

THE INTERBEHAVIORIST

A Newsletter of Interbehavioral Psychology

Volume 22

1994

Number 3

EDITOR

Linda J. Hayes, *University of Nevada*

PAST EDITORS

Noel W. Smith, Vols 1-7 (1970-1978)

Ronald G. Heyduk, Vols 8-11 (1978-1983)

Edward K. Morris, Vols 12-17 (1983-1989)

ADVISORY BOARD

Sidney W. Bijou, *University of Nevada*

Donna M. Cone, *State of Rhode Island*

Dennis J. Delprato, *Eastern Michigan University*

James J. Fox, *East Tennessee State University*

Patrick Ghezzi, *University of Nevada*

Sandy Hobbs, *Paisley College of Technology*

Edward K. Morris, *University of Kansas*

Paul T. Mountjoy, *Western Michigan University*

N. H. Pronko, *Wichita State University*

Roger D. Ray, *Rollins College*

Emilio Ribes, *University of Guadalajara*

Robert G. Wahler, *University of Tennessee*

MANAGING EDITOR

Duane C. Lord, *University of Nevada*

ASSISTANT EDITORS

Debra W. Fredericks, Mark A. Swain
University of Nevada

TABLE OF CONTENTS

The Agora3

Interbehaviorist SIG at ABA Minutes

Cheiron Conference Notes

Graduate Students of J.R. Kantor

Special Section on Psychological Subjectivity

Edited by

Dennis J. Delprato and

Mark A. Swain

Noel W. Smith.

Phenomenological Psychology 5

Dennis J. Delprato and John R. Knapp.

Q Methodology and

Interbehavioral Description 14

Steven R. Brown.

Q Methodology and Interbehavioral

Phenomenology 24

Roger Ray.

A Readers Comments 27

THE INTERBEHAVIORIST

A Newsletter of
Interbehavioral Psychology
ISSN 8755-612X

Linda J. Hayes, Editor
Department of Psychology
University of Nevada
Reno, Nevada 89557, U.S.A.
702-784-1137

THE INTERBEHAVIORIST publishes news, information, discussion, journal and book notes, book reviews, comments, and brief articles pertaining to interbehavioral psychology – a contextualistic, integrated-field approach to the natural science of behavior.

The newsletter also publishes professional communications that fall between informal correspondence and colloquia, and formal archival publication. As such, the newsletter supplements contemporary journals dedicated to basic and applied research, to the history and philosophy of the behavioral sciences, and to professional issues in the field. The newsletter strongly encourages submission of notes about current professional activities of its subscribers, news and observations about interbehavioral psychology and related perspectives, comments on journal articles and books of interest, more extended book reviews, and brief articles. All submissions should be sent in duplicate hard copy and a single computer disk copy (any major word processor; any Mac or IBM disk format) to the editor and should conform to the style described in the Publication Manual of the American Psychological Association (3rd edition).

Subscription Information

Student Subscriptions (USA).....	\$7.00
Regular Subscriptions (USA).....	10.00
Foreign (Non-USA) Subscriptions.....	12.00
Institutional Subscriptions.....	15.00
Back Volumes 1-18.....	12.00

THE INTERBEHAVIORIST is published as a public service by CONTEXT PRESS, BOX 50172, RENO, NV 89513. CONTEXT PRESS publishes books of interest to contextualists and interactionists. Write for brochures on the books available.

J. R. Kantor Books

The estate of Helene J. Kantor (1919-1993) has given The Archives of the History of American Psychology the inventory and copyrights of The Principia Press, long the publisher of the works of J. R. Kantor (1888-1984). The Archives is now prepared to respond, as The Principia Press, to orders from the list of books in print and in stock written by J. R. Kantor.

Aim and Progress of Psychology	\$23.34
Principles of Psychology	\$23.77
Psychology and Logic	\$28.34
The Logic of Modern Science	\$17.91
Interbehavioral Psychology	\$17.48
An Objective Psychology of Grammar	\$15.48
The Scientific Evolution of Psychology	\$44.20
The Science of Psychology:	
An Interbehavioral Survey	\$22.91
Psychological Linguistics	\$17.48
Cultural Psychology	\$18.91
Tragedy and The Event Continuum	\$17.05
Psychological Comments and Queries	\$22.48

Send order to:

The Principia Press
Archives of the History of American Psychology
The University of Akron
Akron, OH 44325-4302
(216) 972-7285

Call for News

THE INTERBEHAVIORIST publishes news about subscribers' activities and information about others' activities that may be of interest to readers. If you have published an article, chapter, or book with an interbehavioral orientation, or have read one published by someone else, particularly if the source is obscure, please let us know about it.

The Agora

Interbehaviorists in ABA SIG Meeting Minutes May 26, 1994 Atlanta, GA

Co-Chairs: Linda J. Hayes, Debra W. Fredericks,
Mark Swain

I. *The Interbehaviorist* Report:

It was announced that despite the increased subscription rates, publication of *The Interbehaviorist* continues to run in the deficit. Production and distribution has averaged \$2,550.00/year. Income from subscriptions and donations averages \$750.00. Nevertheless, Context Press has subsidized publication of the newsletter and will continue to do so.

Due to a decreased number of submissions, the number of yearly issues had been decreased to two. The number of issues will increase by one beginning with volume 22. Meeting this goal, and eventually returning to quarterly issues, will require efforts toward procuring more submissions. Attendants were asked to assist by submitting their work and encouraging their colleagues to do the same.

Linda Hayes introduced the current working staff of TI: Sid Bijou, Debra Fredericks, Patrick Ghezzi, and Mark Swain. It was announced that Duane Lord had been hired as managing editor.

II. Newsletter Sections:

Some changes to format were proposed and discussed. Along with regular sections including the agora, articles, comments and research notes, the addition of three new sections were under consideration: a student forum, "alternative views" and interviews.

The student forum, possibly called "student comments and queries", is an opportunity for students to submit short questions or comments for responses by experts. This will allow students, especially those from non-interbehaviorally oriented programs, to have their concerns addressed without having to submit a polished paper.

The "alternative view" commentary will be a point-counter-point type of interaction focusing on a discrete issue of concern to both interbehaviorists and non-interbehavioral psychologists. It was decided that the utility of this section will depend upon selecting participants who, although not interbehaviorally ori-

ented, are familiar with interbehaviorism.

Interviews, titled "varieties of interbehavioral psychology", will each explore the personal evolution of a prominent interbehavioral psychologist. The first interview, scheduled for publication in 22(3) will be with Sidney W. Bijou.

III. Promoting Interbehavioral Psychology

Increasing the circulation of *The Interbehaviorist* is seen as a top priority.

It has become evident over the years that only a few members of the advisory board have remained active. This is understandable given competing demands on already busy professional lives, nonetheless, efforts will be made to increase participation of advisory board members.

A number of ways in which to expose students to interbehavioral psychology were discussed. A student paper competition was tabled since the group did not feel adequate resources for an award were currently available. "Student packets" will be mailed to universities with significant student involvement in A.B.A.. These packets will contain a synopsis of interbehavioral psychology, information on the newsletter, invitations to submit materials, news from interbehaviorally oriented graduate programs, and the names of contact persons near their universities.

It was the consensus of the group that we needed to maintain a higher profile at ABA in order to recruit new SIG members. The Context Press exhibition booth has advertised the newsletter and a poster was presented at the ABA expo. In addition, it was announced that a representative of *The Interbehaviorist*, Debra Fredericks, will attend this year's Cheiron meeting.

IV. General Discussion

The meeting closed with a general discussion of future activities. Topics for symposia at ABA'95 were discussed, including one on varieties of interbehaviorism and the construct of time. Upon conclusion of the meeting members concurred that they would enjoy spending more time together in informal settings, such as social hours or round table discussions at next year's ABA meeting.

Please submit any corrections or additions to the minutes to Debra W. Fredericks, assistant editor, *The Interbehaviorist*, Dept. of Psychology, University of Nevada, Reno, NV, 89557-0062.

Conference Notes

Cheiron

The twenty sixth annual meeting for The International Society for the History of Behavioral and Social Sciences was held June 2-5 in Montreal, Canada. Among those attending were Debra Fredericks, John Mills, Edward Morris, Paul Mountjoy, and Noel Smith. Given the strong interest of most interbehavioral scientists in historiography, most of the papers presented at the meeting would have appealed to readers in one way or another. However, of particular interest was the symposium chaired by John Mills titled, "The imperial theme: American behaviorism 1896 to 1944." Included were papers by: Charles Tolman, "Deconstructing American functionalism; Nancy Innis, "E. C. Tolman's purposive behaviorism"; John Staddon, "Behaviorism, cognitivism and theoretical behaviorism; and Hank Stam, "Rats, pigeons and other human beings." Thomas Leahey was the discussant and affected stimulating debate which continued well after the meeting adjourned for the day. A relatively small group attended the Cheiron meeting. There were no concurrent sessions and the papers were substantive and stimulating. These factors, combined with an adequate amount of free time scheduled for interaction among attendants, resulted in a relaxed, intellectually satisfying experience. Readers are encouraged to consider participating in next year's meeting, June 22-25, at Bowdoin College, Brunswick, Maine. For information, contact Dr. Raymond E. Fancher, Cheiron Executive Officer, Department of Psychology, York University, North York, ON, Canada, M3J 1P3 (E-mail: fancher@vm1.yorku.ca).

Comments and Correction

In the last issue of *THE INTERBEHAVIORIST*, we published an article by Dennis Delprato entitled: *Interbehavioral Psychology: Critical, Systematic and Integrative Approach to Clinical Services*. It should have been noted that the paper was an abridged version of a chapter by the same title that will appear in W. O'Donohue and L. Krasner (Eds.), *Theories in Behavior Therapy*, Washington, DC: American Psychological Association

Paul Montjoy on Kantor Graduates

Mills (1994) stated that I was the only graduate student produced by Kantor. He based this upon an erroneous statement in one of my letters to him. My

purpose is to correct that error.

Hearst and Capshew (1988) compiled a complete list of all graduate degrees granted between 1886 and 1919 by the Indiana University Department of Philosophy, and from 1929 to 1987 by the Department of Psychology. To my knowledge it was only at Indiana that Kantor served as Chair of graduate committees. Hearst and Capshew list Chairs when possible (the first such faculty identification occurs in 1920, the year Kantor arrived at Indiana).

Correction of the record seems best accomplished by simply listing in chronological order the names and the degree granted.

1934

Carter, Jerry W. (MA)

1936

Schroeder, Paul M. (MA)

1938

Briones, Ignacio T. (Ph.D); Carter, Jerry W. (Ph.D)

1942

Bowles, J. W. (MA); Bucklew, John (Ph.D)

1943

Lundin, Robert W. (MA)

1944

Lehndorff, Annemarie (MA); Pronko, Nicholas H. (Ph.D)

1947

Herman, David T. (Ph.D); Lundin, Robert W. (Ph.D)

Neu, D. Morgan (MA)

1948

Hill, Harris E. (Ph.D), Wolf, Irvin S. (Ph.D)

1951

Mountjoy, Marjorie, P. (MA)

1952

Bowles, J. W. (Ph.D)

1953

Mountjoy, Paul T. (MA)

1954

Weinstock, Solomon (Ph.D)

1957

Mountjoy, Paul T. (Ph.D)

References

- Hearst, Eliot and Capshew, James, H. (1988). *Psychology at Indiana University: A Centennial Review and Compendium*. Bloomington, Indiana: Indiana University Department of Psychology.
- Mills, John, A. (1994). Jacob Robert Kantor (1888-1984). *The Interbehaviorist*, 22, 8-13.

Special Section Psychological Subjectivity

Mark A. Swain
University of Nevada

Dennis J. Delprato
Eastern Michigan University

Despite successful efforts by interbehaviorists to develop innovative empirical methodologies (see, Ray and Delprato, 1989, Hawkins and Sharpe, 1992) the Interbehavioral movement has been criticized because there is no conspicuous methodology which is exclusively interbehavioral. This criticism reflects a basic misunderstanding of the position, in that, the interbehavioral community is best described as a community comprised of individuals who share a similar philosophical and theoretical orientation regarding a general system, or approach, to the study of psychological events. This is our strongest commonality; not a commitment to any one specific methodology. However, as indicated above interbehaviorists are eager to develop and explore alternative scientific methodologies; especially those developed by researchers sharing similar philosophical and theoretical orientations. This special section will describe the philosophy, theory, and empirical techniques common to the naturalistic study of psychological subjectivity. The first article is authored by Noel Smith, Ph.D. and describes the historical development of this study. The second article is authored by Dennis Delprato, Ph.D. and John Knapp, Ph.D. and describes the identifying assumptions and techniques common to William Stephenson's Q-methodology. As you will see, the historical and current study of psychological subjectivity as described in these two articles involves many fundamental similarities to the interbehavioral position.

