RECENT CONTRIBUTIONS OF BIOLOGICAL AND PSYCHOSOCIAL INVESTIGATIONS TO PREVENTIVE PSYCHIATRY

Proceedings of the Second Institute on Preventive Psychiatry

EDITED BY RALPH H. OJEMANN

State University of Iowa

1959

RECENT CONTRIBUTIONS OF BIOLOGICAL AND PSYCHOSOCIAL INVESTIGATIONS TO PREVENTIVE PSYCHIATRY

Proceedings of the
Second Institute on
Preventive Psychiatry
Held at the
State University of Iowa
April 10 and 11, 1959

Edited by Ralph H. Ojemann, Director

Preventive Psychiatry Research Program

State University of Iowa

Copies of this publication are available from the State University of Iowa Department of Publications, Iowa City, at $2.00 each.

Library of Congress Catalogue Card Number: 57-63764

TABLE OF CONTENTS

Foreword

The Second Institute on Preventive Psychiatry was held at the State University of Iowa, April 10 and 11, 1959. As with the First Institute,° which took place two years ago, this symposium was planned by the University Committee on Preventive Psychiatry and was supported by grants-in-aid from the Graduate College of the University, the Grant Foundation, and the Iowa Mental Health Authority. The members of the University Committee on Preventive Psychiatry are the following:

Chairman: Dr. Ralph H. Ojemann, Professor, Child Welfare Research Station

Dr. Milford E. Barnes, Jr., Associate Professor, Psychiatry; Chief, Child Psychiatry, College of Medicine

Dr. Geraldine Clewell, Associate Professor, Home Economics Education; Head, Home Economics, University High School

Mr. Richard Cheville, Research Assistant, Biochemistry, College of Medicine

Dr. Harvey H. Davis, Provost, State University of Iowa

Mrs. Maxine Delmare, Research Associate, Child Welfare Research Station

Mr. Samuel M. Fahr, Professor, College of Law

Mrs. Alice Hawkins, Research Associate, Child Welfare Research Station

Mrs. Margery Hoppin, Research Associate, Child Welfare Research Station

Mrs. Frances Horowitz, Graduate Student, Child Welfare Research Station

Dr. Kenneth Hoyt, Associate Professor, College of Education

Dr. Paul Huston, Professor and Head, Department of Psychiatry, College of Medicine; Director, Psychopathic Hospital

Mrs. Sylvella Jacobsen, Educational Psychologist and Director of Special Education, Iowa City Public Schools

Dr. Walter F. Loehwing, Dean, Graduate College

Dr. Lloyd Lovell, Assistant Professor, Child Welfare Research Station

---

° For a report on the First Institute on Preventive Psychiatry, see *Four Basic Aspects of Preventive Psychiatry*, edited by Ralph H. Ojemann, published in 1957 by the State University of Iowa.

Dr. Eleanore Luckey, Assistant Professor, Child Welfare Research Station

Dr. Boyd R. McCandless, Director, Child Welfare Research Station

Mr. Boyd Metzger, Research Assistant, Biochemistry, College of Medicine

Dr. Siegmar Muehl, Assistant Professor, Child Welfare Research Station

Dr. Rolf Muuss, Research Assistant Professor, Child Welfare Research Station

Dr. Albert Norris, Assistant Professor, Psychiatry, College of Medicine

Dr. Carlton Singleton, Assistant Professor, College of Education

Dr. Bill Snider, Research Assistant Professor, Child Welfare Research Station

Dr. James B. Stroud, Professor, Education and Psychology, College of Education

Dr. Franklin H. Top, Professor and Head, Department of Hygiene and Preventive Medicine, College of Medicine; Consulting Director, State Bacteriology Laboratory

Mrs. Alberta Wells, Research Associate, Child Welfare Research Station

The details of the physical arrangements of the institute were under the supervision of Dr. William Coder, co-ordinator of conferences for the University.

In this Second Institute, as with the First, the aim was to recognize that questions of the effectiveness of preventive measures can be answered only through careful and comprehensive research in a variety of disciplines. Hence this report may be considered as the second in a series devoted to a complex and significant problem. The statement of purposes, which follows in Chapter I, re-emphasizes the idea that there are many aspects to the problem of prevention. The statement was prepared well in advance of the meetings and sent to all invited participants. In addition, each of the five speakers who prepared the formal papers for the various sessions supplied in advance a brief outline and list of suggested readings for respective panel members. Each panel was so constituted as to represent a variety of fields of study in order to stimulate interdisciplinary thinking. The prepared papers, together with the panel discussions which followed each one, are reproduced in Chapters II through VI.

Participants in the institute, whose names can be found in the roster at the end of this report, came from all sections of this country, from

Canada and abroad and represented a wide range of interests, viz., psychiatry, child and social psychology, pediatrics, education, public health, nursing, physiology, biochemistry, home economics, sociology, social work, journalism, and law.

The proceedings of the Second Institute on Preventive Psychiatry were recorded on tape by the University audio-visual service. The manuscript of this report, which was prepared for publication by Esther Tuttle, comprised the prepared papers and the edited transcriptions of the tape recordings. The following members of the Preventive Psychiatry Committee read sections of the manuscript: Chapter II was read by Professor Muuss; Chapter III by Dr. Norris; Chapter V by Professor Fahr; and Chapter VI by Dr. Barnes. Carroll Coleman, director of University publications, supervised the production of the book.

It can thus be seen that the Second Institute on Preventive Psychiatry was made possible through the co-operation of many agencies and individuals. Sincere appreciation is expressed to all who assisted in this enterprise.

Ralph H. Ojemann, Director
Preventive Psychiatry Research Program

PROGRAM

Second Institute on Preventive Psychiatry

April 10-11, 1959

Iowa Memorial Union
State University of Iowa
Iowa City

Friday, April 10

9:00 a.m. Morning Session

Chairman: Paul Huston, M.D., Head of Department of Psychiatry, and Director of Psychopathic Hospital, State University of Iowa

Presentation of Topic—Recent Contributions of Research to the Development of the Concept of "Creative Mental Health"

M. Brewster Smith, Ph.D., Professor of Psychology, University of California

Discussion of Topic

Panel Moderator—J. S. Gottlieb, M.D., Director, Lafayette Clinic, Detroit, Michigan
Panel Members: Richard Q. Bell, Ph.D., Laboratory of Psychology, National Institute of Mental Health, Bethesda, Maryland
Muriel W. Brown, Ph.D., Parent Education Specialist, Children's Bureau, Department of Health, Education, and Welfare, Washington, D.C.
Armin Grams, Ph.D., Associate Professor, Institute of Child Development and Welfare, University of Minnesota
Kenneth B. Hoyt, Ph.D., Associate Professor, College of Education, State University of Iowa
Edward Linzer, Director of Education Services, National Association for Mental Health, New York City

12:00 noon. Luncheon

Chairman: Ralph H. Ojemann, Ph.D., Director of Preventive Psychiatry Research Program, State University of Iowa

Introduction of Preventive Psychiatry Committee and Experimental Teachers

2:00 p.m. Afternoon Session

Chairman: Boyd R. McCandless, Ph.D., Director, Iowa Child Welfare Research Station, State University of Iowa

Presentation of Topic—Recent Investigations in Selected Aspects of the Physiological Dimensions and the Implications for Prevention

John W. Lovett Doust, M.B., Associate Professor of Psychiatry, University of Toronto

3:00 p.m. Discussion of Topic

Panel Moderator—John I. Lacey, Ph.D., Chairman, Department of Psychophysiology-Neurophysiology, Fels Research Institute, Yellow Springs, Ohio

Panel Members: David D. Blyth, Ph.D., Associate Director, Children's Mental Health Center, Columbus, Ohio
John P. Filley, M.D., Department of Mental Health, School of Public Health, University of North Carolina
Roger Howell, M.D., Lafayette Clinic, Detroit, Michigan
Albert S. Norris, M.D., Assistant Professor, Department of Psychiatry, Psychopathic Hospital, State University of Iowa
Lucy D. Ozarin, M.D., Chief, Mental Health Services, Department of Health, Education, and Welfare, Kansas City, Missouri

7:00 p.m. Dinner and Evening Session

Chairman: Walter F. Loehwing, Ph.D., Dean of the Graduate College, State University of Iowa

Presentation of Topic—Recent Investigations of the Interrelationships between the Social Environment and Health and the Implications for Prevention

Lawrence E. Hinkle, Jr., M.D., Department of Medicine, New York Hospital-Cornell Medical Center, New York City

Discussion of Topic

Panel Moderator—Edgar B. Phillips, M.D., Executive Director, American Child Guidance Foundation, Boston, Massachusetts

Panel Members: Richard Q. Bell, Ph.D., Laboratory of Psychology, National Institute of Mental Health, Bethesda, Maryland
Madeleine Lay, Chief Consultant, New York City Community Health Board
Paul T. Rankin, Ph.D., Assistant Superintendent, Detroit Public Schools, Detroit, Michigan
Mary Belle Roberts, Consultant, Psychiatric Social Work, Department of Health, Education, and Welfare, Kansas City, Missouri
Robert E. Switzer, M.D., Director, Child Psychiatry Service, Menninger Foundation, Topeka, Kansas

Saturday, April 11

9:00 a.m. Morning Session

Chairman: Mason Ladd, S.J.D., Dean, College of Law, State University of Iowa
For the University: Virgil M. Hancher, J.D., LL.D., President, State University of Iowa

Presentation of Topic—A Comparison of Russian and American Legal Systems and the Implications for Prevention

Harold J. Berman, LL.B., Professor of Law, Law School of Harvard University

Discussion of Topic

Panel Moderator—Henry Weihofen, J.S.D., Professor of Law, University of New Mexico

Panel Members: A. D. Buchmueller, Executive Director, Child Study Association of America, New York City
J. O. Cromwell, M.D., Director of Mental Institutions, Board of Control, State of Iowa, Des Moines
Samuel Fahr, LL.B., Professor, College of Law, State University of Iowa
Leon Lipson, LL.B., Professor, Yale Law School
R. Kent Martin, L.L.B., Judge, Fifteenth Judicial District Court, Atlantic, Iowa
John Pierce-Jones, Ph.D., Associate Professor, Department of Educational Psychology, University of Texas

12:00 noon. Luncheon and Afternoon Session

Chairman: Carlton M. Singleton, Ph.D., Assistant Professor of Education, State University of Iowa

Presentation of Topic—Recent Studies in the Genetic Aspects of Mental Illness and Implications for Prevention

Ralph D. Rabinovitch, M.D., Director, Hawthorn Center, Northville, Michigan

Discussion of Topic

Panel Moderator—John D. Rainer, M.D., Department of Psychiatry, College of Physicians and Surgeons, Columbia University

Panel Members: Milford E. Barnes, Jr., M.D., Assistant Professor of Psychiatry and Chief, Child Psychiatry, Psychopathic Hospital, State University of Iowa
William E. Blatz, M.B., Director, Institute of Child Study, University of Toronto
John W. Lovett Doust, M.B., Associate Professor of Psychiatry, University of Toronto
Sheldon C. Reed, Ph.D., Director, Dight Institute for Human Genetics, University of Minnesota
Charles Shaw, M.D., Child Psychiatrist, Hawthorn Center, Northville, Michigan
Lester W. Sontag, M.D., Director, Fels Research Institute, Yellow Springs, Ohio

CHAPTER I

*The Purposes of the Second Institute**

RALPH H. OJEMANN, PH.D.

When plans were drawn for the First Institute on Preventive Psychiatry in 1957, it was recognized that there are many aspects to the problem of prevention. It was also recognized that it is impossible in one conference to give consideration to all the factors that are suspected as playing a part in producing emotional disturbances or building mental health. The basic plan which guided the organization of the First Institute was to think in terms of a series of conferences, each of which would be concerned with selected aspects of the area. The First Institute considered four basic aspects; namely, current definitions of the concepts of "prevention" and "creative development," factors associated with the prevalence of mental illness, recent research on the effects of education in human development, and suggested next steps in research. It was the purpose of the Second Institute to consider additional facets.

"Creative physical health"; that is, the degree of physical health attainable under a given set of conditions when intelligence and imagination are applied to the task, has come to be a well known and widely accepted concept, largely because of the influence upon our thinking of findings of numerous studies in nutrition, bacteriology, and other areas. The results of such studies have indicated some of the potentials of the human organism in building immunity to disease and increasing reserves of energy. In infant nutrition, for example, studies have demonstrated that the hemoglobin content of the blood between the ages of three and eight months can be maintained at a more adequate level than was thought possible before it was discovered that a source of iron can be added to the infant's diet at the earlier age. Similarly, studies of communicable diseases have indicated that it is possible, in many cases, to build an organism which is immune to some diseases. Thus it has come about that through the acceptance and dissemination of the results of research, our conception of "creative physical health" has been broadened.

