

Excerpt from the Book
*General Behaviorology:
The Natural Science of
Human Behavior*

Lawrence E. Fraley

West Virginia University

Excerpt from the chapter on
Changes in Antecedent Behavior–Controlling Relations

Common Interpretative Fallacies

*I*t has sometimes been suggested that the discriminative stimulus, to the extent that it is compelling, *signals the availability of a reinforcer* to an organism and that the organism can then respond to that S^D (more or less at its discretion). However, the notion that an organism is possessed by an inner agent that can “*make* a response” at its own discretion is a mystical assumption. We need not endow an organism nor its nervous system with the mystical power to “*make* the association” between an antecedent stimulus and the consequence that the preceding behavior will produce.

That association was functionally established by the conditioning history that put the particular behavior under control of the particular stimulus. The organism does not have to “*know*” that responding to a given stimulus will yield a reinforcer. The behavior–controlling function of a discriminative stimulus does not necessarily depend on the presence or absence of such private verbal behavior. Nor does the S^D *persuade* an internal agent to direct its host body to behave. Behavior is not a product of a willful self that has taken notice of a stimulus and has been persuaded by that stimulus to issue action orders that are to be executed by certain body parts that that self–agent has chosen for the job.

On a present occasion, given that particular stimulus, that particular behavior tends to occur automatically, and, if conditions are as they were in the past, that behavior will yield contact with the same kind of reinforcers that it yielded on previous occasions. When you reach down into a tall opaque box that, in the past, has contained candy, that reach occurs because the box has come to evoke “reaching–in” responses.

That behavior–controlling relation may concomitantly evoke some verbal behavior that *describes* that relation between the box and the reach. The verbal description of that relation and the reaching behavior can occur simultaneously, because the descriptive verbal behavior is produced by different parts of the body than those that are executing the reach.

If such a verbal response is evoked, once it occurs, it merely starts sharing in the antecedent control of further reaching behaviors to render them more reliable and perhaps more effective as well. While such verbal supplements may strengthen the evocative control exerted by the box, those verbal supplements are not absolutely necessary.

For example, nonverbal organisms, which lack the bodily capacity to describe *anything*, can be trained to reach for food in hidden places even though they lack body parts that can produce verbal supplements to the controls on their reaching behaviors. That is, for lack of the necessary kinds of body parts (in their nervous systems), they simply cannot engage in the kind of verbal behavior and other modes of consciousness¹ to which we refer as their “knowing about” the controls on the remainder their own behaviors. Yet those prevailing controls, of which they necessarily remain unaware, obviously produce all of the other kinds of behavior that are exhibited by those organisms.

Once prior conditioning has micro-structured the body to respond in a certain way to a certain stimulus, given that stimulus, the body tends to exhibit that response. It does so naturally, because it is *structured* to do so (not because it is following the orders of some indwelling self-spirit that has been persuaded to issue behavioral directions to the remainder of the body). When, with the presentation of a particular stimulus, a particular kind of behavior follows, the functional relation between stimulus and response is the result of an energy transfer between them. Absent such an energy transfer, we speak of *coincidence* instead of *function*.

In the previous example, the responses on which we expended our analytical concern included both the motor behavior of reaching and the verbal behavior of describing. Note that the describing per se was not a manifestation of a mysterious inner self agent that, proactively, was “making decisions” or “forming associations,” but was merely a class of operant behavior (i.e., largely verbal behavior) that, like any other kind of operant behavior, is (and has to be) evoked by antecedent stimuli in the environment. That verbal behavior, once it occurred under its natural evocation, described the controlling relation that was affecting another part of the body—a functional relation under which the reaching response was produced.

That descriptive verbal behavior was evoked because, in the past, the body had been conditioned to behave that way on such occasions. Verbal behavior is often evoked in response to the controlling relations affecting another part of the body. Since antiquity, that phenomenon has been misinterpreted as evidence that bodies are run by spirits called selves, souls, or whatever. Only a tiny minority of people, with the aid of some modern natural philosophy and science, has gained the intellectual capacity to transcend that universal fallacy. The implications of that intellectual emergence are vast.

Often our nonverbal behaviors fail to evoke any concomitant verbal behavior or other behaviors in the class called *consciousness*. As we have noted repeatedly, humans respond with the behavior of consciousness to only a small part of the operant behavior that they exhibit.

In spite of the seemingly vast intellectual capacity of humans, the controlling relation between a discriminative stimulus and a nonverbal behavior often fails to evoke concomitant behaviors of consciousness in the behaving person. In that case, the person is said to remain oblivious to some of its own ongoing behavior.