References

- Hawkins, A., & Sharpe, T. (Eds.) (1992). Field systems analysis: An alternative for the study of teaching expertise [Monograph]. *Journal of Teaching in Physical Education*, 12 (1).
- Ray, R. D., and Delprato, D. J. (1989). Behavioral systems analysis: Methodological strategies and tactics. *Behavioral Science*, 34, 81-127.

Article

Phenomenological Psychology

Noel W. Smith

State University of New York at Plattsburgh

Introduction

Many psychologists believe that phenomenological psychology claims to study a mind or subjective experience and is a form of introspection that ignores behavior. This, however, is a misconception. According to Kruger (1983), phenomenological psychology may be defined as "the study of the nature of our presence to the world" (p. 19). This means that when we think we think about something, when we are angry we are angry about something, when we remember we remember something. Such relationships involve meanings, and phenomenological psychology investigates these meanings of things to us and us to them rather than using the impersonal mode of the physical sciences that much of psychology has largely adopted. The world to us, phenomenologists insist, is not one

of bare or impersonal objects nor is the body's role one of a computing machine that processes information or neurally interprets the world. The world has meaningful structure and our bodies live as part of that meaning.

In the nineteenth century when it was breaking away from theology and philosophy, psychology began imitating the physical sciences, especially physics and chemistry. These two sciences served as prestigious models, and the mechanistic philosophy of British empiricism added to the orientation. The early investigators held that their task was to determine how the organism used its physiological equipment to differentiate colors, sounds, brightness, size, and even feelings about the physical objects around it. Ebbinghaus in the nineteenth century began his

pioneering studies in memory by inventing nonsense syllables to represent memorized items. (More directly, he assumed that the syllables represented the items that comprised a mind as propounded by the British empiricists; the syllables were an outer form of inner mental atoms.) He wanted to know how people learned what was devoid of meaning—nonsense. Similarly, the behaviorists and more recently the cognitivists regarded the world to be stimuli to the organism, stimuli that have physical properties of contours, loudness, number, size, etc. The current form of behaviorism, behavior analysis, holds that reinforcements *shape* the organism's behavior. Cognitivists hold that the organism is a computing machine that *processes* information. For both behaviorists and cognitivists, research in psychology is largely confined to the laboratory where experimenters set up experiments from their own point of view, strive to keep all conditions as mechanistic as possible, and direct the "subjects" to their tasks in such a way as to minimize any possibility that they might be actually subjective. They take measurements of subjects' responses to stimulus objects where those responses are assumed to be *dependent* on the stimulus, and the stimulus is *independent* of the subject and then amalgamate all data so that all individuality is lost.

What is missing in all this? According to the phenomenologists it is *meaning*. To them, we do not perceive stimuli, but meanings of objects and conditions. The task of psychology should be to study the meaning of things to people. A desk is not just a rectangular configuration made of atoms and molecules but means to us a surface on which we can write or place certain objects. Meanings may also involve feelings, values, and judgments. And these meanings will change in different contexts. It is these meanings that should be central to any investigation of human activity, and meanings always involve a relationship between the person and the world. We cannot study the person or the person's world in isolation but only as a relationship.

The modes of expression that we have available in our language do not readily allow us to express this mutuality. We regularly refer to the automobile we see or the child we hear, but it is difficult to express the way in which the automobile or the child acts on us. (Aristotle noted the same problem.) In order to indicate that action Kruger (1981) refers to "that which shows itself" and Zaner (1985) to "the *awareness-of-something*, and *that-of-which* there is the awareness" (p.

620) as a co-relationship.

Consciousness and mind get redefined by phenomenology. Consciousness is said to point beyond itself to an object either an actual object or one thought about. Therefore consciousness is not something in the person nor do objects occur in consciousness. As Sartre (1956) puts it: "a table is not in consciousness—not even in the capacity of a representation. A table is *in space*, beside the window, etc." And according to Lyotard (1991):

We arrive at a new locus of the "psychological" which is no longer interiority, but intentionality—that is, the relation between the subject and the situation, it being understood that this relation does not unite two separable poles, but on the contrary that the ego, like the situation, is definable only in and by this relationship. (p. 80)

Mind-body or inner-outer dualism along with consciousness as a receptacle for objects of the world or as a representation of an outer world are all rejected and replaced with relationships. Consciousness is the process of being present to something else. Similarly rejected is the explanation of psychological events in terms of physiology. For example, Giorgi (1976) notes of the trace theory of memory, "memory always involves the awareness of the past as past from the present" (p. 305). If memory were the activation of a trace, the memory should appear in the present as its trace does; yet it appears to be in the past. He notes further that researchers have searched for the trace in the neuron, the synapse, and RNA and DNA. "Thus in the history of the search, one moves nonchalantly from anatomical, to functional, to chemical conceptions without blinking" (p. 306). Arcaya (1989) gives an extended argument against the notion of memory traces and stored memory and indicates that phenomenology replaces storage with memory as part of a temporal context that involves a way of relating to the world. The notion that the brain is an interpreter of an outside world also comes in for criticism: Kruger (1981) insists that he is not sitting in his brain looking out at the world and interpreting it. Rather, he is present in the world, a part of it, interacting with people and other components of it.

Early Development and Some Issues

Husserl

A key concept, one used by Lyotard in the quotation above, is *intentionality*, the word referring not to something deliberate but rather to relatedness. The

concept of intentionality comes down from the scholastics of the Middle Ages, especially Thomas Aquinas, and is derived from Latin *intendere*, meaning "to stretch forth". In this view a mind is directed to or *intends* its object which is not necessarily a real thing but is what the mental act is about. In the nineteenth century Franz Brentano (1838-1907), a dozent and priest at the University of Vienna,¹ employed the concept in his psychology (in which the mental content is physical but the act of judging, representing, or valuing it comes from the nonphysical soul); and Edmund Husserl (1859-1938), a professor of philosophy and mathematician by training used it in his development of phenomenological philosophy.²

For Husserl, phenomenology was the attempt to describe the essence of consciousness of things rather than the features of the physical world. This means that even purely imaginary things such as mermaids and ghosts as well as objects such as trees are the sublime sounds of a symphony orchestra could be included. Essence is what makes things what they are. It is what gives existence and stability to things and determines their characteristics. To determine the essence of the experience of things one must suspend or *bracket* (as brackets are used in algebra) all biases and other habitual modes of thinking. By this means one obtains an intuition of the essence. This is the first step. The second step is that of analyzing the essence: one imagines certain features such as form, color, extension of the object or any similar object and thereby apprehends seeing not just a dog, for example, but any visual object. The third step is that of describing the essence. The vagueness of this procedure led to varied interpretations among Husserl's followers.

Experience, Husserl argued, is not *caused* by an external object, a stimulus, that is independent of the experience. Rather, what one experiences is a meaning quality that comprises an interdependence of the thing and the person. A slice of lemon on one's plate means sourness and flavoring; this meaning is a quality of the person's experience with the lemon and the presence of the lemon in that particular context. Similarly, anger is not something in itself but is a way of relating to something. Anger is always anger about something, not isolated physiology of glands or action of the nervous system.

But phenomenology is not just subjective experiences or the particular point of view of an individual. It is, according to Husserl and his followers, a way of obtaining absolute knowledge through intuiting the

essences of conscious events. One may intuit that a square has four right angles of ninety degrees each, and this can be ascertained as a universal, eternal truth by anyone in any culture at any time period. Consciousness along with mathematics and other essences is not in time and space as is the natural world.

Phenomenologists argue that psychology commits an error when it treats mind or consciousness as connected with the body and as a part of the natural world that obeys natural law. Psychology cannot experiment on the essence of consciousness, but philosophy can do this and at the same time provide a foundation for empirical psychology that will enable psychology to become scientific. This is where bracketing comes in. One suspends the *attitude* of a natural world (not belief in the *existence* of a natural world) to achieve pure consciousness. By stripping away all of our presuppositions about something's existence or nonexistence one takes on a new attitude or new focus in which essences can be apprehended. This Husserl called "transcendental reduction" in which one no longer studies the object of consciousness but rather essences which provide meaning to those objects and events. One can, for example, reflect on a visual object such as a book; and by imagining various characteristics of it such as its weight, its appearance from various angles, its print with readable characters, its shape, one intuitively grasps its essence and that of similar objects. This procedure apprehends the process by which the characteristics of objects come to have a unity and wholeness to us despite their diverse features, features by which we know the object and which persist on subsequent contacts with it. These characteristic meanings differ from the natural ones that the chemist or physicist would describe. As an example, consider the Müller-Lyer illusion:



The investigator could, following a physicalistic model, ask participants to measure the length of each arrow shaft and report the results. This would miss the illusion that would occur in a phenomenological procedure. In another example, Purkinje, a Czech physiologist, observed a color shift in his flower garden at dusk. Reds turned to grays while blues became lighter and retained the color after other colors had faded. By holding a neutral attitude—bracketing or accepting what was presented to consciousness instead of interpreting what he "knew" to be reds and blues—he discovered the true essence under those lighting conditions. This color shift could not be learned

from reading of instruments because it is a strictly organismic event. Today it is known as the Purkinje phenomenon or Purkinje effect and has applications in what colors show up most or least in varying intensities of light. Phenomenologists cite this finding as a example of the fruits of the phenomenological method and as indispensable to psychology (although Purkinje did not knowingly use such a method).

Attitudes about natural events arise from a particular time and context or a particular theory. For example, Newtonian physics considered gravity to be force acting at a distance between bodies in space; physics of general relativity considers gravity to be equivalent to acceleration in a space that is distorted by bodies of mass. In contrast to these theories, the knowledge of essences such as the apparent difference of arrow shafts in the Müller-Lyer illusion is, according to Husserlians, free of all theories, opinions, assumptions, biases, cultural beliefs, etc. It is absolute, nonrelative, and eternal. A stone age woman or a Wall Street broker would intuit the same essence. Some phenomenological psychologists reject the claims of absoluteness (e.g., Snyder, 1988); some even reject Husserl (e.g. Henley, 1986). Others have maintained that phenomenological philosophy with its transcendental reduction (often referred to as "phenomenological reduction" or merely "reduction") is a necessary foundation for a scientific psychology (e.g., Davidson, 1988; Jennings, 1986).

Toward the end of his life Husserl began developing a phenomenological psychology in which he accepted experimental methods as a means of assistance in the phenomenological method. But he always rejected the collection of correlated facts as making for an empirical psychology. Rather it was the discovery of the meanings of things as people orient toward the world that remained paramount for him, life as it is lived.

The French Connection

Merleau-Ponty

It was in France that a more direct effort to apply phenomenology to psychology was developed. The principal figure in this event was Merleau-Ponty (1908-1961) who held an appointment in psychology and child pedagogy at the Sorbonne in Paris and later received an appointment in philosophy at the Collège de France. (Jean Piaget later filled his position at the Sorbonne and replaced his phenomenological psy-

chology of children with cognitive child psychology.) It was his work in phenomenology that came to the attention of American psychologists. His book, *The Structure of Behavior*, as the title suggests, has important points in common with behaviorism. However, this is not the mechanistic behaviorism of Watson but behaviorism as broadly conceived. In Kvale and Grenness's interpretation (1967), behavior is "man's meaningful relatedness to the world" and in such a relationship "neither can be defined independent of the other" (p. 137). Merleau-Ponty's major goal was to study the relationship between consciousness and nature, and consciousness he found to be a form of behavior. He rejected the assumption of consciousness as pure subjectivity. To him behavior is part of a structured context and replaces the mind-body distinction. Structure refers to the dialectic process (Kockelmans, 1985, p. 126) or relationship as part of a context. These relationships involve a more or less stable form. For example, joy will differ in its character from one situation and one time to another. It is never the same twice, but it has a meaningful commonality, form, or structure that runs through all instances.