---

* This statement was developed with the help of the Preventive Psychiatry Research Committee.

It is conceivable that studies of the mental and emotional potentials of the organism may have a similar effect on our conception of "creative mental health"; that is, the realization of the full potential of the organism under a given set of conditions. Therefore it is pertinent to ask what contributions available studies in this area have made to this aspect of our thinking. One session of the institute was devoted to this question (Chapter II).

The development of the individual at any given moment is the product of the interaction of organism and environment. One element which appeared early in man's thinking about the etiology of mental illness was the genetic factor. However, as investigations revealed the extensive influence that experimental factors may exercise in the development of emotional disturbances and mental health, interest in genetic determinants tended to recede. Recent investigations[1] have suggested, however, that genetic factors cannot be ruled out. For this reason, one session of the institute was used for an assessment of man's knowledge in this area (Chapter VI).

The organism possesses both a physical-physiological-biochemical dimension and a mental-emotional-social dimension. Recent investigations, especially in the areas of neurophysiology and neurobiochemistry, have suggested that the physio-chemical characteristics of the organism as well as the psychosocial characteristics may influence the effect that a given experience may have. To extend our knowledge of the development of emotional disturbances and the promotion of emotional health, studies must be made of the influence physiological and biochemical differences exercise on the effects obtained when the organism is subjected to a specific set of experiences. What physio-chemical factors are suspected as playing an important role in this area and what implications do recent studies have for a comprehensive approach to this problem? This was the topic for another session (Chapter III).

Since the organism in its physio-chemical and psychosocial dimensions operates as a unit, it may be suspected that a given experience will have an effect on both dimensions. Recent studies of the influence of the social environment on health have provided some evidence that adaptations to life situations, for example, may affect both the physical and mental health of man. How extensive are these data, and what implications do these studies on the effects of the social environment have for the development of health? A session of the institute was concerned with this issue (Chapter IV).

---

[1] Erik Stromgren, "Genetics and mental health," *Children* 5:2, 49-54, March-April, 1958.

As we extend our thinking about the forces in the social environment, the part played by the various social institutions which man has developed enters the picture. A social institution may be thought of as a crystallization of certain ways of thinking and acting. Such a crystallization helps to shape the mores of succeeding generations. To what extent do the various social institutions, as presently organized, incorporate available knowledge of human behavior?

One such institution is law. This institution operates with special force. Its rules and procedures reflect general concepts of the nature of man and his relation to society; at the same time law sets practical limits to what people may do without social interference. Thus it becomes a powerful influence in shaping man's thought and practice relative to human interactions. It is important to know to what extent our legal system is sensitive to developments in our knowledge of human behavior and also to what extent our research must be responsive to the needs of a sound legal order. One method of obtaining a perspective of our legal system is to compare it with the systems of other cultures. One of the five sessions of the institute was devoted to this question (Chapter V).

Throughout all of the discussions participants in the institute were asked to keep in mind the full meaning of prevention as it applies to the mental health area. Preventive psychiatry is concerned not only with the prevention of emotional disturbances, but also with the development of man's full potential. In discussions of genetic factors, for example, there has appeared at times a tendency to consider these factors mainly as they relate to the development of mental illness and to omit consideration of the part they play in the building of what has been called here "creative mental health." In this Second Institute on Preventive Psychiatry, we wished to consider the full scope of the problem of prevention.

As was the case in the First Institute, the purpose of the second conference was not to prepare a final solution for each issue raised, even if that were possible. The purpose was to bring together the thinking of workers in many different fields that are involved in the study of prevention to learn what the agreements and disagreements might be. Each topic was represented first through a prepared paper. After the paper was discussed by the panel as a group, the audience was invited to take part. Participants in the institute were asked to contribute to the discussion whatever they considered helpful to the extension and clarification of the basic issues.

INTRODUCTION TO CHAPTER II

Dr. Huston: It is my very great pleasure to again welcome this group to the campus of the State University of Iowa for the Second Institute on Preventive Psychiatry, the first having been held in the spring of 1957. Our speaker for the first session is Professor M. Brewster Smith, who was at the previous conference. You may recall that he has been on the faculty at New York University. He will soon be on his way to Berkeley, where he is to be professor of psychology at the University of California. Dr. Smith has also been on the faculties of Harvard University and Vassar College. His Ph.D. was granted at Harvard. Although this background sounds quite "eastern," Dr. Smith is by no means going to the west coast as a "tenderfoot." He took some of his college work at Reed in Oregon and received his B.A. and M.A. from Stanford University.

Brewster Smith is the author of a considerable number of publications and he is also the editor of the *Journal of Abnormal and Social Psychology*. He is, without a doubt, as well qualified as any person could be to speak on this most difficult topic: "Recent Contributions of Research to the Development of the Concept of 'Creative Mental Health.'" I suspect that "creative mental health" may not be too different from what has sometimes been referred to as "positive mental health"; and if this is a trend, we may find ourselves one of these days talking about "Grade A homogenized mental health!"

Dr. Smith, we are pleased to have you with us again, and now we want to hear what you have to say.

CHAPTER II

Recent Contributions of Research to Development of the Concept of "Creative Mental Health"

M. BREWSTER SMITH, PH.D.

Thank you, Dr. Huston. One of the virtues that often gets included in attempts to list what we mean by "creative mental health," or even "positive mental health," is depth-of-time perspective, or foresight. By this criterion, I can only admit that Dr. Ojemann's mental health is greater

than mine. Way back last June he asked me to give a paper on this topic in the Second Institute, and after arguing with him a bit about the title, I heedlessly agreed. As I finally struggled to begin it, I found myself wondering at my rashness. But I have been interested in the tricky subject of positive mental health for quite a while (Smith, 1950), and now that the paper is done, I can actually admit my gratitude to Dr. Ojemann for the stimulus he provided.

I think it is fair to say that the recent shift in interest toward greater concern with prevention and positive mental health has not been accompanied by proportionate gains in research and scientific understanding. The phrase remains more of a slogan, a rallying cry, than a scientific concept. If this is an accurate impression and we have actually met something of an impasse in our attempts to give mental health conceptual content, we ought first to try to locate some of the difficulties that the term presents to those who would work with it in a scientific framework. The initial job is thus a diagnostic and a critical one. A clearer view of what the difficulties have been should lay the basis for reviewing some of the ways in which recent and current research bears on our understanding of optimal human functioning.

I

What of the difficulties? One real, if superficial, obstacle may be noted and dismissed at the outset: that presented by the rather inappropriate connotations of the terms "mental" and "health," which for historical reasons we are undoubtedly stuck with whether we like them or not. But the serious trouble is not merely semantic, and it is not to be resolved just by revision or clarification of terminology.

The crux of the matter, it seems to me, is that mental health is inherently an *evaluative* concept, and that science has not yet learned how to deal sure-footedly with values. To say as much is no counsel of despair; it is rather to specify the nature of the problem. Mental health is personality evaluated, measured against certain criteria that either have the status of values or are derivatives of implicit values. If we are to use the results of research on personality to clarify our conceptions of mental health, we come face to face with the more general problem of how scientific knowledge of empirical facts and relationships can be made to contribute to the clarification of values. It is just here that scientists, humanists, and theologians have traditionally parted ways in a cloud of controversy.

Values are involved, whether mental illness or creative mental health is at issue. But so long as the mental health movement was preoccupied with pathology and malfunction, the value issues could readily remain

implicit, for values are taken for granted when everybody agrees about them. Everyone could agree that the grosser forms of mental disease are evils to be eliminated as much as possible. A scientific psychopathology could therefore get about its difficult task of seeking a causal account of the varieties of "mental illness." (Note that once our cultural horizons are broadened beyond the reach of this value consensus, even pathology becomes problematic as value differences become explicit: How are *we* to decide whether or not a shaman's trances—or a saint's—are a sign of poor mental health? (Devereux, 1956)).

Habitual ways of thinking about "normality" and "adjustment," as long as they seemed to work for us, shielded us from facing the value problems that lurk in notions of positive mental health. But they no longer work. Marie Jahoda (1958) is merely the most recent of many critics of these once-fashionable concepts to note that neither is at all satisfactory as a criterion of mental health. Of the various meanings of "normality" that we learned to distinguish some time ago, the one that is closest to being value-free—the statistically average—turns out on examination to be irrelevant for our purposes. Averageness is surely a far cry from optimal functioning, however we are to define it; and it is easy to conceive of whole populations that are sick, to a degree, mentally as well as physically. Any other meaning of psychological normality either shifts the question—What is health?—to a new terminology without getting us any closer to an answer, or uncritically substitutes the cultural "norms" of a given time and place for more universal criteria. We have somehow to transcend cultural perspectives if there is to be much point in talking about positive mental health.

Adjustment as a criterion of mental health runs afoul of just this pitfall of culture-boundedness. Adjustment to *what?* And why *adjustment* rather than, say, autonomy and creativity? Of course, adjustment is still a perfectly good concept, in spite of the eclipse it has suffered among intellectuals in a post-McCarthy era as a result of its linkage with conformity. We will continue to need to talk about the degree to which a person has come to terms with the demands of the situations in which he finds himself. The point is, rather, that to take adjustment as our single standard for evaluating personality is to give entirely too much weight to essentially arbitrary characteristics of the person's situation, and to adopt implicitly the value position that persons *ought* to come to terms with situations as they encounter them. Inherently relative to culture and to situation, the concept of adjustment fails to give us the leverage that we need in order to transcend situational and cultural boundaries. And in the context of mental health, adjustment *is* a value, one that conflicts with other values to which we would give priority. Once we see it as a

value, not as a value-free importation from biological, hence scientific, thinking, we perceive its insufficiency for guiding our thought and action.

Let us agree that neither normality, nor adjustment—nor, I will flatly state, any other conceptual panacea—excuses us from facing a choice of values if we are to concern ourselves with "creative mental health." How, then, are mental health values to be distinguished from other values? And how can research be brought to bear in making the distinction? In these complex issues lies the heart of our problem, and there is little sign of consensus on either of them.

There seems to be an increasing tendency to treat positive mental health as a kind of *summum bonum*, a synonym for the "good life." When richness of life, self-actualization, and creativity as well as the more homespun virtues of honesty, faith, hope, and charity are embraced as aspects of mental health—and sometimes even *justified* by this classification—we may wonder just what is happening. Does it add to our appreciation of older values, or give us a concept that is at all workable, to regard mental health as a kind of latter-day substitute for salvation? Provisionally, it seems clear that if mental health is to be a useful term for other than propagandistic purposes, it will have to be confined to some more restricted sense.

For the institutional psychiatrist still baffled by the treatment of gross mental disease (cf. Barton, pp. 111-19, in Jahoda (1958)), there is no problem here; mental health, for his practical purposes, is the absence of flagrant mental illness. More than his colleagues treating character disorders and neuroses in private practice, he can and perhaps should leave to others concern with the whole array of positive values beyond merely adequate functioning. But we are committed to exploring a concept of positive mental health that the parent, the teacher, the social planner can use. We need guide lines to distinguish the values we would promote in the name of mental health from ones we embrace simply as citizens and people of good will. Because we are scientists, or professionals in disciplines that seek their nourishment from science, we look to research for guidance. Can we find it?

II

Of one thing we can be sure at the outset: Research isn't going to solve our value problems for us, to absolve us from having to make responsible decisions. It is a commonplace that no amount of empirical knowledge about what *is* can settle the issue of what *ought* to be. Who is to convince the mystic that he ought not to mortify the flesh because it "isn't healthy"? The choice of values involves an irreducible element of

individual option; and consensus on values, to the extent that it is attainable, is catalyzed by social intercourse out of communalities in the response of human potentiality to human situations. Granted all this, evidence from behavioral and psychological science can still be crucially relevant.

To the extent that there is already consensus on human values, empirical evidence, when there is some, can tell us how to maximize the values we have selected. Research can also provide the occasion for revising existing consensus or for approaching consensus where none presently exists. For an understanding of the causal nexus in which values are embedded let us see the *cost* in terms of other values of attaining the particular goals we have set our sights upon. With increasing knowledge we should be in a better position to make choices among values in the light of the consequences that these choices entail. And, as Gardner Murphy (1958) has recently emphasized, new choices become possible as knowledge extends our conception of what is attainable.

Research can therefore contribute to the identification of values, and to the clarification of choices among them. Can it help us decide which values may usefully be included in the boundaries of "mental health"? Here we are handicapped by the relatively primitive state of our science of personality. If we are to understand mental health as "personality evaluated," a well developed theory of personality might be expected to suggest boundaries of relevance. As it is, we are faced with competing perspectives among which the degree of congruence is a matter for debate, and scattered areas of reasonably well established fact following up broader reaches of clinically informed opinion.

