Psychochemical Research Strategies in Man

Symposium, 28–29 December, AAAS Annual Meeting, New York City

Coordinated by Arnold J. Mandell

Over the past several years, researchers concerned with the central nervous system and behavior have convened at symposia. The participants and their theoretical positions have assumed various titles: hallucinations, schizophrenia, memory, thinking, dreams and others. In each instance, because of the ambiguous flexibility of definitions in the sciences related to behavior, the same work could and has been reported within these various contexts. On the surface, this symposium may resemble this kind of collection of interesting but limited data. Brain amines, pituitary-adrenal axis, developmental biochemistry, and other such active areas of research can be "plugged in" to any of the popular applied labels. The symposia of this type in the past were unquestionably valuable sources of rather freer statements and reports of data outside the ritual demands of standard journals by the participating scientists. Nonetheless, the authors conceptualized their data in terms of a disease (that is, schizophrenia) or function (memory) to which the conference was dedicated. This conference limitation has often been a research strategy limitation as well in the area of relating biochemical variables to behavior. A disease or a function whose operational definitions grow from data foreign to biochemical data, such as psychiatric diagnosis or psychological tests, may limit the relations between chemical variables and behavioral variables that might emerge if the defining criteria were either chemical or at least interactional. This among other strategic issues will be discussed by a number of the authors.

In focusing on the general area of research strategies, we hoped to free the conference from such restraints. The ostensible strategy of this symposium is the disregard for such applied goals. The authors have promised to use their theory and data to exemplify theoretical and methodological problems in relating biochemical variables to brain states without the justification and importance sections that have not only stretched the credibility gap during grant-writing activities but even worse, has been gradually internalized by many of the practicing scientists in this area.

At this conference, we can probably anticipate a number of themes which are not formalizable enough to resemble theories or monolithic research approaches, but rather clusters of accepted opinions and methods by workers who share a number of the same assumptions, reservations, and operations. These will probably include:

1) An area relating reflections of the activity of the pituitary-adrenal axis as a meaningful and nonobvious reflection of emotional state and coping style (Bunney, Sachar);

2) An area synthesizing peripheral and central findings relating mood, mentation, and mental illness to alterations in amine metabolism (Kety, Friedhoff, Freedman, Schildkraut);

3) A cluster of basic and clinical studies suggesting the possibility that exaggerations of normal or unmasking of latent metabolic processes may occur in the basal state or under certain conditions of metabolic "activation" which might adversely effect the brain (La Du, Weber, Masuda, Mandell);

4) The new findings of population genetics and chromosomal studies which will probably be seen as not only more accurately prognostic but useful in refining heterogenous human population being researched (Winokur, Judd);

5) The application of relatively short-time constant physical dependent variables as reflections of changes in the chemical activity of the brain in various behavioral states (Sokoloff, Dement, Kado);

6) Issues exemplifying strategic problems of a more general sort approaching many experimental strategies in addition to the content foci encompassed above (Eiduson, Yuweiler, Friedhoff, Durell, Gottschalk, Mendelson, Lipton).

Another feature of note about this conference, perhaps relative to a sociology of science issue, is contained in the dramatis personae of the conference. For several decades, the field of psychiatry and therefore research in psychiatry has been divided into two armed camps along lines of a primitive philosophical division between the sides of a nature-nurture controversy. This was translated into the political parties of the "organicists" and the "psychodynamicists." Sociological research comparing the party stalwarts by Hollingshed and Redlich in the late 1940's and 1950's contributed some interesting observations on the behavior and appearance of these two breeds. The "organicist" was Protestant, wore a long white coat, was right wing, and used shock treatment. The "psychodynamicist" was Jewish, wore business suits, was liberal, and did psychoanalysis. This division in schools has appeared to be dissolving at an accelerating rate. Biologists interested in behavior have less static models for their systems and appear to be accepting dynamic and transactional features of behavior as consonant with their new thoughts about biological systems. Psychodynamically trained people are turning to the rich complexities of biological mechanisms to enrich previous models and lead to more fruitful new ones. It is of interest that the participants in this conference, with few exceptions through either training or exposure, are people who are relatively comfortable with elements of both of the previously inimical schools with probably no more than a little of the old adrenergic surge when a question or comment falls between the old battle lines in a discussion. It may be that the new brain and behavior men as represented in this conference have grown past the philosophical dualism that has hung up so many centuries of eclectic thought about the origins of behavior.