In his analysis, a presumed transcendental mind and mechanistic reactions to stimuli give way to an interaction or dialectical interchange between the person and that person's world. That is, rather than assuming a ghostly guiding agent inside the organism or responses due to conditioning, he looks for concrete interchanges between the person and the person's world. The organization of the human body with its particular sensory organs, mobility and capabilities for thinking, perceiving, etc. select for the behaviors that occur in this circular dialectic; and these behaviors in turn provide further selection to the body's participation and it to the qualities of the behaviors. This dialectic process comprises meanings.³

Rather than a stimulus that elicits a response, Merleau-Ponty finds that one cannot identify a stimulus apart from a response, as for example in a painful stimulus. Further, the stimulus is actually both "the physical event as it is in itself, on the one hand, and the situation as it is 'for the organism,' on the other, with only the latter being decisive in the reactions (p. 129). In other words, it is not the physical properties of the stimulus that are important in behavior but what the object or event means to the person. Fine wine may mean a delightful tasting experience to a wine connoisseur but an evil liquid to a Muslim. Its physical

properties have no direct relevance to the dialectic process.

Just as stimulus separates into two distinct characteristics, so too does response. The "sum of the movements actually executed" have an "objective relation with the physical world" whereas these same movements as "behavior so-called" have an internal articulation as a kinetic melody gifted with a meaning" (p. 130). That is, movements as mere movements are physicalistic and devoid of meaning but movements as behavior (in interdependence with the stimulus as meaning, presumably) are a part of the meaningful world, the world as experience. Both stimulus and response "are linked internally by their common participation in a structure" (p. 130) involving a circular process rather than cause and effect. A stimulus does not cause a response but the two interact with each other giving rise to ever changing meanings.

Merleau-Ponty's *Phenomenology of Perception* is aimed more at providing a basis of his philosophy than at establishing a model for psychology. Nevertheless, it provides much that is relevant to psychology; and, like *Structure of Behavior* draws heavily on research that was available at that time, including that from psychology, psychopathology, and clinical medicine (esp. brain injuries), often with a point by point reference to that research.

It is perception, he holds, that provides "a window" to meanings. It is a way of understanding the dialectic between consciousness and the world. Fundamental to perceiving is attending. In an objectivist's world, he notes, there would be no way for us to attend to one object or situation rather than another. But the experience of attention establishes figure on what was previously ground. Now we see the bird in the tree as figure where we previously saw only the tree, the ground. Attending *provides the unity* of a new meanings but *does not constitute* new meanings or provide for their origin. New meanings occur in perception as happens in examining a cube (treated primarily in *Structure of Behavior*). In a phenomenological reduction one finds that a cube never presents itself as having six sides with equal angles at each corner. Instead, "it presents itself in a series of profiles, each of which announces the cube in its entirety but without revealing it" (Brannon, 1967, p. 29). What it shows is affected by its context, such as lighting and the viewing angle and the viewer's distance from it. Never does it present itself as a six sided figure. That would only be possible in a completely disembodied conscious-

ness. By redefining and recognizing the object and consciousness of it in terms of the experience in which both occur, one can function phenomenological. Such a procedure constitutes a reduction. The reduction provides the tools for a critique of various approaches to psychology and the presuppositions involved. It also provides a basis for a redefining of the mental and the physiological.

Rather than regarding perception as a product of the body's physiology, Merleau-Ponty regards the body as providing the condition for perception of objects and the meanings that come from the perception. An object is a structure for consciousness, and consciousness is always of some object. Consciousness of something and the structure for consciousness that the object provides would each cease to be without the other.⁴ This is a dialectical relationship. Each implies the other, its opposite. The body is only completely constituted with consciousness. The object then is a counterpoint to the body and to existence in which the body provides stabilized structure. Meaning is as much a part of the body as it is of the object: in Merleau-Ponty's expression, "j'en suis" (I am of it.) Giorgi (1975) addresses this when he says, "Sleekness belongs to the airplane as much as it does to my perceiving it." It is not that one is objective and the other subjective but both are objective in their own way.

In his analysis of the senses, each sense—such as taste, vision, hearing, smelling—involves a different behavior structure which cannot be interchanged but nevertheless interpenetrate one another. We look at a drum and see its loudness. We read a maxim and see its lesson. We see strength in a steel beam and weight in a boulder; we hear fire in a "hot" trumpet; we hear a lively rhythm and feel energized. Perceptual synthesis is through the body, not through thought, not through interpretation. Although we see our word through two separate eyes, the single view of that world we experience is not because of transformation by neurons or because we think about the merger of two images or reinterpret two images as one but because of body organization as it relates to the perceived world. And intersensory events (hear fire in the sound of a trumpet) involve a perceptual synthesis similar to that of intrasensory events (see a single object with two eyes). Sensing involves the whole body but particularly with the sense modality involved. No interpreter—neuronal or intellectual—is needed. Instead, there is a unity involving visual

intentionality with the object seen. Merleau-Ponty refers to "the roots of the mind in its body and in its world" (1964b, p. 3) in opposition to perception as result of mechanical actions of stimuli on the sense organs and to consciousness or mind as an interpretive agent sitting in the body. Perhaps a statement about color expresses as well as any the thoroughgoing interdependence of the body and its world that Merleau-Ponty emphasizes: "...colors...are themselves different modalities of our co-existence with the world" (1964b, p. 5).

An important question in understanding perception is that of constancies. In the case of size constancy, for example, why do we see an adult at a distance not as small but as the same size as when the person is close? For Merleau-Ponty it is not because a disembodied mind or brain is reinterpreting the size as the distance changes. Rather, it is because the perception as lived, as experienced, is one of same size adult at different distances against the appropriate ground. He (1964a) treats a number of other constancies in a similar manner.

As for the role of illumination in perception it is not, he insists, one of the brain converting light waves into color or into an object. We don't see illumination but according to it; it is a medium for those things we do see. Illumination mediates color and provides a condition.

Because he holds that the person and the person's world comprise one another, he finds that psychological events do not involve cause-effect relationships. The world does not cause the person to behave. This means that phenomenological psychology does not use the experimental study of cause and effect, and for the same reason rejects independent and dependent variables, control groups, and testing of hypotheses. Hypotheses imply that some hidden condition is causing the observed event, and so this cause-effect assumption, too, is replaced with descriptions of the lived world.

Merleau-Ponty's approach to thinking is to treat it as expressing experience we have previously lived (*Structure of Behavior*). However, it involves not only previous meanings but also gives new meanings to things. Thinking, he concludes, is not located in us but is intentional with the thing thought about and therefore has no location except as a relationship, but the relationship excludes itself. That is, it does not reflect back on itself. Like perception and other psychological behaviors, thinking is not a product of neurons

though it depends on the body; it too is a dialectical process.

His analysis of these psychological events indicates that Merleau-Ponty attempts to avoid both mind-body dualism and physiological mechanism in favor of an organism-environment relationship. "Truth does not 'inhabit' only the 'inner man,' or more accurately, there is no inner man, man is in the world, and only in the world does he know himself" (Merleau-Ponty, 1962, p. xi).

Interbehavioral Psychology

If we compare Merleau-Ponty's phenomenological psychology with J. R. Kantor's interbehavioral psychology we find many similarities and a few differences. Both distinguish between the functional or meaning character of a stimulus and its physical characteristics; both similarly distinguish the response from the response function; both consider the stimulus and response to be interdependent, not one dependent on the other; both indicate the interdependence of setting and response; both reject mechanism of external stimulation or of internal physiology causing responses and emphasize interaction or dialectical interchange between the person and surroundings; both reject an internal-external distinction; both consider light to be a medium of contact rather than a stimulus to be converted into an object; and both reject linear causality. Further, Merleau-Ponty's concept of the "lived body" as potentials that interact with the surroundings seems to be consistent with interbehaviorism's stress on biology as a participating factor (a necessary but not a sufficient condition) in all psychological events.

They differ in that Merleau-Ponty retains the mental or consciousness in some sense and through the concept of intentionality seems to contradict his attempt to move toward a thoroughgoing dialectic. Interbehaviorism holds that to the extent that the "mental" refers to anything beyond historically invented abstract constructs, it can only refer to concrete events that comprise the field of interactions. Thus, enjoying, believing, perceiving, etc. are interactions and are not reducible to physiology or to something special to the organism. As the phenomenologists would insist, when we enjoy we enjoy something; when we believe, we believe something; when we perceive, we perceive something. Interbehaviorism emphasizes these relationships (while recognizing that some acts involve the organism and its own response-produced stimu-

lation more than others) as field events to the exclusion of any additional mentalistic constructs whereas phenomenology retains same mentalism and organocentrism, of which the unidirectionality assigned to intentionality is one example.

Interbehaviorism agrees on the importance of meanings as lived (the interbehavioral field comprises meaning) and would agree that research with that emphasis is indispensable; at the same time it finds merit in the more traditional research as well. Perhaps this is not entirely inconsistent with Merleau-Ponty if one considers his position that factual information can serve as a basis for phenomenological information. Interbehaviorism rejects causality and hypothesis testing only if these are linear but can accept them if they refer to field interactions. Apparently phenomenological psychology cannot accept them under any conditions.

Q methodology

The search for subjective meanings to which phenomenological psychology is dedicated could be facilitated by the use of Q methodology. Both share a determination to avoid imposing the researcher's objective structure on the person, to find what things mean to the person, and to do this objectively. Q methodology provides a rigorous way to do exactly this in almost any situation or subject matter, even with very young children (e.g., Taylor, Delprato, & Knapp, 1994).

A phenomenologist's characterization of psychology is quite apropos to Q methodology: "an intersubjective communicative science, systematically studying the structure of human existence by explicating lived (historical) experience.... While the word 'intersubjective' indicates that psychology is to be a shared, validated enterprise, the word 'communicative' indicates that the psychology as a science, must be built up by what people can communicate about their experiactions" (Kruger, 1983, p. 19).⁵ Communication of subjectivity is exactly what Q methodology is all about. William Stephenson (1988), the founder and developer of Q, recognized the relationship with phenomenology and advocated its use for that orientation. He notes that communicability would replace consciousness, events of experience provide for the course (statements to be sorted), and Q-sorts allow for grasping essences—but those of the subject rather than those of the investigator; when factor analysis reduces the self-references to clusters of factors, new understandings of subjective meanings emerge.

Critique

On the positive side, phenomenological psychology's emphasis on studying meanings in life is one that the larger body of psychology can hardly afford to continue ignoring. Nor do phenomenology and the traditional natural world approach necessarily need to be mutually exclusive methods. We would not want to abandon what we have learned about perception as it applies to improving the safety of pilot's approaching a landing strip, but we also need to explore perceptions as meanings while recognizing that when meaning to the pilot has not been consonant with reality the result has been tragic. We would not want to abandon operant conditioning where it has vastly improved self-care by the retarded, but we might also make advances in helping the retarded if we tried to better understand things from their point of view (note the statement above by the schizophrenic). Environmental psychologists have found that playground design, as one of many examples, is vastly different when children and adolescents are asked what they want than if the designer merely observes children at playgrounds and records statistics. As for laboratory studies, eco-behavioral psychology has shown us the value of getting out of the laboratory into the world of various behavior settings. These and a variety of other methodologies such as Q will no doubt be necessary for obtaining a major advancement toward understanding the complexities and richness of "the structure of behavior" and human "experiaction" of which phenomenological psychology has made critically important contributions.

Footnotes

¹He later resigned his position at the university and his priesthood rather than accept papal infallibility that became official 1870.

²One of Husserl's students, Martin Heidegger (1889-1976) renamed intentionality "being-in-the-world" (*Dasein*), and this phrase has enjoyed wide usage. For the psychologists Merleau-Ponty and Sartre (see below) it included not just cognitive acts but the relationship between one's body and an object prior to any verbalization or other recognition, for the body has a rapport with a situation and an understanding of its possibilities even prior to explicitly recognizing it or reflecting on it. For example, one jumps out of the path of a moving car seen only in peripheral vision; one has a reply to a verbal statement prior to reflecting on it. Intentionality also comes to mean a direct dialectic, a bi-directional interaction between persons and

world. See Eckartsberg (1989) for the evolution of meanings of "intentionality".