Under these circumstances, a modest inductive approach is in order. An overview of recent research in this spirit suggests that there have been three principal strategies for gaining a research toe-hold on positive mental health. These range from what amounts to frontal assault to an indirect approach that may not be regarded as dealing with mental health at all. Let us sample these presently available strategies to see what kinds of contributions we may expect of each.

III

First, the frontal assault. If you want to isolate the features of a disease syndrome, you can single out a series of cases that share what you believe to be the diagnostic symptoms, and note what other features of history and of present status these cases have in common that distinguish them from the population at large. Pursuit of this strategy tells you whether or not your initial diagnostic hunches are fruitful; and if they turn out to have some validity, it provides the basis both for elaborating

your conception of the syndrome, and for drawing inferences about its etiology. Why not apply the same strategy to problems of mental health? The idea has considerable appeal, but I know of few examples of its actual use.

A. H. Maslow, who for some time has been asking psychologists to pay more attention to health, love, and creativity and less to deficit phenomena, tried such a direct approach in his exploratory study (1950) of self-actualizing people. To get a relatively pure criterion group of people who had realized their potentialities to the fullest, he spread his net to include historical figures as well as acquaintances and notable contemporaries; his specimens included Beethoven, Lincoln, Jefferson, and Thoreau, as well as Einstein and Eleanor Roosevelt. Inspection of what distinguished this remarkable group from the run of the mill seemed to identify a number of characteristics, including a more efficient perception of reality; acceptance of self, others, and nature for what they are; spontaneity; problem-centeredness rather than ego-centeredness; the quality of detachment, with a need for privacy; autonomy in relation to culture and environment; freshness rather than stereotype of appreciation; openness to mystical experiences though not necessarily religious ones; identification with mankind; capacity for deep intimacy in relations with others; democratic attitudes and values; strong ethical orientation that does not confuse means with ends; philosophical rather than hostile sense of humor; creativeness.

This list of traits is certainly suggestive, and the study well serves Maslow's purpose of calling our attention dramatically to the interesting and important problems that optimal functioning poses for research. Apart from inadequacies of data and informalities of method, however, we cannot be satisfied with this study as *evidence* for a self-actualizing syndrome of creative mental health. So much depends on the kind of people Maslow liked and admired enough to select for his self-actualizing group. Actualization of *potentialities* is a slippery concept, for unless one assumes built-in goals of human nature on the model of Aristotle's entelechy (which in this context is to beg the question), human potentiality is manifold: to be a Napoleon or a Khrushchev as well as a Cellini or a Dostoevski. One may actualize oneself in many ways, and tastes as to which are preferable differ. Maslow's list, like his selection of people, tells us more about his own values and preferences than it does about creative mental health as such.

A second illustration of the frontal assault may be found in the much more rigorous program of research into excellence of human functioning that has been in progress for some time at the California Institute for Personality Assessment and Research. Barron (1954) has reported one

aspect of this program in a study of the *personal soundness* of some 80 advanced male graduate students, mostly doctoral candidates in the sciences. Judgments by professors in the student's major department provided the main criterion. By way of guidance the raters were told that "all-round soundness as a person" refers to "the soundness, balance, and degree of maturity which the individual shows in his relations with other people." After a three-day assessment at the Institute, using a variety of procedures, the staff rated the subjects on a number of personality variables. They also made their own global ratings of the subjects' inner psychological soundness.

Barron summarizes the traits that were found to be most consistently related to personal soundness as conceived by both major professors and Institute staff. These traits are effectiveness and organization in working toward goals; correct perception of reality; character and integrity in the ethical sense; and interpersonal and intrapersonal adjustment. Scrutiny of the subjects' personal histories led the assessment staff to the conclusion that ". . . psychopathology is always with us, and that soundness is *a way of reacting to problems, not an absence of them*. . . . High Soundness subjects are beset, like all other persons, by fears, unrealizable desires, self-condemned hates, and tensions difficult to resolve; they are *sound* largely because they bear with their anxieties, hew to a stable course, and maintain some sense of the ultimate worthwhileness of their lives . . ."

While there was a substantial core of agreement between the conceptions of soundness as reflected in the departmental ratings and in those of the assessment staff, there were also differences. According to the pattern endorsed by the departments, high stability tended to be combined with low responsiveness. Soundness as they conceived it was apparently to be achieved at some cost of spontaneity and personal warmth. The psychologists, on their part, placed a premium on some other traits besides the goal-oriented ones: friendliness, lack of affectation, tolerance, etc. Indeed, the study provides interesting insights into the values of psychologists and of science professors! Does it do more?

Barron's study at least has the advantage over Maslow's of recognizing explicitly that its central criterion variable is socially defined. From a practical standpoint, the judgments of a graduate student's major professors have a lot to do with the opportunity he will have to realize his potentialities; it is useful to make the basis of their judgments explicit, as this study does, and to uncover the psychological correlates and antecedents of earning their favorable or unfavorable regard.° The use of

---

° This rationale for personality assessment is essentially the one elaborated by Stern, Stein, and Bloom (1956).

two sets of criterion judgments—the professors' and the psychological staff's—has the further advantage of partly escaping the limitations of reliance on the judgments of a single group. Where there is agreement between the two sets of judges, there *may* be an area of general value consensus on which a conception of mental health can begin to build. And the divergences between the sets are mutually illuminating; they foster critical reconsideration of the assumptions implicit in each, with the possibility of subsequent movement toward closer consensus.

There remain obdurate sources of ambiguity that limit the usefulness for our purposes of this study taken in isolation. How much did the definition of personal soundness that was offered for the judges' guidance influence them? If the influence was little, the judgments may be saturated with "halo effects" of general favorableness, and the analysis of their correlates amount essentially to dissection of the halo. In this case, mental health has not been distinguished from other human values after all. If, on the other hand, the judgments turn out to be highly specific to the definition provided, then we face anew the problem of how to choose among alternative definitions. Clearly a complex program of research, not a single study, is required to throw light on these questions; and, as surely, such a program offers no royal road to a conception of positive mental health that is *dictated* by the evidence.

What are we to say of the frontal assault as a strategy? Certainly, there is much to be learned by pursuing it, especially about the tacit ingredients of our conceptions of mental health. When a well-specified defining criterion can be taken as given, as will be true for some practical purposes, such an approach can give useful information about antecedents and correlates. We get less help here on the central problem of deciding what criterion to employ.

A further limitation, and a major one, remains to be mentioned. There are ample grounds, some of them to be reviewed shortly, for questioning whether optimal mental health can appropriately be regarded as a unitary syndrome. The frontal assault prejudges this issue in its commitment to seek what is common to persons who function well. Perhaps it would be more fruitful to start, not with global judgments of soundness or health, but with more specific criterion measures. How these criteria are related to one another could then be explored empirically. This is a second major strategy through which research can contribute to a concept of positive or creative mental health, and to it I turn next.

IV

Among students of mental health, Marie Jahoda (1950) has developed one of the more articulate conceptions in terms of multiple criteria, and

her recent survey for the Joint Commission (1958) is conceived along similar lines. You will recall that she identified six major themes or categories of criteria in the recent theoretical literature—a literature that for the most part reflects clinical wisdom rather than systematic evidence. To list them concisely is to pass over what is probably the most valuable contribution of her monograph: her insightful commentary on distinctions and convergences in the writings of significant recent theorists. But here they are in brief: 1) Attitudes toward the self, including its accessibility to consciousness, correctness of the self-concept, self-acceptance, and sense of identity; 2) Growth, development, and self-actualization; 3) Integration, including the balance of psychic forces, a unifying outlook on life, and resistance to stress; 4) Autonomy; 5) Perception of reality, including freedom from need-distortion, and empathy or social sensitivity; and 6) Environmental mastery, under which she groups a number of proposed criteria in order of decreasing specificity: ability to love and to experience orgasm; adequacy in love, work, and play; adequacy in interpersonal relations; efficiency in meeting situational requirements; capacity for adaptation and adjustment; and efficiency in problem-solving.

Such a list of recurrent, related, yet diverse themes reflects a degree of convergence in contemporary discussion that is heartening or disappointing according to one's expectations. Jahoda proposes in effect that we give serious consideration to each of these proposed criteria, and give up the idea of settling for any single candidate, at least until much more evidence is in. After all, they have each been proposed by competent authority, and few of us would rule out any one of them as *un*-desirable. How much redundancy there is in the list remains to be seen.

Jahoda would have us move from speculation to research on positive mental health by first translating the theoretical criteria into empirical indicators—test scores, Q-sorts, rating variables, behavior in test situations, and the like. One could then study in different populations the inter-relations among the several criteria, and perhaps reduce the list by attention to the way they cluster empirically. And one could seek, with respect to each criterion in turn, the conditions under which mental health is acquired and maintained. If mental health as measured by different criteria turns out to share the same conditions of development and maintenance, there would be further grounds for combining or collapsing the list into a simpler one. But if different criteria yield distinctive patterns of correlates, we need to know it and to treat them separately.

Any apparent modesty in this proposal is of course grossly deceptive. True, one takes as a starting point the views of informed authorities, not

abstract principles, and is prepared to be satisfied at the end with a set of partly correlated criteria, rather than a single over-arching definition that generates a single dimension. But there is a wide and treacherous gap between abstractly formulated criteria and empirical indicators. The crux of the research problem lies in whether a finite number of satisfactory indices can be found to represent the proposed criteria, and our experience with indices in other research situations hardly warrants optimism here. Each facet of a complex category like integration—say, unity of personal philosophy, or resistance to stress—seems all too likely to dissolve into a host of slightly correlated measures, and the attainment of a single score that validly represents a person's over-all degree of integration seems a distant goal at best. The problem may be one for factor analysis, but in comparable domains the factor analysts have achieved only moderate success.

Evidence for the complexity of indexing mental health variables, but also for the promise of a multiple criterion approach, may be found in the forthcoming survey of mental health in a representative national sample, done for the Joint Commission on Mental Illness and Health by Gurin, Veroff, and their colleagues at the Michigan Survey Research Center (in press). In this ground-breaking study, randomly selected respondents throughout the country were interviewed at length concerning the satisfactions and problems they found in life. Their self-perceptions were explored, and their adjustments in marriage, in parenthood, and in the world of work. Crude indices of symptomatology were also obtained. The foregoing could then be related to the extent to which respondents were ready to seek professional help should they find themselves in difficulty, and to their actual employment of such resources.

One of the many possible illustrations of the index problem in their work concerns perception of the self, an area that corresponds to one of Jahoda's categories. The Michigan investigators had available for their analysis responses to three open-ended questions:

1. People are the same in many ways, but no two people are exactly alike. What are some of the ways in which you are different from other people?
2. If you had a son (daughter for women), how would you like him to be different from you?
3. How about your good points? What would you say were your strongest points?

It was possible to use the coded answers to these questions to derive a number of indices, among them these: perception of difference from others, admission to shortcomings, and denial of strong points. The authors sought to explore the meaning of these indices and to get at more

fundamental distinctions by examining their interrelationships and their associations with other variables, following much the strategy that Jahoda would recommend. I can summarize only one small aspect of their analysis here.

Each of the three indices just named may be viewed as reflecting the acceptance or rejection of one of the three self-percept questions. As it turned out, perception of difference from others is quite unrelated to admission of shortcomings in the self; admission of shortcomings is likewise unrelated to denial of strong points; but there is a strong relationship between perception of difference from others and denial of strong points (persons who saw themselves as different from others in some respect were much more likely to mention strong points about themselves in their initial response to the third question.) A fine kettle of fish!

Actually, this pattern of relationships was predicted by the authors on the basis of the rationale that led them to include the questions in the interview. Running through all the questions is a focus on the person's ability or willingness to introspect, to look inward at the self. Introspective tendency might be expected to go with perception of differences from others and with the awareness both of strong points and of shortcomings, while the less introspective people should tend to fall on the "rejection" end of all three indices. But each question also taps certain affective or attitudinal aspects of the self-percept. As the authors point out,

> To reject the idea that one is in any way different from other people not only implies a lack of introspection, but may also have implications for a negative evaluation of the self reflecting an impoverished identity. To reject the idea that one has strong points also reflects a negative self-image. Rejection of the idea that one has shortcomings, on the other hand, has obvious implications for a *positive* view of the self.

For two of the relationships between the indices, the direction of correlation that one would expect on the basis of introspective tendency runs counter to that which self-attitude by itself should produce. One might expect these contrary trends to "wash out" the relationship, and in fact just these instances yielded null correlations. The strong positive relation found between indices of perception of difference and denial of strong points, on the other hand, corresponds to parallel predictions from both supposedly underlying variables.

