

ism, U Missouri, Columbia MO 65205), will be serving as program co-chair.

It is anticipated that the format will follow that of the previous two conferences: wine and cheese social Thursday evening, presentations Friday, banquet Friday night, and presentations until late Saturday afternoon. Recommended modifications are invited. More specific details will appear in the April issue of *OS*.

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## NEWS, NOTES & COMMENT

### *Recent and Forthcoming Scholarship*

William Stephenson (2111 Rock Quarry Rd, Columbia MO 65201), "William James, Niels Bohr, and Complementarity: I--Concepts," *Psychological Record*, 1986, 36, 519-527. *Abstract*: The concept of complementarity was introduced by William James in 1891, and by physicist Niels Bohr in 1927, the latter probably without knowledge of the former. The phenomena were experienced as "gaps" in thought, and by the experiential observation that thought is divisible into transitive and substantive parts, providing evidence of complementarity. The most obvious phenomenon of psychology, that of *thought*, therefore requires quantum-theoretical exploration. Bohr was fascinated by the principle of complementarity and of the possibility of a new epistemology based upon it.

William Stephenson, "William James, Niels Bohr, and Complementarity: II--Pragmatics of a Thought," *Psychological Record*, 1986, 36, 529-543. *Abstract*: Q-factor theory has close correspondences with quantum-theoretical concepts in physics. The observation by William James, separating transitive and substantive parts of thought, and identified by him as complementariness, calls for a quantum-theoretical basis for so-called "mind." Following the methodology suggested by James, the thought "Columbus discovered America in 1492" is subjected to Q methodology,

resulting in operant factors which are complementary to each other. The law of transformation of experience into operant factors is proof of quantumization of so-called "mind." Since we replace "mind" by communicability, the law applies to the latter. Complementarity applies to transitive thought, whence its significance in quantum theory, where observer and observed are conjoined in some self-referential form. Bohr's expectancy for a new epistemology based on the complementariness principle finds full support in Q methodology, applicable to all subjectivity. Similarly, there can be unity in science, provided objective and subjective parts are granted, each rooted in quantum theoretical concepts.

Dan Nimmo and Michael W. Mansfield, "The Teflon President: The Relevance of Chaim Perelman's Formulations for the Study of Political Communication," in James L. Golden and Joseph J. Pilotta (Eds.), *Practical Reasoning in Human Affairs: Studies in Honor of Chaim Perelman* (pp. 357-377), Dordrecht, Holland: D. Reidel, 1986. Philosopher Perelman's rhetorical theory is coupled with Q methodology and applied to understandings of politics as operantly defined. The Q sample ( $N=36$ ) was drawn from the first and more general of a seven-part article entitled "How Good a President?" (*Newsweek*, August 27, 1984). A P set of  $n=15$  was selected to represent Perelman's audiences--indifferents, apprentices, and experienced. Participants first provided their own viewpoints which, when factored, indicated two kinds of "beliefs accepted by the audience" (Perelman) prior to reading the *Newsweek* assessment. The first group, comprised mainly of indifferents, are favorable toward the President: "Reagan's presidency is very much a work in progress" (+5). The second group is largely critical: "As president, Reagan is neither especially knowledgeable nor well prepared for the most powerful job in the world" (+5). The respondents' reading of "How Good a President?" established "presence" (Perelman) in the sense that selected elements were endowed with significance through the focalizing of attention. Factor analysis of the Q sorts rendered after the reading revealed essentially the same two attitudes; however, two "apprentices" shifted from the negative to the positive appraisal. Both before and after the reading,

the "universal audience" contributes to a consensus on those Teflon items in the Q sample which indicate that President Reagan is dissociated from the failures of his own administration.

Wendy Rahn (Political Science, U Minnesota, Minneapolis MN 55455), "The Active Construction of Reality: A Schematic Interpretation of Attitudes Toward Family Farm Policy," American Political Science Association, Washington DC, August 28-31, 1986. *Abstract*: Political science has typically examined rural politics in terms of political behavior, neglecting the study of agrarian values and the role they may play in directing political behavior. This paper argues that the investigation of rural values should begin with attention to individual differences in political information processing. A theoretical framework for studying attitudes toward the current farm crisis and family farm policy is presented that explicitly incorporates notions of personal relevance and the involvement of the self in political cognition. It is hypothesized that the attitudes of farmers will differ in both structure and content from non-farming individuals. A Q-methodological survey of both farmers and non-farm subjects is used to evaluate the utility of an information processing perspective on agrarian values.

