# Interbehavioral Research: A Commentary on the Investigative and Interpretive Domains [1]

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## Abstract

Kantor (1888-1984) dedicated his career to the development of a psychological system which he termed *Interbehavioral Psychology*. Interbehavioral Psychology is a comprehensive scientific system consisting of various coordinated subsystems including the investigative, interpretive, and applied domains. However, one of the often-mentioned critiques of interbehaviorism is lack of interbehavioral research. Therefore, given the perceived lack of interbehavioral research, this paper provides a commentary on research activity and interpretation from an interbehavioral perspective. Namely, this paper will discuss how interbehavioral research necessitates a precise consideration of how the scientist's assumptions interrelate with the selected subject matter, methods, procedures, treatment of data, and formulation of conclusions. In brief, interbehavioral research is simply research that is closely guided by the philosophical assumptions of the interbehavioral system as a whole. A basic account of this interrelation among the philosophical, investigational, and interpretative domains is provided within the framework of a research manuscript.

***Keywords:*** *Interbehaviorism, interbehavioral research, investigation, interpretation, Kantor*

## Resumen

Kantor (1888-1984) dedicó su carrera al desarrollo de un sistema psicológico que él llamó Psicología Interconductual. La Psicología Interconductual es un sistema científico comprehensivo que consiste de varios subsistemas coordinados incluyendo los dominios de la investigación, interpretación y aplicación. Sin embargo, una de las críticas usuales al interconductismo es su falta de investigación interconductual. Por eso, dada la falta percibida de investigación de este tipo, este trabajo proporciona un comentario sobre cómo puede realizarse investigación interconductual. Esto es, este trabajo discute cómo la investigación interconductual necesita de una consideración precisa de cómo los supuestos del científico se interrelacionan con el objeto de estudio seleccionado, los métodos, procedimientos, tratamiento de datos y formulación de conclusiones. En resumen, la investigación interconductual es simplemente investigación estrechamente guiada por los supuestos filosóficos del sistema interconductual como un todo. Dentro del marco de un escrito de investigación, se provee un recuento básico de la interrelación entre los dominios filosófico, de investigación e interpretativo.

**Palabras clave:** *Interconductismo, investigación interconductual, investigación, interpretación, Kantor.*

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Some psychologists, including behavioral scientists, may have little knowledge of or value the philosophical underpinnings of their science. A lack of contact with the philosophical bases of a given science and how these definitions and assumptions cooperate within the systemic framework of the science leads to several problems. This includes confusion over the exact subject matter under investigation, errors in the way the subject matter is investigated, misinterpretations of the products of investigation, and a failure to establish psychology as a legitimate, naturalistic, comprehensive, progressive and coherent science.

Within the culture of behavior analysis there is a common strict adherence to "behaviorism". However, behaviorism is not a philosophy; rather, behaviorism is an umbrella-term that encompasses a variety of specific systems of philosophical assumptions. The most commonly recognized system is that of radical behaviorism. The cultural influences of this group are far-reaching within the field of behavior analysis. However, several other significant philosophical systems exist. Interbehaviorism is a comprehensively developed and detailed philosophical system that is often underappreciated within the culture of behavior analysis. In order to understand this system, we must first understand its roots.

J. R. Kantor (1888-1984) was a pioneer within the field of psychology, who believed that a satisfactory treatment of psychological events had yet to be achieved (Clayton, Hayes, & Swain, 2005). Thus, Kantor dedicated his career to the development and promotion of a comprehensive, integrated, and coherent psychological system that came to be known as Interbehavioral Psychology. Kantor maintained a wholly naturalistic approach to all scientific activity, with a particular emphasis on the science of psychology (Fryling & Hayes, 2012). Scientific system-building is the hallmark of Interbehavioral Psychology and Kantor (1959, pp. 60-80) believed that no meaningful scientific understanding of these events could be accomplished until a satisfactory treatment and investigation of psychological events is incorporated into the context of a scientific system[3],

The scientific system of Interbehavioral Psychology consists of various domains including that of investigation, interpretation, and application. These domains are intimately coordinated within the overarching system of Interbehavioral Psychology and are viewed as equally important in the context of the entire scientific enterprise (Fryling & Hayes, 2012, p. 191). In other words, the investigative, interpretive and applied domains are interrelated and equally important (Fryling & Hayes, pp. 187-206). It is argued (Fryling & Hayes, p. 191) this overt effort toward organization and integration results in more productive relationships among the domains; which is not always accomplished with other psychological approaches (Elliot, Morgan, Fuqua, Ehrhardt, & Poling, 2005).

