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Book Reviews

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Psychology From the Standpoint of an Interbehaviorist: A Review of "Modern Perspectives on J. R. Kantor and Interbehaviorism,"

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How fitting for me to have been asked to review this excellent book, which examines the theoretical contributions of one of psychology's more poorly understood and often ignored pioneers, J. R. Kantor. One of the institutions I was guided to for master's-level graduate training following graduation from Brooklyn College in 1961 was the University of Wichita. My professor for Advanced Experimental Psychology, Solomon Weinstock, gave me some insights about what faced me. In graduate school, he said, you will meet students who drink beer and talk about sex and those who drink beer and talk about psychology. Hang out with the latter group, he advised, because the first group is made up mostly of talkers. He also informed me that the University of Wichita contained a warren of interbehaviorists, something I knew little or nothing about. It was only on reading the book under review here (chapter 1, Mountjoy and Cone), 46 years later, that I finally discovered how Weinstock knew that about Wichita University—he was one of Kantor's doctoral students at Indiana University.

Arriving in Wichita in 1962 to unbelievably hot weather, I was introduced to two other of Kantor's doctoral students, both psychology faculty members, David Herman and N. H. (Nicolas Henry) Pronko. Pronko was to become both my mentor and my close friend in the years to come. I am sorry to say that Weinstock, Herman, and Pronko are all now deceased, but I believe they would be proud of the psychologist they helped me become.

Another curious bit of history regarding my education is worth recounting in this preface to my review. Following my doctoral training at Kansas State University, I became associated with Ethel Tobach at the then influential Department of Animal Behavior at New York's American Museum of Natural History (Greenberg, Partridge, Weiss, & Pisula, 2004). The department was once headed by T. C. Schneirla, and I soon came under the influence of the approach to psychology that he espoused. The coincidence of my exposure to Kantorian and Schneirlerian (see Lazar, 1978) psychology has been brought to bear in my current intellectual involvement with developmental systems theory (Ford & Lerner, 1992; Greenberg, Partridge, Mosack, & Lambdin, 2006; Halpern, Hood, & Lerner, 2007; Oyama, Griffiths, & Gray, 2001). I once had the opportunity to meet Kantor, during his visit in 1978 to Wichita State University, and I explained to him that I was an adherent of Schneirla's views. He said that Schneirla was good "and had it mostly right!" (I took the photograph of him

which accompanies this review at that time; see Figure 1.) All of the players in these three approaches to psychology share many theoretical ideas, which will become clear as this review proceeds. Again, I am pleased and honored to have been selected to review this book, as it touches on many aspects of my professional training and subsequent career.

This book is divided into two parts, the first of which in 5 chapters summarizes the essential features of Kantor's "school" of thought, *Interbehaviorism.* The 6 chapters and commentaries of the second half of the book illustrate the relevance of Kantor's ideas to contemporary issues in psychology. The 11 chapters and commentaries are written by Kantor's students, other interbehaviorists, and still others who find merit in his ideas.

The book opens with a brief overview by the editors, summarizing the essential features of Kantor's psychology.

> [Kantor] was mainly a systematist. His goal was to provide the foundations of a natural science of psychology that would integrate theory, research, and application. . . . He called his system *interbehavioral psychology* or *interbehaviorism*—a system that is field-theoretic, not lineal-mechanistic, self-actional, or mediational; a system that is naturalistic, not dualistic; and a system that is comprehensive, not narrowly focused. [p. ix]

In this we see that Kantor set himself an impressive goal, one that many believe he achieved.

Figure 1. J. R. Kantor in 1978 (photo by the author).

Following the overview and introduction (a paean to Kantor, of sorts), the book begins with a biographical sketch of him (chapter 1, Mountjoy and

Cone): "Jacob Robert Kantor (1888–1984) was a leader in certain aspects of 20th century scientific and philosophical revolutions, especially in what is commonly called the 'behavioral revolution'" (p. 15). His doctoral degree was from the University of Chicago, and, of particular interest to readers of this journal, he was the founder of *The Psychological Record* in 1937. He taught at Indiana University for 39 years, during which time he played a crucial role in shaping 20th-century psychology. He was among the first and most vocal critics of mind/body dualism, emphasizing that psychology should be the science of observable behavior and not of the soul or mind. He never shied away from confronting "the Establishment," being one of the earliest to dismiss the claim (still somewhat current) that women and "so-called primitive people" (p. 19) are intellectually inferior, thus challenging Social Darwinism. His first major work was the two-volume *Principles of Psychology* (1924, 1926), which "described *all* [italics added] available psychological data of the early 20th century with *no* [italics added] resort to dualistic concepts, such as the unified soul, atomistic mind, or conceptual nervous system" (p. 23).