Were that ongoing nonverbal behavior to evoke some behaviors of consciousness, that behavior of the consciousness type would be the person’s “knowing what he or she is doing.” If those neural behaviors of consciousness are also being evoked in part by

¹ In a later chapter entitled *Consciousness* the concept of consciousness will be analyzed in greater detail. In this chapter, the reader may simply regard consciousness as a rather broad class of private neural and predominantly operant behaviors.

the environmental events to which the person's ongoing behavior is a response as well as their correlation with the ongoing behavior, the concomitantly evoked neural behavior of consciousness is typically described in invalid agential terms as "the person making an association" between the ongoing nonverbal behavior and the environmental stimuli that are evoking it.

For example, the controlling relation between a curve in the road and the turning of an automobile steering wheel may evoke some private neural responses by the driver. Specifically, the driver would have a private vision of himself or herself turning the steering wheel as that curve moved from the front to the rear of the car. That driver may also privately talk about that controlling relation in the sub-vocal way to which we could refer as the driver's "thinking descriptively and analytically" about what is occurring between the curve in the road and the arm and hand behavior that gets the steering wheel turned.

However, that kind of private descriptive verbal behavior, although evoked by the features of the nonverbal behavior-controlling relation, is often not a necessary part of what controls the steering behavior. For example, the arms and hands of a daydreaming driver may be under direct stimulus control of a curve in the road such that the curve evokes the behavior of slightly turning the steering wheel so that the car moves safely around the curve. Yet the driver, experiencing a daydream about entirely different events unrelated to driving the car, remains completely unaware of both the curve in the road and the behavior of turning the steering wheel.

In that case, neither the curve nor the steering behavior evokes a conscious seeing reaction nor any other conscious sensations such as feels or sounds. Furthermore, neither will the curve nor the steering behavior evoke any verbal behaviors such as the kinds to which people refer as "describing," "anticipating," or other kinds of thinking about the ongoing driving experience. The behavior of the arms and hands remains under *direct stimulus control* of the curve and of other features of the road ahead, while no aspects of those behavior-controlling relations are evoking responses in the class that is called consciousness, including verbal behavior.

In this example, the body parts that are required for such behaviors of consciousness and thought are currently preoccupied under control that is being exerted by stimuli that are unrelated to the driving. The stimuli intrinsic to the car steering behaviors and their controlling relations cannot gain control of those preoccupied body parts (i.e., the parts that produce the neural behaviors of consciousness and thinking). Thus, the day-dreaming driver has to steer the car without benefit of the supplementary antecedent controls consisting of consciousness and thought about that steering.

Nevertheless, an appropriate kind of steering is accomplished while the daydream proceeds. The daydream is executed by the body parts that can do that sort dreaming—parts that currently are not directly involved in the steering of the car. This situation represents two parts of the body, which often work conjointly under common or related controls, operating, in this case, independently, each under its own kind of stimulus control.

The phrase "*direct stimulus control*" of the car driving behaviors implies that no concomitant behaviors or consciousness and thought are being evoked concurrently either by (a) the environmental stimuli that are evoking the driving responses, (b) those driving responses per se, nor (c) the relation between (a) and (b). In the current example, nothing about the road or the driving behavior is concurrently evoking any behaviors of consciousness by the driver. The consciousness is simply a second kind of behavior, which, if it were occurring under stimulus control of the road or the driving, would involve other body parts (mainly a portion of the nervous system), but which, in cases like this example, is *not* being evoked by features of the car-driving activity and, importantly, does not have to occur for the car to be driven effectively. A person does not

have to know that he or she is driving a car for the car to be driven effectively, as daydreaming drivers have often discovered when they snap out a daydream many miles further down the road and cannot remember anything about their having driven the car during that part of the trip.

Drivers typically do experience behaviors of consciousness and thought that are evoked by features of the driving activity in which they are engaged. The driver, who is commonly cast as an internal agent, is often said to be “paying attention” to the driving. Once evoked, that private neural behavior shares in the control of further driving responses. That supplementary neural behavior is maintained by reinforcers that manifest in the form of the increases in driving effectiveness that result when those supplements share in the controls of the driving behavior. When those resultant increases in effectiveness diminish, it may be said that “the driver’s concentration on the driving is no longer doing any good” or “is not helping.” At that point, the neural behavioral supplements to the control of the driving behaviors are redundant and are on extinction. The capacity of the driving-related features to evoke those behaviors of consciousness and thought will then diminish until something else gains stimulus control over the body parts that behave in those neural ways. At that time, consciousness or thought that is irrelevant to the driving activity begins to occur prepotently (e.g., daydreaming).