³Husserl referred to our meaning making activity as the "intentional arrow of consciousness". This comes from two sources: the inner horizon of our consciousness with its domain of meanings and the outer horizon of objects and the meaning context in which they are embedded. Although Merleau-Ponty adopted the concept of a dialectic to indicate this relationship, Kwant (1966) holds that near the end of his life he replaced dialectic, a kind of duality, with reversibility, an interchangeability or intercommunicability from one mode of responding to another—touch to sight, to touch, perceiving to speaking and even reversibility between different persons. Further, "reversibility manifests" itself in the relationship between man and world: man is part of the world, but he is a part which possesses the whole.... There is an interpenetration of man and world" (p. 90-91).

⁴Kwant (1963) notes that he refers to consciousness as "a presence of man to himself" (p. 228) but provides no analysis of it.

⁵"Experiaction" is one of phenomenology's neologisms; it indicates that experience is an action or behavior, not a separate event. There is no dualism of experience and behavior, that is, mind and body. There is only a single unified behavior but with the emphasis on subjective or meaningful behavior that the "experiaction" suggests.

References

- Arcaya, J. (1989). Memory and temporality: A phenomenological alternative. *Philosophical Psychology*, 2, 101-110.
- Brannon, J. F. (1967). *The Philosophy of Merleau-Ponty*. Harcourt, Brace & World.
- Davidson, L. (1988). Husserl's refutation of psychologism and the possibility of a phenomenological psychology. *Journal of Phenomenological Psychology*, 19, 1-17.
- Eckartsberg, R. (1989). The unfolding meaning of intentionality and horizon in phenomenology. *Humanistic Psychology*, 17, 146-160.
- Giorgi, A. (1975). Convergences and divergences between phenomenological psychology and behaviorism. *Behaviorism*, 3, 200-212.
- Giorgi, A. (1976). Phenomenology and the foundations of psychology. In *Nebraska Symposium on Motivation*, 1975, Vol. 23. Lincoln, NE: University of Nebraska Press.
- Henley, T. B. (1986). Beyond Husserl. *American Psychologist*, 43, 402-403.
- Jennings, J. L. (1986). Husserl revisited: The forgotten distinction between psychology and phenomenology. *American Psychologist*, 41, 1231-1240.
- Kockelmans, J. J. (1985). On the function of psychology in Merleau-Ponty's early works. *Review of Existential Psychology and Psychiatry*, 18, 119-132.
- Kruger, D. (1981). *An Introduction to Phenomenological Psychology*. Pittsburgh: Duquesne University Press.
- Kruger, D. (1983). Psychotherapy research and existential-phenomenological psychology—an exploration. In A. Giorgi, A. Barton, & C. Maes (Eds.), *Duquesne Studies in Phenomenological Psychology*, Vol. 4. Pittsburgh: Duquesne University.
- Kvale, S. & Grenness, C. E. (1967). Skinner and Sartre: Towards a radical phenomenology of behavior. *Review of Existential Psychology and Psychiatry*, 7, 128-150.
- Kwant, R. C. (1963). *The Phenomenological Philosophy of Merleau-Ponty*. Pittsburgh: Duquesne University Press.
- Kwant, R. C. (1966). *From Phenomenology to Metaphysics: An Inquiry into the Last Period of Merleau-Ponty's Philosophical Life*. Pittsburgh: Duquesne University Press.
- Lyotard, J. (1991). *Phenomenology*. (B. Beakley, Trans.) Albany: State University of New York Press.
- Merleau-Ponty, M. (1962). *Phenomenology of Perception* (C. Smith, Trans.). London: Routledge & Kegan Paul.
- Merleau-Ponty, M. (1963). *The Structure of Behavior*. Boston: Beacon Press.
- Merleau-Ponty, M. (1964a). The primacy of perception and its philosophical consequences. (J. M. Edie, Trans.). In J. M. Edie (Ed.), *The Primacy of Perception and Other Essays on Phenomenological Psychology, the Philosophy of Art, History and Politics*. Northwestern University Press.
- Merleau-Ponty, M. (1964b). An unpublished text by Maurice Merleau-Ponty: A prospectus of his work. (A. Dallery, Trans.). In J. M. Edie (Ed.), *The Primacy of Perception and Other Essays on Phenomenological Psychology, the Philosophy of*

- Art, History and Politics*. Northwestern University Press.
- Sartre, J. (1956). *Being and Nothingness*. London: Methuen.
- Snyder, D. M. (1988). Comment on Jennings. *American Psychologist*, 43, 403-404.
- Stephenson, W. (1988). William James, Niels Bohr, and complementarity: V—Phenomenology of subjectivity. *Psychological Record*, 44, 171-183.
- Zaner, R. M. (1985). The logos of psyche: Phenomenological variations on a theme. In S. Koch & D.E. Leary (Eds.), *A Century of Psychology as Science*. McGraw-Hill.

Author's Comments

The preceding chapter on Phenomenology is an excerpt from a book in progress titled, "Current Systems in Psychology: Theory and Applications." The book is intended as a supplementary text in courses in theory and systems of psychology. At present no book exists that systematically presents the various theoretical systems in psychology today. Those that are called history and systems books, in addition to history, deal primarily with the classical systems—those up to about 1950—and add a few bits and pieces of two or three more recent ones. I plan to include ten systems including one, of course, on interbehaviorism. A final

chapter will be "Conclusion: Two Major Trends". The two I see (and this may change after working in more detail with all of the systems) is (1) a convergence on organism-object interactions and (2) mentalism. Some of the interactionists also include the organism's historical development and/or setting conditions. (The chapter on interbehaviorism should illustrate to those who are reasonably astute how this can all come together in an integrated fashion, though I am trying to avoid any advocacy.) Mentalism, to be sure, creeps into some of these; and some of the organism-object orientation shows up in mentalistic systems. But I think the two general distinctions are there.

The three completed chapters are behavior analysis, phenomenological psychology, and dialectical psychology. I would be pleased to send a copy of any or all of the chapters to anyone who is willing to offer suggestions for improvement: clearer writing, correction of errors, addition of important points, deletion of unnecessary detail, etc.—whatever would be an improvement for an advanced undergraduate textbook.

Please direct all correspondence to: Noel W. Smith, Department of Psychology, S.U.N.Y. Plattsburgh, Plattsburgh, NY 12901

Article

Q Methodology and Interbehavioral Description

Dennis J. Delprato and John R. Knapp
Eastern Michigan University

In 1953, William Stephenson published a remarkable program for a naturalistic study of behavior. According to Stephenson, Kantor's interbehavioral science provided crucial foundations for the former's Q methodology. Despite what Stephenson saw as close ties between interbehavioral science and Q methodology (see also Stephenson, 1982, 1988/1989), it does not appear they have been explored in data-based basic or applied work. A few of us at Eastern Michigan University (e.g., Taylor, Delprato, & Knapp, 1994) have begun examining Q methodology from an interbehavioral viewpoint. In the first section of this paper we will set forth some of our preliminary thinking on this. Subsequent sections will take up some additional considerations. The hope is that we will say something helpful to others who might be looking for ways to answer questions about behavior.

Stephenson (1953, 1982, 1988/1989) and Lichtenstein (1988) have written extensively about the Q-interbehavioral connection. We recommend these sources.

Taxonomic Classification

In trying to understand what one might be accomplishing with Q methodology, we have found it convenient to focus on a fundamental component of all scientific and applied activity. In particular, as Kantor recognized from the time of his doctoral work, classification is a fundamental component of all attempts to understand.

At the level of scientific activity, classification comes down to deriving categories in the form of products that the observer uses to express the outcome of particular observations, i.e., taxonomy. The most obvious classificatory outcomes are those we derive from what we commonly refer to as measurement operations. Thus, after determining what features of events we wish to measure, we record such characteristics as frequency counts and durations. In measuring event frequency, we have ready-made categories in the form of the number system—1, 2, etc. Timing mea-

asures, as of duration, provide categories such as 1.3 ms, 4.8 hr, and so on. Scientists, in general, find such physical scales valuable in their descriptions of the outcomes of observations of physical (or geographical, or topographic) components of events.

From the earliest point of modern scientific psychology, researchers realized that physical scales per se might not yield sufficiently complete classifications of psychological events. Admittedly, the initial inspiration for the development of scales beyond ordinary physical ones was the dualistic assumption that sensations and perceptions had to be measured. However, one need not endorse physical-psycho dualism to favor the need for uniquely psychological measurement operations, scales, and categories. Along this line, we are impressed with the mutually-compatible views of writers in two seemingly separate literatures. In both Q methodological (Stephenson, 1953) and certain phenomenological (e.g., Giorgi, 1970) work we find important interbehaviorally-consistent views that call for nondualistic and naturalistic descriptive classification of psychological events.

Q methodology stresses the distinction between *objective* and *subjective* statements made about events. The former use categories, linguistic or in the form of other symbols, that have physical meaning. "It snowed last night" and "It snowed 3 inches last night" have no psychological content per se. They can be evaluated outside the context of psychology. But what might be a psychological concomitant of these statements? This brings in an organism such as a young boy who reports he enjoys the snow or an adult who is miffed because of the snow removal activity the snow calls for. According to Stephenson, the psychological events of interest are distinguished by *subjectivity* or self-reference, and Q methodology provides a vehicle by which they can be addressed. Subjectivity is not nonspatiotemporal, nor does subjectivity refer to hidden realms of consciousness or awareness. Subjectivity is a particular person's point of view.

Like Stephenson and Kantor, advanced

phenomenologists "are against dualisms, both of the world, i.e., a physical real world and its duplications in terms of representations *in* a mind, and of man, i.e., a real man that is visible to everyone and then an 'inner man' consisting of conscious states of which he alone is aware" (Giorgi, 1975, p. 201). To phenomenologists such as Giorgi (1970) and Merleau-Ponty (1963) Stephenson's *subjectivity* is the phenomenal which refers to the person's actual *lived* world, or how the world appears to the person. From this view, *experience* is not "inner," "private," or distinguished from (psychological) behavior. Description of the phenomenal (or subjective) level of events requires different categories than the physical ones provided by science to date. The phenomenological perspective argues that psychological science has yet to develop adequate descriptive categories that reflect experience from the point of view of persons who are the nominal subjects of study.

The phenomenological psychology that we find to be fundamentally compatible with interbehavioral psychology takes a radically descriptive approach to psychological study. Of interbehavioral writers, perhaps Verplanck (1970, 1983) and Ray (see Ray & Delprato, 1989) have most emphasized the centrality of descriptive and taxonomic work. Most phenomenological work to date goes about description and classification without the aid of quantitative aids. Researchers derive categories ("essential properties") following various guidelines, including critical self-reflection. Basically, Q methodology offers a way of extracting categories with the aid of a particular type of multivariate analysis. Kuiken, Schopflocher, and Wild (1989) have demonstrated that multivariate methodology in the form of cluster analysis shows promise as a way of identifying categories (clusters) in the phenomenal or subjective domain.

To help make more concrete our proposal for using Q methodology in interbehaviorally-oriented work, let us consider Roger Ray's development of behavioral systems analysis (BSA). Given the realities of space, we have to assume the reader is quite familiar with Ray's strategies and tactics. These are presented in most complete form in Ray and Delprato (1989). Sharpe (1991) and Hawkins and Sharpe (1993) provided examples of research based on BSA in this newsletter. Furthermore, Hawkins and Sharpe (1992) edited an entire issue of the *Journal of Teaching in Physical Education* which was devoted to Ray's data generation processes.

With BSA we seek more complete descriptions of psychological events than are provided by conventional data-collection methodologies. BSA allows the observer to take into account numerous participating field factors. This is accomplished by first identifying domains of interest. Domains are macro-categories within which various measurement operations occur. For example, in a study of mother-child interactions we may select domains such as mother vocalizations, mother posture, mother heart rate, child vocalizations, child posture, and child heart rate. For descriptions of the heart rate domains, we can use categories (codes or elements) following established physiological recording methods. In the case of the other domains, we might use direct observational coding systems already developed for them or first complete a unique coding system for one or more of them. The codes, e.g., mother's eyes directed at child, mother reaches for child's hand, are categories by which we obtain symbols as outcomes of the observational (measurement) process.

Our field perspective, in conjunction with Q methodology and phenomenological thinking, lead us to identify an important component of the above mother-child field that is not included in our descriptive system. Although we have included verbo-vocal, postural, and physiological domains, our descriptions are incomplete in that they do not allow us to record uniquely human behavior in the subjective, experiential, or phenomenological domain. By incorporating Q methodology into our study, we can obtain categories (codes) that capture each participant's subjective reactions, the point of view of the participant, while taking into account our biases as observers.

