

A citation study of the interbehavioral field psychology of J.R. Kantor

*Un estudio de citas de la psicología del campo interconductual
de J. R. Kantor*

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ABSTRACT

The characteristics of Kantor's interbehavioral field are presented as a prelude to a comprehensive analysis of citations from 1917–1976 concerning his works. A number of the individual topics Kantor has dealt with are reviewed in order to discover the nature of the references made to these areas. Specifically investigated are the reasons for Kantor's relative lack of influence despite the magnitude and originality of his scholarly production. Possibly indicating the growing recognition of the need for an objective field system such as his is the marked trend toward more frequent citations after 1950, including those of behavior analysis. In general, Kantor's field approach is overwhelmingly approved when noted but infrequently receives attention.

DESCRIPTORS: interbehavioral field psychology, J. R. Kantor, citation study.

RESUMEN

Se presentan las características del campo interconductual de Kantor como un prelude a un análisis comprensivo de las citas a sus trabajos de 1917 a 1976. Se revisan numerosos tópicos individuales que ha tratado Kantor con el fin de descubrir la naturaleza de las referencias hechas a esas áreas. Específicamente investigadas son las razones por la relativa falta de influencia de Kantor a pesar de la magnitud y la originalidad de su producción académica. Posiblemente indicando el creciente reconocimiento de la necesidad de un sistema de campo objetivo como el de él es la notable tendencia hacia citas más frecuentes después de 1950, incluyendo aquellas del análisis conductual. En general, el enfoque de campo de Kantor es abrumadoramente aprobado cuando es notado pero recibe atención de manera poco frecuente.

DESCRIPTORES: psicología del campo interconductual, J. R. Kantor, estudio de citas.

Despite the immense and original scholarly production of J. R. Kantor (Smith, 1976), he has been largely neglected in psychology at large. The few

¹ The authors are grateful to Lucien Leduc, Parker Lichtenstein, Marion White McPherson, and Lawrence Shaffer for reviewing the manuscript. Requests for offprints should be sent to Noel W. Smith, Dept. of Psychology, State University of New York College at Plattsburgh, Plattsburgh, New York 12901.

who have carefully examined his general position (Bentley, 1935; Lazzeroni, 1956; Mountjoy, 1976; Robinson, 1924–25; Smith, 1975; Stephnson, 1953a) have usually found that it offers a sound scientific basis for resolving the unscientific assumptions that have caused dilemmas and unfruitful research in psychology over the past century. Among the detailed analyses the single major objection to the system is Tilquin's (1944) who objected to the replacement of consciousness with objective referents.

The presente study is directed toward investigating in a comprehensive way as many of the citations to his work as could be found during the sixty years of 1917 through 1976² and analyzing them for whatever clues they might offer to (a) the characteristics and extent of influence he has had and (b) the reasons for the limit of that influence.

Before describing the study it may be useful to sketch some of the major features of his treatment and what they offer for potential scientific advancement in psychology. One of the first points to note is that Kantor (1959) has explicitly laid out his postulates at all levels of generality so that there is no question about any aspect of his system, that it proceeds from concrete events, and that it is contrary to treatments that impose metaphysical constructs. Such thorough explication cannot be found in the works of any other writer. Further, these postulates are not only consistent with his system but also inseparable from it. A few of their major points may be indicated as follows: Psychological events (1) are continuous with all other events of the universe and equally objective and naturalistic, (2) consist of occurrences that follow their own principles of organization and are therefore relatively independent of and irreducible to those of any other domain of events such as culture, biology, or chemistry, (3) must be dealt with as concrete occurrences from which constructs such as relationships and laws are derived and not have traditional constructs such as mind–body diremptions imposed on them, (4) derive from bioecological evolution of species, and (5) consist of multiplex fields of interactions of organism, stimulating objects, setting factors, and history of past interactions.