As earlier noted, people who are under extraneous contingencies to maintain explanatory reliance on an inner body-directing spirit often resort to what natural scientists construe to be a fictitious invention called the “subconscious mind.” Those people insist that, in the subconscious mind, a clone or extension of the autonomous self-agent continues to monitor any on-going behavioral events being neglected by the spirit-agent that occupies (and perhaps constitutes) the “conscious mind.” From its place in the conjured subconscious mental realm, this associate self-agent, or sub-self, gives the putatively necessary directions to the appropriate body parts to get the driving done, although any such motivating directions, mistakenly believed to emanate from a subconscious mind, remain undetectable (as does the putative subconscious mind itself). Thus the daydreaming driver’s arms, hands, legs, and feet presumably continue to get their car driving “orders” from an inner agent, in this case from a sub-self hidden in what is called “the subconscious mind.”

This conceptual extravagance (conjuring a subconscious mind as a working realm for an ethereal subself) provides the putative in-dwelling ethereal agent with something important to do, even in cases where the usual misconstrued kinds of evidence for the self (i.e., the various neural behaviors that collectively are called consciousness) are absent. Through these redundant inventions, an unparsimonious excuse is created to retain explanatory reliance on a willful agent that activates the body of each living person. In continuing to make the body-driving self-agent seem important and necessary the verisimilitude of the whole farther ranging spirit world that it represents is implicitly bolstered. The traditional social sciences, often accused, from their outset, of representing an intellectual pander to popular mystical assumptions have for that reason never rightfully occupied a place at the roundtable of the natural sciences.

Note that in the case of the day-dreaming driver, it is true that the driver would be exhibiting a *continuous* stream of behavior in the class that is known generally as consciousness, but, once the daydreaming began, that behavior would not be evoked by the road ahead nor by the steering behavior. The driver’s behaviors in the consciousness class may not pertain to *any* features of the immediate car driving situation. Instead, the driver’s capacity for consciousness would be preoccupied by other antecedent stimuli that may be unassociated with the driving. It is those stimuli that would definitively establish that to which the driver did remain conscious.

That separate controlling relation, apart from the concurrent control of the driving behavior, is what makes this kind of awareness *daydreaming* instead of *concentration*

on the driving. Remember that a person is “conscious of” the antecedent events that are evoking the behavior of being conscious, and that consciousness is not the manifest will of an autonomous agent within. Instead, like all behavior, the neural behaviors of consciousness are always functionally produced by elements of the behavior–controlling environment. Consciousness, like all other kinds of behavior, is not spontaneously proactive, but instead occurs reactively.

The popular but superfluous interpretation that the function of a discriminative stimulus is possible only because an internal person–agent proactively “associates” the discriminative stimulus with a potential reinforcer is not based exclusively on the evidence. Instead, it is based in part on certain preconceived but flawed assumptions that some people *bring to the evidence*. An example is the previously discussed assumption that the body is inhabited by an autonomous “person” who is there precisely to take the initiative in making such associations. According to that agentive view, observed behavior is not the structurally–determined direct effect of environmental control but rather occurs according to the will of that indwelling ghost and is presumed to manifest in a form that fulfills that spirit’s wishes. Presumably, the environment merely affords presentations of varying persuasiveness to that inner person (A.K.A. the self, the human spirit, the soul, the inner man, the character, etc.) who in some arbitrary or discretionary way responds, or not, to those presentations in the expression of its own caprice.

On the practical front, an enduring problem is how best to get control of behavior, but that depends on the nature of behavior, including how and why it occurs. Explaining behavioral events in terms of internal agential constructs raises those same kinds of questions on an even larger scale: What is the origin and nature of such an inner agent—and how does *it* function? Not only is one left without the kind of answer to the original question that will support practical action, but also the pseudo–explanation gives rise to another level of even more troublesome questions that typically are answered through recourse to even more superstition.

Regardless of the fact that explanatory recourse to nonnatural variables creates more questions of kinds that defy answering, such a philosophical perspective traditionally has underlain both religious and secular views of behavior. Scientific support for such indulgences in mysticism has also been sought under the banner of traditional psychology where scientific methods have been applied in efforts to better understand behavior when it is interpreted as implications of those basic mystical assumptions. Data from studies of behavior have been interpreted from the fixed perspective of those assumptions, and interpretations of that kind provide much of the substance of traditional psychology textbooks.

A natural science of behavior completely dispenses with the ethereal inner agent, a discard made easy by a more complete scientific accounting that leaves nothing important for such an agent to have to do. To make such a mystical agent seem necessary usually requires that the analyst remain ignorant of, or neglect, some rather important pieces of behaviorological science as well as some of the relations discovered through its applications. In contrast, natural scientists of behavior, even when faced with major unanswered questions about behavior–related events, temporarily preserve that ignorance as a requisite application of natural science philosophy. Within a natural science discipline, the domain of ignorance is to be defined precisely, and its husbanded territory is to be yielded, with careful reluctance, only to evidence–based inference.