The outcome of Q methodology is a factor structure yielded by analysis of the correlation matrix of q sorts. We will overview the essential details of factor analysis and subsequent rotation in a section to follow. In the next section, we examine the assumptions that underlie the claim that factors represent phenomenal codes saturated with psychological meaning.

Assumptions for Extracting Factors

The extraction of meaning from a quantitatively-derived factor structure is the most unique aspect of Q methodology and the reason we discuss it now. To those familiar with Q methodology, it may appear that we are "putting the cart before the horse" by bringing up what is essentially the interpreting of factors at this point, especially because, according to the quantum

theoretical stance underlying Q methodology, meaning can only emerge from our operations on events, i.e., the details of the procedures by which q sorts are generated and analyzed. However, because the quantum methodological nature of Q methodology is so often overlooked, we feel that it is valuable to orient potential users "up front" so they have a better idea of just where the operations are headed.

The key to getting from factor structure to phenomenal codes is measurement, but not the measurement typically found in psychology. Q methodology and phenomenology (see Giorgi, 1970) call for a radically different approach to measurement from that inherited by psychology from "objective" science.

In one of the most important papers ever written in interbehavioral psychology, Zimmerman (1979) demonstrated the close relationship between quantum physics and the interbehavioral point of view. Subsequently, in several places, Stephenson (e.g., 1988, 1988/1989) discussed the implications of this for Q methodology. Readers who examine faithful representations of quantum theory will develop further understanding of the points below.

Subjectivity is inseparable from conditions of measurement.

To illustrate the interrelationship between subjectivity and measurement, it might be helpful to first consider what subjectivity is not and what we are not doing with quantum measurement operations. There is a tendency to equate subjectivity, phenomenal, or, indeed, mental with "private" events in a "public-private" distinction and with "covert" events given a "overt-covert" distinction. Skinner (e.g., 1974, pp. 27, 103-104) has been a prominent theorist who has adopted a public-private distinction, albeit with shifting boundaries. Thus, in maintaining dualism of inner-outer, private-public, and mental-physical, mental is an inner process, often "behaving weakly" amenable to study by amplification methodology, such as physiological ones and by asking the person to "think out loud."

Q methodology, phenomenology, and interbehaviorism (e.g., Pronko, 1983/1984) reject dualisms of inner-outer and covert-overt, whether taken as dichotomies or as continuities. Descriptions of subjectivity are akin to those of quantum phenomena. As Frank (1955) put it, "Speaking exactly, a particle by itself without the description of the whole experimental set up is not a physical reality" (p. 474). In the same way, a private event by itself without the description of

the observational/measurement operations is not a psychological reality. In brief, phenomenal descriptions do not follow lineal rules as they might if they obeyed a principle of private event \rightarrow manifestation on recording instrument. Instead, they are systemic where interdependency (\leftrightarrow) reigns.

The observer is an inherent participant in measurement.

It seems possible to argue that the truly radical and unsettling discovery of quantum physics was that the outcomes of measurement operations were always "contaminated" by observers' behavior. Because this introduces an inherent psychological factor into knowledge of quantum events, it is not surprising that physical scientists who have confronted it often remain befuddled. They fail to completely accept that quantum measurement entails departure from measurement strategies and tactics of classical physical science, and, in extreme cases, adopt classical dualistic psychology and impart mental or spiritual powers and forces to physical events. Phenomenologists have long recognized the role of the observer in psychological measurement and have used the strategy of bracketing in attempts to take this into account. Phenomenological bracketing is a version of Kantor's dictate that we explicitly identify presuppositions (postulates, assumptions) in knowledge operations.

In applications of Q methodology, one way in which the inherent participation of the observer's point of view is addressed is by the tactic of judgmental (as opposed to purely statistical/mathematical) rotation of factors. Another way is by "structuring" in advance the objects (q items) upon which respondents operate (sort). A third tactic for incorporating the observer's vantage point is by including it in the experimental conditions ("conditions of instruction") under which the participant operates on the q items.

Factors begin with concurrence, are indeterminate, and are subsumed by the specificity principle.

The outcome of a Q methodological measurement undertaking is a catalogue of subjective codes that ultimately evolves from our interpretative behavior. By considering how concurrence, indeterminacy, and specificity are involved, we can gain further insight into how this process is coordinated. Furthermore, these considerations might help some avoid the temptation to assume that the measurement process, especially the observer, is magically creating events, a

persistent problem in accounts of quantum measurement.

By *concourse* is meant the full range of communicative *self-referable* (usually, but not necessarily) verbo-vocal statements made by a participant in a psychological event. There is no limit to the possible number of elements in a *concourse*. A *concourse* can be obtained by interviewing a participant in a manner recommended by phenomenological methodologists. Each statement is assumed to be equally probable and is devoid of meaning to the observer. The researcher selects *q* items from *concourse*.

Frank (1955) makes it clear that Heisenberg's much misunderstood relation of (quantum) "uncertainty" or "indeterminacy" comes down to laws of predicting future events. Indeterminism has nothing to do with the capriciousness of events. It pertains to our knowing relations, to knowing \leftrightarrow known. In the case of subjectivity, there is no fact or set of facts (e.g., covert behavior) contained in *concourse* that lies hidden to be revealed by measurement operations. We believe this point underlies phenomenologists' (e.g., Giorgi, 1970) objections to attempts to apply an "objective" attitude of "natural science" (i.e., classical physics) to psychological events. The *concourse* of subjective (self)-communicability is saturated with potentiality. It is, as Brown (1988) put it, the "quantumstuff" of a science of subjectivity" (p. 192). The measurement process is an indeterminant one insofar as nothing in *concourse* is "there" from which an observer can predict outcome in a cause \rightarrow effect manner. A particular *Q* methodological measurement process does proceed lawfully, and the end point is the actualization of specific potentiality as a result of a convergence of component interdependent variables (for discussion of potentiality and actuality, see Kantor, 1983).

Kantor (1938, 1978) finds the principle of specificity a defense against absolutism and metaphysical license unjustified by events, thus of great advantage for scientific description. As applied to our derivation of subjective factor structure, specificity means that the outcome of *Q* methodological measurement is conditional on an entire set of particular operations. This is not to imply that we must abandon goals of generalizable knowledge. Specificity does suggest that general principles of event operation are most effectively uncovered by taking into account that all knowledge operations are about particularities derived under specific conditions. The specific factors

we extract from a particular set of operations are not the only ones that could be legitimately derived from the "quantumstuff" (*concourse*). There is no one absolutely "correct" outcome of *Q* methodological measurement.

Taxonomy is polythetic.

Until recently, classificatory strategies have been based on attempts to discern one or a few characters of a taxonomic group. In contrast, *Q* factor structure is polythetically derived. This means *Q* methodological classification identifies phenomenal codes on the basis of over-all similarity, multiple correlated characters, or "family resemblances" (Jensen, 1970). Although phenomenologists frequently describe their goal as one of describing the essential properties of phenomena, which might imply classification on the basis of key characters, Kuiken, Schopflocher, and Wild (1989) showed how the full complexity of phenomenological data is best handled by methods that allow for class membership to be constrained by multiple properties. When this is done, we find quantum indeterminacy in the data. Indeed, polythetic taxonomy seems to have been one of the implications of factor analysis from the inception of this class of multivariate tactic.

Categories are abductively or reflectively derived.

We eventually reach a point at which we must come to some conclusion regarding just what quantitatively-specified factors mean. Stephenson (1983) describes part of his behavior during this process thusly:

I like to spend a lot of time with each factor, statement by statement.... This gives me time to cogitate about statements....(p. 81)

Phenomenologists refer to "reflective reading" or the reflective method. As Giorgi (1970) puts it, "reflection is not speculation; the former is always directed towards the actual and is based upon it..." (p. 214). Admittedly, the method of reflection, or what Stephenson (1961) has referred to as abduction, following C. S. Peirce, is in need of methodological attention. However, Stephenson (1961) and Giorgi (1970) are recognizing an important class of scientific behavior that is not covered by conventional categories of deduction and induction. Abductory reasoning seems to be consistent with field/system views (e.g., Plas, 1986) in which we look for commonality of pattern and redundancies over

seemingly disparate phenomena. Reasoning is not linear as with deduction and induction, but recursive.

Consistent with the principle of quantum indeterminacy, there are no absolute criteria of "right" and "wrong" behind the method of reflection or abduction, a state of affairs that has been associated with no small number of problems for phenomenologists themselves. And scientists holding to "natural science" methods (classical physics) tend to find reflection abhorrent. But, as we have tried to indicate, it appears that subjectivity is best not viewed as following principles of classical science.

Selecting Q Items

The most obvious feature of the Q methodological procedure is the participants' active manipulations of what are generically referred to as q items. Participants operate on (sort) q items according to rules that we will discuss in the following section. At this point, we will overview some considerations for selecting q items.

Q items can be anything that participants can interact with from their point of view. Although, they can be in the form of pictures, things, or statements, we will concentrate on the latter here. The investigator derives the q-item sample from the concourse. Because concourse has no fixed limitation on the number of elements it contains, most procedures for selecting q items begin with a sample from concourse that is further reduced in size according to particular considerations.

One source of q items is any available body of oral or written material on a topic. For example, in researching a psychologist's stance on methodology, one might consider using statements from the literature ("the experimental method is necessary to determine cause and effect," "experimentation is overrated," "careful study of single cases is the key to understanding"). We have developed a method of selecting q items that is based on phenomenological research as presented in Kruger (1981). We find this method is flexible (it can be applied with varying degrees of completeness), and it is compatible with Brown's (1980) guidelines.

Participants.

The investigator can rely on a single participant or on multiple participants as the source of q items.

Interview.

Data collection begins with a spoken interview on the focal topic. It is tape-recorded and subsequently transcribed. The interview should be open-ended and as non-directive as possible. Interviewers must avoid as best they can anything that might "lead" the interviewee. A structured interview would introduce too many of the researcher's assumptions. Thus, we use a semi-structured interview, with questions designed to help participants verbalize their experience.

Extracting q items.

The process of reducing the protocol begins by identifying natural meaning units (NMUs). These are statements that express a single aspect of the participant's experience. Four NMUs are indicated in the following portion of a protocol when the participant was asked, "What's it like when you're sad? How do you feel?"

A little bit withdrawn./₁ Probably not too much of a behavioral difference./₂ Not as much energy./₃ Generally won't be doing any of those up behaviors./₄

Next, the NMUs are reduced as much as possible while retaining the participant's meaning. The above four were reduced as follows:

- 1 Withdrawn feeling.
- 2 Feelings of sadness not obvious to others.
- 3 Reduced energy.
- 4 When sad, I don't exhibit behavior that would be indicative of someone being in a particularly good mood.

As the "reduction" of Item 4 indicates, communication of meaning in the reductions takes priority over mere quantity.

Items 1-4 are candidates for q items, subject to the specifics of the research undertaking. If we want to develop a q sample from multiple participants, we would pool potential q items from all, examine the set for redundancies and breadth of coverage, and reduce it to the size of q sample we have decided to use.

Number of q items.

There is no fixed answer regarding the number of q items that is most desirable to address a particular question. Certainly, the larger the q sample, the more time it takes participants to manipulate them. We have obtained satisfactory results with 24 items. For certain purposes, 60 items may be desirable. It seems reason-

able that if one is working with a very small number of participants (e.g., clinical cases), then an item sample size at the high end might be considered. Because the q item sample is a sample from course we must be sensitive to its representativeness.

Structuring the q sample.

Qmethodologists have identified two techniques for selecting q items. Unstructured samples are formed without systematic consideration given to the inclusion of different meanings. Of course, the principle of representativeness is taken into account. But with structured samples different meanings (points of view, perhaps theories) are explicitly organized according to principles of single-factor or multiple-factor variance design. For example, in studying psychologists' orientations, items might be selected in a 2 x 2 factorial design on the basis of two "effects" such as world views (lineal/mechanical, field/system) and science-practice (basic science, applied). This would entail including in the sample equal numbers of q items that fall into each of the four cells and thus constrains the number of items to multiples of four. Brown (1980) maintains that structured sampling is a means for investigators to be explicit about their own biases. This idea is intriguing because it is directly consistent with phenomenologists' tactic of bracketing.

