

The Interbehavioral Alternative to Free Will and Determinism Constructs ¹

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Abstract

A review of various approaches to the old debate of determinism vs. free will shows little progress toward resolving the puzzle by any of the approaches. It is argued here that this is due to the failure to recognize that both free will and determinism are not things or events but imposed constructs, abstractions. Consequently, they cannot have causal or explanatory power. When we turn to observable events it brings us to a multiplex of things and conditions with which the individual interacts in the choosing event. This is an interbehavioral approach in which the interaction consists of this multiplex of events and constitutes the choosing. The interbehavioral resolution of this old conundrum has application in psychotherapy and criminal justice.

Keywords: *Free will, determinism, interbehaviorism, multiplex field, envirocentrism, organocentrism*

Resumen

Una revisión de varios enfoques al viejo debate determinismo vs. libre albedrío muestra poco progreso en la resolución del problema por parte de esos enfoques. Aquí se argumenta que esto se debe a la falla en reconocer que tanto el libre albedrío como el determinismo no son objetos o eventos sino constructos impuestos, abstracciones. Consecuentemente, éstos no pueden tener poder causal o explicativo. Cuando volcamos nuestra atención a los eventos observables encontramos un complejo de condiciones múltiples con las cuales interactúa el individuo durante el evento de elección. Este es un enfoque interconductual en el cual la interacción consiste en un complejo múltiple de eventos y constituye la elección. La resolución interconductual de este viejo enigma tiene aplicación en psicoterapia y jurisprudencia.

Palabras clave: *Libre albedrío, determinismo, interconductismo, campo múltiple, ambientalismo, organocentrismo*

Sometimes the topic of consciousness is cited as an impenetrable mystery or the greatest remaining mystery in the universe; and sometimes free will versus determinism receives that dubious honor. As long as they are not recognized as imposed constructs, they will remain great mysteries, for they send workers off in wrong directions chasing after phantoms. Constructs are a legitimate and necessary part of science but must be derived from observable events and not imposed on the events from traditional sources (Kantor, 1981; Smith, 2007). Free will and determinism are not events but constructs from a long metaphysical history and imposed on the observations of people engaged in such events as choosing. In contrast to imposing constructs, observation of choosing events will disclose a constellation of happenings which comprise the choosing. In one of his early works Kantor (1926, p. 337) observed that the specificity of the interactions and the surrounding conditions are involved in choosing behaviors. No constructs of will or determinism are necessary or even relevant.

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Types of Free Will and Determinism

Free will and determinism are usually arrayed against each other as some kind of forces or causes of behavior. I will argue that these are imposed constructs, not events. We observe people choosing, not in a linear cause and effect chain but as part of a much wider array of things and conditions that enter into each choosing act. When approached as concrete events that can be observed, these constructs, like mind and consciousness, could be used as handles for the event (while discarding any causal role), but they are really superfluous and their dismissal could avoid unintentionally attributing a causal role or an explanatory role. After reviewing a few of the numerous treatments of free will and determinism I will turn again to the events of choosing. These long established categories of free will and determinism are so well installed that they are usually treated in general reference books such as encyclopedias and on internet searches as well as in more technical works such as those of Baumeister and Tierny (2011), Dennett (2013), Frank (1957), and Immergluck (1964). The fact that the quandaries they contain never get resolved suggests that something is fundamentally wrong with them.

Determinism

Incompatible determinism holds that determinism is incompatible with free will. *Compatible determinism* maintains that free will and determinism are compatible with each other (Dennett, 2015). With *soft determinism*, a form of compatible determinism, only to a limited extent is behavior determined by environment and only some of it at that. It holds that all behavior has some freedom of choice but is influenced by our biology and surrounding conditions. People do make choices proponents say, and these in turn are directed by other conditions. All events including human are determined by nature.

Cognitive psychologists accept free will but usually of a soft determinism type. They turn to computer analogies in which information is processed as a rational decision making process. Strategy and organization govern one's choices but also assist in making the best choice in any given situation. In soft determinism "people do have a choice, but their behavior is always subject to some form of biological or environmental pressure" (McLeod, 2013).

According to *hard determinism*, free will does not exist. All events including human are determined by nature. Free will and responsibility are meaningless. Given, they assume, that mind is brain and therefore mechanistically determined by brain action, all choices are determined by brain action, that is, by this organ's mechanistic electro-chemical impulses. It causes us to experience free will even though the choices are determined.