Among the important ideas that shaped Kantor's thinking were field theory in physics (embodied in his emphasis of the contextual nature of behavioral events), the principles of Darwinian evolution (though he would certainly be opposed to the way in which contemporary evolutionary psychologists have co-opted these principles, something pointed out by Lickliter in chapter 7), and the rejection by behaviorists of dualism. Kantor also insisted that psychology was an independent *natural* science (my mentor, N. H. Pronko, was fond of saying that "psychology is as natural a phenomenon as rolling balls down inclined planes was for Galileo"), and that behavioral events were not biological events. Biological factors were understood by him to be participating and not causative factors of behavior. Although he found merit in some of behaviorism's ideas, he saw fragments of mentalism within it. In this he was like Zing-Yang Kuo (1967), another early critic of mentalism, who criticized Watson for not really abandoning mentalism (Greenberg & Partridge, 2000).

Kantor's understanding of psychology as a natural science is not a minor point. Significantly, it places psychology in the same league as the other sciences, rather than diminishing the field by referring to it as a social or lesser science. In chapter 2, Debra Fredericks discusses Kantor's history of the rise of psychology from its philosophical beginnings to its standing as a science in the early 20th century—his impressive two-volume work, *The Scientific Evolution of Psychology* (1963, 1969). Kantor was not, of course, unique in dismissing the nonscientific ideas of mentalism and dualism: "Mentalistic thinking was analyzed [by Kantor] as a product of cultural and nonscientific influences and not as an inevitable discovery of characteristics inherent to psychology activity" (p. 29). Being the true Kantorian that I am, I have elsewhere argued that the mind was not something discovered by psychologists, but rather something invented by thinkers such as Descartes and Freud (Greenberg & Lambdin, 2007). As Fredericks and I point out, the idea of the mind has religious connotations and origins, being once regarded as identical with the soul (see Uttal, 2005). But for Kantor, "the subject matter of [*scientific* psychology] must be naturally occurring interactions between organisms with objects and events of the environment . . ." (p. 57). The mind has never been understood in this way.

In chapter 3 Clayton, Hayes, and Swain discuss several ideas that entered into Kantor's construction of his system of psychology. Notable among them is his emphasis on the hierarchical organization of the universe in general and of life in particular. Thus, "he noted that different descriptions and interpretations are possible (e.g., chemical, biological, psychological) of . . . events" (p. 64). Similarly, in discussing his understanding of evolution, Clayton, Hayes, and Swain point out that he distinguished between planetary evolution, phylogenetic biological evolution, ontogenetic biological evolution, and psychological behavioral history. All of these are inextricably related to each other, though "these intervals, although interwoven and related, are never the cause or the source of the other" (p. 65). This is, in essence, Kantor's antireductionistic position and is his own formulation of the important concept of integrative levels (e.g., Aronson, 1984; Novikoff, 1945). Psychological events are "higher" or more complex than biological events and cannot be reduced to, or even described in, biological terms. An important contribution of this chapter is its reprinting of a series of 10 protopostulates taken from Kantor's *Interbehavioral Psychology* (1959), a book that summarizes his entire system of psychology in a formal set of principles, postulates, protopostulates, corollaries, and so forth.

These 10 protopostulates are pregnant with implications and bear summarizing. With them Kantor (1) identifies psychology as "just" another science, different from, though compatible with, the others; (2) psychology is recognized as a truly independent science, and is not simply a branch of biology, which many today would argue; (3) psychology is a science of events and of processes, and behavioral events cannot be reduced to lower levels of analysis—thus, although we begin life as biological organisms, somewhere early in our reactional biographies we become psychological creatures. (4) Context counts, and all events in the behavioral setting influence behavior (some more so than others); (5) in a behavioral event, whole organisms behave, not just parts of them (e.g., their brains [in this Kantor paraphrased Kuo's (1967) principle of behavioral gradients, though Kuo proposed this much earlier than 1967]). Finally, (6) behavior has a developmental history that begins almost at the moment of conception. I have omitted some crucial details and direct the interested reader to this chapter, or, better still, to *Interbehavioral Psychology* (Kantor, 1959).