Once we have formed the q sample, we are ready to arrange and administer the next phase of data collection. We take up this in the following section.

Administering Q Sorts

Now we address procedural matters and bring up some of the options available to the Qmethodological investigator.

In most cases, the q items can be placed on cards that the participant will actively manipulate. The q sort is the basic procedural unit. A completed q sort consists of a distribution of q items. The items are distributed such that some are ranked "most unlike my point of view," or "most unlike me," or "least preferred," on one end of the distribution. Other items are ranked "most like my point of view," or "most like me," or "most preferred," on the other end of the distribution. Still other items are ranked somewhere between these points.

More precisely, the investigator must decide on particular details of the distribution. The typical distribution is quasi-normal, thus it is said that the participant sorts the items into a "forced-normal"

distribution. The investigator must decide how many levels (piles) to use in the distribution. A distribution of 54 q items might consist of 11 piles with 8 q items assigned to the "neutral" pile (Pile 6, going from left-to-right), and 6, 5, 5, 4, and 3 items in the 5 piles, respectively, on either side of Pile 6.

We ask the participant to form the distribution of q items by first identifying those that apply to the left-most pile (e.g., "most unlike my point of view"—Pile 1 in the above example), and next identifying those that apply to the right-most pile (e.g., "most like my point of view"—Pile 11 in the above example), or vice versa. Next, they are asked to select the q items out of those remaining that apply to Pile 2 (now "most unlike"), then those that apply to Pile 10 (now "most like"), and so on until the last remaining q items are placed into the "neutral" pile. In most cases, the participant actively places the q items into piles on a table using a distribution marker or aid that indicates the Pile numbers, number of items for each pile, and anchors.

The data recorded from each q sort is the pile number of each q item. This is easily accomplished by assigning each q item a number from 1-n (the total number of q items).

A single q sort performed by a single individual is not particularly informative. Data analysis begins with correlations between sorts, and at least 6-7 sorts, usually more, are required for useful information. There are two basic ways to collect multiple sorts; they can be combined in a single study. First, we can collect sorts from several participants, in which case our analysis will reveal individuals who form "families" on the basis of commonalities in their sorts. Second, and perhaps of most interest from a phenomenological perspective and of most relevance for clinical applications, we can have the same individual do multiple sorts under different conditions of instruction. In this case, factors will indicate *conditions of instruction* that bear a family resemblance to one another on the basis of subjectively shared attributes. It is also possible to have the same individual do multiple sorts over time (e.g., days) under the same conditions of instructions. With this procedure, we can identify sorts (e.g., days) that reflect commonalities in lived experiences.

We find it useful to think of the "baseline" condition under which a q sort is made to be something like "Me now" or "Myself." This is a common rule, or condition of instruction, we ask participants to follow

when distributing q items. Therefore, if someone sorts particular q items under this condition of instruction over a period of several successive days, we stand a chance of learning something about how the individual lived different days. However, we can increase the degree to which we probe into subjectivity by using several conditions of instruction. Most generally, we select conditions of instruction on the basis of (a) which facets of a question we believe might be informative if explored, (b) hypotheses (theories) that suggest particular conditions should be important, and (c) biases in the sense of phenomenological methodology.

Finally, we make a procedural suggestion that to our knowledge has yet to be made. Because q sorting is always a series of active acts of preference, we find no barriers to applying Q methodology to any organism, including nonhumans. Why should study of subjectivity be restricted to humans?

Data Analysis and Interpretation

After the desired q sorts have been collected, they are ready for analysis. Covariation is the fundamental concept underlying analyses of sorts, and it is assessed by determining correlation coefficients. Because each sort has the same distribution properties, the bounds of the correlations are never constrained. Furthermore, the outcome of the sort is taken at face value; there is no need to consider whether a sort is a "true sort," i.e., a sort that would be revealed if no measurement ever were to intrude. Two individuals with similar experiences under a common condition of instruction should sort q items with similar (correlated) distributions. If an individual performs sorts over several days, days with highly correlated sorts supposedly represent more commonality of experience than do days whose sorts correlate only minimally. Although all analyses begin with a correlation matrix, the interpretative problem is one of detecting meaningful patterns in the intercorrelations. Factor analysis is a data reduction technique for revealing patterns in correlation matrices. More particularly, factor analysis is a family of quantitative procedures that removes redundancy from a collection of correlations and represents the variables with a smaller set of derived variables or factors. It is these factors that we treat as phenomenal codes.

Thanks to the availability of computerized factor analysis programs, it is easy to obtain factors. However, Q methodology does bring up some unique considerations at the stage of factor analysis and

interpretation. We touch on these, as well as on some general considerations of factor analysis that might be helpful to one just getting started.

First, there are several methods for extracting factors from the correlation matrix. Stephenson advocated the *centroid* method apparently because its inherent indeterminacy is consistent with the quantum foundations of Q methodology. But initial factor extraction by *principle components*, readily available in many software packages, seems to produce factor structures comparable to those obtained by the centroid method.

A difficult question to answer in the initial extraction of factors is when to stop factoring, i.e., how many factors does one accept? One rule is to accept no factor that accounts for less variance in the data than would one variable; this rule relies on *eigenvalues* which represent solutions to equations which will reproduce correlations between the sorts. Another rule that is used in determining the number of factors from principle components analysis is the *scree test*. This uses a plot of the eigenvalues in the data as a function of successive factors extracted (the first factor accounts for the largest amount of the variance, the second one for the next largest amount, and so on). The curve will be a negatively accelerated, decreasing one, and the scree test criterion accepts factors just prior to the levelling of the curve.

There are other criteria as well. In line with the quantum undercurrent apparently contributing to the development of factor analysis itself, factor analysis requires no absolute criteria for selecting the number of factors extracted. *Indeterminacy* reigns, measured is not independent of measurer.

Factors are defined in terms of how they account for variance in the correlation matrix. Recall, the process is one of polythetic taxonomy. We would like to end up with a factor structure (categories) that partitions the correlation matrix into as many polythetically distinctive factors as necessary to adequately describe the data. To include too many factors runs the risk of imposing an esoteric category specific to an individual, an occasion, or a condition of instruction. How we attend to the number of factors extracted will, therefore, bear on whether or not we include relevant factors and exclude nonessential ones. The matter of the distinctiveness of categories is addressed by *factor rotation*.

Upon initial extraction of factors, each variable (q sort) forming the correlation matrix will have a *factor*

loading (saturation) on each factor. The loading of a variable on a factor represents the correlation between the variable (q sort) and the derived factor. Note what this means. We use factor analysis to reduce the correlation matrix (of q sorts). If some members of a set of q sorts have high factor loadings on Factor A and low factor loadings on Factor B, then the members of this set fall into a category defined by Factor A, and they *do not* fit into the category defined by Factor B. If some q sorts of a set have high correlations with a particular factor, they share something in common. Given the procedures by which the q sorts were obtained, we take the commonality to pertain to what we often refer to as meaning or subjectivity. Just how we determine *what* a particular factor means is discussed below. But first, we go back to factor rotation.

Ideally, we would conduct a factor analysis of the q sort correlation matrix and end up with a number of factors far less than the number of q sorts. And each factor would be defined by a distinctive set of q sorts whereby each q sort in a set would load highly on one factor and load little, if any, on all other factors. Although this scenario is not quite "ideal" for Q methodology, let us assume it is (until "simple structure" comes up below). The initial extraction of factors (e.g., via the centroid method or principle components method), in which we decided on how many factors to accept, is not likely to yield even an approximation to the ideal pattern from a taxonomic standpoint. That is, variance in the correlation matrix will not be partitioned in such a "neat" way as we would like. A common result is that several sorts load moderately on more than one factor. Thus, although the composite factors are "accounting for variance" in the data set, interpretation of them is difficult because their boundaries, as specified by q sorts, are too obscure. Factor rotation is a way of *redistributing* the variance in the correlation matrix such that we obtain a clearer definition of the factors. Factor rotation does not involve altering the number of factors, nor does it change the relationships among the q sorts. Factor rotation is akin to altering our perspective, point of view, or a reference level. As Brown (1980) put it, after rotation "the sum total of reality remains the same ... just as the distance between Moscow and Washington is the same no matter where we might draw the equator or the International Date Line" (pp. 226-227).

Factor analysts have developed several methods for rotating factors. Of particular importance for Q

methodology is whether rotation is completely statistical or based on a combination of statistical criteria and the investigator's judgments. Today's computerized factor analysis packages make statistical rotation as easy as a few key strokes. Programs prepared especially for Q methodological work (see below) contain the *varimax* type of rotation. Varimax provides a rotated factor structure that works toward *simple structure*. Simple structure seems to be the most straightforward approximation to a factor structure from a taxonomic perspective because, at its most elegant level, each q sort would define one factor only.

Statistical rotation clearly has a place in Q methodology. However, if we are to study subjectivity even more fully from a modern quantum and phenomenological perspective, we will want to consider rotation that uses both statistical and judgmental criteria (*judgmental, hand, or graphical* rotation). Recall phenomenologists' concern about the investigator's biases and attempts to handle this problem by bracketing. (*Interbehavioral comment:* Noteworthy it is that only an area much maligned for being less than satisfactorily scientific by many mainstream psychologists has explicitly confronted biases in the constructional process of psychological science and has attempted to do something about it. Meanwhile, interpretations in leading journals, textbooks, and classrooms remain permeated with the unrecognized and unpurged biases of pre-scientific and cultural influences.) With judgmental rotation the investigator examines graphic representations of the loadings of q sorts on two factors at a time (in *two-factor space*) and manually moves axes used to identify factors (but not the relationships among the q sort variables) to alter the loadings of q sorts on factors. Instead of achieving rotated factor structure by relying solely on statistical criteria, this can be attained by using one's judgments concerning which point of view to take. In this way, we can control for biases, i.e., examine the data from different points of view.

If judgmental rotation is acceptable, the implication is that simple structure may not always be the most desirable criterion for final factor structure, for judgmentally we may find it valuable to examine the factor structure from a perspective (by having certain q sorts define a particular factor) that is not justified by only statistical criteria. This seems to be a "revolting development" from the standpoint of taxonomy, where we are not aware of even polythetic taxonomists who have endorsed "subjective" criteria (but perhaps some

have). However, Brown (1980) expressed the situation well when he argued that simple structure is an "idealization more akin to a reconstructed logic [as opposed to logic-in-use which is specific], or to an absolute interjected into a situation for which it may be inapplicable" (p. 236). Judgmental rotation and willingness to accept other than simple structure in factor structure are consistent with the observer as inseparable from observed, the quantum relation of indeterminacy, the specificity principle, the abductive logic of Q methodology, and modern phenomenology.

The final stage in typical phenomenologically-oriented Q methodological work is the interpretation of the factors. The question of what each means is at issue. It is easiest to do this when the q items are statements as opposed to pictures. *Factor scores* are used in factor interpretation. A factor score for each q item is calculated for each factor. Essentially a factor score is a weighted pile number (e.g., -5 = "least preferred," 0 = "neutral," +5 = "most preferred," where for ease of interpretation Pile numbers 1-11 have been transformed to -5 through +5, respectively) that expresses where the q item is ranked for the factor (recall factors are statistically-formed, representative q sorts). In interpreting factors we examine the content of statements with more extreme factor scores on the factor. It is more correct to say that we examine the entire pattern of factor scores on the factor, but the extreme scores are especially noteworthy. Actually, the extraction of meaning, is very much a reflective process— using factor scores (see above section on assumptions for extracting factors).

Anyone considering doing Q methodological work is advised to obtain a program that contains factor score routines and a judgmental rotation option. We are familiar with two such programs. One is Michael Stricklin's PCQ prepared for IBM-compatible PC applications. PCQ can be obtained by contacting Michael Stricklin, 3234 South 17th Street, Lincoln, NE 68502 (e-mail: MSTRICK@UNLINFO.UNL.EDU). Steven Brown directed the preparation of Q-METHOD, with versions that can be run on IBM mainframes or VAX systems. Q-METHOD can be obtained by sending the command GET Q-METHOD PACKAGE (for the IBM version) or GET VAXQ PACKAGE (for the VAX version) as the sole content of an e-mail message addressed to LISTSERV@KENTVM.KENT.EDU.