The *libertarianists* argue that determinism does not hold nor does free will exist. But people are special cases. They are active agents and make choices even though the rest of nature is determined. These choices are not the product of outside forces but wholly determined by individual initiative. Libertarianists have not argued that behavior is lawless but follows laws unique to humans. Skinner's schedules of reinforcement are good examples of principles that may apply to nonhumans as well as humans but apply in their pure form largely to special learning situations. They apply to humans most effectively when numerous additional variables such as setting conditions (Smith, 2006) are considered. For example, schedules of reinforcement predict gambling behavior for some individuals but not for all. It is not clear that laws of behavior are necessarily exclusively human.

Among the types of determinism, *causal determinism* holds that nature follows a predetermined route. Every event is produced by antecedent events. It also insists that our thinking, reasoning, and choices are as determined as other events in nature and such thinking reasoning, and choosing is responsible for the occurrence of still other things. The chain of events stretches back to the beginning of

the universe. Nothing is self-caused or uncaused. The future is determined by the past. This is not based on reason or observation but is simply taken as a truism and is called *nomological determinism* or *physical determinism*. It is a common form of causal determinism. *Theological determinism* makes the case that because God is omniscient he knows what will happen in the future. In fact, he created the past, present, and future. Therefore, he is responsible for whatever happens in the future. Humans have no role in determining the future or any responsibility for what happens in it or in what humans do, what choices they make. It is all God's responsibility. Human free will is impossible when a creator has made it all and determined it all and set it all in motion with complete foreknowledge about the course of action, a fixed course.

Still another approach is that of referring to Brownian movements in which particles in a fluid move about randomly, not deterministically, as a putative example of indeterminism on the microlevel. This view holds that events in nature exist at various levels. The events are deterministic at some levels and indeterministic (List, 2014, Musser, 2015) at others. Those of physics are deterministic but free will is not physical and not deterministic. On the level of "mind", such as desires, intentions, and beliefs, these conditions are indeterministic.

"The world is a layer cake of determinism and indeterminism.... It is not the cause of your decision. It is your decision" (Musser, 2015, p. 93).

To be free, we need indeterminism not at the particle level but at the human level. And that is possible because the human and particle levels are autonomous. Even if everything you do can be traced to earlier events, you can be the author of your actions because neither you nor the actions exist at the level of matter, only at the microlevel of mind (Musser, 2015, p. 93.)

This mentalistic approach seems to say that indeterminism and free will are the same.

Still another approach is that of Harris (2012) who argues that free will is an illusion. This illusion is produced by a combination of genetics and environment, which, together result in a brain state that produces the behavior. At the same time the organism observes its own behavior which the individual does not choose but which arises from mind/soul/brain before the observation occurs.

A few of the deterministic hypotheses are more relevant to psychology than are most of the others, those being primarily of interest to philosophers. *Biological* or *genetic determinism* holds that human beliefs and endeavors are fixed by genomes. *Behavioristic determinism*, best represented by B. F. Skinner, contended that all behavior is environmentally determined (or reflexively determined according to J. B. Watson in the early part of the twentieth century), but Skinner accepted the role of genetics and evolutionary history in behavior (Skinner, 1984).

Cultural or *social determinism* attributes causality to the cultural milieu in which a person is raised. Another approach or group of approaches that go by several different names such as neuropsychology, psychoneurology, behavioral neuroscience, biopsychology, and psychobiology take a largely neural approach by holding that behaviors are determined by neurons. Increasingly these approaches have been recognizing that environmental conditions, both biological environment and external environment as well as neurons, hormones, and genes influence behaviors of choosing.

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soft determinism “people do have a choice, but their behavior is always subject to some form of biological or environmental pressure” (McLeod, 2013).

Free will

One of the oldest views of free will is that of *faculties*. In this view, all organisms have powers or faculties or capacities; but a few, especially humans, have free agents that provide for volitional behaviors. Free will requires an intellectual faculty to make judgments and then choose among the possibilities.