Out of a domain of events in the universe those of particular interest to psychology include the interaction of organisms with other things or events in a particular setting. An interaction involves a reciprocal action of organism and stimulus object. An object becomes a stimulus only when there is a response to it; a response always occurs in conjunction with something that is stimulating. Thus they are interdependent, not dependent–independent or antecedent–consequent or input–output. On successive contacts a stimulus object develops different meanings. The small child learns that a ball has properties of motion, taste, color, and tactual characteristics when it is rolled, dropped, tasted, seen or felt. It may stimulate him or her to interact

² The data are analyzed in four-year units. It would be desirable to bring this up to 1980 but due to the fact that journals of a given date sometimes appear a year or even two years late and then another year or more is required for the citations to appear in the citation indexes, it would be 1983 before the citations of 1977–1980 could be completed.

with it in any of these ways depending on setting factors. If an adult is present to pick it up, the child may drop it; but if no adult is present, he or she may be stimulated to taste it or, if teething, bite it. It thus has a stimulus function or stimulus meaning depending on past interactions and present setting. The meaning is not some mental thing that is added but is the interaction, the stimulus function. Corresponding to the stimulus function but on the organism side of the interaction is the response function. It is interdependent with the stimulus function so that biting or dropping is what he or she does as a function of being stimulated to do so. This interdependence of stimulus and response is represented by a double headed arrow ($S \leftrightarrow R$). The usual single headed arrow ($S \rightarrow R$) is considered more appropriate for purely biological responses or for one billiard ball hitting another where the action is unidirectional. And the need for an invisible intervening variable such as mind, consciousness, information processing, cognition, or representation is precluded. These stimulus-functions/ response-functions that are built up by successive interactions constitute the interactional or interbehavioral history.

Every direct interaction of organism and object occurs by means of some contact medium such as light. The interaction is not with the light which enables or facilitates the action, but with the object itself. This contrasts with the approach that holds that the eye receives light rays that must be internally transformed into the object. In interbehaviorism there is no double world. Stimulus object with stimulus-function, organism with response-function, interactional history, setting, and media as contact factors constitute the psychological or interbehavioral field. The locus of the psychological event cannot then be in a gland or the head or the nervous system or even in the entire organism. Nor can it be in the stimulus object or in the setting. Rather it consists of the total field of interrelated events. Hence, psychology consists not just of behavior, but of interbehavior. The dynamic ever-changing field is unique for each individual, but stimulus objects that have common cultural meaning make for much similarity among individuals of that culture. Biological events participate in the field of events as enabling factors. Or as metabolic, glandular, or neural deficiencies they may limit the development of interbehavioral history. As illness they may be part of the setting factors just as the social context or lighting conditions may be. Both "empty organism" and physiological reductionism is obviated. Neither is there a hypothetical mind or consciousness to be somehow related to body and no mechanistic input-output assumptions. Human experience in its full richness and complexity entails the concrete functional meaning of things and adjustment to them as developed in each interactional history. Such history is not, however, something stored and available for retrieval: for it is actions that occur, not things; accordingly, it is actions that are reperformed or modified.

The interbehavioral field precludes singling out one factor and making it the determiner of the entire event. Thus, the environment does not cause

or determine the event, nor does the organism's biology or its culture. Culture and individual history as well as the nervous and other physiological systems along with anatomical structure are necessary conditions that participate in the field but do not determine it. Causality consists of the total integrated field. This psychological field is a level of organization that must be studied in its own right and not reduced to or determined by any of its components. Thus any centrism of organism, culture, setting, or individual history are obviated. There is no internal-external, mind-body, cognition-behavior distinction. Other diremptions such as private-public, real world-phenomenal world, and experiential-objective are equally spurious. Inasmuch as all events in the universe are held to be continuous with all others, thought (better, *thinking*) cannot be unextended or any less physical than the radiation of a star, the fall of a stone, or the bark of a dog; and subtle or covert activities such as imagining, believing, perceiving, and reasoning are directly continuous with more overt behaviors and no different in principle.

It may be argued that there are a number of scientific consequences that follow from the interbehavioral approach. Empirical studies are immediately directed toward observable events involving interrelationships. Interpretive constructs, guided by a field of events, are kept in conformity with observations. Simplistic explanations can be avoided and so can mechanism, mentalism, and reductionism. Analogizing from other sciences, whether models of computers or holographs or other technological devices or systems, can also be avoided with the formulations these bring of treating psychological events as things they are not. Instead, the full range of human activities such as perceiving, knowing, learning, thinking, imagining, feeling, and choosing can be given full recognition. These activities will not be converted to hypothetical engrams, verbal creations which, being unobserved and unobservable, violate the scientific requirement of corrigibility. They will be seen, rather, as fields of complex interactions, amenable to observation and experimentation or other means of study. The resulting constructs of laws, explanations, and relationships can be refined and corrected. Prediction and control can be enhanced and their limitations better understood because of the increased number of factors and their interrelationships that are considered. This brief account can do no more than hint at the full interbehavioral construction and implications but may help provide an orientation for the remainder of the paper.