Richard B. Ulman and Doris Brothers, "A Self-Psychological Re-evaluation of Posttraumatic Stress Disorder (PTSD): Shattered Fantasies," *Journal of the American Academy of Psychoanalysis*, 1987(Apr), 15(2). Although not a Q study, this paper focuses on the "intersubjective" approach to treatment of post-traumatic stress disorder (PTSD). Ulman is a psychoanalytic psychotherapist in New York, and is affiliated with the Department of Psychiatry, New York Medical College, Valhalla NY 10595. He was co-author of "Psychoanalysis as a Hermeneutic Science and the New Paradigm of Subjectivity: A Prolegomenon," a paper read at the 1985 meeting of the International Society of Political Psychology and which endeavored to tie hermeneutics and Q methodology together. (His revised and expanded ideas on these matters will be presented at the July 1987 meeting of ISPP in San Francisco.) Ulman and Brothers are authors of the forthcoming *The Shattered Self* (Hillsdale NJ: Analytic Press).

Thomas R. Hensley (Political Science, Kent State U, Kent OH 44242-0001), Joyce A. Baugh and Steven R. Brown, "Testing Communication Theory in the Study of Judicial Impact: The 1986 Abortion Case," Southern Political Science Association, Atlanta, November 5-8, 1986. *Abstract*: A substantial amount of speculation has been offered regarding the importance of the communication of Supreme Court decisions, but little empirical research has been undertaken. Drawing upon the theoretical ideas set forth by Johnson and Canon (*Judicial Policies*, Congressional Quarterly Press, 1984), we have studied the United States Supreme Court's 1986 abortion decision of *Thornburgh v. American College of Obstetricians and Gynecologists* to assess whether communication variables are significantly related either to respondents' responses to the decision or to respondents' attitudes about abortion (as determined by Q method). We found little support for the hypotheses associated with communication theory. Instead, the key explanatory variable was respondents' prior attitudes regarding abortion.

Stuart Hill (Political Science, U California, Davis CA 95616), "A Theory and Test of How Citizens Evaluate Technology," Association for Public Policy Analysis and Management, Austin, October 30-November 1, 1986. A P set of 147 members of the general population (supplemented by 58 members of special interest groups) provided the basis for this comprehensive study of public decisionmaking with respect to the Diablo Canyon (California) nuclear power plant. With the assistance of 17 interviewers, Hill administered four separate Q sorts designed to highlight various features of his theoretical model: *Common orientation*, or *ideology* (e.g., "Nature should be valued for its own sake"), *procedural judgment* ("Decisions about this plant have been made too quickly"), *personal control* ("This project makes me more dependent on the expertise of others"), and *substantive effects* ("Future generations will have to contend with the wastes from this project"). Interviews with respondents were taped, cluster analysis was utilized to determine the extent of audience segmentation, and cluster memberships were entered into a path analysis which indicated perceived substantive effects to be the most important direct con-

tributor to a person's final evaluation of the Diablo Canyon project (as measured by a seven-point scale from strongly support to strongly oppose); procedural judgment and personal control also had strong impacts, independently and through perceived substantive effects; ideology (common orientation) impacted only indirectly, but was stronger for persons who were newly resident in the area. Concluding remarks focus on the importance of direct experience and the views of trusted others in understanding the role of political judgments in complex choices.

Stanley A. Mulaik, "Factor Analysis and Psychometrika: Major Developments," *Psychometrika*, 1986, 51, 23-33. This paper surveys the contributions to factor theory which have appeared in the pages of *Psychometrika*, including William Stephenson's "The Foundations of Psychometry: Four Factor Systems" (1936), which Mulaik says introduced Q-technique and influenced subsequent approaches to cluster analysis. Q was of course introduced a year earlier, in *Nature* and *Character and Personality*, and the impact on cluster analysis to which Mulaik refers was in terms of "system 3" of Stephenson's "four factor systems," and not "system 2" which alone implies Q methodology (as it has since come to be known). The implications of Stephenson's innovation were partially spelled out in his joint paper with Cyril Burt which appeared in *Psychometrika* in 1939, but which Mulaik does not cite. (The "foundational" nature of Q was reiterated in Stephenson's "Foundations of Communication Theory," *Psychological Record* 1969, some 30 years later.) Mulaik ends with an expression of disappointment in *Psychometrika's* failure to sponsor philosophical discussions bearing on methodology.