Scientific psychology is unambiguous in its declaration that there is no such entity as a will and so there can be no legitimate question about the freedom or determination of the will. The will construction derives directly from faculty psychology which is, of course, mentalistic and theistic. Will whether free or determined stems from soul psychology and not from any observation of human beings and their behavior. (Kantor, 1981)

A *hierarchical* view holds that free will arises among hierarchies of desires when a first order desire becomes a first order volition. *Reasons sensitivity* assumes that agency has a sensitivity to certain reasons and acts on them with free will when they meet certain rational conditions. It does not act on them with free will when they do not meet such conditions.

These types of free will receive little attention outside philosophy. Usually free will is considered in juxtaposition to types of determinism such as those outlined above. For each type of determinism there are proposals about its nature. Some workers have denied its existence; some claim that it exists alongside free will; some hold it to be compatible with will; and some accept it as real but argue that it is not compatible. Some hold that the truth of any variety of determinism is irrelevant because free will is simply impossible. None clearly recognize that these are constructs and therefore fictions.

From the standpoint of interbehavioral psychology, a serious fault of both positions is the resort to popular metaphysical arguments. Basically the disputants on both sides have reverted to the religious problem of the freedom of the will. When actual human behavior is concerned, there is no generalized problem of freedom. What a scientific observer has to describe are specific suggestions in which alternative performances are performed. The factors that allow or prevent choice are entirely concrete, [such as] financial, legal, social, domestic and personal history items. (Kantor & Smith, 1975, p, 499).

Directions in Psychology

Before Copernicus (1473-1543) the earth was the center of the universe. The planets and the sun as well as the moon circled the earth, which was the glorified center of creation. But then Copernicus edged the earth out of the center where it was no longer supreme. Similarly, interbehavioral psychology calls for not only moving the brain out of its central control of behavior of the organism but moving the entire organism out of its center as the locus of its own causation and make the organism one component in a field of events comprising causation. Cognitivism, a major player in mainstream psychology, still operates in a pre-Copernican manner where the organism is the center and is self-caused. This viewpoint did not originate from observation of events or investigation of any behaviors but from tradition going back to Augustine (354-430) and Thomas (1225-1274).

Theologians formulated the belief in predestination (a pre-determined course of events for humans) while other theologians argued for the operation of free will. In the free will versus determinism debate, psychology has traditionally favored the determinism issue over free will. The argument for preferring determinism goes something like this: Psychology sees human behavior as a part of nature which all sciences address, and this in turn follows deterministic laws. Any event in nature that did not

result from antecedent events would violate laws of physics and would be unpredictable. The sciences would be impossible. A science of psychology that looks for regularity and follows discoverable principles would be impossible if it were not determined. Lives would be chaotic instead of orderly.

Does free will mean that an undetermined event, an effect without a cause, can occur? Is behavior unregulated and chaotic? Is it self-caused? Determinism, on the other hand, assumes strict cause and effect. Free will assumes an internal cause and determinism an external cause. In contrast, interbehaviorism treats cause as a complex of observable events. It identifies both free will and determinism as constructs that get imposed on the observed events and rejects them both. It insists that investigations must begin not with constructs but with observation of events from which constructs such as theories, descriptions, measures, diagrams, and inferences may be derived (Smith, 2007).

B.F. Skinner has been one of the staunchest supporters of determinism, and that source of causality is environmental. Environment, especially in the form of reinforcement, determines behavior. Some individuals receive reinforcements for breaking the law—often wealth is the reinforcer. Others who are law abiding are reinforced for their exemplary behavior. Free will is just an illusion. Skinner's discovery of the consequences of various schedules of reinforcement is one of the important demonstrations of his position. His work shows, for example, the powerful influence and its resistance to extinction that intermittent reinforcement has on gambling, on training animals, and on teaching task achievements to children. Although its application often gives less than perfect results it remains one of the most powerful procedures for influencing behavior that we have today. This regularity and predictability led Skinner (1971) to discard *autonomous man* and to replace him with *autonomous environment*. Skinner's view is thoroughgoing envirocentric (Smith, 2001). For Skinner the reinforcement principles are laws of behavior that require no acts of will, no choices on the part of the organism. It is all a result of stimulus control.