As I pointed out earlier, the highest stage, or level, in Kantor's hierarchy of events was that of the psychological history of the organism. He summarized his thinking about this in his conception of the "interbehavioral field," and this is the subject of Noel Smith's contribution to this book (chapter 4). I have included a diagram of the field, also referred to as the "behavior segment," which can be defined as the smallest analyzable unit of an interbehavioral event.

Of course, behavior is absolutely continuous; it is not some phenomenon that can be pickled and put on display in a museum jar. This continuity is represented in Figure 2 by the preceding and succeeding behavior segments. Attending to the focus segment allows one to analyze a particular behavioral event. Note the two-headed arrow in the segment R ⇔ S. "Kantor abhorred the unidirectional arrow of environmental control over behavior. To him, Skinner's psychology was exquisite but only 'half a psychology'" (Cromwell's Commentary on chapter 9, p. 243). Kantor's two-headed arrow refers to the interplay between Stimulus and Response events, something ignored by behaviorism and other formulations of psychology.

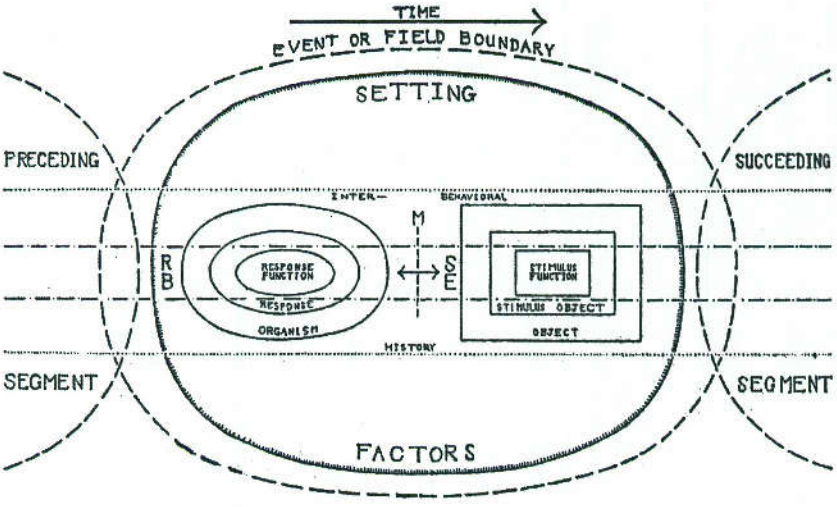

Figure 2. "The behavior segment."

Other important features of the behavior segment are (a) its focus on the setting factors and the medium of contact of behavioral events, a referent to the contextual nature of behavior (this idea has been fully vetted by developmental systems psychologists [e.g., Gottlieb, 1992; Lerner, 2002], having been discussed at length as early as 1942 by Pepper) and (b) its reference to the individual's Reactional Biography, a history of *all* stimulative effects beginning prenatally. Figure 3 is a diagrammatic representation of the concept. It is of

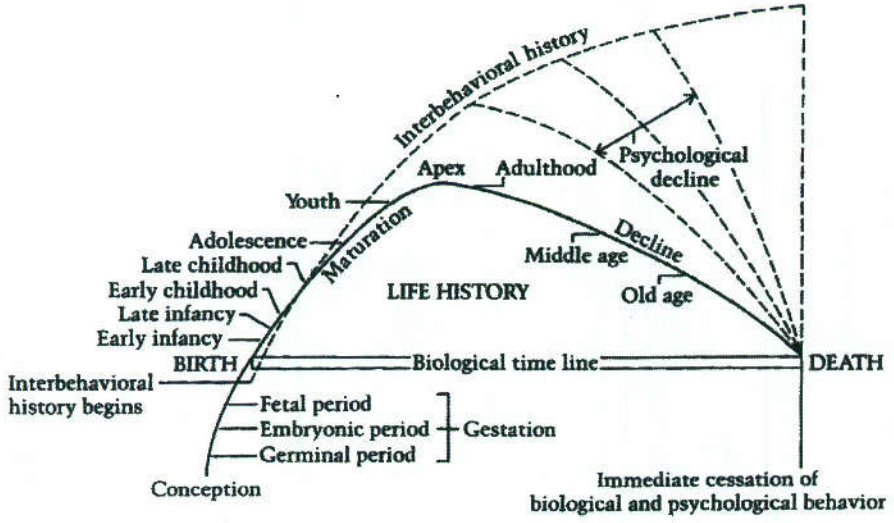

Figure 3. "The Reactional Biography."

interest to note what Smith (chapter 5) says of this concept: "In a psychological field, the organism's biological structure is only a facilitating or limiting component of the field, while the organism's interbehavioral history is of more direct importance—and is continually accumulating" (p. 101).