#### *Advertising Quantumized*

Copies continue to be available of William Stephenson's manuscript, *Quantum-Theory of Advertising* (Columbia MO: University of Missouri, 1986, 193 pp.), which formed the basis for his presentations at the 2nd Q Conference. There will be no cost for a copy of the manuscript so long as demand does not exceed the existing supply. Contact Stephenson, 2111 Rock Quarry Road, Columbia MO 65201.

### *The Forced Distribution Controversy*

John M. Bolland (Inst. for Social Science Res., U Alabama, University AL 35486), "The Search for Structure: An Alternative to the Forced Q-Sort Technique," *Political Methodology*, 1985, 11, 91-107. **Abstract:** Q methodology and its attendant Q-sort technique have played an important role in the study of political attitudes, beliefs, and values. Yet the structural requirements typically imposed by the Q-sort technique and the data it generates (i.e., a large number of categories, a quasi-normal distribution) may also make it inappropriate. An unforced alternatives to the forced Q-sort technique is proposed, along with a set of nonmetric or quasi-nonmetric analysis procedures. These procedures are then used to analyze a set of forced Q-sort data. The results are very comparable to those yielded by correlational and factor analytic procedures, suggesting the validity of the alternative procedures in a controlled situation.

Steven R. Brown (Political Science, Kent State U, Kent OH 44242), "Comments on 'The Search for Structure'," *Political Methodology*, 1985, 11, 109-117. In response, it is noted that Q sorting is a ranking rather than a grouping task, hence does not require the uncommon degree of cognitive sophistication that Bolland contends; moreover, feelings and not simply cognitions are implicated, and an illustration is presented with respect to the abortion controversy. It is argued that the Q-sort distribution is a model rather than a statistical conclusion, and is consequently free of normative presumptions (e.g., that there is one "best" distribution), although an example is presented showing that a representative Q sample typically produces a common mean and standard deviation. The main function of the Q sort, it is stated, is to induce subjective operants, and peripheral features of the inducing mechanism (e.g., distribution shape) are irrelevant. Bolland's less central contentions are also addressed--that Q and R are simply reciprocal systems, that validity and reliability are critical to Q, and that alternative statistical procedures (e.g., factor analysis, multi-dimensional scaling, etc.) produce comparable results.

John M. Bolland, "The Illusion of Structure: A Reply to Steven Brown," *Political Methodology*, 1985, 11, 119-123. In his rejoinder, Bolland insists that some people are more cognitively complex than others (hence utilize a larger number of categories), and that a free Q-sort distribution allows for these individual differences. He also suggests that the shape of the distribution may be related to the nature of the question under study, which can be considered another argument for the optimality of the unforced distribution. Finally, he contends that a forced distribution is a threat to content validity in comparative Q research, and argues the importance of this form of validity in making generalizations. He also raises questions about factor interpretations in Q, and suggests that investigators who avoid using goodness-of-fit criteria for evaluating preferred factor solutions run the risk of projecting their own understandings into the data.

### *Speech Communication Developments*

Richard G. Nitcavic (Speech Comm, Ball State U, Muncie IN 47306) and Joan E. Aitken (Speech Comm, U Southwestern Louisiana, Lafayette LA 70504-3650) conducted a short course on Q methodology at the 72nd annual meeting of the Speech Communication Association, Chicago, November 13, 1986 (see OS, October, 1986, pp. 30-31). The three hour course gave instruction on the basics of Q methodology in communication research: a background, applications, designing a Q study, and data analysis. Those in attendance represented a cross-section of communication scholars, from graduate students to regular Q users.

In addition, the papers utilizing Q were presented at the SCA meeting:

Carole A. Barbato (Kent State University),  
"Uses of Interpersonal Communication."

Ellen Murray (U of New Mexico), "Quantifying Qualitative Data: The Q-sort as an Aid to Interpretive Rigor."

Richard G. Nitcavic (Ball State U) and Joan E. Aitken (U of Southwestern Louisiana),  
"The Communication of Inclusion: Communication Needs of Mainstreamed Adolescents."

Also at the meeting, the SCA approved a new Commission on Intrapersonal Communication Processes. Among the newly elected officers are Aitken, Secretary; and Nitcavic, Newsletter Editor. In an effort to stimulate more interest in Q, Aitken and Nitcavic are submitting a program proposal on Q for the 1987 SCA convention in Boston. Also at the 1987 meeting will be paper presentations under the auspices of the new Commission, whose chair is Charles Roberts, Head, Department of Communication and Theatre, McNeese State University, P.O. Box 1277, Lake Charles LA 70609. The deadline for paper proposals is February 15.