A counter argument to envirocentrism is that behavior is not only influenced by the environment but in turn influences it so that there is a reciprocity of influences. The determinists ask, if behavior is not determined is it random? If not random then what accounts for the regularity if not environmental, genetic, and other conditions. Free will advocates, on the other hand, ask how determinism can handle moral responsibility, for it requires free choice. An individual who violates a law may be punished for exercising the wrong choice. This assumes that we are free to make choices for which we are held responsible. Baumeister (2011) is one psychologist who supports the construct of free will. He holds that it is a special form of causality that arose through evolution to serve social purposes (see Baumeister below). Nahmias (2015) and Nahmias, Shepard, and Reuter (2014) dispute the claim that studies of neurological action and behavior show total brain control of our behaviors. They argue, and have some studies they claim support it, that there is room for some degree of free will.

Pearce (2015) holds that there is zero evidence for free will but abundant evidence for determinism. He summarizes seven points of evidence and concludes that science would be impossible without a deterministic world; the evidence is so overwhelming, he avers, that determinism is a foregone conclusion. "In fact there is so much evidence from social science, psychology, neuroscience, genetics, and biology demonstrating that free will is an illusion that we hardly need call on philosophy to make the case" (Pearce, 2015).

Both free will advocates and determinists, as parts of mainstream psychology (Smith, 2001), which is mostly organocentric, give behaviors, whether said to be free or determined, a fictitious locus somewhere in the brain. Often this is based on blood flow measures (as indicators of neural impulses) in which certain blood flow patterns correlate with observed behaviors. But these are only indicative that those particular brain cells are participants (Delprato, 2006) in the act or necessary conditions for the act.

And even this is only a correlation of blood flow and behavior and not any assurance of a necessary condition. It is certainly far from a sufficient condition that would make those cells the container or producer of the observed acts. This putative internal determiner gives little credence to any external factors. The hypothetical mind-brain is a kind of god in the machine (*deus ex machina*) and receives almost the entire burden of explaining behaviors. Sometimes it is said to be an internal motive or willpower that explains why an individual made this choice rather than that choice. It is the moving and determining power. The organism is self-caused. In the interbehavioral system no one condition causes behavior, not the brain or a part of it or DNA or even the entire organism. All factors in the field (organism, stimulus object, interactional history, setting conditions, media of context) comprise the event. No one factor accounts for the event. Each one is a necessary condition, not a sufficient condition but together in a multiplex of events they comprise sufficient conditions. To understand choices, these concrete factors rather than constructs of will and determinism hold the answer to understand the choice made. All the component factors must be assessed. The notion of free will or determinism never arises in a field system. These traditional constructs are an artifact of self-causation and the confusing of constructs with actual events.

At the opposite end of the continuum from Skinner is Carl Rogers whose client-centered therapy assumed free will. The therapist's task is to facilitate clients' choices so that they could benefit from life. For this they have to have free will. Rogers emphasized the importance of constructive development of the self (mind) that will enable an individual to make more and better choices which will contribute to a good life. This point of view is in keeping with other humanistic psychologists such as George Kelly, Henry Murray, Gordon Allport, Abraham Maslow, and Joseph Rychlak. In this tradition, Howard & Conway (1986) presented three studies "to remind researchers of just how much of human behavior might best be understood as purposeful action by the agents involved. A psychology that appropriately recognizes active agency might, in turn, more effectively relate its insights to findings in the humanities and the other human sciences" (p.1250). A more recent advocate of free will is Baumeister (2011) who sees it as a result of evolution even though his empirical research offers no support.

Nearly all of psychology accepts that behavior is influenced by the person's history, the biological organization of the species, past history, and surrounding conditions. Beginning roughly in the 1950s, empirically oriented psychologists have less frequently than in the past considered behavior to be totally determined and now use such language as *purpose* and *conscious choice* to account for some behaviors even though no empirical proof of free will or determinism is possible. The assumption of free will has been used to guide the planning of studies about purpose or choice (Sappington, 1990).

Some Consequences of Belief and Non-Belief

Empirical studies show that belief in free will improves cooperative behavior and reduces aggressiveness (Baumeister, Masicampo, & DeWall, 2009). After reading about choosing prosocial behavior, subjects tended to be more willing to engage in prosocial behavior and less likely to show aggression toward someone who had rejected them. Belief also reduces a tendency to cheat (Vohs & Schooler, 2008). But at the same time, a belief in free will also reduce conformity (Alquist, Ainsworth, & Baumeister, 2013). Subjects are not inclined to follow the lead of other people when led to believe that free will is an illusion. They feel more autonomous. After experiencing sadness they reflect on alternative behavior that would be more effective and results in learning (Baumeister, Vohs, DeWall, & Zhang, 2007; Stillman & Baumeister, 2010) and activation of brain regions (Rigoni, Kuhn, Sartori, & Brass, 2011). In a series of experiments Clark et al. (2014) found that free will belief affected prosocial behavior and punitive judgments. Evidence from the studies points to its use as a means of holding people accountable for moral responsibility and to punish those who adversely affect society.