I have gone into this much detail because I think the foregoing analysis fairly illustrates the complexity of working with empirical indices, which will seldom tap without contamination the single conceptual variable in which one is interested. Disentangling the underlying variables in their relationships is at best a complicated business, and the

program laid out in principle by Jahoda is probably to be regarded as an ideal rather than as a working plan.

The Michigan survey also provides a demonstration—convincing to me—of the advantages of working with multiple criteria of mental health. For in relation to other variables the different indices enter into distinctive relationships that would be lost to sight with a less differentiated approach. Let me illustrate by quoting in part from the mental health profiles of two important demographic variables, education and age:

> Two important themes run through the differential responses of persons at varying educational levels. People with more education seem to be more introspective about themselves, more concerned about the personal and interpersonal aspects of their lives, and coupled with this introspectiveness is a greater sense of well-being, of satisfaction. Their introspectiveness is reflected in the greater prevalence among the more educated . . . of: feelings of inadequacy both as a parent and as a husband or wife, the experience of "problems" in marriage, and reports of *both* shortcomings and strong points in the self. . . . They are happier—in their over-all evaluations of their current happiness, in their marriages, and in their jobs—and are more optimistic about the future than the less educated respondents. These two themes which appear so clearly in our data seem to point to a broadening of one's perspective and a raising of one's aspiration level—both of these accompanied by an increased realization of "problems," unfulfilled expectations, *and* a greater awareness of life satisfactions.

These differences were maintained even when income level was held constant, and therefore cannot be discounted as a mere reflection of greater material advantages.

Now to consider age. To quote the authors in part:

> While the age pattern data show a good deal of similarity to our education findings, as might be expected in view of the relationship between these two demographic variables, there are interesting differences between the two sets of results. The most consistent difference we obtained between young and old people was the minimization of both self-doubt and the perception of "problems" among the older respondents. . . . These results are similar to those reported for the lower educational levels. . . . What about the more positive aspect of feelings of adjustment? Do older people, who see fewer difficulties in life, also feel more gratified? Yes, but only partially so. Older men are more satisfied with their jobs than younger men. . . . Older men and women are more satisfied as parents than younger men and women. . . . There was no relationship, however, between the evaluation of marital happiness and age. And . . . when asked to *generally* evaluate their current life satisfactions, the older person reports that he is *less* happy than the younger person. . . . The reasons the older person gives for both his current happiness and unhappiness . . . are predominantly health-related.

What can be concluded from these patterns of relationships? Age differences seem to most of all reflect differences in the current level of aspiration

in older and younger people. . . . Their satisfactions [i.e., those of older people] seem to be based on limited expectations and a passive acceptance of their status. . . . Only in one area of their lives does there seem to be much "investment" of energy—in their concern with their health and general physical well-being. Younger people, on the other hand, are actively involved in the numerous aspects of their lives—their families, their jobs, their friends—and express greater self-questioning about their behavior in these realms, and sometimes greater dissatisfactions about their lives. This self-questioning and dissatisfaction seems to be a reflection of greater involvement, however, rather than greater malfunctioning.

The parallelism with Jahoda's approach is closer than might superficially appear. Several of Jahoda's suggested aspects of mental health figure prominently in the Michigan study, but not as unified criteria, rather as rubrics or categories around which questioning was directed. In the translation to indices, things suddenly get more complex. Fascinated by the empirical relationships revealed, the authors hardly bother with a conception of mental health. Yet they surely contribute to our understanding of the multi-faceted functioning of people.

Perhaps this may be the fate of the multiple criterion strategy: to provide a map for research in the course of which the initial criteria get lost in the complexity of the relationships discovered. Yet from the point of view of the practitioner or professional who needs standards of human functioning and wants them to be grounded in empirical fact, the data reported by Gurin and Veroff can be highly relevant to the reformulation of mental health criteria. To mention one conclusion that I draw from several interrelated findings in their material, an awareness of personal problems is more properly to be regarded as an aspect of good than of poor mental health—an extension of Barron's observations as previously quoted.

V

The readiness with which multiple criteria dissolve into a multitude of empirical indices to be studied in their relationships, once the evaluative perspective becomes secondary in actual research, leads directly to the third major strategy through which research contributes to a concept of positive mental health. From one standpoint it is not a mental health strategy at all. I have in mind, of course, the main stream of research in personality, its functioning and development, pursued for the sake of understanding structure and causal relationships without any immediate concern for evaluation. Personality research becomes a source of insight into positive mental health when its results can be interpreted secondarily in an evaluative framework. Since the apparently more direct research approaches to positive mental health, with

their inherent pitfalls and ambiguities, turn out not to be so direct after all, I have little doubt that this roundabout strategy will prove the most fruitful in the long run. It has the merit of being governed by the intrinsic patternings of phenomena as they become progressively accessible to the tools of investigation. Sometimes these patternings may be relevant to the evaluative interests of mental health; often they may not. But research is likely to be more creative if it follows its own bent with a healthy opportunism, rather than being forced prematurely into an evaluative frame.

It would be pointless to try to identify the strands in this central research tradition, or to illustrate their contribution, actual and potential, to our thinking about positive mental health. There are naturalistic studies of individual personalities (White, 1952; Smith, Bruner, and White, 1956), with their demonstration that personal assets take many forms and are quite compatible with elements of pathology; these strongly favor a complex view of mental health in which multiple criteria stand in some sort of alternative relationship to one another. There is the long line of studies centering on the authoritarian personality (Adorno *et al.*, 1950), which in spite of some methodological detours has unquestionably added greatly to our thinking about the goals of personality development. There are developmental studies, and factor analytic studies, and studies of personality dynamics deriving, at long last, from some sophistication in psychoanalytic theory, with the result that this previously isolated source of insights itself stands to be refined and enriched. Just how personality research contributes to an emerging concept of positive mental health is as hard to state formally as its substance is difficult to itemize; yet its contribution has surely been substantial.

VI

During the course of this paper, we have looked at several paths by which research contributes to the elucidation of positive mental health: the direct assault, the multiple criterion approach, and the interpretation of fundamental research on personality. We have found merit in each, though greatest promise in the last, to which we devoted the least attention. But we have left dangling the question posed near the outset of our inquiry: How, in the light of research, are the ingredients of mental health to be distinguished from other values?

Neither the strategy of direct assault nor that of multiple criteria turns out to give us much assistance on this problem; both seem likely to come out with distinctions already built into the procedure of investigation, either explicitly or surrepitiously. Both are compatible with either nar-

rower or more expanded conceptions of mental health. The empirical relationships brought to light by research that follows these strategies may aid us in the volitional decision as to where to draw the boundaries, to be sure, but we cannot count on much help.

At an earlier point I suggested that if mental health is personality somehow evaluated, we are handicapped by the relatively primitive state of the science of personality. So long as personality theory must be represented by *theories* of personality (cf. Hall and Lindzey, 1957), we are in a poor position to set our boundaries according to guide lines suggested by any one of the several competitors. Here lies still another reason for the support of fundamental research in personality in the interests of mental health.

In the meantime, we do well to note some formal convergences among the various conceptualizations of personality. Most views of personality conceive it as some sort of open system with tendencies toward self-maintenance and growth in commerce with the environment. A closer look at the functional interdependencies that warrant the term "system" identifies two distinguishable though interrelated *loci* of organization, which for convenience I can label the external and the internal subsystems. The external subsystem lies in what Angyal (1941) called the biosphere, and concerns the dispositions and processes underlying adaptation, as newly emphasized in the psychoanalytic "ego psychology" of Hartmann and others (cf. Gill, 1959). The internal system, on the other hand, stressed in the traditional theories of Allport (1937) and of Murray (1938), and in the orthodox psychoanalysis of Freud, has to do with stable interrelations among the institutions and processes of personality, including the management of anxiety and tension. If we take the notion of system seriously, mental health can be identified with the stability, resilience, and viability—in a word the system properties—of these external and internal subsystems of personality.

This way of thinking ties mental health to our most general conceptions of personality in a schema that permits, or better, requires elaboration by research. It calls for the development of multiple criteria of mental health, and provides a framework for sorting out many of the ones that have been proposed, in terms of internal and external system properties. And it derives from the notion of system, which by definition has its own self-maintaining dynamic, a natural basis for evaluation on which agreement can perhaps be reached. This evaluative standpoint, which transcends culture and situation, is distinguishable, moreover, from other ethical values and is by no means all-inclusive. A Khrushchev can be mentally healthy but socially destructive; a Dostoevski, mentally ill yet artistically creative. Mental health, thus viewed, is complex and

not easily schematized. It is a cluster of values which compete with other values in the arena of personal and social choices. We will not always want to give it priority. That, I think, is as it should be.

REFERENCES

1. Adorno, T. W., Else Frenkel-Brunswik, D. Levinson, and R. N. Sanford, *The Authoritarian Personality* (New York: Harper, 1950).
2. Allport, G. W., *Personality: A Psychological Interpretation* (New York: Holt, 1937).
3. Angyal, A., *Foundations for a Science of Personality* (New York: The Commonwealth Fund, 1941).
4. Barron, F., *Personal Soundness in University Graduate Students* (Berkeley: University of California Press, 1954).
5. Devereux, G., "Normal and abnormal: The key problem in psychiatric anthropology," in J. B. Casagrande and T. Gladwin (Eds.), *Some Uses of Anthropology: Theoretical and Applied* (The Anthropological Society of Washington, 1956), pp. 23-48.
6. Gill, M., "The present state of psychoanalytic theory," *Journal of Abnormal and Social Psychology*, 1959, 58, pp. 1-8.
7. Gurin, G., and J. Veroff [National sampling survey on mental health] (New York: Basic Books, *in press*).
8. Hall, C. S., and G. Lindzey, *Theories of Personality* (New York: Wiley, 1956).
9. Jahoda, Marie, "Toward a social psychology of mental health," in M. J. E. Senn (Ed.), *Symposium on the Healthy Personality* (New York: Josiah Macy, Jr. Foundation, 1950), pp. 211-30.
10. Jahoda, Marie, *Current Concepts of Positive Mental Health* (New York: Basic Books, 1958).
11. Maslow, A. H., "Self-actualizing people: A study of psychological health," *Personality Symposia*, 1950, No. 1.
12. Murphy, G., *Human Potentialities* (New York: Basic Books, 1958).
13. Murray, H. A., *Explorations in Personality* (New York: Oxford University Press, 1938).
14. Smith, M. B., "Optima of mental health: A general frame of reference," *Psychiatry*, 1950, *13*, pp. 503-10.
15. Smith, M. B., J. S. Bruner and R. W. White, *Opinions and Personality* (New York: Wiley, 1956).
16. Stern, G. G., M. I. Stein and B. S. Bloom, *Methods in Personality Assessment: Human Behavior in Complex Situations* (Glencoe, Ill.: The Free Press, 1956).
17. White, R. W., *Lives in Progress: A Study of the Natural Growth of Personality* (New York: The Dryden Press, 1952).

DISCUSSION

Moderator: DR. GOTTLIEB

Panel members: DR. BELL, DR. BROWN, DR. GRAMS, DR. HOYT, MR. LINZER

Dr. Huston: I do not need to introduce to most of this audience Dr. Jacques Gottlieb, our former colleague in the Department of Psychiatry here, who is now director of the Lafayette Clinic in Detroit. He, too, participated in the First Institute on Preventive Psychiatry. It is always

a pleasure to have him back for a visit. He is to serve as our moderator this morning in our discussion of Dr. Smith's excellent presentation.

Dr. Gottlieb: I want to say that this panel wishes to conduct itself in an informal fashion as a reactor panel to the provocative and stimulating presentation of Dr. Smith. The panel has indicated its willingness, in fact its desire, to be interrupted by the audience; so the audience should feel itself as part of the panel.

Now certainly the presentation which we just heard has been most provocative and has raised a number of problems. Dr. Smith—without my belaboring the point—has pointed out the complexities of defining our concept of positive mental health—if it can at all be defined—and he has posed some of the innumerable problems surrounding this concept. His thesis resolved around the issue: How are mental health values to be distinguished from other values?

He proposed several methodological approaches to this problem. He gave us examples of the frontal assault, using the work of Maslow and Barron as illustrative material. He then presented the second approach, the conceptual framework in terms of multiple criteria, and revealed the difficulty here of translating the theoretical criteria into empirical indicators. And thirdly, he pointed out the basic value of research into development and structure of personality. He raised the question of the concept of general systems as a possible theoretical platform for solution of this very posing problem.

With this very brief summary of the points as I saw them, I'm going to now take a seat and open the discussion, hoping that one of our reactors here will be strongly moved to initiate reacting.