A description of the background of this conference would not be complete without acknowledging the role of Seymour Kety (who will participate), Leon

Eisenberg, and David Hamburg (who unfortunately cannot) who have helped set up a non-club called the Psychiatric Research Society to which many (but not all) the participants belong and the organizer of this program derived both stimulation and sustenance for such an enterprise. It is my hope that this non-club will have its goals partially exemplified by a program such as this under the partial aegis of the American Psychiatric Association. It is exciting to hope that conferences such as this one may help facilitate a move toward more research and less prose on the psychiatric scene.

Program

28 December

Morning

A. Friedhoff, Chairman.

A. J. Mandell (UCLA School of Medicine), *Introductory Comments and Acknowledgements.*

B. La Du (New York University School of Medicine), *Techniques for Elucidating Metabolic Errors in Behavioral Aberrations in Man.*

G. Weber (Indiana University Medical School), *The Implications of Metabolic Adaption for Behavioral Studies in Man.*

M. Masuda (University of Washington School of Medicine), *Adaptational Individuality.*

S. Eiduson (UCLA School of Medicine), *The Developmental-Biochemical Approach in Man.*

A. Yuwiler (V.A. Hospital, Los Angeles), *The Multivariate, Factor Analytic Approach to Multidisciplinary Research Involving Chemical Parameters.*

Afternoon

G. Winokur, Chairman.

S. Kety (Harvard University Medical School), *The Precursor-Load Strategy in Man.*

A. Friedhoff (New York University School of Medicine), *Strategies for Investigating Biochemical Aberrations in Mental Dysfunction.*

L. Sokoloff (National Institute of Mental Health), *Brain Circulation and Behavior in Man: Strategy and Findings.*

D. X. Freedman (University of Chicago), *Psychopharmacological Agents as Tool for Human Brain Neurochemical Research: Hallucinogens.*

W. Dement (Stanford University School of Medicine), *Nonchemical Methods and Data Using a Biochemical Model: The REM Quanta.*

R. Kado and W. Ross Adey (UCLA School of Medicine), *The Use of Electrical Data to Reflect Neurochemical Changes in Man: Impedance.*

December 29

Morning

D. X. Freedman, Chairman.

G. Winokur (Washington University School of Medicine), *New Advances in Psychopathological Population Genetics.*

L. L. Judd (UCLA School of Medicine), *Modern Chromatin Studies of Psychopathological Groups.*

J. Durell (National Institute of Mental Health), *Circulating Macromolecules and Schizophrenia–Factor Alleged to Affect Chicken Erythrocyte Metabolism.*

A. J. Mandell, *Metabolic "Correlations" of Behavioral States.*

L. Gottchalk (UCI School of Medicine), *Phasic Peripheral Metabolic Reflections of Mental Content.*

J. J. Schildkraut (Harvard Medical School), *Rationale of Some Approaches Used in Biochemical Studies of the Affective Disorders: The Pharmacological Bridge.*

Afternoon

L. A. Gottchalk, Chairman.

W. Bunney (National Institute of Mental Health), *Psychoendocrine Parameters and Psychopathology.*

E. Sachar (Albert Einstein College of Medicine at Montefiore, N.Y.), *Endocrine Function and Psychological Homeostatis.*

J. Mendelson (National Institute of Mental Health), *A "Disease" as a Biochemical Research Program Organizer–Alcoholism.*

M. Lipton (University of North Carolina), *What Does All This Clinical-Chemistry Stuff Mean to the Clinician about the Brain?*

S. Kety, *Conference Summary.*

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See Science, *22 September 1967, for details about registration and hotel reservations for the AAAS Annual Meeting. Additional reports on events or symposia taking place during the AAAS Annual Meeting appear in the following issues of* Science: *22 September, "Evolution of the Earth's Atmosphere"; 29 September, "Terrestrial Adaptation in Crustacea"; 6 October, "Behavioral Research—New York Zoological Park"; 13 October, "Weather Modification"; 20 October, "Hazards of Iodine-131 Fallout in Utah"; 27 October, "New York Botanical Garden—Research and Education"; 3 November, "New York Aquarium and Osborn Laboratories of Marine Sciences"; 10 November, "Psychoanalytic Studies in Child Development" and "Adhesion in Biological Systems"; 17 November, "Lamont Geological Observatory" and "Marine Science"; 24 November, "Crime, Science, and Technology," "Molecular Approaches to Learning and Memory," and "Man and Transportation"; 1 December, "Haskins Laboratories," "Web-Building Spiders," and "AAAS General and Sectional Symposia"; and 8 December, "Preconvention Issue."*