Given the equal importance placed upon the investigative, interpretive, and applied domains within Interbehavioral Psychology, it is surprising that one of the often-mentioned critiques of interbehaviorism is the lack of interbehavioral research being conducted. In actuality, although there are technical differences between research conducted within behavior analysis and what may be regarded as interbehavioral research, any and all research can be interpreted from an interbehavioral point of view. Perhaps, the most significant difference is that interbehavioral research is simply research that is closely guided by the philosophical assumptions of the interbehavioral system as a whole. This approach necessitates a precise consideration of how the scientist's assumptions interrelate with the selected subject matter, methods, procedures, treatment of data, and formulation of conclusions. Although many interbehavioral researchers are already conducting research in this manner, even non-interbehaviorists may

[3] *See* Clayton et al. (2005); Fryling & Hayes (2012) for a comprehensive account of the Kantor's Interbehavioral Psychology as a scientific system.

benefit from viewing their own research through an interbehavioral lens. Doing so may bring problematic oversights to light within their own scientific system.

In short, identifying as an interbehaviorist does not necessarily change the way in which a scientist conducts research; rather, Interbehavioral Psychology provides a description of the scientific system, such that scientists operating at an individual level within the system are aware of their influence on aggregate scientific products. This "awareness" can influence the value of particular reinforcers or punishers and alter the stimulating functions of various stimuli for individual scientists. In this way, particular behaviors may be altered for some researchers and contribute to more efficient and robust scientific progress for the field of behavior analysis as a whole. Altering research behaviors in this way may increase productivity and efficiency at the individual level as well.

It should be noted that the purpose of this paper is not to provide a direct critique of other psychological approaches, a comparison of such approaches to interbehaviorism, or a detailed account of the philosophical assumptions of interbehaviorism (*see* Moore, 1984; Morris, 1984; Morris, 1982; Parrot, 1983; Tourinho, 2004). Rather, the purpose of this paper is to provide an interbehavioral commentary on research activity at various stages within in the scientific process, with an emphasis on the investigative and interpretive domains. A more general purpose of this endeavor is to aid in the establishment of psychology as a legitimate, naturalistic, comprehensive, progressive, and useful science.

## Goals of Science, Subject Matter, and Purpose of Experimentation

As this paper provides an outline of interbehavioral research, it is pertinent to first specify the overall goals of a scientific enterprise, the unique subject matter of psychology, and the purpose of experimentation within the scientific system of Interbehavioral Psychology. From an interbehavioral perspective, "Science is an enterprise directed at increasing our knowledge of the world and such is accomplished by describing confrontable events and elaborating upon our descriptions so as to produce what we may call explanations for the forms and operations of those events" (Hayes, Adams, & Dixon, 1997, p.97).

However, there is no one science; there are many sciences that adopt different methods and procedures (Kantor, 1953, pp. 13-14). What differentiates one scientific field from another is the particular subject matter of interest. The subject matter of Interbehavioral Psychology is the interactions of whole organisms with environing factors such as objects, events, or other organisms (Kantor, 1958).

The purpose of experimentation is derived from the aforementioned goals of a scientific enterprise and its unique subject matter. Thus, within the scientific system of Interbehavioral Psychology, the purpose of experimentation is to systematically describe the interactions of whole organisms with environing factors in a manner that increases our knowledge of that part of the world (Kantor, 1970).