Dr. Brown: I have been wondering whether we don't need another dimension in our discussion of mental health, ways of achieving it, values represented by it, and so on. I think perhaps we'd look at the approaches Dr. Smith mentioned a little differently if we first were to ask ourselves *why* do we want it? Is it because we think that people can be more comfortable with themselves? Or would we like to see the possibility developed for their becoming more comfortable? Is it because we think that with certain kinds of knowledge available, people can learn how to be the kind of people with whom *other* people can be more comfortable? (That's another possibility!) Or is it because we want to add to the store of creative potential in the world? Or is it just because we're a little scared and we think, for instance, that we ought to know how to get on better with the Russians?

I don't mean to be facetious about it, but I do think that perhaps the goals for mental health, either as a field of knowledge or as a movement or a complex of movements, have a good deal of bearing on the way we

work with it, the kind of research we institute, the methodology we are interested in, and the possibility for discovering ways in which, perhaps, these goals can be reached.

Dr. Bell: I'd like to work a little further with Muriel Brown's point. But first of all, I'd like to mention, relative to Dr. Smith's presentation, that I find myself comfortable with this general approach and I think that most research people would find that they would accept, in general, the major outline of Dr. Smith's points.

It has been mentioned that there's a tremendous admixture of evaluation in the concept of positive mental health. The term "positive" is, of course, the evaluative component and this frightens research people and they struggle to do something about it to try to get the evaluation out. It's correct to point out, nonetheless, that values determine the areas we function in in research; values may determine the problems we select; they determine the rating scales we set up, the situations that we observe. Actually there are certain kinds of research approaches in which the values will even completely determine the results!

I would like to make one small point on this matter of values relative to Barron's work. If Dr. Smith had had the time to go into it more, he might have mentioned that there were some surprises in this for Barron and Barron's associates. This was a subculture of clinical psychologists; and from what I know of this subculture, they were a little shocked, I think, to find that you can't have everything. That is to say, here were some sound people, as judged by the departmental representatives, but, lo and behold, these sound graduate students *weren't* spontaneous and warm and sociable. In other words, the researchers ran into the "law of costingness"—you can't have everything! Though it's hard to assert this with any evidence, I believe, knowing the culture out of which Barron and his associates sampled, knowing their value structure, that this was a little surprising to them. I think that they would rather look upon a sound person as a general all-around effective person, a good graduate student, sociable, warm and spontaneous with his associates, but they didn't quite find this!

So my point is that if the research is properly set up, if there are safeguards in the project, as there were in Barron's, the research worker can be prevented, to an extent at least, from just getting back his own values in the results. The safeguards were mentioned there: They had two different groups—they had one group for the independent variable and one group doing assessment on the dependent variable. This isn't a complete safeguard; but, and it is an important point to keep in mind on research, if it is set up properly, you can find that your values don't quite go together the way you thought they would. In this respect, research

can help. But after we have the research findings, we still have the problem of what are you going to do with them?

Now to the point that Muriel Brown made: What are our goals and how can we achieve our goals? I would like to suggest another approach, which is that we frankly assume that we can't achieve and maximize all these lists. Dr. Smith has suggested three; Jahoda has six; there are varying numbers that you can set upon this. I think Barron's research points out what I would personally guess would be the outcome of all this, that we will find out that in finite situations, with finite people, we won't find anybody maximizing everything, that instead we will find out that there are simply different patterns for living—in a graduate school or in a community—and these will give different patterns and profiles on the six elements, or three, and that inevitably we'll come up against the fact that you can't have everything in the area of positive mental health. We'll find out that we are only able to realize our potential to different degrees; we'll simply be able to achieve some things but not others.

Mr. Linzer: I'd like to relate my comment to the question: What are we going to do about the findings once they are ascertained?

I'll examine this from the point of view of the role of our organization, the National Association for Mental Health, because this organization, among other groups, is charged to accept the responsibility of sharing new knowledge with the general public since we are one of the media through which new understanding and new insights reach people in large numbers. We can only be effective, in a movement such as ours, as we can share increased understanding and new knowledge.

Now in one sense we have been rather successful. This has been in terms of our work in regard to public understanding of mental illness. We're very intrigued with the recent Elmo Roper study,° made in December, 1958, which reported that, next to education, people are more willing to be taxed for the care and treatment of the mentally ill than for any other community service. They're more willing to be taxed for the care and treatment of the mentally ill than they are for social security benefits, highways, prisons, unemployment compensation, and a number of other things. The Roper organization attributes this new acceptance on the part of the public to the work of organizations such as ours that have acquainted people with the need to accept and understand the mentally ill.

With regard to our concept of mental health, Dr. Smith noted that it is viewed by some as being almost synonymous with salvation. I can attest to this, also, because in some of my work with community groups

---

° See "More tax money for public services," in *The Public Pulse* by Elmo Roper and associates; released through National Newspaper Syndicate, December 20, 1958.

I've encountered this conception. I led a mental hygiene course for officers from the Salvation Army and we had a difficult first session because they were not aware of my concepts. Finally one person said, "Now, if you'll use the phrase 'a saved person' for a mentally healthy person, we'll understand you perfectly because the person who is 'saved' has all of the virtues that you attribute to mental health!"

Along this line I had another very interesting experience of leading a course in mental hygiene for a group of nuns in a Catholic orphanage. They didn't understand my concept of mental health and a mentally healthy mother. They couldn't understand, for example, why so many of the dependent neglected children in their institution were the products of Catholic mothers. This made quite a dilemma for them. So we talked about certain indices of mental health and mental illness. And they said, "Now, we don't understand this concept of mental health, but if you'll talk about 'the natural mother,' we'll understand you and we'll know exactly what we're doing."

The public, then (or so it seems from our perspective), is seeking a panacea. They want the short, the quick, the readily understandable definition and the immediate application of this knowledge. I remember a few years ago when we tried to prevent poliomyelitis, we were told to wash our hands and wash our fruit and keep out of crowded places and see that our kids didn't get overtired. And, lo and behold, a miracle ingredient was introduced—the Salk vaccine—and all the folklore about clean fruit became less important.

The new miracle drugs, also, have encouraged the panacea concept in terms of treatment of illness. Even many physicians, I think, have given the public this expectation. We're told that some physicians use drugs that include a number of ingredients because they're not sure what they're treating but they're hopeful that the combination will knock off anything that's troubling the patient! This is what the public is learning to expect, unfortunately.

The scientific people in our midst who are encouraging this point of view make the job for an organization such as ours very difficult because *we* consider our goal as being one of identifying new understandings, evaluating them, and communicating them to the public. And our work, I want to assure you, is difficult to those of you who originate these new concepts because the new concepts by themselves are ineffective. It's the ability to communicate them, have people adopt them and use them, that becomes important here. You tend to leave us in a very precarious position because the public expects of you through us something that apparently we at the present time and in the closely foreseeable future can't offer to them.

Dr. Grams: I'm much interested in this whole matter of values and the way in which it keeps popping up. It seems as though the literature today is becoming increasingly loaded with statements about values. The amazing thing is that we manage to circumvent the problem, or at least keep from getting too deeply involved, simply because we say that this is not appropriate to our method, or, it's an area that is outside the boundaries of science, and so on. Yet I can't help but feel, as I look at this literature, that ultimately it is within the context of values and that a number of very important keys are to be found to this question of positive mental health. And I think some of our basic personality theory reflects this, whether we admit it or not. Some of the ideas that have cut through the literature, particularly in child development, in the last thirty or forty years, reflect values. I know that at a conference some time ago we had an interesting discussion of just what it is that research does, not so much for people as for researchers; or perhaps it's better to say what it is that research does *to* researchers—I mean in terms of limiting the perspective, limiting the viewpoint of individuals who must deal closely with research problems.

The point I'd like to add here is that maybe we need to ask again a rather basic question, which I see by an ad in the last issue of *The American Psychologist* has now appeared in print as the title of a book; namely, the question *What Then Is Man?*

We're coping here with the question of, as Dr. Smith puts it, how do you differentiate between mental health values and other values? I can't help but ask why must we make such a differentiation to begin with? It seems that we are going to be forced into a theory orientation, and I think that good theory is in the process of being developed. I feel that there has been a lot of work recently that is pointing toward what I would call a "relational theory of personality" built around the concept of human abilities and looking at man as a kind of (as I like to call him) "ability-studded organism." Then, as we study his behavior, we see two things happening as he moves toward maturity (and I think these two things probably are areas that can be investigated further under the topic of positive mental health): One is that the human being needs to elucidate goals for himself in terms of values, which, to a certain extent, are the product of his educational experiences and the contacts he has had with other people but which are also, in part, dictated by the very nature of his being—hence the question I mentioned before, "What, then, is man?" Secondly, I think we see in healthy human beings a degree of commitment and dedication to goals which can propel individuals in the direction of the optimal functioning that Dr. Smith was talking about.

It's certainly true that mental health cannot mean the same thing for all people, but I do not think that this means that there is not an underlying unity to human personality—rather that personality is probably the individual expression of the almost unlimited variation which man's natural potential can take. Consequently, I'm sure we need to raise questions in areas that will involve us in an interdisciplinary approach, that will involve us in philosophy, if you will, or that will involve us in theology. I was much interested in Dr. Smith's remarks that this is the area where scientists and philosophers and theologians have always parted company in a cloud of dissension. I think that is no longer so true as it once was, and I have a feeling that we're not going to settle this matter simply within the area of the social scientists. As I said, we're going to have to ask more penetrating questions about the nature of the human being, because his mental health involves very definitely his grasp of goals which are dictated, in part, by that nature and by his commitment and direction of his life toward those goals.

Dr. Brown: Could I say something to that point just because it occurs to me? In thinking out the journey toward those goals, we need to be much more aware than perhaps we are now of what the concept of development means. How many times we contradict ourselves in these discussions! We talk about integration as if it were something to be achieved once and for all, as if health were a unitary characteristic, as if maturity were something which you got and kept, or something that you worked toward and finally reached.

Well, none of those things are true in the concept of development as it's really understood. So in connection with what Armin Grams has just said, I would like to put in a very strong plea for keeping in mind in this discussion what the real implications are in the concept which we've accepted without having gone very deeply into.

Dr. Hoyt: The only concept, it seems to me, which we've accepted is the one which we call here "creative mental health" and this concept we have accepted as a goal; that is, helping each person become better, so to speak.

I was much interested when I read this topic, Dr. Smith, in anticipating how you would attack it. It seems to me that Dr. Smith was given an almost impossible topic to talk about because this was a topic that was are not related to a setting; it was not related to any purpose that grew out of a particular setting. I think he did a magnificent job. But I suspect that most of us as we sat in the audience and listened were thinking: How does this apply to what I am trying to do, and how does this apply to the environment in which I am operating?

And this we must do, obviously. Yet I don't think this should become

the topic of conversation at this session because we should be more concerned with the idea of where we are trying to go in this developmental concept of mental health. We have had pointed out that we're always concerned with two things: one having to do with factors within the individual and one having to do with ways in which the individual is able to react with other individuals. Now we haven't said for what, and we haven't said why, and we haven't said how we would go about making changes when we observe certain phenomena taking place, and I'm not sure that we really ought to do that at this point. We are concerned basically with defining what *is* this thing called mental health. And I would quote Dr. Smith as saying that if we could say what it is, then how could we measure it?

Dr. Brown: But it's so many different things! What worries me is that sometimes I feel as if I should put on a bonnet when I talk about mental health because for years and years I have thought I was committed to the concept of the total personality. Yet you talk about physical development and physical health and mental health, and you seem to be fractionating again the very wholeness that you've been trying to encompass in your thinking. I wish somebody would react to that because I think there are questions that could be raised about the phrase mental health itself that are limiting us in what we're trying to do.

Dr. Smith: I'd like to respond to that challenge because it seems to me that the notion of total personality is useful in some contexts and is really a terrible trap and a pitfall in almost any other context, in that one cannot talk about totality meaningfully, all at once, without speaking poetry or prophecy. In order to talk practically, or in order to conceptionalize so that one can add to understanding through research, one has to analyze, recognizing that one is abstracting, recognizing that one is cutting into the way in which unity ties everything together, but nevertheless going ahead and doing it. I think the very things which make any concept of mental health a limited one, as compared with an all-embracing conception of total personality, are just the respects which make it a more useful one potentially because it gives us some handles to take hold of, whereas totality has no handles.

Dr. Brown: But where do you finally reach the place where you can say positively that a given phenomenon is physical, physiological, material, and not mental or vice versa? To me it's getting more and more difficult as I read the research to separate those two things. That's why I wondered whether we do help ourselves by labeling a discipline mental health, for instance. I don't know—I don't want to push it too far, but I think it's a real problem.

