less aversive stimulation. As a result, the children may be more likely to play freely on the playground and to walk alone in the hallways, or to participate in after-school activities. Teachers may be less likely to seek other jobs and the principal may be able to attract new teachers who have opportunities to go elsewhere. We could say that the school's culture changed as a result

of the intervention. But even if a change in the school's culture was the reason for performing the multiple behavioral interventions, the mechanism of change involved only behavioral contingencies. The change in the school's culture was a by-product of carefully designed interventions in the related operant contingencies of many individuals. So the *intervention* was behavioral, not cultural, because in describing what Mattaini did, only behavior analytic classifications are needed.

The type of intervention Mattaini described is a highly desirable and creative use of operant principles. The problem that we see is that the new contingency networks are unlikely to maintain without his continuing intervention. Either there must be a manager maintaining the operant contingencies, or there must be an environment external to the contingency network to keep the whole system in place.

Mattaini's discussion of autopoietic systems suggests he believes that the contingency network in his school might be considered self-organizing. We can see the possibility of autopoietic change in a contingency network. For example, a new principal may enter the system and implement policies and procedures that result in certain changes that "reverberate through the system" (Mattaini, 2004, p. 128). However, the contingency network in Mattaini's school was not self-organizing because he intervened from outside the system.

More importantly than the fact that Mattaini's contingency network wasn't self-organizing is that it is unlikely to be self-sustaining. We suspect that the positive results of Mattaini's intervention will last only if an external environment requires an aggregate product of an accurate record of low rates of violence. In this way his intervention on the behavioral contingencies in his contingency networks would be supported by a metacontingency. The validity of our suspicion is open to empirical investigation.

Consider now an example of an actual cultural intervention that consists of manipulating the external environment's demand on a school's aggregate product – behavioral repertoires. These products are the results of recurring interlocking behavioral contingencies operating within the boundaries of each school. Over time, the repertoires that society needs have become increasingly complex and the interlocking behavioral contingencies have been increasingly less successful in producing the needed repertoires in significant numbers of students. Some states have made some funding to the schools contingent on a specified percentage of students passing a state test. In other words, clearly specified metacontingencies have been established.

We do not believe that the metacontingency between funding and the educational product of the interlocking behavioral contingencies can improve performance of low performing schools. It is rather like arranging an operant contingency between 10-foot high-jumps and frequent flyer miles. Most of us won't get the miles – not because the miles can't function as a reinforcer, but because the behavior is not in our repertoires. A consequent intervention in schools is more likely to be successful if something like a cultural level shaping procedure is implemented. The selection criteria would be based on baseline performance of each school and altered as the product becomes increasingly closer to the desired criterion. We could, at the same time, intervene directly on the interlocking contingencies of a school to improve the students' repertoires (the product).

This would be comparable to manipulating genes to adapt a lineage of organisms to a dramatically changed environment, and it would require knowledge of the alterations needed and the means to implement the alterations. The knowledge and the means are not enough, however, to engender lasting change in interlocking behavioral contingencies that fail to produce adequate repertoires. The external environment must also set an achievable criterion.

To conclude our reply to Mattaini's commentary, we wonder if parsimony is being confused with reductionism. The need for scientific classification of cultural things can be avoided if we cleave only unto operant principles in our analysis of cultures. Sociobiologists can do us one better by cleaving only unto the principles of natural selection in accounting for cultural things. Perhaps physicists can relieve sociobiologists of the task of worrying their heads over cultures by viewing cultural things as a matter of energy transfer.

REFERENCE

- Mattaini, M. A. (2004). Systems, metacontingencies, and cultural analysis: Are we there yet?
Behavior and Social Issues, 13, 124-130.