Consciousness in Less Verbal Species

Species having less neural capacity than humans typically lack most or all of the neural structure necessary for the class of behavior called *consciousness* in humans. A human can respond with consciousness both to events in the external and internal environments. Both an ant and a human can detect food at a distance and move toward

it, but only the human can exhibit the additional behavior described as being conscious of doing so.

The current human condition. The human organism can respond with the neural behavior of consciousness to external events, including the controlling relations as those events exert control on the behavior of other body parts (e.g., a person can be conscious of a rock on the ground and of the behavior of picking up that rock). This capacity for the behavior of consciousness to be evoked by environmental events seems to be largely or totally absent in many non-human species, except for those with complex nervous systems that approximate the human version.

Species differentiation. In non-human species with sufficient neural development, primitive levels of consciousness seem possible. Some neurally advanced non-human species approximate the human capacity for consciousness and are generally assumed to experience some level of the private neural behaviors that collectively are called consciousness. The difference in the capacity for behavior in the consciousness class between the human species and neurally advanced non-human species on this planet is not marked by a *major* discontinuity. However, by human standards, any such conscious-type of behavior would presumably represent a somewhat reduced level of consciousness. One class of consciousness manifests verbally, and that capacity is rather exclusively human with only a few closely related species capable of primitive approximations of verbal behavior.

Species of greater consciousness. Neither behaviorological nor physiological reasons exist to assume that human evolution has carried the capacity for human consciousness and even more complex intellectual exercises to its maximum potential. Among the implications of that observation is that eventually the members of a more evolved human species may, in retrospect, regard *Homo Sapiens* as an intellectually dull predecessor that had to behave its way through life in a state of relative obliviousness. Also, in the unlikely event that we humans encounter an alien species possessed of a greater consciousness, that species may regard humans merely as an exploitable resource. At that point we would hope for the universality of the kinds of ethics that underlie the Endangered Species Act.

Daydreaming. Daydreams are private behaviors of consciousness. Each behavioral event is a response to antecedent stimuli consisting of the preceding response in the course of the dream. That is, daydreams “chain” insofar as one moment in the dream serves as the antecedent stimulus to evoke the next one.

Except for members of species with appropriately advanced nervous systems, the members of most species are constrained to go effectively about their lives while behaving under direct stimulus control of environmental events, just as the car driving behavior occurs unconsciously to the daydreaming human driver. However, in the case of most species of organisms, for lack of the neural body parts to perform it, the coincident daydreaming, including any related verbal behavior, cannot occur. That is, not only do the members of such species not know what they are doing, they *cannot* know what they are doing.

While the members of those species can typically behave effectively enough for the survival of their species, they cannot match humans in behaving effectively enough to insure their individual survival. Their having to act only under direct stimulus control leaves their environment-targeted behavior without the supplementary stimulus control exerted by their own conscious behavior (because their conscious behavior cannot happen). They live out their behavioral lives without the fine tuning of their responding that such conscious supplements to the control of their other behaviors make possible. They are often described as insentient and unintelligent.

Natural selection can produce organisms with the behavioral capacity to cope in complex ways with an environment and to survive its challenges—all without also hav-

ing to have produced the capacity for any kind of consciousness. Insects represent typical examples. The physiological capacity for awareness is a further evolutionary adaptation that is selected under special circumstances that have taxed few species sufficiently for its production. Termites can build their castles of mud without any of them knowing that they are doing so, but a human being cannot unconsciously build a modern house in which to dwell. The differences in the nature of those two construction projects reflect historical differences in the evolution of humans and termites.

The condition of permanent unawareness is difficult for a human to imagine, but suppose that you were engaged in car driving while daydreaming, and the daydream stopped, but no “awareness-of-driving” responses started. You would be totally unconscious, but the effective ongoing car driving would continue under *direct stimulus control* of the road ahead plus the car’s controls. Then imagine that when the car trip ended, you proceeded onward through the rest of your life under similar direct stimulus control of your environment. You would never know what you were doing or that you existed to be doing it. Also, whatever behavior you exhibited would have to occur without the partial stimulus control contributed by your own behaviors of consciousness.

When we consider a non-verbal organism that cannot know that it exists nor what it is doing, that organism’s condition approximates the state described in this example of life without consciousness. Non-verbal organisms simply lack the neural capacity for the additional concurrent behavior of such knowing. That they do things that to many people seem to suggest awareness and sophisticated knowing simply reflects the substantial complexity of the conditioned and unconditioned behaviors that can occur under direct stimulus control.☺

Availability

The current edition of this book is under development. Each of the planned chapters has been drafted, and editing is in progress.

Contacting the Author

Contact the author by any of these means:

Lawrence E. Fraley
Rt 1 Box 233A
Reedsville WV 26547

Email: lfraley@citlink.net

Phone: 304-864-6888 or 304-864-3443