### *"Qualitative Research"*

...which is the thematic title of the fall 1986 issue of *Journal of Thought* (Vol. 21, No. 3), edited by Robert R. Sherman and Rodman B. Webb, and available for \$10 (plus postage and handling) from the publisher: College of Education, University of Oklahoma, Norman OK 73019. There is nary a word about Q in any of the six articles--covering such topics as "phenomenography," grounded theory, and critical theory--which is not surprising since Q is widely thought to be primarily quantitative inasmuch as it has something to do with factor analysis. Nevertheless, comments by some of the authors indicate that Q could be profitably considered. For example, Giroux (quoting Simon) states that "our concern as educators is to develop a way of thinking about the construction and definition of subjectivity within the concrete social forms of our everyday existence..." (p. 93).

### *Kantor Remembered*

J.R. Kantor, whose interbehavioral conceptions influenced William Stephenson's methodological ideas, died in February 1984, and a short obituary written by Stephenson appeared in the April 1984 issue of OS. A more complete remembrance by Paul T. Mountjoy and Jay D. Hansor appears in *American Psychologist*, November 1986, pp. 1296-1297.

### *A Feeling for the Organism*

Researchers who are in a hurry often recommend "streamlining" Q technique so that it can be admin-



istered quickly, e.g., in a mailed questionnaire: In this way, they not only can enhance sample size, but also administer several "Q sorts" simultaneously. And enthusiasm for this strategy grows when it is realized that the same factors will likely emerge whether the statements are actually sorted as in Q technique, or responded to one at a time as in a questionnaire. (This is due to the virtual equivalence of results produced by any of the methods of impression: order of merit, single stimuli, or paired comparison--see Beebe-Center's *The Psychology of Pleasantness and Unpleasantness*.) This same preference for ease over drudgery favors varimax over judgmental rotation. How can the manifestly more difficult be justified, then, when the simpler appears to suffice?

A partial answer is given by geneticist and Nobel laureate Barbara McClintock (as relayed by her biographer, Evelyn Fox Keller):

Over and over again, she tells us one must have the time to look, the patience to "hear what the material has to say to you," the openness to "let it come to you." Above all, one must have "a feeling for the organism." (p. 198)

According to Keller, in her book with this title (W.H. Freeman and Co., 1983), McClintock's *feeling for the organism* emerges from a thorough absorption in her material. "The important thing," she says of her work in maize genetics, "is to develop the capacity to see one kernel that is different, and make that understandable" (p. xiii). One associate is quoted as having remarked that McClintock could look at a cell under the microscope and see what no one else could see. In part, she attributed her good fortune to having worked with a slow technology and a slow organism.

Similarly in Q. The slowness of Q sorting contrasts with the speed with which the same statements can be read and scored in a questionnaire format--a feature which exploding computer technology will accelerate--and the plotting and examination of factor patterns during judgmental rotation is snail-paced when compared with the instant of computer time

required to produce a varimax rotation. Yet the slow process of gathering a Q sort, of discussing it with the person who gave it, of scoring it and participating in the process of analysis (Kantor's interbehavioral basis of science) give the scientist a *feeling for the organism* which is unachievable otherwise. Like McClintock, who "knows" every plant in the field, the Q methodologist typically knows the Q sorters and is forced to contemplate them. Q technology is indeed slow, but the task is not to speed it up; rather, it is to know how to benefit from the slowness.

## DISSERTATIONS IN PROGRESS

Neeloo Bhatti, *Dispelling the North American Acid Rain Clouds: Developing a Framework for Political Consensus Through the Identification of Elite Viewpoints* (Yale University)

Acidic deposition has simultaneously been referred to as an environmental curiosity and as an ecological holocaust. This polarization of opinion on this pollutant has resulted in the current stalemate in Congress over whether or not to legislate acidic deposition control measures. It is also responsible for the major part of the friction which currently exists in Canada-United States relations. As long as the acidic deposition issue continues to be perceived as a contest between extremist groups of acid rain elites, there is little chance for resolution.

This study attempts to identify the distinctive viewpoints which characterize these opposing attitudes and, in doing so, to determine the underlying factors (especially scientific versus non-scientific ones) and values which are most influential in shaping these viewpoints in the minds of the acid rain elite. This will provide some indication of the future role of scientific expertise in resolving this problem and will indicate the areas in which most of our research efforts should be directed. In addition, a determination will be made to ascertain if there is a