Dr. Lovett Doust: I think we're all interested in any help for positive

and creative mental health; but this is a question, surely, which has been asked since the dawn of man by philosophers, by people interested in God and the relationship of man to God. This is a concept which men have had a tremendous number of different ideas about. And I don't know that any of our ideas today are too different from those that have developed in the evolution of man. But I think today we are particularly interested in mental health because of mental illness, and I think that the tremendous response of the public in their interest and in their turning over of funds to research in this area has come about because of the tremendous impact that mental illness makes upon society today.

We've only recently come to grips with the prospects of having our hospitals throughout the country half full of mentally ill patients. There are as many mentally ill patients in hospitals as there are physically ill. This is the sort of statistic that brings people up and makes them look at mental illness and by contrast with mental health. There's a fascinating book recently published by Paul Lemkau[2] of Boston (it's interesting that Lemkau is not a psychiatrist but an expert in public health administration), and he makes several terrible points in the book. One of them gives this information; namely, that one out of every 12 children born in the United States today is going to spend some period of his life in a mental hospital. This is the sort of statistic that grips us all. He gave another observation and that was that between 40 and 60 per cent of people, if they brought their problems to a psychiatrist, would be accepted by that psychiatrist for psychotherapy—a fantastic thing. These are the areas, I think, which are of immediate concern to us, and this, as I say, is no new problem. It can be redefined in common, everyday terms over and over again, but the problem itself is as old as man.

Dr. Tasch: I'd like to comment on a point raised by the panel. From the way you've presented it, it looks as though we're in a dilemma, and the reason why we're in a dilemma is because we're stuck with our methods of carrying on research. And so long as we're stuck with a qualifying kind of methodology, I don't see how we can speculate about "what-then-is-the-nature-of-man?" You can talk about the "ability-studded organism," which adds up easily, but which won't really make up your organism. So it's easier to get factor analyses, but with these conventional research methods we're still not going to get the answer to Professor Grams's question: What, then, is the nature of man?

Dr. Blatz: I wish to make a light comment on what our member from the National Association for Mental Health had to say about the Salvation Army. During the war I had the privilege of doing some research on

---

[2] Lemkau, Paul, *Mental Hygiene and Public Health*, 2nd ed. (New York, McGraw-Hill, 1958), 486 pp.

some evacuated children and we had a training program in Birmingham for them. A number of these nursery schools were being carried on by the Salvation Army. I visited them from time to time, and on one occasion they were going to have the youngsters all sing. The Salvation Army officers had taught the children hymns instead of some of the more usual nursery rimes and tunes, which was perfectly all right; but as I was listening, sitting there beside one of these children, the hymn was "Stand up, Stand up for Jesus!"—and they sang this quite lustily. Suddenly the robust four-year-old beside me reached over, picked up a sandwich, looked inside it and, while he was singing, said, "Bloody old cheese again!"

This has a very interesting impact on what we've just been saying. For we know perfectly well that we can teach and we can say a lot of things, but we're never sure what the students or what the public are going to make of it! So I sympathize with our friend from the National Association.

However, those of us who are clinical in our efforts apply immediately what we can glean from those who do the research. (It may be ineffective therapy, but we have to live!) We can't wait until panels such as we have here of distinguished people tell us what this research means. When a person comes to us for help, we have to say, "Do thus-and-so."

In this connection, I always take comfort in the fact that the people who are not in psychiatry or mental health, those physicians, let us say, in physical health, are no more able to determine what is good physical health than we are with good mental health. They have, in a sense, given up talking about positive *physical* health—they leave that primarily to the *Reader's Digest!*

Now let me give you a story which shows why I believe that doctors in internal medicine are no further ahead than we are. Some years ago our governor general, a distinguished English statesman, was examined by one of our outstanding internists, who spent three days examining him and then published the report, in sum, "The Governor General is in excellent health. Nothing is wrong." He fell dead next day!

I often bring it to mind when I hear people saying that we must arrive at some basis for discussion of some definition of mental health. All I feel about it is that the normal extends far wider than the abnormal. Some people seem to think that mental health refers to a strong group of people who are healthy mentally and that all the rest of us are just a little nuts! I choose to think that 95 per cent of us are quite normal and that there is only a small group of the greatly disturbed—this in spite of the statistic that Dr. Lovett Doust quoted. There isn't any question but that a good many of us are going to seek psychiatric help, or at least some

kind of counseling in our lives; but that doesn't mean that we have departed from being fairly normal people.

Dr. Pierce-Jones: The thing which intrigues me is related to things which both Dr. Smith and Dr. Bell alluded to. It's simply this—that I'm awfully afraid of globalism, whether we talk about mental health or mental illness or schizophrenia. I'm wondering if the implication of Dr. Bell's earlier remark about profiles is not really that we ought to conceptualize some particular dimensions of behavior and study their antecedents and corollaries, much as has been done, for example, in the area of hostility and reported in very comprehensive fashion by John Paul Scott[3] (in a recent book in the University of Chicago biology and medicine series) in which genetic factors, physiological factors, cultural factors and learning theories based on experiments have been brought to bear upon understanding aggression and hostility as a behavior dimension.

Dr. Brown: You're talking about a behavior dimension and about the complexity and the interrelationship of the factors that will be involved in it. That's the most sensible meaning of global, isn't it?

Dr. Pierce-Jones: Of course you do refer to levels of analysis here.

Dr. Brown: I mean levels—and there's a semantic problem there, too.

Dr. Pierce-Jones: There certainly is.

Dr. Brown: There's a very real one. But I was thinking of the fact that by a certain age, if you project the curve, there will be so many people in state hospitals. They'll be there with disturbances of behavior and that behavior may have a dozen more or less subtle causes; and some of them may be in the area which for *convenience* we label "physiological" and some in the area that for *convenience* we label "emotional." But more and more the term "mental" is seeming inapplicable. That's the only point, and maybe we waste some time when we stick around on that because what we're interested in is behavior and the way "behavior behaves"—under what kind of conditions and in relation to what goals, isn't this so?

Dr. Pierce-Jones: And this, I think, is in shorter form part of the point I was making.

Dr. Brown: Yes, I just wanted to be sure I understood. Thank you.

Dr. Bell: I would like to question the notion that the interest of the public in mental health is powered entirely by a desire to avoid mental illness or a desire to do something about these statistics. It's very difficult to say what is providing the energy for public interest in this area. I suspect that it would be difficult to try to demonstrate that all this

---

[3] Scott, John Paul, *Aggression* (Chicago University Scientists Library of Biology and Medicine), University of Chicago Press, 1958, 148 pp.

interest in mental health comes from a fear of figures like one out of 12 and so forth. Actually, I think that quite a bit of this interest is coming out of parents who have more time to deal with problems of child development, and I think they want help. After all, when you have a forty-hour week, a father can get more involved in the family; and when a mother has a reduced commitment to physical labor in the home, she has more time to cope with problems of development and mental health. It would be a mistake to sell short this sort of influence in the national picture of what is giving us strength in our mental health program. I doubt that we can deal with this entirely in terms of how we can avoid mental illness. It reminds me of the saying that no soldier thinks he's going to be hit by a bullet—it's going to be someone else. And that one out of 12—that's someone else's child. But if your child is having reading difficulty, or he's kicking up a fuss over the first grade, or if he's doing this, or that, you want to do something about it; and you're not necessarily thinking of this in terms of mental illness.

Mr. Linzer: I don't know as I'd agree with you. We explore the interest of people in this entire area and we find that there are many factors that are involved. We are in a changing time. Those of us who work in parent education are impressed as we discuss with people their interest in understanding their roles as parents that they can be led—and I use this word advisedly—to say that they're hoping through this experience with parent education to make their children less susceptible to emotional disturbances. And I believe that this is a factor in the interest and concern they have for parent education and various other aspects of mental health programs. However, we are talking about things that people now can perceive as having certain causal relationships. This is the era of psychological insight. And while they are concerned about the possibility of emotional disturbances, they are also concerned about possible mental illness occurring in their families. I think this is a very powerful drive in people in terms of their interest.

Another thing that has been very interesting to us has been the change in the kind of volunteer workers in the mental health movement. Ten years ago the more typical volunteer in the mental health associations was a more intellectual person concerned with theory and possible use of theory in his own life experiences. And the members of this group met equally with professional people to explore ideas about mental health, child care, and so on, but had little interest in mental illness by and large. Now that we have become more of a citizens' movement, we are finding that we are attracting a service-oriented volunteer, who's more interested in offering a direct personal service through working in clinics, institutions, hospitals, etc. We haven't completely lost the

original group, but we're finding a humanitarian (that's the way it's described) attribute in these new people. They are bringing an entirely new dimension to our movement. And part of the great growth and acceptance of our movement in the past ten years has been due to this opportunity to serve that now is provided. There are many reasons, as we will all acknowledge, for the public's interest and concern, but I will not sell short the idea that there is a fear and apprehension about mental illness that is basic in much of their interest.

Dr. Filley: I'd like to go back to Dr. Bell's point and go a step further with it. I think that people are concerned about their children but not nearly so much from fear of potential mental illness. It seems to me that a great many people have been through experiences in their lives: They were dissatisfied, they faced certain struggles, they had anxieties, they did not like the way things went as they grew up, as they faced jobs, as they dealt with various things in their lives. So, as a result, their concern is not to prevent gross disease; as with the soldier, it's "not going to happen to them," but there's something that did happen to them that they don't want to happen to their children. People are concerned with the minor degrees of variation, not just the avoidance of anxiety but the avoidance of real trouble during adolescence or various other phases of life, and they wonder how to do something more for their children. I think that this is one of the big factors in people's interest in mental health today.

Dr. Grams: I'd like to amplify that if I may. I, too, feel from my experience in parent education that many parents are concerned certainly about avoiding emotional disturbances in their children; and I agree with the point that you made. But I think, too, that one of the reasons they fear emotional disturbance in the child is that they have learned from the tremendous volume of literature about this that an emotional disturbance will somehow reduce the possibility of their child's achieving a maximal performance or maximal achievement of some sort of a goal they envision for him, perhaps in a very nebulous way. I think their fear of the youngster's developing difficulties relates to this fear of his not achieving to the degree he might. They think in terms of this being a hindrance to him.

I would agree with Dr. Filley and Dr. Bell. I don't think it's just a matter of the parents' being afraid of their child's ending up as a statistic in a mental hospital.

Dr. Brown: There is one more very strong motivation that we're noticing in our parent groups; that is, a feeling of responsibility on the part of parents for preparing a child (if there is any possibility of doing such a thing) for a future that's precarious and unknown. Whether

they're justified on that, I don't know; but this has entered strongly into the requests for parent education materials that parents make pretty well over the country.

Dr. Hoyt: We've been selling parents and others on the idea that if we work in creative mental health, we can reduce the incidence of mental disease; and we have further pointed out to them that if we follow maxims of creative health—or whatever we want to call it—we can somehow become more "successful." You can find all sorts of materials that tell how we can become more successful. I read something the other day that's being distributed through the schools for seniors which is entitled "Seven Ways to be Successful." The first rule is, "Never fail!"

We seem to have sold people on the idea that if we attack things psychologically—and I think Dr. Smith made the most potent point here of all—we must have some base to start on; and a psychological base seems to have wider applicability than most any other for attacking this problem, coming back to theories of personality development and evolving from there.

Mr. Hollyer: I think we're talking about two philosophical approaches. I have seen from my own experiences in parent education and work in service settings that these two aspects discussed here keep coming up. I think if in your publicity and so on, your service or parent education program is offered from a preventive aspect, using the fear sort of selling (the one in 12 and one out of four basis), that then you would tend to attract to your groups people who are responding out of their own fears. You get groups in which you find yourself with parents who themselves need individual psychotherapy, or seem to. This is what they seem to come for.

On the other hand, if you're selling your program or interpreting it as designed to help people be more creative or get more enjoyment out of life, help kids over the stumbling blocks, etc., then you'll probably get a group like one I had in western Nebraska, in which the kids were "normal" kids and the parents were concerned with how to better use their leisure time and so forth. Riesman in *The Lonely Crowd* gives me the answer for this increased interest in mental health; at least for me it's a better working philosophy, and Dr. Bell has described it, in that people have more time to concern themselves with improving their social existence so that they are more interested in learning how to achieve better mental health.

There is, however, another group of people who are frightened of pathology, and so you get some of them, too. I think that the National Association for Mental Health—at least the individual chapters that I've known—tend to emphasize the pathology, whereas some other groups

emphasize the other side, and I don't think the two are incompatible. They can exist side by side and supplement each other because there are people who are afraid of being sick and there are also people who want to be happier.