The first part of this book ends with an interesting summary by Smith (chapter 5) of the kinds of research that has been generated by interbehaviorism. To be sure, this answers the criticisms that Kantor's ideas, while interesting, have never generated testable hypotheses. Much of the research cited was not designed specifically to test interbehavioral ideas, but their relevance is made apparent by Smith.

The first part of this book is mainly a summary of Kantor's main ideas; as such it should serve only as an introduction. Anyone familiar with Kantor's system will appreciate this summary for its accuracy. However, the curious reader will want to go further and consult his extensive bibliography (Smith's appendix, pp. 305–324), which began in 1915, ended in 1984 just a few days prior to his death, and amounted to 20 books and more than 120 journal articles, reviews, and other written material.

The second part of this book consists of five essays and commentaries concerning the utility of Kantor's ideas and how they might apply to today's psychology. My feelings about these chapters are mixed. Some are strong contributions, others are not. Among the strongest entries are those of Robert Lickliter (chapter 7), Edward Morris (chapter 11), Dennis Delprato (chapter 6), and Alan Costall (chapter 8).

Lickliter describes the contemporary approach to psychology known as *developmental systems*. "The view that development is determined by interactions among various components of the organism and its environment, including genes, hormones, diet, sensory experience, social interactions, and numerous other factors, has come to be known as a 'developmental systems' approach" (p. 173). Anyone familiar with interbehaviorism will see this as just the latest iteration of an understanding of psychology stretching from Kuo (1967) to Kantor to Schneirla (1949) to Gottlieb (1992) to Lerner (2002) to myself (Greenberg et al., 2006), now to Lickliter (this volume), and to many others. As a comparative psychologist working in this framework, I have argued that comparative psychology is less about earthworms, gerbils, and monkeys than it is about all of psychology—a general psychology, if you will (Greenberg & Haraway, 2002).

The developmental systems approach posits that all behavior has a developmental history, a principle embodied in Kantor's idea of the reactional biography. In addition, this line of thought points to the enormous complexity of psychology—that psychology is a more complex science than physics, which, after all, can identify the variables on both sides of its equations. Psychology is still trying to identify what all of its variables are. What Kantor and others in this line of thought were aware of, however, is that

> no single element in the [behavioral] system, be it internal or external to the organism, necessarily has causal primacy or privilege in the emergence of behavior . . . A developmental systems view . . . characterizes behavior as an emergent property resulting from the integration of nervous system activity, other internal physiological and endocrine variables, and specific features of stimulation present in the organism's physical and social context. . . . *[This]*

important idea is still not widely recognized in much of psychology [italics added]. (pp. 174–175)

Consistent with developmental systems and other ideas psychology has borrowed from contemporary physics is a new idea proposed by Rumbaugh, that of salience, an alternative to the traditional views of reinforcement (Rumbaugh, King, Beran, Washburn, & Gould, 2007). I believe Kantor would find merit in this idea, especially in light of Lickliter's comment that "one of the chief aims of a developmental systems approach [is] the specification of how external stimulative events coact with organismic factors to exert particular effects on specific traits or characteristics at particular times" (pp. 183–184). Salience replaces reinforcement with the idea that contingencies play a larger role in strengthening behavior than some unknown strengthening property of reinforcers.

We entered the 21st century on the heels of two expensive and popular scientific efforts, The Decade of the Brain and the Human Genome Project. Both purported to put to rest the search for the origins of behavior. The former endeavor sought to put the entire burden of behavior on the brain, the latter on the human genome. Both, of course, came down on the nature side of the nature/nurture equation; both failed to "take development seriously" (Robert, 2004). However, "As Kantor . . . acknowledged, a psychological event is at the same time a physiochemical event, a biological event, and a social event. Most traditionally trained psychologists, however, are not prepared to address such a multileveled, integrative framework" (Robert, 2004, p. 186). Indeed, mainstream psychology is often understood to be a biological science, placing undue emphasis on neural and genetic influences on behavior. Thus, cognitive neuroscience is among the fastest growing subfields in our discipline, and with evolutionary psychology, instincts are once again in vogue (Blumberg, 2005). "[Evolutionary psychology's] notion of the genetic specification of behavior . . . represents a disregard of a wealth of empirical findings presently available from embryology, neuroscience, and developmental psychology" (Lickliter's chapter, p. 178).