In recent years, other movements in psychology have found the traditional positions deficient or erroneous and have looked for a better framework. The dissatisfaction with input-output and narrow range of behavioristic studies has led to a reversion to mentalism or cognitivism, but such return to metaphysics cannot offer a science. Some versions of mentalism have turned to information processing, a form of mechanism for which observable referents are as lacking as in other forms of mentalism. The advent of contextualism (e.g. Bronfenbrenner, 1977), dialectical psychology (e.g. Riegel, 1976), and ecological psychology (e.g. Willems and Raush, 1969),

and ecological psychology (e.g. Willems and Raush, 1969), and one trend in phenomenology (Kvale, 1967) indicate a groping for something similar to interbehaviorism. Behavior analysis on occasion has looked directly toward interbehaviorism for a possible useful framework for its entry into increasingly complex behaviors. Taken together these suggest that interbehaviorism may have a valuable role to play and that whatever has been the source of its neglect needs to be examined.

PROCEDURE

A preliminary survey showed what journals were those containing most of the citations. The following were examined exhaustively from 1917 to 1976 or, for those founded later, from the time of inception: *American Journal of Psychology*, *Contemporary Psychology*, *Journal of the History of the Behavioral Sciences*, *Psychological Bulletin*, *Psychological Review*, *Psychological Record*, *L'Annee Psychologique*, *Behaviorism*, *Revista Mexicana de Analisis de la Conducta*, and *Interbehavioral Newsletter (Interbehavioral Quarterly)*. For early years the *Journal of Philosophy*, *Philosophy of Science*, and *International Journal of Ethics* were searched. These constitute the major sources of journal citations. The *Science Citation Index* beginning in 1961 and the *Social Science Citation Index* beginning in 1972 were used. These added additional scattered references, especially in foreign journals. Books were also checked. This was necessarily less systematic. It involved pulling hundreds of psychology books from library shelves and checking the name index. Two university libraries were used. When writers were found who had cited Kantor, their other books were checked.

The full collection of the data extended over a period of about nine years. The *Science Citation Index* came to the senior author's attention in 1968 and showed that about 20% of the citations were missed between the 1961 and 1968 dates. Consequently, the citations from 1918–1960 may be somewhat on the low side but in all probability by a much smaller amount than 20% for the first ten years or more of that period. This is because the number of psychology journals was few and the most fruitful ones were examined.

Each of the citations was entered on a separate card along with an annotation describing the character of the citation and the works cited.³ Citation cards were arranged chronologically and the number of authors' works citing any of Kantor's work for each four year period counted. Citations to each of Kantor's works were also counted and the most frequent of these plotted. Self-citations were excluded in all cases. These frequency counts constitute the quantitative analysis. For the qualitative analysis a more judgmental procedure was sometimes required. (The reader

³ For the list of annotated citations and the bibliography with which it is keyed see Smith (1981).

may wish to give a more tentative status to those aspects.) This involved going through the annotations and noting what topics were referred to, such as operationism, perception, language, emotion, setting factors, field, and others; use of the position for experimental studies; and reasons offered for Kantor's neglect. Because the categories or topics that would emerge were not known at the time the annotations were written, they were sometimes insufficient or unclear, making it necessary in those cases (perhaps 10%) to recheck the original publications.

QUANTITATIVE ANALYSIS

Figure 1 indicates the number of authors citing Kantor's works for each

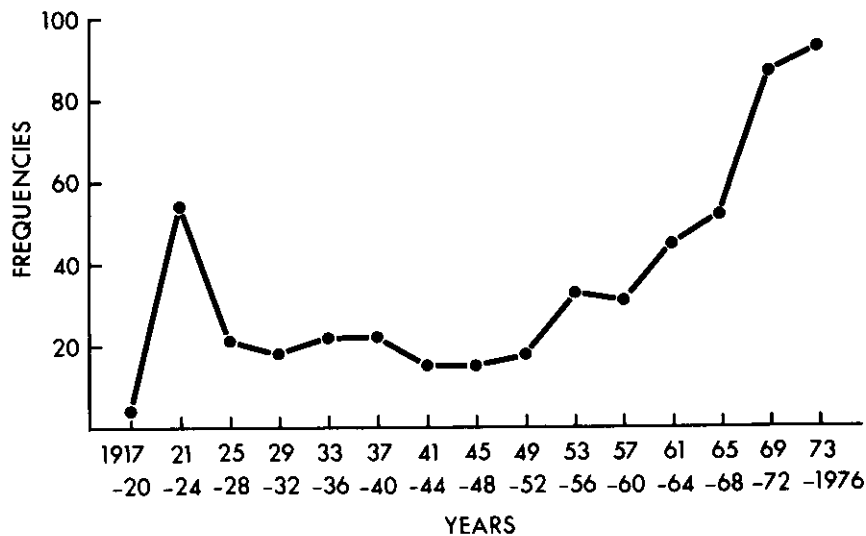


Figure 1. Number of authors' works citing works of J. R. Kantor for each four year period 1917-1976.