In this way, experimentation involves both the activities of investigation and interpretation. Experimentation is wholly guided by the philosophical assumptions within the framework of the scientific system (i.e., the philosophical domain). These scientific activities are cumulative (Kantor, 1959, p. 71), such that any given investigative pursuit is guided by the interpretive products of prior research endeavors and results in interpretive products that guide continued scientific work. In order for scientific activities to be cumulative, interpretive products must be philosophically congruent across individual investigative endeavors. In addition, scientific activities are corrigible (Kantor, p. 71), such that any investigative or interpretive product that is incongruent with previous products and philosophical assumptions warrants further experimentation and potential modifications to the philosophical assumptions of the entire

scientific system. Finally, these products are closely coordinated with the applied domain. As interpretive products are utilized in an applied setting, additional incongruences may be noted and may warrant similar considerations and modifications within the philosophical, investigative, and interpretative domains. As a whole, this integrated process represents scientific activity within the scientific enterprise of Interbehavioral Psychology.

## Conducting Interbehavioral Research (The Investigative Domain)

Within the scientific system of Interbehavioral Psychology, the typical organization of a procedural system includes the following components of an experimental situation: (a) the definition of a research problem, (b) the hypothesis, (c) the procedure, (d) the research operations, (e) the treatment of data and (f) the formulation of conclusions (Kantor, 1958). Though not entirely separate, the first four components are presented in the context of the investigative domain, the latter two components are presented in the context of the interpretive domain, and all components combined constitute a particular research undertaking. This paper is structured to align with this procedural system and the format of current published research manuscripts.

### Definition of a Research Problem

In any experimental endeavor, a logical starting point involves identifying a research problem or experimental question. As is consistent with interbehavioral event field theory, all variables are interrelated and every interrelation is of equal significance to the event. However, individual scientists cannot feasibly study everything. Rather, individual scientists ask particular questions and are responsible for assigning importance to particular kinds of interrelations. The specific questions asked depend upon the subject matter of the scientific system, the interests of the scientist, the interrelation of the research products among the other domains, and ultimately, scientific progress of the field. The subject matter of interbehavioral psychology is the interaction between the actions of whole organisms and the stimulation of environing things and events, set in the context of other factors (Kantor, 1953).

In addition, the scientist must be recognized as a participant in an investigative situation (Hayes, 2010; Kantor, 1953). There are several notable variables influencing the selection of a particular research question and the interests of an individual scientist. This includes the perceived possibility for publication, funding and other resources necessary for carrying out the research activity, and the influence of other scientist's interests such as current or previous academic advisors. The influence of "publish or perish" may lead particular scientists toward pursuing research questions that are likely to be published, but may not address a wide variety of socially relevant applied problems. Along this vein, in combination with the influence of funding, scientists may develop specialized research lines. This activity may lead the individual scientist to pursue increasingly precise and molecular analyses of similar phenomena, in lieu of complex psychological phenomena, and, thus, sacrificing scope and a comprehensive understanding of human behavior, at large.

While an interbehavioral approach does not remove the influence of these factors, the selection of every new research question should begin with a thorough analysis of the variables influencing that decision and an awareness of how the research products may influence the other domains within the scientific system. In this way, the interbehavioral scientist is constantly engaging in verbal behavior about the stimulating functions of relevant variables influencing the scientist as participating variable within the investigational context.

## Hypothesis Development

Once a research problem is identified, the scientist must develop a hypothesis about relevant factors and how they interrelate based upon previous products of investigation. The hypothesis is not an assumption to be tested; but rather serves as a guide for the development of procedures. That is, a given research endeavor or series of experiments does not confirm any "truths" regarding a causal relationship between two variables. A hypothesis simply outlines the variables of interest to be manipulated and measured in the context of the investigative situation. Ultimately, the selection of a research question and development of a hypothesis involves verbal descriptions of how socially relevant variables interrelate in a naturally occurring context such that they may be brought into an analogue context for more detailed investigation. At this point, the interbehavioral scientist begins to select appropriate procedures to accomplish this goal.

## Procedures (Selection of Subjects, Settings, and Apparatuses)

Arguably, most, if not all, investigative manipulations may be considered analogue preparations (including applied research); however, care must be taken to adjust procedures as much as possible to mirror the original events in question (Kantor, 1958). For example, the use of an animal model to investigate complex human conditions and behaviors must be carefully considered for its appropriateness (Hayes & Delgado, 2006), as they are often imposing and excluding necessary parts of the event of interest. Thus, experimental endeavors aimed at establishing distant analogies are illegitimate (Kantor, p. 89).