Conclusion

We have attempted to say something that might help interbehaviorally-oriented psychologists better understand Q methodology. Despite Stephenson's stress on interbehavioral psychology as foundational in Q methodology, most of the latter literature contains no hint of interbehavioral thinking. And few of those who take the interbehavioral literature as valuable seem to have examined Q methodology. A small bridge at present connects the two realms.

It might be appropriate to say a few words about the *operant* construct in relation to Q methodology. Indeed, the operant has such a central place in Q methodology that the only periodical devoted to Q is entitled *Operant Subjectivity*. We have found it difficult to determine just what Q methodologists find so valuable in the concept of the operant. The Skinnerian operant has not taken mainstream behavior analysis anywhere near to quantum theory. A prime example here is Skinner's view of private behavior as covert ("behaving weakly") and subject to observation by amplification methodology such as bio-amplification and "think aloud" instructions. We doubt that physical scientists would take quantum measurement to be so revolutionary if it were merely a way of amplifying events in this sense. The operant turns out to be a multi-headed construct. Beginning with a procedural distinction between Pavlovian and Thorndikian conditioning, to a purely inferential distinction of elicited-emitted, through response classes of "non-elicited" "response instances, and behavior that is a function of (maintained by) consequences (reinforcers), the operant is difficult to pin down. In one place, Brown (1980) states that behavior of interest to Q methodologists "is operant because it exists naturally within a particular setting" (p. 4). This does not help us determine how the operant is so important in Q methodology. Our hypothesis is that the operant does contain a germ of quantum psychology (related to the theoretical notion of not being elicited and formed antecedently) but that Stephenson and Brown appreciate this, not the typical psychologist who favors that aspect of psychology in which the operant is prominent. If the latter ever discover what Stephenson and Brown have and follow through on it, we will witness a revolution in behavior analysis. In the meantime, we probably are advised not to confuse operant subjectivity with what is typically associated with operant psychology.

Operant Subjectivity, the journal of the International Society for the Scientific Study of Subjectivity,

is a valuable resource for Q methodology. Subscription information can be obtained from the Editor, Dan B. Thomas, Department of Social Sciences, Wartburg College, Waverly, IA 50677-1003 (email: thomas@wartburg.edu). Another resource is Q-METHOD, an electronic-mail network. To subscribe, send the e-mail message:

SUBSCRIBE Q-METHOD YOUR NAME
to LISTSERV@KENTVM.KENT.EDU. Brown's (1980) *Political Subjectivity: Applications of Q Methodology in Political Science* is the best resource for theoretical and technical guidance. McKeown and Thomas's (1988) monograph covers Q methodology in a condensed manner and is recommended.

References

- Brown, S. R. (1980). *Political subjectivity: Applications of Q methodology in political science*. New Haven, CT: Yale University Press.
- Brown, S. R. (1988). Commentary [on "Quantum theory of subjectivity"]. *Integrative Psychiatry*, 6, 191-193.
- Frank, P. (1955). Foundations of physics. In O. Neurath, R. Carnap, & C. Morris (Eds.), *Foundations of the unity of science* (Vol. 1). (pp. 423-504). Chicago, IL: University of Chicago Press.
- Giorgi, A. (1970). *Psychology as a human science*. New York: Harper & Row.
- Giorgi, A. (1975). Convergences and divergences between phenomenological psychology and behaviorism: A beginning dialogue. *Behaviorism*, 3, 200-212.
- Hawkins, A., & Sharpe, T. (Eds.) (1992). Field systems analysis: An alternative for the study of teaching expertise [Monograph]. *Journal of Teaching in Physical Education*, 12(1).
- Hawkins, A., & Sharpe, T. (1993). Technology driven research methodology: Behavioral and interbehavioral perspectives. *The Interbehaviorist*, 21, 4-12.
- Jensen, D. D. (1970). Polythetic biopsychology: An alternative to behaviorism. In J. H. Reynierse (Ed.), *Current issues in animal learning* (pp. 1-31). Lincoln, NE: University of Nebraska Press.
- Kantor, J. R. (1938). The nature of psychology as a natural science. *Acta Psychologica*, 4, 1-61.
- Kantor, J. R. (1978). The principle of specificity in psychology and science in general. *Revista Mexicana de Analisis de la Conducta*, 4, 117-132.
- Kantor, J. R. (1983). *Tragedy and the event continuum*. Chicago, IL: Principia Press.
- Kruger, D. (1981). *An introduction to phenomenological psychology*. Pittsburgh, PA: Duquesne University Press.
- Kuikan, D., Schopfloch, D., & Wild, T. C. (1989). Numerically aided methods in phenomenology: A demonstration. *Journal of Mind and Behavior*, 10, 373-392.
- Lichtenstein, P. E., (1988). Interbehavioral psychology and Q methodology. *Operant Subjectivity*, 11, 53-61.
- McKeown, B., & Thomas, D. (1988). *Q methodology*. Newbury Park, CA: Sage Publications.
- Merleau-Ponty, M. (1963). *The structure of behavior* (A. L. Fisher, Trans.) Boston, MA: Beacon Press. (Original work published 1942)
- Plas, J. M. (1986). *Systems psychology in the schools*. New York: Pergamon Press.
- Pronko, N. K. (1983/1984). A vote toward the obsolescence of the term "covert." *The Interbehaviorist*, 12 (1), 11.
- Ray, R. D., & Delprato, D. J. (1989). Behavioral systems analysis: Methodological strategies and tactics. *Behavioral Science*, 34, 81-127.
- Sharpe, T. (1991). Interbehavior: A teacher education perspective. *The Interbehaviorist*, 19, 10-19.
- Skinner, B. F. (1974). *About behaviorism*. New York: Alfred A. Knopf.
- Stephenson, W. (1953). *The study of behavior: Q-technique and its methodology*. Chicago, IL: University of Chicago Press.
- Stephenson, W. (1961). Scientific creed—1961: Abductory principles. *Psychological Record*, 11, 9-17.
- Stephenson, W. (1982). Q-methodology, interbehavioral psychology, and quantum theory. *Psychological Record*, 32, 235-248.
- Stephenson, W. (1983). Against interpretation. *Operant Subjectivity*, 6, 73-103.
- Stephenson, W. (1988). Quantum theory of subjectivity. *Integrative Psychiatry*, 6, 180-187.
- Stephenson, W. (1988/1989). The quantumization of psychological events. *Operant Subjectivity*, 12, 1-23.
- Taylor, P., Delprato, D. J., & Knapp, J. R. (1994). Q methodology in the study of child phenomenology. *Psychological Record*, 44, 171-183.
- Verplanck, W. S. (1970). An "overstatement" on psychological research: What is a dissertation? *Psychological Record*, 20, 119-122.
- Verplanck, W. S. (1983). Preface. In N. W. Smith, P. T. Mountjoy, & D. H. Ruben (Eds.), *Reassessment in psychology: The interbehavioral alternative* (pp. xi-xxv). Washington, DC: University Press of America.

Response to Smith, Delprato and Knapp

Q Methodology and Interbehavioral Phenomenology

Steven R. Brown
Kent State University

Dennis Delprato, John Knapp, and Noel Smith have performed an important service by bringing William Stephenson's Q methodology to the direct attention of interbehaviorists, and by indicating its connection to major intellectual streams in psychology, especially phenomenology. Stephenson maintained a lifetime interest in phenomenology, beginning with his early work with David Katz (Katz & Stephenson, 1937) and including his critique of that brand of phenomenology advanced by Snygg and Combs (1949; Stephenson, 1953, p. 243) and relating his self theory to Koffka (Stephenson, 1979), who was the first psychologist he ever met, while a student of physics at the University of Durham in the mid-1920s. And finally, a year before his death, he showed how Husserl's phenomenology was compatible with quantum-theoretical features of Q methodology (Stephenson, 1988). But if Stephenson felt himself in league with the phenomenologists, he felt no less so with Kantor and interbehaviorism (Stephenson, 1982, 1984, 1987).

As Noel Smith documents, phenomenology has had great difficulty in separating itself from substantive categories such as consciousness, and it was only in respect to this difference that Stephenson (1979) took issue with Koffka: "Our theory of self is developed out of Koffka's, but we forgo perceptual concepts for those of communicability" (p. 8). We are not conscious of something, then, nor do we hold a perception of it per se; rather, we are communicable about it, which means that the playing field is in the open air of confrontable behavior (mainly linguistic) rather than the deep recesses of covert mental activities. It is this that renders a naturalistic science of subjectivity possible, and it is this aspect of Stephenson's work, among others, that some interbehaviorists have found attractive.

So many important points have been raised in the preceding papers that one cannot hope to address them all. Perhaps the best tack is to present a brief case study illustrating a few of the main ones.

A point of departure is provided by a line of research on nursing care begun by Larson (1987), who administered her caring Q sort (CARE-Q) to nurses and their patients, all of whom were asked to provide their conception of what constitutes good provision of health care. Note that this is a conceptual exercise that engages the higher intellectual capacities based on a priori knowledge. Procedurally, Larson's Q-sorting operation consists of ranking a set of statements from most indicative of good care (+4) on down to those most counter-indicated (-4), and the statements in this instance were of the following kind: "Gives the patient's treatments and medications on time," "Tells the patient of support systems available," "Knows when to call the doctor," and the like. Larson then proceeded to calculate an average score for each of the statements and then to examine item-by-item differences between nurses and patients.

We will return to Larson's averaging subsequently. For the moment, however, and with respect to her asking nurses and patients to provide their general conceptions of care, recall Noel Smith's reference to the "Purkinje effect," named after the Czech physiologist J.E. Purkinje, one of Goethe's devoted followers, who in 1825 reported the "fact" that yellows diminish in brilliance relative to greens as illumination declines. This fact runs contrary to what is known – e.g., that yellow and green flowers do not really change brilliance as the sun sets – but Purkinje was a remarkable observer in the tradition of Goethe and was able to put aside what he knew to be true objectively so as to enable new phenomena to make an impression and to register their own factualness. It is this observational naivete that is central to phenomenology; and by extension, what is important about nursing care is not simply how it is conceived in a factual or logical sense, as is implied in Larson's approach, but in how it shifts phenomenologically with alterations in the psychosocial field, analogous to shifts in the colors of flowers with changes in sunlight.

The contextual nature of nursing care can be seen most readily by "ascending downward" from the group averages which Larson employs to the specificity of the single case (Brown, 1981; Kantor, 1978; Stephenson, 1974). The event was a relatively minor surgery of my own requiring only a day or two of hospitalization. Using a shortened version of Larson's CARE-Q, I provided Q-sort representations of the kind of care which I experienced at the hands of the surgeon and the three nurses with whom I came into contact (one Q sort for each of the four). I also reflected back on another hospitalization when I was a college student, and also provided a Qsort of the kind of care provided by my mother when I was sick as a youngster. In addition, Q-sort representations were provided for each of Larson's nurse and patient perceptions. Duly factor analyzed, the structure was as shown in the following table.

Conditions	Factors		
	1	2	3
Surgeon	X		
Nurse 1	X		
Nurse 2			
Nurse 3		X	
Student	X		
Mother			X
Larson's nurses			X
Larson's patient			X

X=significant loading

Before continuing, it is important to take account of how the above comports with Kantor's (1959, p. 16) formula for a psychological event:

$$PE = C (k, sf, rf, hi, st, md).$$

The stimulus function (sf) consisted of the actions of the doctor, nurses, and others, and the response function (rf) consisted of my reactions; combined, sf and rf comprise the behavior segment. (A total picture would also include Q sorts by the doctors and nurses themselves.) The Student and Mother conditions bring in the historical function (hi). As to the setting (st), suffice it to say that Nurse 1 administered a painful but necessary procedure, but with the patient's approval; and that Nurse 2 sought to administer the same procedure without authorization, and would have had Nurse 3 not intervened. The medium (md) through which the interactions took place included not only the light and air which made sight and sound possible, but

also the social and political forces which brought stimulus and response functions together in this particular configuration. The situation was unique (k) and interactive (C). Factor analysis transforms the above functions into operant factors (Stephenson, 1982), hence:

$$PE = C (k, \text{factors } f_1, f_2, f_3)$$

Factors 1, 2, and 3 above are all indicative of kinds of care, and this is revealed in those statements that received the highest scores:

(Factor 1, Surgeon and Nurse 1): Was honest with me about my condition.... Gave me good physical care.... Was well organized.