four year period from 1917--1976. The total works citing him is 526. The gradient, except for a sharp spike at the beginning, is roughly level until about 1950 when it begins a consistent rise. The spike can be attributed to the practices of *L'Annee Psychologique* and *Psychological Bulletin* of publishing, during a period that included the first few years covered in this study, summaries of journal articles that occasionally involved some commentary. Kantor published a large number of articles (18) from 1922 to 1924 and these were abstracted.

The number of authors citing Kantor's works since the 1950's is accounted for in large part by the frequent citation of *Principles of Psychology* (1924-26), *Interbehavioral Psychology (IB)* (1958), and *The Scientific Evolution of Psychology* (1963-69). The first of these is a two volume work

that sets forth a detailed presentation of the system and the second is a thorough exposition of the postulates together with the resulting system. These are thus cited quite heavily as a reference to the system as a whole. The third work has aroused frequent but diverse reactions.

Figure 2, indicating the works published up to 1936 with the highest

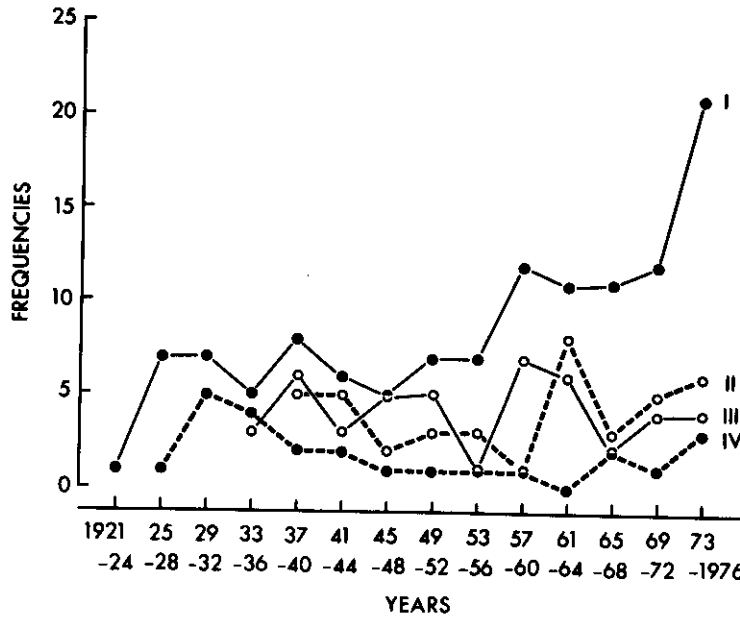


Figure 2. Works of J. R. Kantor receiving highest frequencies of citations of those published up to 1936, where I = *Principles of Psychology* (1924-26), II = *An Objective Psychology of Grammar* (1936), III = *A Survey of the Science of Psychology* (1933), IV = *Outline of Social Psychology* (1929).

frequencies of citations, shows that of the four works, *Principles* is the only one which has shown a continual rise in citations over the years. Again, this can probably be attributed to the fact that this work is the most comprehensive coverage of interbehaviorism to date. It is the classical statement. The other works in this category have shown no such corresponding rise in frequency of citations, but rather remain at an average overall level from the time of publication to 1976.

Figure 3 records the works receiving the highest frequencies of citations of those published 1945 or later. *IB* shows a steady rise, while the citations of *Scientific Evolution* drop off from a high point in the 1965-69 period to the end of the recording period.

Analysis of Figures 2 and 3 also shows that the works which are most often cited consist almost entirely of books with only one journal article — that being on behavior analysis — included in this group. This can probably be attributed to the more enduring nature of a major work and the autonomous nature of a book, a journal article being more easily buried.