It is of interest to note, as does Lickliter, that the developmental systems perspective is influenced by contemporary thinking in physics, something that Kantor would have recognized as showing the compatibility of psychology with the other natural sciences. Thus, much behavior is understood to originate from emergent processes, a result of self-organization (Greenberg, Partridge, & Ablah, 2002). Again, mirroring Kantor's thinking, behavior from the developmental systems perspective is understood to be multidimensional, nonlinear, activity dependent, and context sensitive. Of course, Kantor was ahead of his time in this, understanding that behavior arises, or emerges, from the interaction of organisms in their environments. Thus, he presaged Dewey and Bentley's (1949) interactionism, later referred to as *transactionalism.* Delprato (chapter 6) refers to this in his discussion of the dialectical influences on psychology.

Morris' chapter (chapter 11) is a thorough review of contemporary thinking about behavior analysis. This would be an excellent introduction for both graduate and undergraduate students to this important aspect of psychology. In Morris's words, "Classical behaviorism [of Watson] . . . is now largely dead; interbehaviorism [Kantor's take on behaviorism] retains its singular identity, but it is not widely known; and [Skinner's] radical behaviorism lies increasingly

outside of mainstream psychology, as it has evolved into the discipline of *behavior analysis*" (p. 277). Of course some would take issue with two of the points Morris makes: that Kantor is poorly known and that Skinner's behaviorism lies outside of mainstream psychology. It is true that few current students of psychology are familiar with Kantor, but almost every one of my contemporaries is familiar with him and his work (though few would identify with his position). And certainly Skinner and his ideas remain among the important contributions to 20th-century psychology — he is the eighth most cited in professional journals and the second most cited in introductory psychology textbooks (Haggbloom et al., 2002). Though Kantor is barely referred to in this chapter, it is an excellent demonstration of the relevance of Kantorian thinking to contemporary psychology.

In their commentary about this chapter, Fox, Brown, and Conroy suggest that because there have been so few citations about or references to "setting events, setting, or contextual factors" (p. 301) in the *Journal of Applied Behavior Analysis* since 1968, this means that the concept has been ignored or abandoned. Of course this is not the case, and the work of developmental systems theorists is entirely within the framework of "developmental contextualism" (Lerner, 2002, p.8). Lickliter's contribution to this book shows how Kantor's system forms the beginning of a continuous development of ideas that were taken up and expanded upon by the likes of Zing-Yang Kuo (1967), T. C. Schneirla (Aronson, Tobach, Rosenblatt, & Lehrman, 1972), and Gilbert Gottlieb (1992).

Delparato's chapter (chapter 6) discusses several converging movements in psychology—ideas that, in some sense, characterize much of contemporary psychological thinking. These movements are interbehaviorism, radical phenomenology, behavioral cybernetics, action psychoanalysis, behavioral epigenetics, ecological psychology, and dialectical psychology. While each of these movements is somewhat unique, they all share certain assumptive commonalities. Each "departs from the one-way mechanistic causality that underlies mainstream psychology" (p. 149); they are all monistic, rejecting the dualistic worlds of mind and body; these movements are all nonreductionistic, eschewing biological explanations of behavior; and they all understand that it is the *whole* organism that acts in all behavioral events. That is, they are all holistic.

In his commentary to this chapter, Zimmerman points out that while these converging movements have similarities, most psychologists "are inclined to remain loyal to a single point of view and pay scant attention to others" and that "theorists often pretend that their own ideas are new and do not cite the sources of their inspiration" (p. 166). Members of the lineage to which Kantor belongs have always recognized, as did Newton, that "they stood on the shoulders of giants. " In his commentary, Lundin offers an important caution: "Many psychologists prefer to follow popular trends and accept conventional wisdom. It is unhappily true that cognitive psychology has brought the 'mind' back to psychology with no apologies. To be non-mainstream, however, involves taking risks. We can hope that interbehaviorism will continue to flourish and may yet lead the way out of the mainstream" (p. 171). This is the hope and vision of developmental systems, so well presented in Lickliter's chapter discussed previously.