(Factor 2, Nurse 3): Knew when I had had and acted accordingly.... Whenever possible, included me in the planning and management of my care.... Was perceptive of my needs, and acted accordingly.

(Factor 3, Mother and Larson's concepts): Listened to me.... Talked to me.... Touched me when I needed comforting.

The first factor is therefore professional (and the patient's reaction one of assurance); the second is deferential (for which the patient feels gratitude); the third is warm and intimate (the patient feels sympathized with). It is, of course, interesting to see that Larson's nurses and patients, when asked to give their conceptions of good care, do so in such a way as to correlate with Mother, the archetype of good care. Larson's work therefore implicates only one aspect of care from among a wider array, as can be easily demonstrated even when $N=1$.

Delprato and Knapp, in their article, wonder about the importance of the operantcy principle in Q methodology and properly distinguish it from any bio-amplification that might be intrinsic to Skinner's methodology, except in the more generic sense of "rendering manifest." Qsorts are not the result of introspection, but (in this case) a reporting of hospital care as naively experienced. Larson's CARE-Q instrument is built up of structured effects (accessibility, facilitating, comforting, anticipating, etc.), but none of these emerges as an effect, any more than do the components of Kantor's psychological event. The Q factors have their own reality, however, much as Purkinje's flower garden, and it is the operantcy of these subjective effects — of assurance that one is in competent hands, of gratitude that one is being taken into account, and of warmth at being understood — that are as real as the increasing brilliance of greens and blues as the sun goes down.

The forgoing will come as no surprise to Professors Delprato, Knapp, and Smith, for they have already joined the ranks of those artists, writers, and scientists who have appealed to us to be honest with nature and to set aside our theoretical claims so as to be able to see the world in its own terms before trying to explain it in ours. The value of Q methodology in this regard is that it takes its measures by placing the Q sort in the hands of the person to be understood, thereby giving us relative assurance that the categories which emerge will have some relevance to that person. This, too, is a form of care.

References

- Brown, S.R. (1981). Intensive analysis. In D.D. Nimmo & K.R. Sanders (Eds.), *Handbook of political communication* (pp. 627-649). Beverly Hills: Sage.
- Kantor, J.R. (1959). *Interbehavioral psychology* (2nd ed.). Granville, OH: Principia Press.
- Kantor, J.R. (1978). The principle of specificity in psychology and science in general. *Revista Mexicana de Analisis de la Conducta*, 4, 117-132.
- Katz, D. & Stephenson, W. (1937). Experiments on elasticity. *British Journal of Psychology*, 28, 190-194.
- Larson, P.J. (1987). Comparison of cancer patients' and professional nurses' perceptions of important nurse caring behaviors. *Heart & Lung*, 16, 187-193.
- Snygg, D. & Combs, A.W. (1949). *Individual behavior*. New York: Harper.
- Stephenson, W. (1953). *The study of behavior*. Chicago: University of Chicago Press.
- Stephenson, W. (1974). Methodology of single case studies. *Journal of Operational Psychiatry*, 5(2), 3-16.
- Stephenson, W. (1979). The communicability and operantcy of self. *Operant Subjectivity*, 3, 2-14.
- Stephenson, W. (1982). Q-methodology, interbehavioral psychology, and quantum theory. *Psychological Record*, 32, 235-248.
- Stephenson, W. (1984). Methodology for statements of problems: Kantor and Spearman conjoined. *Psychological Record*, 34, 575-588.
- Stephenson, W. (1987). Q methodology: Interbehavioral and quantum theoretical connections in clinical psychology. In D.H. Ruben & D.J. Delprato (Eds.), *New ideas in therapy* (pp. 95-106). Westport, CT: Greenwood Press.
- Stephenson, W. (1988). William James, Niels Bohr, and complementarity: V. Phenomenology of subjectivity. *Psychological Record*, 38, 203-219.

Response to Smith, Delprato and Knapp

A Reader's Comments

Roger Ray
Rollins College

The combination of Smith's article on "Phenomenological Psychology" and Delprato and Knapp's article on "Q Methodology and Interbehavioral Description" makes a very important contribution to the Interbehavioral literature. Together, these articles articulate several important points of convergence among what many researchers would consider disparate approaches, especially phenomenological, Q-Methodological, and Interbehavioral philosophies.

By articulating philosophical convergences within the context of measurement and description problems, Delprato and Knapp especially build a very important methodological bridge between these approaches as philosophy and their implications for empirical psychology. It is no small task to bring reliable order to subjective experiences that are concomitant with the more overt dimensions that are so much more easily monitored by "objective" observers. Nor is it a small task to articulate the role of the observer, as Q-methodology allows one to do. The authors are to be congratulated for the success of their efforts to bring this important methodology to those who would aspire to better understand how to accomplish subjective measurement in interbehavioral research.

I would, however, like to encourage these authors to return with additional articles which might illuminate some remaining questions. The questions I have in mind relate to how one comes closer to tracking some of the important temporal nuances of interbehavioral events. In my first article introducing a behavioral systems approach (Ray & Brown, 1975), Brown and I wrote,

"As one first views the living organism, he is struck by the most obvious and often overlooked fact that behavior is a continuous and somewhat integrated stream rather than a series of temporally spread and segmented events....the behavioral measurement process is largely a problem of analog-to-digital conversion, which many experimental situations oversimplify." (Ray & Brown, 1975, p 460)

This observation seems as true to me today as it was nearly twenty years ago, despite continuous attempts by myself and others to find better means for converting the analog to the requisite digitization of language and numbers (be they factor structures or formal linguistic descriptions). The strength of Q methodology clearly lies in its ability to create windows which allow us to glimpse a subject's view of events. One weakness is how temporally spaced those windows are, both from the experience we are glimpsing and from other temporal windows into the same stream. By the time the intrusion of measurement takes place, the event being measured has long passed, and we are much more likely to measure only the remembrance of the original events or even the experience of being measured as we are the subjective experiences we wish to infer with our factor loadings.

I should caution readers not to misinterpret me here. I am not suggesting there is no place for questioning subjects, whether formally or informally. And I especially like the prospects of Q-methodology as a means for making such inquiries. After all, how are we to gather even the simplest of subjective observations if we don't stop the subject and ask, either implicitly or explicitly, in some way?

But I sometimes worry that we do serious damage to the events themselves, much less the continuity of the stream of such events (and the stream of the subject's consciousness of those events), when we ask subjects to reflect on them after-the-fact. In these instances, measurement is now the stream of behavior in progress, not the stream that most researchers intend to measure.

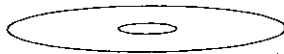
Interestingly, that is one of the core problems articulated by quantum indeterminacy. The problem is much the same as not being able simultaneously to know the position and the velocity of matter because we intruded with the light necessary to illuminate it. That doesn't lead us to despair, of course. It only cautions us that we know one piece of a very complex

puzzle, not the full picture.

Imagine if we had to use the current technology of Q-sorts to measure the temporal dynamics and nuances of subjective experiences created by sexual intercourse—from foreplay, through heightened arousal into orgasm and beyond. In doing so, one might begin to appreciate why after-the-fact questions of “was it as good for you...” become more the elements of comedy, not serious digitizations of the analog process. The temporal windows, both in terms of windowed sampling rates and sample window durations, are just all wrong for the process. But there surely are many experiences with sufficient stability

and duration to allow for quite meaningful instructional interruptions. And Q sorts certainly offer a superior sophistication of procedure for gathering the data intended by such instructional interruptions. What I’m now eagerly awaiting is for Delprato to help us understand which is which by articulating this continuum of inappropriate-to-appropriate event-to-representation-of-event transduction windowing and its implications for using Q-sorts. And while he’s at it, could he help me sort out the factor loadings which I can use to describe the many nuances of satisfaction and dissatisfaction with a colleague’s writing? That would almost certainly improve my communications on such matters.

Books from CONTEXT PRESS



Sidney W. Bijou and Patrick M. Ghezzi
**Outline of J. R. Kantor's
*Psychological Linguistics***

A complete, point by point outline of Kantor's book, that makes it much more readily understood. Perfect for classroom use or as a quick way to introduce others to Kantor's approach.

Sidney W. Bijou, **Behavior Analysis of Child Development (Second Revision)**
An entirely new version of this classic text

Steven C. Hayes, Neil S. Jacobson, Victoria M. Follette, and Michael J. Dougher (Eds.), **Acceptance and Change: Content and Context in Psychotherapy**. The first volume to focus entirely on psychological acceptance methods from the point of view of modern empirical clinical psychology.

Linda J. Hayes, Gregory J. Hayes, Stephen C. Moore, and Patrick M. Ghezzi (Eds.), **Ethical Issues in Developmental Disabilities**. If you work with persons who have disabilities, you need this book.

Steven C. Hayes, Linda J. Hayes, Masaya Sato, and Koichi Ono, **Behavior Analysis of Language and Cognition**. A contemporary look at the nature of stimulus relations and verbal events, and their impact on cognitive activity.

Bernard Guerin, **Analyzing Social Behavior: Behavior Analysis and the Social Sciences**. Provides the first full coverage of the social sciences from the perspective of modern behavior analysis.

Steven C. Hayes, Linda J. Hayes, Hayne W. Reese, & Theodore R. Sarbin (Eds.), **Varieties of Scientific Contextualism**
Contextualism from soup to nuts

Sam Leigland (Ed.), **Radical Behaviorism: Willard Day on Psychology and Philosophy**
The wonderful thought of a man ahead of his time

Steven C. Hayes and Linda J. Hayes (Eds.), **Understanding Verbal Relations**. The best available book on equivalence and similar relational phenomena.

Linda J. Hayes and Philip N. Chase (Eds.), **Dialogues on Verbal Behavior**. Statements about verbal behavior from leaders in the field.

CONTEXT PRESS Order Form

Acceptance and Change

_____ paperback (ISBN 1-878978-19-5) \$34.95 _____ hardback (ISBN 1-878978-20-9) \$46.95

Analyzing Social Behavior

_____ paperback (ISBN 1-878978-13-6) \$39.95 _____ hardback (ISBN 1-878978-14-4) \$51.95

Behavior Analysis of Language and Cognition

_____ paperback (ISBN 1-878978-17-9) \$34.95 _____ hardback (ISBN 1-878978-18-7) \$46.95

Ethical Issues in Developmental Disabilities

_____ paperback (ISBN 1-878978-15-2) \$29.95 _____ hardback (ISBN 1-878978-16-0) \$41.95

Outline of J. R. Kantor's Psychological Linguistics

_____ paperback (ISBN 1-878978-11-X) \$12.95 _____ hardback (ISBN 1-878978-12-8) \$24.95

Varieties of Scientific Contextualism

_____ paperback (ISBN 1-878978-04-7) \$34.95 _____ hardback (ISBN 1-878978-05-5) \$46.95

Behavior Analysis of Child Development (3rd edition)

_____ paperback (ISBN 1-878978-03-9) \$19.95 _____ hardback (ISBN 1-878978-09-8) \$39.95

Radical Behaviorism: Willard Day on Psychology and Philosophy

_____ paperback (ISBN 1-878978-02-0) \$29.95 _____ hardback (ISBN 1-878978-08-X) \$49.95

Understanding Verbal Relations

_____ paperback (ISBN 1-878978-01-2) \$29.95 _____ hardback (ISBN 1-878978-07-1) \$49.95

Dialogues on Verbal Behavior

_____ paperback (ISBN 1-878978-00-4) \$34.95 _____ hardback (ISBN 1-878978-06-3) \$54.95

_____ Add shipping & Handling: \$3 for the 1st book, \$1 for each additional book

_____ If you live in Nevada or are shipping to a Nevada address *you must add 7% sales tax*

_____ Total ___ Check or M/O enclosed ___ Bill my:

MasterCard Visa Account # _____

Expiration Date _____ Signature (required) _____

Name _____

Address _____
(institutional address preferred)

City _____ State _____ Zip _____

Country _____

Checks should be made out to CONTEXT PRESS and should be mailed to:

CONTEXT PRESS, 933 Gear St., Reno, NV 89503
OR, BETTER YET, FAX YOUR ORDER TO 702-746-2013

THE INTERBEHAVIORIST

A Newsletter of Interbehavioral Psychology

Department of Psychology

University of Nevada

Reno, NV 89557-0062