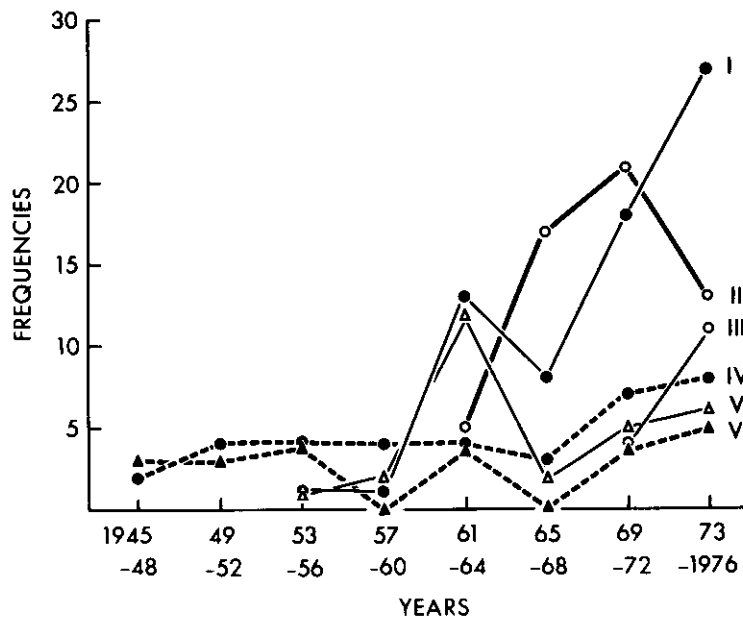


Figure 3. Works of J. R. Kantor receiving highest frequencies of citations of those published 1945 or later where I=*Interbehavioral Psychology* (1958), II=*The Scientific Evolution of Psychology* (1963-69), III = "An analysis of the experimental analysis of behavior (TEAB)" (1970), IV = *Problems of Physiological Psychology* (1947), V=*The Logic of Modern Science* (1953), VI=*Psychology and Logic* (1945-50).

Overall, the three figures reveal the trend in recent decades toward more frequent citations of Kantor's works. After years of relatively few citations, Kantor and interbehaviorism have of late received, in comparison, a much greater amount of recognition. Part of this can be attributed to the influence on those who have come to know his work best, his own graduate students; for 204 of the 526 are from that source. A tabulation of their citations from 1937-1976 showed that their contributions are approximately proportional to non-students on a year by year basis.

QUALITATIVE ANALYSIS

Original Contributions

In discussion of the work of Kantor, a topic often noted is the number of innovative contributions Kantor has made through his interbehavioral system. In total, 19 authors have cited the novel approach he has taken to a variety of subjects. Two of the most frequently cited are his pioneering use of the field of approach in psychology (e.g. Mountjoy, 1976) and his recognition of

interactions as the basic data of psychology (e.g. Bentley, 1939; Rotter, 1960; Wolman, 1960). Specifically noted are his early identification and rejection of internal states as determiners of behavior (Rotter, 1967), and his priority in providing scientific constructions (Burke, 1963). Kantor has also been cited for his early naturalistic system that "preserved the complexity of actual psychological events" (Russell & Winograd, 1970) and his objective system of terminology (Daniel & Louttit, 1953; Smith, 1976). His original and often revolutionary way of dealing with perception, language, social psychology, and other areas of psychology as well as special topics such as logic, causation, and the role of physiology in behavior are often acknowledged. Some of these will be taken up separately below.

Instinct

Among the early citations are those referring to instinct, there being ten stretching from 1929 to 1969. Kantor was one of the early critics of the instinct doctrine. Citations from 1921 to 1932 were mostly critical and regard him as an extremist. One of these (Kuo, 1922), another anti-instinct crusader, regarded him as insufficiently critical. From 1932-1969 the citers moved toward agreement with him and noted his opposition as representing a trend that others were taking, one of abandoning the instinct doctrine.

Emotion

Kantor has drawn a sharp distinction between emotion and affect. This drew 22 citations between 1921 and 1975. Eleven of these were primarily descriptive and non-evaluative, 8 agreed with the position. Of the latter, Howard (1928) made full use of the position and Brady (1975) developed a systematic position around it. Three were critical of the position.

Perception

Kantor holds perceiving to be the joint action of organism and object mediated by light, sound, chemicals (taste), gaseous particles (odor), and tissue changes (touch, temperature, pain, motion). He rejects (a) the assumption of an internal process that represents the outer world, (b) the conversion of media into representation of objects, and (c) a distinction between sensing and perceiving, all of these springing from mind-body assumptions. Perceiving, he holds, is not in the brain or even in the whole organism but is the field of events of the organism in interaction with its surroundings via media of contact. This position has drawn little attention although some workers have been independently moving toward it (e.g. Gibson, 1979). Of twelve references, three merely noted it. The remaining nine were favorable.