Mr. Buchmueller: I've been wondering whether we might not be falling into the same kind of a trap that some people outside the profession have done, and that is attempting to oversimplify a very complex thing involving motivations of people who come into some kind of parent education experience. Whether the motivation be fear of something specific or whether they want the kids to be more successful or whether they're interested in the kinds of things which we have thought constituted mental health, unless our parent education programs are well thought out as to desired goals and possible effects, the results might be perfectly terrible because we would be attempting to place in a very simplified framework something that cannot be done this way. Where the value of this particular conference may be is to take a look at what a variety of approaches have to contribute to the concept of mental health, what some of the different kinds of frameworks are, rather than attempting to search for simplified solutions.

Dr. Gottlieb: That last request is very difficult.

Dr. Smith: I'd like to give a reaction to Mr. Hollyer's comment. It seems to point out a really urgent task where research could contribute very considerably to a clarification of our thinking in this area; namely, just what the relationship is between the prevention of pathology (that is, trying to lower that one in 12 incidence) versus the bringing out of good functioning potential on the other side of the picture.

I would be willing to venture a couple of propositions: the first one is that we know practically nothing firm, research-wise, about the prevention of pathology. We do a lot of things, we use the best hunches that we have, but there is just no good solid evidence to back up our conviction that we prevent pathology when we follow the kinds of programs for parents and children that we believe are the wise programs to follow. So there is one research task of a tremendous sort to follow along this line and really firm up what knowledge we can attain on prevention of pathology. It may turn out that pathology is relatively irreducible, given the human situations and the human genetics that we have to take.

Now the other research problem that seems to me to come from this has to do with the relationship between the prevention of pathology and the attainment of good functioning in various areas. I would venture that we know more about the development of certain admirable traits like independence, acceptance of responsibility, and so on, as the result of some of the recent research programs in child development. We know

much more about this than we do about the prevention of pathology. What we don't know is whether the distance made on these positive fronts has any correlation with whatever gains we may make on the prevention front. I believe that John Clausen[4] raised this question in his review of research on mental health. Does positive mental health, does any variety of these positive values have any correlation with resistance to breakdown under stress? We just don't know, and it's terribly important for us to find this out. I think this kind of question is thoroughly researchable, and eventually we will have a great deal more than we now know on this score. When we know this, we'll be in a much better position to make intelligent value choices and thereby arrive at a clearer way of thinking about these things and then we can marshal our forces.

Mr. Linzer: I would like to echo Dr. Ernest Gruenberg,[5] who, in a Milbank Foundation report, acknowledges that there's little we know about the prevention of pathology but indicts us severely for not applying that knowledge about prevention that we do have. For example, he cites in this reference the great deal that we know about birth injuries and our lack of attentivity to a number of birth injuries that affect brain functioning. A recent study by the Maternity Centers Association of America indicates that more brain-damaged children are born between the hours of 11:00 p.m. and 7:00 a.m. than at any other times. Why is this? Are we applying any knowledge to try to prevent this? I'm sure it's not a question of merely setting the clock, but what is the relationship?

Gruenberg also points out that many elderly persons admitted to mental hospitals suffer basically because of nutritional deficiency; but in the warmth, in the comfortable setting of mental hospitals and with adequate food, they are restored to a degree of efficiency they had not experienced previously. Gruenberg talks about certain other aspects of mental health, for example, the irrationality of this country towards the ADC program (Aid to Dependent Children). This program is endorsed and supported by our national government because we want to help keep families together and we don't want mothers out working in order to maintain the integrity of the family. Yet the atmosphere in many communities is one of shame and embarrassment directed towards those who receive ADC help, with the family suffering socially because of the handicap of a parent. This does not contribute to mental health. I would like a conference dedicated to creative mental health to not overlook the

---

[4] Clausen, John A., *Sociology in the Field of Mental Health* (New York: Russell Sage Foundation, 1956), 62 pp.

[5] Gruenberg, Ernest, "Application of Control Methods to Mental Illness," *Planning Evaluations of Mental Health Programs*, Part II, Milbank Memorial Fund, 1958, pp. 29-56.

group of emotional and mental disorders that we do know are preventable.

Miss Lay: I was very glad that Dr. Brown raised the question of the physical component for it seems to me that man is made up of two systems, that we have to recognize the fact that we're "body and soul"—whether we borrow the term from theology or from the song of the early twenties! Medicine, a few decades ago, operated almost as though man were a zombie, a body but no spirit; and sometimes I think we tend to get the reverse of that and talk as though man were a "spirit disemboweled." We need to study the two systems within the framework of personality.

But to shift to another point: When we talk about mental health, aren't we really talking about absence of disease? I hated to see the semantics of these terms dismissed so quickly. I think it's important that we try to define our terms. This helps in communication. There was a time when we said "creative" or "positive" mental health and we meant growth and development of the personality; and I wonder whether we weren't talking about growth and development this morning, rather than "bad mental health." My point is that it's important to stick with semantics sufficiently so that we know what we are talking about whatever terms come out.

It also went through my mind when we were talking about the nature of man that man has wonderful and powerful potential. Certainly any of us who were close to the aftermath of war in Europe have seen the horrible potential. And I must say that when I read the newspapers of the day, it's very tempting to see what Bergdorf's is advertising and thus avoid reading the details of what's going on in different parts of the world. It's a great temptation. I think there are many people in the world who are aware of this awful potential in man, and this is what was referred to when the comment was made that people are insecure in the world and are afraid for their children and for the next generation. I think this is a very real thing.

Somehow, it seems to me, we've got to think about stemming the tide, a tide that either is more apparent since the war or is worse since the war. We have to reach the masses of people in some way, not the ones who are sufficiently sophisticated so that they go and find the parent-teacher groups—I don't belittle that; but there is a tremendous area that we've got to put our minds to—how do we reach those who are not sophisticated enough to get very much out of the *Reader's Digest* or pick up *Woman's Day* at the supermarket. These groups, in our large urban areas particularly, are an important challenge.

I don't know how you can find out what makes strength in people, but I do think that there are groups of people who have displayed remark-

able strength in the face of great burdens who should be studied for clues as to what has given them the strength to go through what some of them have. I have in mind particularly some of the children who survived the concentration camps, who were brought to this country and who have made a miraculous adjustment. As one of them was quoted as saying, "I don't think about it any more. It's just a bad dream." And this is one kind of thing that we ought to study.

Dr. Gottlieb: I believe the time has come to bring this panel discussion to a conclusion. First, I would like to thank Dr. Smith for his stimulating presentation, which has provoked a great deal of expression both from our distinguished panelists and from those of you in the audience, and certainly I want to thank all the participants.

I would like to conclude with the request that even though optimum mental health at the present time cannot be defined collectively, perhaps we can make, as a result of our interaction here, added facets to our individual definitions and carry this with us through the other sessions which are in store for us.

Dr. Smith's reference to system study will be illustrated on the other panels, for there is one on genetics, one on physiological mechanisms, one on sociological mechanisms, and one on social institutions and law. And as we receive information from and interact in these settings, I hope we'll add to our discussion of this morning and go away with "positive mental health!"

INTRODUCTION TO CHAPTER III

Dr. McCandless: It is a genuine pleasure to introduce to you Dr. John Lovett Doust, who is an associate professor of psychiatry at the University of Toronto. He is also a member of the Royal College of Physicians, England, and a fellow of the Royal College of Physicians in Canada. He has an extremely rich and varied background, which is by no means confined to medicine and psychiatry since he studied philosophy, psychology, and theology at King's College at the University of London before going into the medical sciences. He spent four years as a British physician in the services, from 1943 to 1947, came to the United States on a Nuffield Fellowship to Cornell Medical College, went back to England in 1950. He was senior lecturer in psychophysical relations at the Institute of Psychiatry at the University of London and was also a consultant physician to Maudsley and Bethlem Royal Hospitals. The western hemisphere lured him again in 1952 when he came to join the Department of Psychiatry in Toronto. He will tell us what he is up to at the present time. It is a real pleasure to present Dr. Lovett Doust.

CHAPTER III

Recent Investigations in Selected Aspects of the Physiological Dimensions, and the Implications for Prevention

JOHN W. LOVETT DOUST, M.B.

Thank you, Mr. Chairman. It is indeed a privilege for a Canadian to be invited to address a distinguished gathering such as this, but I am mindful that the State University of Iowa has for a long time had the reputation for facilitating international exchanges, and it was with delight that I recognized the names of so many of my friends on the program of this Second Institute on Preventive Psychiatry.

My topic for this afternoon is concerned with some of the advances ("break-throughs" is the fashionable term) resulting from biological research into the emotional problems of psychiatric patients, and the

preventive implications of these advances. I have the results of some investigations currently being carried out in the Department of Psychiatry, University of Toronto, which I propose to report, but first I would wish to discuss briefly with you certain aspects of some earlier work on to which our present efforts have been grafted. I shall classify these approaches under three main heads.

FIRSTLY THEN, THE RELATIONSHIP OF ADULT BEHAVIOR DISORDERS AND MENTAL ILLNESS TO PATTERNS OF GROWTH AND DIFFERENTIATION

It is almost an axiom in psychiatry that the seeds of breakdown in a patient must be sought in his premorbid personality and that the form, the timing, and even the outcome of the illness are largely determined by factors quite unrelated to the apparent precipitating cause, if, indeed, such an immediate cause can be discerned at all. Numerous attempts have been made in the past to implicate a number of different epochs of development as crucial to personality evolution. These epochs range from various degrees of genetic penetrance of inherited morbid traits prior to conjugation of the ovum, through the trauma of birth, the ability of the young child first to be able to form conditional reflex responses, the recognition by the child of certain anatomical differences between the sexes and the genesis of castration anxiety from this percept, up to such flights of fancy as the "primal scene." Earlier authors have stressed the torments of puberty and adolescence, etc. I shall not touch on the genetic factor at this time because it is to be handled specifically later in this symposium but I do propose to deal with some other evolutionary epochs which appear to be assuming a growing logical prominence in the story of personality development: I refer to those occurring during the enormously important nine months lived by the child prior to its birth. Growth is taking place at a tremendous rate throughout this period with differentiation and morphogenesis mainly during the first third of the time. Pregnancy hazards have too long been assessed solely in terms of the mother's well-being and only very recently (e.g., 77) has some serious attention been given to the health of the fetus—and this despite the conviction of W. J. Little (46) one hundred years ago that the mental and physical condition of the child depended very largely upon such hazards. Bailey (3) has critically reviewed the 500 or more investigations since this time which have attempted to correlate fetal asphyxia with mental abnormalities in the child. That a clinical correlation exists there seems little doubt; how the one stands causally in respect of the other seems to call for more and better designed experiments, including those on animals. Certainly the few animal experiments which have been

attempted have yielded uniformly conclusive results. Scheidler's (73) work on the effects of prenatal anoxia in rats and Meier's (56) similar studies on chick eggs are examples of such fruitful applications. They prove that critical prenatal periods exist for the development of behavior and that behavioral alterations inevitably follow reversible prenatal structural changes induced by anoxia. It would seem that such morphological and physiological changes bring about a brief depression in the organism's sensitivity and ability to respond to environmental change. In essence, this relative loss is a perceptual one, a lapse of the continuity of lived experience, and confirms the clinical studies suggesting similar perceptual anomalies in brain-injured children (57) when tested for flicker fusion and for perception of real motion (75, 76-a, 76-b).

By far the majority of work relating prenatal anoxia to abnormalities in mental development has emphasized various types of intellectual retardation as the outcome of such insults. The field is, however, much broader than this and evidence implicating natal or prenatal anoxia in many other psychiatric disorders is accumulating. Epilepsy (21, 26, 38) and especially temporal lobe epilepsy (65), behavior disorders (4, 5, 71), psychopathy (20), and neurotic anxiety (23) have all been described, and many convincingly, among the sequelae of prenatal or natal anoxia. That stressor influences may lead to an arrest or a deceleration of the growth process when the fetus is insulted in the later phases of pregnancy, or to a morphodysgenesis when the insult is applied in the early stages of ovum implantation and up to the establishment of an adequate placental blood supply, seems probable. That such insults to the fetus have anoxia as their most important operant result (55) and lead to malformations and the "threshold conditions of abortion" (6) would appear equally probable, since anoxia is known both to be the principal contributor to fetal casualties of all types (42) and to be the common tissue end result of a host of other noxious influences (15).