The other strong chapter in this section of the book is Alan Costall's (chapter 8), which in true Kantorian fashion is a diatribe against the currently popular cognitive model in psychology, in which "the appeal to 'cognitive

processes' . . . is the only possible way for psychologists to engage in proper science" (p. 205). Of course, there are many who reject this almost religiously held view.

I am not as positive about the remaining chapters in this section of the book. Brown (chapter 10) discusses Q methodology. I was never clear about the significance or the use of this method, neither in graduate school nor after reading this account. I chalk this up to my own shortcomings, since the American Psychological Association has recently published a volume devoted to the technique (Block, 2008). I am not alone in this, however; Brown himself acknowledges that Kantor had trouble with the subjectivity of the technique. Given Kantor's misgivings, I am unsure as to why the editors included this chapter in their book. Finally, I had difficulty following the chapter by Sarbin and Carney (chapter 10) on the use and value of narratives in social psychology. Either I am, again, slow to understand, or their discussion is as obtuse as were many of Kantor's own writings. But Sarbin and Carney do show how this was a concept embraced by Kantor and related to his idea of the reactional biography.

Of course, this is a book praising Kantor. There are criticisms of his approach, which in the final analysis is not so much a formal theory as it is a paradigm. Paradigms cannot be falsified; they can be accepted or rejected almost on faith. A theory, on the other hand, has to be specified in ways permitting verification or falsifiability. Uttal (2005) has one of the best discussions of what theories are and whether they exist in psychology. It has been suggested by some that interbehaviorism failed on these grounds. Indeed, Kantor did not produce methods for the evaluation of his specific hypotheses. Perhaps this is one answer to why Kantor was not as influential as he deserved to be. He set things up in so abstract and general a fashion, with his ideas being so nonconcrete and nonspecific, that it was virtually impossible to falsify them. I am indebted to my colleague and fellow University of Wichita graduate Luciano L'Abate for this critical assessment (2008). L'Abate (2005) wrote, "It is better to be humbly 'wrong' or incorrect in the pursuit of specificity than being seemingly correct in the grandiose" (p. 76). That is, it is preferable to be specific and wrong than to be general and always right, in the way Freudian ideas were.

So, who was J. R. Kantor and what is interbehaviorism? It is important to recognize that Kantor was among the few who understood psychology to be a science that was mature enough to stand on its own, separate and distinct from its biological underpinnings, with its own unique principles, even as he began writing in the early 20th century. As this book reveals, he was a psychologist, a teacher, and a philosopher of science. It is appropriate to conclude this review with a list of Kantor's most basic achievements, as recounted by Mountjoy and Cone (pp. 31–32):

1. He distinguished between events (data) and constructs (statements about data) and explicated the impact of our dualistic culture on scientific work and constructs.
2. He proposed that the organism and object in *interaction* comprise the basic unit of psychological investigation.
3. He indicated the fundamental bases for the proper conduct of the various sciences and argued that they could proceed in a relatively independent manner.

4. He introduced the concept of the behavioral event field, a restructuring of the twin concepts of cause and effect from their traditional metaphysical status to conform to the latest empirical and theoretical developments in the non-psychological sciences of physics and biology.
5. He extended the four advances listed above into a new psychological science by explicating the first naturalistic *system* of psychology since that of Aristotle (384–322 B.C.E.).
6. He analyzed the empirical and theoretical bases of the sciences, as well as the foundational status of the non-empirical science of logic and the basic intellectual enterprise of general philosophy.

These six accomplishments represent both the introduction of innovative constructs and the conservation of viable traditional ones. Kantor's life work exemplifies the idea of scientific activity: the corrective and continuous actions of a person who valued both the empirical and the analytic aspects of science.

Just as science in general and physics and biology in particular have adopted new models (e.g., dynamic systems, nonlinear dynamics, complexity theory) at the beginning of the 21st century, so too is psychology beginning to see merit in these new approaches. This is precisely the genius of Kantor and the few others I have already identified—they had worked from these points of view from the beginnings of their careers. Thus, we can see that Kantor and his contributions to psychology are not merely of historical note. As this excellent book reveals, he was both a pioneer and a prescient thinker whose ideas continue to shape our still-developing science.

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