Social Psychology

Kantor early took the position that social psychology involved shared (institutionalized) responses to objects and should be distinguished from studies of groups, the latter being the subject of sociology. His work attracted 22 comments between 1927 and 1974. Of these, nine found some agreement with the position, two thought that it offered little, and one (Goldenweiser, 1933), that it was too objective.

Language

Kantor's approach to language can be described as basically bistimulational. In verbal communication the speaker is interacting with the listener and the object being referred to; similarly the listener is interacting with the speaker and the object. This approach is in contrast with the viewpoint that language is a system of transmitting mental messages from the mind of the speaker to the mind of the listener via sound waves. The topic of language is cited a total of 41 times during the period between 1926 and 1976. Twenty-six of these comments are positive, six are negative, and eleven are neutral. Included in the positive remarks are a number of observations regarding the contributions of the system (Schoenfeld & Cumming, 1963) and the importance of Kantor's work (Greenburg, 1964). Also contained in the positive category are ten experimental studies based on the inverbehavioral framework (e.g., Ratner & Rice, 1963). Of the authors who cite this topic negatively, two feel that the work is without usefulness or substance (Newman, 1953 Esteves, 1955), and another disagrees with Kantor's distinction between language and symbolism (Hess, 1929).

History

In analyzing the subject matter of psychology Kantor frequently employs an essentially historical approach as a means of illuminating the unwitting assumptions of much of psychology. He is then able to contrast interbehavioral assumptions as an alternative. This use of history as a tool of analysis has led to charges of "presentism" (Mackenzie & Mackenziem 1974) and "whig history" (Weyant, 1970).

In addition to the above use of history, Kantor has also contributed to the exposition of the history of psychology itself through his extensive writings on it, these writings, too, serving the analytic functions as well as exposition. The citations concerning this topic occur most frequently in reference to his book, *The Scientific Evolution of Psychology* (see Figure 3). Of the 32 citations contained in this category, the majority are positive, including recognition of the importance of this work (e.g. Lichtenstein,

1970) and acclaim for its scholarly merit (e.g. Lundin, 1972). One author believes that Kantor's work in this area provides a scientific approach (Pomgratz, 1967), while several others support and use the construction in their own works. On the negative side, four authors feel that Kantor's work in this area is biased (e.g. Watson, 1964), one states that his historical work is antiquarian and irrelevant (O'Neil, 1965), and several others voice disagreement about specific facets of the treatment (e.g. Thornton, 1966). It is worth noting that some defenders have come forth against the critics (Russell & Winograd, 1970; Mountjoy & Smith, 1971).

Biological Factors

Kantor's approach to the role of physiology in psychology is antireductionistic. Physiology does not determine the event, direct it, or act as an internal interpreter. It does participate in the event but has no causal status except as it is one of the components of the total field, for the field itself comprises the cause. Between 1931 and 1976, 45 authors cited this approach. Of these, 18 merely note the position, 25 approve of it, and three express disagreement. The approval includes finding experimental support of the position (Wolf, 1958a, b), acknowledging the influence on the citer (Jessor, 1958), and noting its importance (Mountjoy, 1976). The negative remarks concern Kantor's rejection of the brain localization of behavior (Esper, 1964; Guttman, 1972) and his denial of internal determiners (Leeper, 1963). Specific reference is made in a number of cases for the support Kantor's view gives to a field approach as opposed to an emphasis on isolated events (e.g. Anastasi, 1948; Handy, 1969; Tolman, 1932).

Field and Setting

During the fifty years of 1926–1976, 79 references were made to the field formulation of which 55 were positive and the remainder descriptive or merely a noting of the position. The great majority of the citations, 53, occurred in the last 15 years and not one of these was negative. Reference is made to the field's utility in eliminating internal determiners (Stephenson, 1953b), its superiority to other approaches (Pronko, Ebert, & Greenberg, 1966), and its necessity for an objective viewpoint (Handy, 1969).

One of the components of the field theory that has received considerable attention is the concept of setting factors. These factors are not viewed as intervening variables participating in an interaction but rather as conditions which affect the occurrence and characteristics of the interaction. This topic was referred to in a total of 25 works between 1958 and 1976. The majority of the citations involve a statement of the importance (e.g. Bijou, 1969) and utility (e.g. Wickramsekera, 1969) of setting factors as part of the psychologi-

cal field. One author (Gewirtz, 1969) notes that the employment of setting factors obviates the need for postulating drives within the organism. A number of experimental utilizations of the setting factors concept also occur (e.g. Bloom, 1974; Ray & Grener, 1973).