Likewise, investigations involving unique human populations must also be considered analogue research if interpretive results are generalized across a broader population of individuals (Kantor, 1958). Behavior analysts often conduct research with "convenient" populations (e.g., individuals with organic or other abnormal characteristics or undergraduate psychology students). This practice is certainly acceptable *if* it comports with the original research problem and target population. If one is studying behavioral phenomena as they relate to humans in general, then the scientist should select a diverse sample of human subjects. Note, this does not necessarily need to be accomplished within a single investigation and may be accomplished via bodies of research across various researchers. However, each scientist should take care to a) evaluate the extent to which they have selected an appropriate sample beyond the influence of convenient access, and b) not assume the burden to fill in the research gaps with less convenient populations falls on other scientists and is of concern to them.

With respect to the investigative setting, when manipulations are made in a controlled setting by a scientist, the total psychological situation becomes highly selective and specialized (Kantor, 1970, p. 104). Experimental research conducted in highly-controlled settings within laboratories may limit our perspectives on psychological behavior. Research involving more naturalistic preparations and *in situ* observation is often unnecessarily underrated and underused.

In regard to the selection of apparatuses, the incorporation of tools and instruments in investigative situations can facilitate scientific work. However, not all research is dependent upon the use of contrived apparatuses. Again, specific research techniques must comport with the scientific problem at hand as well as the nature of the events in question. This necessitates that the scientist consider the appropriateness of utilizing an apparatus in a given scientific investigation. The scientist must be careful not to use an apparatus for purely ritualistic purposes (Kantor, 1953, p. 105; Kantor, 1970).

Again, the interbehavioral scientist must determine the extent to which every variable within the investigative context is connected to the actual event as it occurs within the natural context. This is done to ensure the products of investigation are congruent with events as they occur within the applied domain and are congruent with the investigational products of other research involving similar psychological events.

## Research Operations

### Types of Investigation.

In the continuum of scientific interbehavior there are two pertinent procedures to behavior analytic investigation: observation and manipulation (Kantor, 1953). As previously mentioned, the scientist must be recognized as a participant in an investigative situation (Kantor, 1953). As such, manipulations and observations of psychological events are themselves psychological events in which the investigator is a participant. Therefore, many variables come into play, (e.g., history of the subjects and scientist, setting factors, influence of the scientist on the investigative event, and cultural sources) which makes not only the original event a unique event but also the observation of the event a unique event (Sidman, 1977; Hayes, 2010; Kantor, 1953).

***Observation.*** Observation is a foundational process within a study of natural events (Hayes & Fryling, 2009). There are four general types of observational procedures outlined within interbehaviorism including direct observation and three types of indirect observation (*see* Hayes & Delgado, 2006, for a detailed account). These methods differ in terms of the scientist's contact with the event of interest and the manipulation of objects or the event in the investigative situation. Direct observation is distinguished from the other three in that it occurs without manipulation of the objects under study (Kantor, 1953, pp. 15-16) and is considered the most intimately connected with the original event of interest.

***Manipulation.*** Manipulation involves the modification of the relations among things and events and the observation of those relations for the purposes of investigation (Kantor, 1953, p. 103). Science is primarily concerned with unearthing characteristics of confronted things and events whereby an emphasis is placed on manipulations that aid in this endeavor (Kantor, 1970, p. 101). While, manipulation is basic to experimental activity, random manipulation of things does not constitute scientific activity (Kantor, 1958, p. 89; Kantor, 1970). Procedures in psychology are never ends in and of themselves but means of solving significant problems concerning the original events around which the investigation is centered (Kantor, 1958).

It is important to recognize that things and events contacted through indirect observation involving manipulation are not the phenomena of original interest (Hayes & Delgado, 2006). The event being studied is a synthetic and simplified version of the original event of interest (Hayes & Delgado). That is, "the things contacted by manipulative procedures are deliberately constructed to permit them to stand in place of the original phenomena for purposes of investigation" (Hayes & Delgado, p. 50). Even direct observation on the part of one individual, whom produces descriptive products such as data, is considered indirect observation on the part of the scientist. That is, the scientist is no longer interbehaving with the original event of interest, but with the interbehavioral products of another individual. The more distant the observation becomes from the original event, the more it is influenced by a myriad of variables imposed upon the investigational situation.