Soft determinism is accepted, even if implicitly, by most psychologists today. It requires that conscious choices have a role to play in at least some behaviors. This is a major shift from mainstream thinking since the 1950s. "It is the concept of human beings as agents, as somehow being the cause of their own choices and actions that stands in opposition to mainstream psychology and that must try to make its case" (Sappington, 1990, p. 20.)

While these findings are of interest and some of them possibly quite important, they in no way establish anything new about the validity of the will or determinism constructs. This is recognized by Baumeister (2011) who observed that they provide no basis for determining if free will exists or not. Nevertheless, he gave will existential status and argued that it arose in evolution for social reasons and functions as a special form of causality that has emerged from simpler processes. He attributed self-regulation or self-control to will power or holds them to be synonymous with will power (Baumeister (2011, 2015), Baumister and Tierney (2011). Despite the numerous empirical studies he has conducted he does not recognize that these are imposed constructs, not concrete events such as those in his studies. Orthodoxy holds an iron grip on many psychologists.

Multiplex Field as an Alternative to Determinism & Will

An individual browses in a library, looks at several books of possible interest, and finally selects one to read. Is this individual exercising free will or is the decision a product of a series of antecedent causal events that determine the selection? The determinist would argue that the individual actually had no choice in the matter but selected the book on the basis of lawful cause and effect sequences. Each act was cause of the next and so on ad infinitum with any "choice" being also determined. The free will proponent would contend that humans can rise above physical cause and event relations and make free choices by exercising willpower. Still others integrate various mixtures of freedom and determinism. Some make a distinction between determinism and causality; causality is a motivating force: in a choice situation an individual uses will power to reject all motives but one, thus rendering the decision as one that is caused but not strictly determined. It is motivation that is currently often referred to as causal rather than will or determinism.

The argument advanced by the interbehaviorist is that the debate is a pointless one, for it invokes metaphysical forces, namely, will and determinism (and sometimes motives), and imposes them on the events. What are will power or determinism but empty abstractions? Where are these constructs tied to actual events? Such verbal creations should not be confused with events. What the observer actually observes are fields of interrelating objects and events. In the example of selecting a book, an event-approach would require examining the individual's interests, his or her momentary pressing problems that the book might have been considered to help solve, length of time available for reading as compared with the book's length, recommendations by a friend, or other relevant factors. After fully describing the essential factors including the deliberating and choosing, there is no need to add a special force of any kind. The interacting and interdependent factors that comprise a field of psychological events are themselves the causal conditions. This is a *functional descriptive* approach rather than a *prescriptive* approach. Each event occurrence can be correlated with particular sets of conditions—examining a book, considering its desirability or appropriateness in terms of interests, needs, reading time. Change in a field of events comprises a new arrangement of field factors—deliberating on another book, rejecting the previous book. As new properties and conditions are present the organization must be a different one, a different correlation or co-presence. Finding the book that is most suitable, in which case it is chosen, is the final field of events for that series. Noting the time and walking to a check-out desk would be further ongoing fields of events. No invisible or impelling force is necessary.

The empirical studies on the effects of belief in will and determinism have a legitimacy; but, as some of the authors of these studies note, they tell us nothing about where on the continuum of these two constructs one finds compelling arguments or evidence for one over the other or of some admixture. And they can't for they are dealing with concrete beliefs about these constructs and not the constructs themselves. It is only by focusing on recognizing these imposed constructs as such and then observing in what conditions choices occur that we can make progress in understanding and perhaps predicting choices at some level of probability of accuracy.

To the argument that observed events which comprise the multiplex field of interbehaviorism are deterministic, it may be countered that as concrete events they have no metaphysical powers nor do they depend on a tradition descending from theology. As events they are not imposed constructs. Further, they cause nothing but are participating factors, not determining factors, in the interactions that comprise the field. And they change as events change, for they are not fixed. Any inferences (constructs) that can be gleaned are those that are derived from observations, never imposed on the observations. The field is not some metaphysical predetermined thing that has slots for things and events that comprise it, but is an ever changing multiplex whose components are interacting and changing, quite unlike starting with an imposed construct of determinism and imposing it on observations.