Experimentation and Case Studies

Although Kantor has been unfavorably cited a number of times for failure to involve himself in experimentation, it is important to note that there are 36 references to the use of the interbehavioral system for experimental and case studies. Ten authors provide experimental support for different facets of Kantor's system including language (e.g. Pronko, 1945; Herman, 1951a, b; Briones, 1937) and stimulus function (Swartz, 1955; Wolf, 1958b). Eighteen references are made to experimental utilization of the interbehavioral framework, especially of the setting concept (e.g. Bloom, 1974). Gewirtz, 1967; Tay & Brener, 1973; Wolfe, 1958a), field approach (Wolf, 1958b), and language analysis (Rosenberg, 1964). Numerous references are also made concerning the efficacy of interbehavioral concepts for the interpretation of experimental data (e.g. Carter, 1938; Herman, 1956; Notham, 1962).

Behavior Analysis

The record shows that the operant behaviorists' viewpoint concerning the relationship of interbehaviorism, to their system has generated a fair amount of interest. This is evidenced by the numerous references comparing behavior analysis and the works of B.F. Skinner to the interbehavioral position. Between 1953 and 1976 there were 24 publications that considered the matter. Most of these argued that there is considerable similarity in the philosophy of science of Kantor and Skinner (e.g., Bijou, 1968; Fuller, 1973) in their insistence on starting scientific work with observation of events rather than constructs; Verplanck (1954) emphasizes that both abjure internal forces and biological reductionism. Kantor's broader framework of a field of interdependent and interacting events is cited as providing a possibly useful framework for operant analysis, especially for its entry into complex human activities. While 22 articles mention similarities, some also point out dissimilarities (e.g., Lichtenstein, 1973). Natalicio & Kidd (1971) consider operant analysis to be a special case of interbehavioral field and Mountjoy (1976) argues along similar lines.

Perhaps the level of interest in the utility of interbehaviorism for, or its relation to, operant analysis is indicated by the fact that Kantor was the invited speaker to the Division for the Experimental Analysis of Behavior (Div. 25) of the American Psychological Association in 1969. He spoke on

"An Analysis of the Experimental Analysis of Behavior (TEAB)" and published the paper in the *Journal of the Experimental Analysis of Behavior* the following year (see Fig. 3), this being the sole published paper that ranks well with the books in frequency of citations. In that journal Schoenfeld (1969) published his retrospective appreciation of two of Kantor's books. Kantor was Honorary Chairman at the First Mexican Congress on Behavior Analysis, April 8–10, 1974 at Xalapa, Veracruz, Mexico. He spoke on "How is Interbehavioral Psychology Related to the Experimental Analysis of Behavior?" As an outgrowth of this, in 1976 he delivered several lectures at the University of Mexico and to its outlying centers and in 1979 conducted a seminar there. Since 1969 when *Revista Mexicana de Análisis de la Conducta/Mexican Journal of Behavior Analysis* began publication he has been writing regularly for it.

Approval and Disapproval

There were 119 references that approved of all or some phase of interbehaviorism; there were 53 cases of criticism. A number of authors offered both negative and positive comments, this happening especially in book reviews where such is almost inevitable. Over the sixty year period covered by this study the positive comments climbed at a rate that closely paralleled the total citations shown in Figure 1, while negative comments remained about the same throughout the period, varying from one to seven for each four-year period and with a typical frequency of about three. There is not a single specific objection to the field approach as such, although a few consider it deficient because it does not give credence to an inner determiner (e.g. Leeper, 1963; Tilquin, 1944). On the other hand Skinner (1938) in the Preface to the Seventh Printing (1966) of the *Behavior of Organisms* credits Kantor with having convinced him of the danger of the drive concept. Gewirtz (1969) finds that setting can replace drive in accounting for variation in responses to successive presentations of the same stimulus and be studied directly by experimental means. The single most common objection is to the denial of neural determinants of behavior. The criticisms also contain some contradictions: Roback (1952) maintains that Kantor oversystematizes, while Guttman (1973) argues that he overemphasizes observation and neglects systematization. One of the strongest supporters of Kantor is A. F. Bentley who, either as sole author or as co-author with John Dewey, cites Kantor in 14 of his works. In some of these he provides a lengthy account of the position and holds that it is close to his own transactionalism. An important methodological development related to interbehaviorism is the Q-technique, originated by Stephenson (1953b) who affirms that the interbehavioral "principle lies behind the main thesis of the chapters in a grass-roots manner" (p. 341) and in several works cites the congruence of Kantor's system with the assumptions of his procedure. Among other positive com-

ments are those on his philosophy of science; his seminal contributions to a number of areas; his analysis of the role of biology, stimulus functions, and constructs; his departure from tradition; his handling of covert behaviors, and his contextual and field emphasis. Several writers indicate his extensive influence on their thinking and their work.