This does not suggest that manipulative procedures are not scientifically valuable; rather care must be taken that the scientist: (a) maintains an awareness of the extent to which his procedures distort or otherwise misrepresent the original event, (b) contrives the investigative situation as little as necessary; and

(c) ensures misinterpretations are not made on the basis of the dissimilar features or unimportant similar features of the analogue situation. Every interbehavior within the investigative process must be planned, considered, and purposeful.

**Independent Variables and Dependent Variables.** The basic procedure in a manipulative investigation is to alter some aspect of the field and examine how the factors become rearranged as a result of this manipulation. In more ordinary parlance, the factors manipulated would be called the independent variables and those being measured would be called the dependent variables. For interbehaviorists, it is reasonable to employ this terminology in the context of investigation but not in the context of interpretation (Kantor, 1958). This means that while it is acceptable to manipulate particular variables deemed as independent variables in order to observe changes in variables deemed as dependent variables, it does not mean that the events of interest are actually structured in this manner. From an interbehavioral perspective all factors are interdependent. Dependency relations are, in this sense, just a convenient way of speaking about investigative operations and do not imply causal relationships.

Taking a purely causal approach at the interpretive level may lead to overlooking other important factors within the event field. With the interpretive isolation of independent and dependent "causal" variables, there is less inclination to examine other factors comprising the total event (Kantor, 1958). A more deliberate focus on the total event field provides opportunities for discovery that might be overlooked when too much attention has been paid to too few factors. An interbehavioral approach to causation reduces the overemphasis on experimentation to produce interpretive constructs about a small number of particular variables (Kantor, 1958). This approach leads, instead, toward the use of experimentation for the development of theories and laws that fit within a broader, comprehensive system.

While the investigative activities of defining a research problem, hypothesis development, procedures, and research operations are necessary within the framework of scientific activity, the interpretation of investigative products is equally important and must also be submitted to the same deliberate scrutiny and precise consideration.

## Conducting Interbehavioral Research (The Interpretive Domain)

The philosophical aspects of behavioral science not only drive the goals of the science, the subject matter of the science, and the way in which scientific activity is conducted; philosophical assumptions also directly guide the way in which events are interpreted. Errors in the philosophical and naturalistic understanding of psychological phenomena will inevitably result in errors in our laws, terminology, and descriptions of the principles of behavioral science.

### Treatment of Data

Observation of dependent and independent variables involves measurement. It should be noted here that while mensurational operations are essential to observation and investigation, measurement is not identical to observation. This confusion results in the fallacy that measurement units, which refer to or describe some quality or dimension of a thing, is actually the thing itself. It must be recognized that numbers are also constructs derived from observation (Kantor, 1953 pp. 140-145). For example, rate is a construct describing an event, not the event itself.

Both measurement and investigation have been regarded as magical, representing a doorway to truth and reality (Kantor, 1953). It is important to recognize that investigation is method, not magic. This view is supported by several points. First, the role of scientific investigation in verifying or testing

hypotheses offers proof that it is method integrated with subject matter and interpretation. Second, investigative methods can fail to provide absolute conclusions.

An excellent example is the work of the physicist Heinrich Hertz. Hertz hypothesized that the development of a magnetic field would be convincing evidence that a cathode beam of rays consisted of particles, so he set up an experiment to test this hypothesis (National High Magnetic Field Laboratory, n.d). That experiment gave negative results. He later conducted another experiment that hypothesized that if cathode rays consisted of particles they would be deflected by charged plates. This experiment also failed. Hertz's hypotheses were not incorrect; rather, the experiments were defective. It was later demonstrated that cathode rays did consist of particles by Perrin (1895) and Thomson (1897) with more refined techniques and a better apparatus.