An interbehavioral orientation, then, would view psychological occurrences as *events* in which the role of all the component factors would be assessed. Their relationship and the interrelationship of the flow of events is the focus of such an orientation. There is no glorification of the organism over the object. Consequently, there is no place for a prime mover, In other words in an interbehavioral approach the question of free will never comes up The free will-determinism controversy is an artifact of a self-actional procedure. If and where, in the distant future, such a procedure should be superseded by a field or interbehavioral type of theory then the question: does man have a free will or is behavior strictly determined?" will be a philosophical and linguistic fossil. It can only be nurtured by a self-actional approach in which it is embedded. The question never arises in field theory. (Pronko, 1972).

Voluntary behavior, unlike constructs of will and determinism, is an observed event; and it goes on continually throughout life. We can study fields of interactions and discover the innumerable factors that enter into choices. In fact, research in consumer behaviors does this with increasingly sophisticated techniques enabled by advances in electronics. These researchers don't look for will power or determiners but the kinds of concrete factors outlined here. The eons of controversies about free will and determinism play no role in their investigations but are left to gather dust. This concrete approach serves very well to find what influences the choices of children, adolescents, and adults and various subgroups of these populations and to try to gain an edge over competitors. Similarly, questions about the putative mysteries of consciousness and mind-brain receive no greater attention than will or determinism in the research budgets of commercial enterprises, and yet they have made some striking advancements in identifying concrete influential factors. .

Issues in Application

Psychotherapy

When one turns to behavior modification, cognitive behavior therapy, reality therapy, psychoanalysis, client-centered therapy, humanistic therapy, gestalt therapy, or others the implicit assumption is that the individual can be changed in some way to behave in a more satisfying manner. These therapies overlook the field nature of the psychological event. Those approaches that are organocentric give rise to the medical model with its use of drugs, frontal lobotomies, and electroconvulsive shock as a means of treating behavior disorders. One of the few therapeutic orientations

that attempts to deal with the situation as well as with the individual is community psychology. The interbehavioral paradigm suggests that the most effective therapies would be ones that work with home, community, and work situation as well as with the individual. A person who obtains new insights and new overt behaviors but who encounters the same situations which were involved in the development of his or her problems in the first place, may not as often enjoy any long lasting benefits as when the situation is also improved.

Social and Legal Responsibility

Where does responsibility lie for an individual's actions. If a person becomes a drunkard is it that person's fault or is it the fault of a disadvantaged community and a broken home? Is the student who is successful in gaining academic honors deserving of congratulations or should we congratulate the parents who provided inspiration, early learning opportunities, and financial support; the good schools that nurtured the student's scholastic interests; and a tax system and a community that supported the schools? And who is to blame for the criminal behavior: the criminal himself or society? If we "get tough" with criminals will this deter crime? Or do we need to address the society? In other words, is the criminal behavior a result of individual will or of determining circumstances? The argument here is that it is neither, for these are imposed constructs.

The courts are increasingly giving more weight to adverse influences on those accused of criminal acts rather than assuming they make totally free choices (Denno, 2011). Pearce (2015) cites a case in which a murderer was given a reduced sentence due to a behavior disorder and to a gene linked to aggression,

From the vantage point of an interbehavioral field, responsibility is clearly a joint relationship. Even with an individual who overcomes adversity to obtain success, some special circumstances can usually be found that contributed, such as an inspiring friend or teacher. Or, when someone from favored circumstances commits a crime, the various influences upon the person from childhood onward may include some that were insidious. Voluntary action depends on perceptions of consequences, setting factors, and interactional history. Society and the individual are jointly responsible for all activities whether evil or beneficent. If we wish to reduce crime we must change both society and the individual, or perhaps more accurately, change them together. If we wish to foster socially desirable achievements we must nurture the individual's milieu as well as the individual. This conclusion may not be unique to interbehaviorism but that system makes the principle particularly clear and guards against the common practice of stressing one side or the other of the interaction rather than the interaction itself with its contributing components that are concrete observable events. This principle would go a long way in getting psychology off to a more fruitful start with all of the questions it deals with, both theoretical and applied.

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