Reasons for Neglect

Of the twenty citations in this category ten make mention of the difficult or ponderous writing style. Five authors describe Kantor as being negativistic toward his predecessors' positions, sometimes at the expense of a positive program of his own (e.g. Esper, 1964; Woodworth, 1948). Robinson (1934) suggests that he fails to identify with potential allies. In a more positive vein, Handy & Kurtz (1964) and Schoenfeld (1969) state that the lack of influence can be attributed to the fact that Kantor has been far ahead of his time and beyond the capabilities of others to understand his position. Apropos to this, Leeper (1963) holds that Kantor is "handicapped" by failing to analyze internal determinants. This remark supports the accuracy of Handy's and Schoenfeld's suggestion: Kantor's obviating of inner-outer distinctions is so far from conventional thinking that it is not understood by most contemporaries. Dualistic and reductionistic constructs are quite tenacious (Lichtenstein, 1973). Schoenfeld remarks, "It was our wit that was wanting, not his. We demanded too little of ourselves, and expected too much from him" (p. 329). Kantor's lack of concentration in any one field has also been suggested as being responsible for his not becoming renowned in any one (Marx & Hillix, 1973). A final possibility is his lack of experimentation (Lundin, 1972) or other examples of showing further directions in which to proceed (Schoenfeld, 1969).

DISCUSSION

A factor that is not mentioned but which would seem to have some importance in the neglect is that most of his students took positions in liberal arts or four-year state colleges where their own research and influence was limited and where the production of additional doctoral students who might have further supported and disseminated the approach was not available. In recent years more of these students have been involved in doctoral programs and a few second generation interbehaviorists have emerged. Other supporters have made their way through graduate programs devoid of any interbehaviorists on the faculty but having been influenced at the undergraduate level. Most of both groups have taken positions similar to first generation students. Some of Kantor's former teaching colleagues at Indiana University, such as S.W. Bijou and W.S. Verplanck have been influenced by his position and have influenced their students at the universities to which they moved.

It would seem that the writing style is the least important of the possible impediments; for other writers, such as the phenomenologists, are sometimes almost impossible to understand due to their neologisms and abstractions yet have commanded a large following. Nevertheless it may be a contributing factor when combined with others; one of these might be that of reactions to his work as being more negative than positive. The effect of Kantor's diversity as mentioned by Marx is difficult to evaluate, but the fact of it cannot be doubted (Smith, 1976). There is however, coherence in this diversity which may mitigate any untoward effects, for Kantor applies the interbehavioral formulation with its explicit postulate system with thorough consistency to all subjects he touches. As such, the wide applicability may become apparent. Of greater probable importance for obscurity is the advanced position of this formulation—its falling outside the familiar dualistic constructs. Only during the last decade have there been other discernible movements toward a field approach, although Gestalt, Lewinian, and a few other constructions were of a field nature while also being mentalistic. The newer developments are manifested in the following, not all of which are entirely free of mentalism: ecological psychology, epigenetic psychology, contextualism, a version of French phenomenology, and the work of some operant behaviorists. Consequently only in recent years has the intellectual framework in psychology moved to a position close enough to Kantor that his work can be appreciated. Perhaps this is reflected in the increasing frequency of citations other than those of his students. The lack of an experimental program is probably also important although, as noted, the system has led to a number of experimental studies. American psychology has been almost slavish in following the experimenter, even when the experimental program dealt with *tortia* and/or unscientific postulation and theory. The latter is well exemplified by Clark Hull's drive reduction theory that dominated much of American psychology for more than a decade and by the current fashion for "information processing" studies. Kantor has been concerned with analyzing basic assumptions and providing a sound system of postulation upon which a scientific psychology can be built; this provides guidance for experimentation or other data collection procedures and interpretation of that data consistent with scientific postulates. Such establishment of assumptions and consistent conceptualization prior to experimentation, however, has not been the operational mode in the past.

Given the fact that the overwhelming numbers who have examined Kantor's system, both students and non—students, have found it valuable or even invaluable, it may be concluded that interbehaviorism has not been examined and found wanting but rather has gone unexamined.

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