Contradictory results of careful investigative pursuits do not support the magical notion of experimentation (Kantor, 1953). Magic, here, does not mean the use of a wand to obtain results, but merely indicates confidence in the *experimentum crucis*. In other words, it may be assumed that a set of operations or demonstrations definitely and permanently settle scientific questions. However, "no important problem is ever solved by one experiment or by one type of experiment" (Kantor, p. 109). Thus, too much emphasis must not be placed on experimentation because our findings are limited by all aforementioned components of the experimental situation (i.e., experimental subjects, setting, apparatus, role of the scientist, observational techniques, and mensurational operations). Replication of investigative activities is given lip service within behavioral psychology, but often, contingencies surrounding publication hinder this process of direct replication. Therefore, it is important that the applied domain remain connected with the experimental domain and philosophical domain, such that failures of the application of procedures and principles to produce expected results are taken into account and the entire system remains corrigible.

## Formulation of Conclusions

**Role of the Scientist in Interpretation.** As previously mentioned, at the investigative level of experimentation, the scientist is interbehaving with the event being studied and is not separate from the investigative situation (Kantor, 1953, p. 34). This also holds true in the interpretive domain. As with the development of hypotheses, the descriptive constructs developed by the scientist when formulating scientific conclusions are not only based upon observations made within the investigation; the descriptive constructs are also derived from the unique history of the scientist and his philosophical assumptions (and related construct descriptions). Having observed the same investigative event and data, various conclusions may be drawn by different scientists.

**Description versus Explanation**. From an interbehavioral perspective, description is the specification of a set of important factors. Explanation involves interrelating that set of variables with each other (Kantor, 1983). The individual elements within a given event are only segregated by description; such segregation does not exist in the actual event (Kantor, p. 239). Thus, we can describe a response function, a stimulus function, a medium of contact, the setting, the setting factors, the behavior segment, or the boundaries, but these things are merely verbal constructs (*See* Fryling & Hayes, 2009; Hayes et al., 1997; Kantor, 1957; Smith, 2007). The event itself does not contain any parts in this way; the parts are verbally constructed and imposed upon the event.

The difference between description and explanation is a matter of how isolated the relations are that one is describing (Kantor, 1983). Traditionally, explanation is the means by which a scientist can say *why* something has happened; however, this is not the case from an interbehavioral perspective. Explanation is merely a more elaborate description involving a discussion of the interrelation of particular

variables. Explanation is never the isolation of one thing held to be responsible for another thing and as such, explanation is not synonymous with causation.

**Theory and Law Construction[2].** Theories and laws constitute temporary endpoints of the scientific system (Kantor, 1958). That is, scientific theories and laws are propositional formulations which interrelate the factors in one or more event fields. Of all the aspects of scientific work, theories and laws are often regarded as the primary goal of science (Kantor, 1958). In the scientific enterprise, constructional products that relate and give order to events are certainly compelling. However, we must emphasize that interpretive constructs fit into a comprehensive structure alongside the description of events and the operational procedures required to measure and manipulate them.

While investigative contacts mostly concern observation, manipulation, and transformation of elements and situations, interpretive constructs of the theory and law type concern the scientist's references to those events. Even though scientific theories and laws are the most abstruse products of scientific work, they are the most intimately connected with events (Kantor, 1958). Theory and law constructions are abstracted from commonalities among observed events (Kantor, 1958).

The scientific system as a whole is cumulative and corrigible. Theories and laws are verbal constructs derived from the cumulative products of investigation, set within the context of the other accepted philosophical constructs of the system. With respect to corrigibility, theories and laws are *temporary* endpoints. They are not absolutes or universal and are subject to change as is any other construct within the scientific system. In this way, investigative products are meant to further future investigative activities, as they relate to the applied domain and the philosophical domain, in a constant process of refinement and scientific progress.

## A Note on the Applied Domain

As mentioned in the introduction, the philosophical, investigative, and interpretive domains within Interbehavioral Psychology are intimately coordinated with the applied domain. Behavioral science is a coordinated scientific discipline in which each of the above-mentioned domains is integrated and impacts one another (Fryling, 2011). The simple service delivery of behavior analytic procedures is often referred to colloquially as applied behavior analysis. However, applied behavior analysis involves investigative activity but it often closely overlaps with practice. Here, the applied system will refer to applied behavior analysis in that proper sense.

Within Interbehavioral Psychology, the applied system serves the role of verification and exploitation (Kantor, 1958). Verification within the applied domain refers to a continuous examination of the entire scientific system with respect to principles and theories derived from other areas of the system (Fryling, 2011; Kantor, 1958). This involves the "discovery and investigation of novel events" (Kantor, p. 158). As such, verification is applied to both work conducted in other areas of the entire system and in novel circumstances of the applied sort such that the entire scientific system is continuously evaluated (Fryling).

Exploitation within the applied domain refers to the production of results that may have utility outside of the scientific context. Although a utility agenda is "hardly avoidable" (Kantor, 1958, p. 158), when it dominates, "scientific work is no longer guided by the interests of the scientist and the aspects of the subject matter that remain to be understood, but rather, by the practical problems of the culture" (Fryling, 2011, p. 27). While the utility of research products for producing meaningful changes is of

imperative value, too much growth in one area of application may result in a severely limited scope of the comprehensive scientific enterprise as a whole.

For example, an overemphasis on the application of behavior analysis for the treatment of autism may ultimately be detrimental to the development and scientific progress related to other complex psychological phenomena and, ultimately, to the development of the scientific system as a whole. If a service delivery practitioner is working to improve the lives of children with autism and their families, they are likely not concerned with "the scientific system as a whole." The burden here, lies on the applied behavioral scientist, not on practitioners.

## Discussion

Interbehavioral psychology provides a comprehensive framework which interrelates the investigative, interpretive, and applied domains. The development of such a scientific system is necessary regardless of the particular philosophical assumptions within a given field. Without an appreciation for and awareness of the absolute pervasiveness of the philosophical aspects of the science, all other levels of the scientific system inevitably suffer and the science as a whole will likely fail to be represented as a true science.

Even if an individual does not identify as an interbehaviorist, there are several important considerations presented throughout this paper that are relevant to psychological scientists from all philosophical backgrounds. First, there is a need to take a more comprehensive approach toward understanding human behavior. Experimentation must be conducted with a deliberate regard to our ultimate goals as scientists. Second, our individual histories, objectives, desires for publication, and so forth can influence our investigative activities and we must recognize that influence and, to the greatest extent possible, minimize it. Third, recognize that investigation is method, not magic, and does not represent a doorway to the discovery of absolute truths. Our description and interpretations of events are limited by our particular settings, subjects, apparatuses, observational techniques, measurement devices and personal histories. And fourth, we must be careful in the way that we formulate conclusions. We must not go too far beyond the original events in question and thus must limit the amount of generalization used in the description of any investigative findings.

Interbehavioral research intentionally differs from other research in the particular details of investigative methodologies. Interbehavioral Psychology provides a framework for the precise consideration of how these particular details relate to all other aspects of the scientific system and the goals and nature of science in general. When one purposely conducts interbehavioral research, the emphasis is placed on specific experimental operations before beginning the research endeavor. However, all research can be interpreted from an interbehavioral perspective. This most significantly involves a critical analysis of the events selected for investigation and the interpretation of investigative products by utilizing the philosophical assumptions of Interbehavioral Psychology. In addition, Interbehavioral Psychology demands that the individual scientist not only pay lip service to how these systems are interrelated, but also constantly evaluate the extent to which the specific and minute activities he engages in interrelates with the goals and progress of the overarching scientific system.

Kantor's aim was simple yet powerful; his goal was "to construct a scientific system that enabled researchers to practice an authentic natural science of psychology" (Kantor, 1959, p. 244). However, the actual process of accomplishing this aim was not so simple. Kantor dedicated his entire career to not only pinpointing the appropriate psychological events for investigation, but also attempted to "remove systematically, at every level, the impact of dualistic cultural presuppositions that have hampered the scientific development of psychology all along" (Clayton et al., 2005, p. 349). This pursuit has remained

relatively underappreciated but should not be taken so lightly. At the very least, within psychological sciences, the continued development of alternative scientific systems based on other philosophical presuppositions that are as detailed, coherent, and comprehensive as that presented in the entirety of Kantor's work must be pursued. The failure to do so will certainly continue to hinder the establishment of psychology as a legitimate, naturalistic, comprehensive, progressive, and useful science.

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