The worst of all mental illnesses is the group of schizophrenias, and there are certain indications that the environmental cause of this reaction may, in the last analysis, be found in the circumstances surrounding the development of the fetus, or in the child's early experiences of life. Since this orientation has represented a major research preoccupation in Toronto, it might not be amiss to mention some conclusions from our findings. We have found, for example, that the appearance of youth of the adult schizophrenic, which so often belies his chronological years, is capable of measurement and objective analysis. This has been studied in the field of physical anthropology by examining the incidence of features designated by Kretschmer (39) as belonging to the "infantile" or "hypoplastic" categories of his "dysplastic" biotype. Assessing the incidence of

these hypoplastic features in 514 individuals, of whom 175 were healthy controls and the remaining 339 were psychiatric patients, we found an adult retention of certain of these morphologically immature features in 18 per cent of the controls and in 48 per cent of the schizophrenics. The latter diagnostic category represented the highest incidence among the psychiatric patients; but statistically significant increased incidences were found also for psychopathy, psychoneurosis, and epilepsy to differentiate them from the controls (51). In a further effort to examine the hypothesis that morphological immaturity contributes to the predisposition of man to mental and emotional disorders, the anthrometric findings of Draper (24) and his co-workers at Columbia for physical illness were employed in similar appraisals of psychiatrically sick patients. A total of 32 traits of structural or functional growth deceleration were selected, each being an example of bodily characteristics found normally in infants and young children but tending to disappear in adult life. The persistence of these infantile traits was sampled in 648 chronologically adult healthy subjects and psychiatric patients. Seven of these 32 traits were amenable to mensuration and anthrometric methods were employed for their determination; the remaining 25 traits were assessed anthroposcopically on a rating scale basis. Holding sex and diagnosis as comparison variables, we found (48-c) that 20 of the 32 traits significantly differentiated our control group from our patient group. Various constellations of these features of morphological immaturity were found significantly to typify different psychiatric syndromes and, when summed together, yielded a loading the degree of which ranged from a mean of about 5 in the healthy controls to twice this number in the epileptics and schizophrenics. Sex proved an insignificant variable in these summed scores and, by relating the individual score to the chronological age of the subject, we were able to show a progressive diminution in morphological immaturity as age advances. In terms of diagnosis, however, it was interesting to note that the slope of this regression line was markedly less for the psychiatric patients than for the controls. We concluded from these investigations that we had some reasonably good evidence to suggest that (a) the loading of factors of anatomical immaturity diminishes progressively as age advances, (b) that psychiatric patients start with a much heavier loading of immature structure than do mentally healthy controls, and (c) that the drive towards maturity, the growth potential in fact, of psychiatric patients is less than that of mentally healthy individuals.

Just as a morphological immaturity stigmatizes the impaired differentiation of certain anatomical features of the constitution of psychiatric patients, so also do other immaturities. Specifically, we noted a decelera-

tion in the rate of anatomical development of capillary blood vessels (50-a), in the development of resistance of these vessels to stress (50-b), in the development of immunity responses (48-a), and in emotional maturation (49). Work still in progress shows that these immaturities are not isolated but linked significantly together in patients, suggesting a common factor in their production. Furthermore, we are accumulating evidence implicating them as responsible for a series of metabolic and pathophysiologic malfunctionings such as characterize patients with psychiatric disorders.

THE SECOND DIMENSION IS THAT OF SENSORY DEPRIVATION AND ITS RELATIONSHIP WITH MENTAL ILLNESS

The formal investigation of sensory deprivation in man is quite recent, but I do not propose to review the growth of this lusty young contributor to our understanding of psychiatry save to recall that its putative parent, Professor D. O. Hebb, is a Canadian. What I do want to do is to mention briefly some of the implications of this hypothesis for our theme today. A logical starting point would link sensory deprivation with what has already been said on patterns of growth and development and such could be provided by a brief reference to Margaret Ribble's (70) longitudinal studies on her 600 babies and young children. While expressed within a framework of Freudian theory, Ribble's observations were made in terms of a developmental study of awareness in the child and her results proved without question the overwhelming importance of sensory isolation in the child's environment in determining deceleration of the normal progress of growth. Insecurity, reality awareness, frustration tolerance, etc., were all seen as byproducts of the extent to which the infant's tactile and kinesthetic senses were less than optimally gratified through contact with the mother. Sucking, breathing, elimination all depended upon this immediate contact, as did the child's spontaneous behavior, excessive neuromuscular tension, and very life itself. Without fondling, constant waking stimulation, direct and symbolic contact with the one on whom Lorenz's imprinting has been made, disaster befalls the child, either in a major and lethal sense with the development of marasmus (Spitz's anaclitic depression), or in more subtle long-term fashion leading to psychiatric disabilities of a variety of types.

The dependence of the organism upon sensory input, and the ability to organize that input centrally, is a theme we shall consider at length in the next section of this paper. An illustration of its supreme relevance very early in life is afforded by Penfield and Robertson's study (66) of growth asymmetries in childhood. At first blush their findings appear paradoxical; for one immediate explanation of, for example, a partial

failure of growth in one foot might be assumed to be a lesion of the motor cortex in the brain. Reflection, however, reinforces the actual findings; i.e., that the lesion actually existed in the post-central gyrus.

In the field of animal experimentation many reports exist of this phenomenon. An example is the work of Windle (78) whose statistical design called for the asphyxiation of pregnant guinea pigs, delivering the fetuses by section and resuscitating them. He found impairment of sensation and perception by the second or third day following delivery along with microscopic hemorrhages in the thalamus, pons and geniculate bodies, together with minimal neuronal losses thoughout the cortex. In this experiment, the stressors producing the lesions subserving the sensory and perceptual losses were unequivocally those of anoxia and metabolic waste products. Other illustrations might be cited from the work of Lilienfeld and co-workers (44, 45, 60, 61, 62, 63, 64) in man in which the asphyxiation was replaced by toxemia, hemorrhage from incipient placental separation and the like, and wherein perceptual losses were associated with congenital malformations and various types of clinical psychiatric dysfunction including behavior disorders.

Perhaps the most telling recent contribution to the clinical literature on maternal deprivation has been the work of John Bowlby (10, 11). Bowlby showed that the ill effects of deprivation vary with its degree; that deprivation leads to anxiety, excessive need for love, urges for revenge in the child, guilt and depression. He proved that maternal deprivation has a crippling effect on character development and the child's ability to relate to others. Bowlby has reviewed the impressive literature on this aspect of our subject and, because of its familiarity to you, I shall not even attempt to summarize it. Suffice it to quote the following paragraph from his account (pages 18 to 19 in reference 11): "Direct observations of the ill effects on young children of complete deprivation of maternal care have been made by a large number of child specialists and have shown that the child's development may be affected physically, intellectually, emotionally and socially. All children under seven years of age seem to be in danger of injury, and some of the effects are clearly discernible within the first few weeks of life. . . . Symptoms of physical and mental illness may appear." The numerous studies of the cold, austere, "scientific" parents of autistic children and of schizophrenic adults are psychological and clinical confirmations of these effects.

Before closing this section of my paper, I would like to make two further points to emphasize the physiological implications of these observations. The first is that maternal and other sensory deprivations do have a normal as well as a pathological aspect: They are acceptable, for

example, when they occur as a periodic withdrawal into sleep—and here it is interesting to recall that the electro-encephalogram changes of natural sleep, of hypnogogic reverie, and of "sensory deprivation psychoses" are all identical (22). The second is that pregnancy trauma need not necessarily be physical. As Stott (74) has shown recently, strong emotion ("mental shocks," acute mental distress, grief reactions, etc.) can act upon pregnant women and deprive the fetus of an adequate environment for its satisfactory development. In his series, emotional stress operating in 849 pregnant women produced three times as many defective children as were produced in 344 control women who did not experience such stress during their pregnancy. Stott concludes (page 52 in reference 74) that "the fetus would seem to be far more vulnerable to outside influence than has otherwise been supposed." If we now seek for a physiological explanation of the action of these psychological stressors, we can again invoke the vicious cycle of anoxia, for the syndrome of any strong emotion has capillary anoxemia and hence tissue anoxia as one of its component parts (18, 27, 33, 37, 40, 47, 48-b, 69).

THE THIRD ASPECT HAS TO DO WITH BIOLOGICAL TIME AND BIOLOGICAL CLOCKS

We have seen from our consideration of fetal and child insults that the earlier in its existence has been the harm done to the organism, the more profound its effects. This brings up the problem of time and its meaning for us as dynamic individuals and I propose to examine the implications of physiological time in some detail.

For Henri Bergson, time is the very stuff of psychological life. "Duration is not one instant replacing another . . . Duration is the continuous progress of the past which gnaws into the future and which swells as it advances . . . The past is preserved by itself, automatically. . . . We think with only a small part of our past, but it is with our entire past, including the original bent of our soul, that we desire, will and act." (8)

For Alexis Carrel, solar time is an insufficient measure of inward time: Its units "give no information about the rhythm of the inner processes constituting our intrinsic time. . . . True age is an organic and functional state. It has to be measured by the rhythm of the changes in this state. Such rhythm varies according to individuals." (16)

Various attempts have been made to measure physiological time. Among the most interesting were the earliest, those of du Noüy (25). His discovery of the index of cicatrization made possible the calculation of one aspect of physiological time. By the use of it and of Carrel's serum growth index can be demonstrated a paradox we have long suspected but have seldom emphasized sufficiently; namely, that while the solar

months of infancy are few when compared with the seemingly interminable dreamy years of old age, yet the physiological time-years of infancy are long indeed while the weeks of old age are but a moment gone. In du Noüy growth index units, the fall is precipitous for the child from birth to one year of age, only less so for the next six to eight years and then is exponential for the remainder of his life, reaching for practical purposes a straight line in our so-called vaunted years of maturity.

The passage of time is measured by clocks. The solar time indicated by the clock on our mantelpiece has been called "World Time" by Cooper and Erickson (19) or, more pointedly, "Government Time" by Gooddy (29). In any event, solar time provides arbitrary but stable units of comparison with those other times which are important to us biologically. The units of measurement are those of space, the hands of the clock indicating the passage of epochs of time. Gooddy among others has examined the neurological evidence which suggests that man may be considered as a clock system, while similar views have been summarized by Bünning (12) for plant forms and by Pittendrigh and Bruce (67) for animals. Organisms possess a sense of time of endogenous spontaneous origin. This time sense is evidenced by inherent rhythmicities, seen in every biological organism, which are capable of being desynchronized by, but are otherwise independent of, such external variables as light-dark ratios, ambient temperature, etc. Furthermore, they characterize both the organism as a whole and its isolated cells.

Endogenous spontaneous rhythms and the nervous system. In the higher metazoa, and especially in mammals and man, it is natural to think of "timing devices," such as those responsible for spontaneous periodicities, as being located in some part of the nervous system. However, since such clocks exist in plants and unicellular animals, it is obvious that this need not be. Yet with the differentiation of neural structures in higher animals, some centralization of these functions seems to have taken place. This is not to say that time analysis is not still inherent in tissue cells of these higher creatures but rather that their nervous systems take over the perception, integration, and analysis of information supplied by non-neural tissue. The experiments of Harker (31) are instructive in this connection. Harker showed that beheaded living cockroaches of the species *Periplaneta americana* have no endogenous rhythm but acquire one when a subesophageal ganglion from the donor cockroach showing rhythm is implanted. And the now-endogenous rhythm of the recipient roach remains both in phase and in period with that of the donor.

Spontaneous activity in mammalian brain cortex. Most work to the present time on tissue cultures from cells of the central nervous system

has been concerned with the use of embryonic material (53). While neuronal migrational growth is possible with this material, even with human fetal gray cortex explants (36), it has been extremely difficult to observe movement or division of perikarya in embryonic neurones (43).

That the culture of such embryonic neural tissue is not without relevance for spontaneous activity is, however, provided by Pomerat (68), who succeeded in growing normal oligodendrocytes in tissue culture (54), and who observed rhythmic contractile movements in oligodendroglia, and made a time-lapse motion picture of the 4.5-minute periodicity of systole-diastole phases exhibited by these fetal cells. Pomerat's work was confirmed by Woolley (7) on Maximow cultures of human fetal brain in Margaret Murray's laboratory. While the behavior of all oligocytes in any one field was not synchronous, the normal pulsations of individual cells were "very easily recognizable." Spontaneous oscillation in malignant gliomatous explants had been observed many years before this property was shown to be shared by healthy oligodendroglia (9). On the basis of this spontaneous activity and the relative sparseness of capillary loops to neuronal cells, Woolley proposed a new function for oligodendroglial cells, that of a natural pump by means of which nutrient material could more readily be transferred from capillary to nerve cell and waste products from cell to capillary.

Very recently, improvements in tissue culture techniques have opened the doors to study of other neuronal elements in mammalian brain tissue, and of adult human as well as fetal material. Margaret Murray reported mitosis and migration during the culture of human adult sympathetic ganglion cells (59) while Geiger (28) by radically changing the orthodox culture conditions (e.g., by omitting excess antibiotics and embryo extract from the culture and employing cortisone or brain extract), succeeded for the first time in subculturing cells from the human adult brain up to the sixth passage.

Again, in Geiger's work, spontaneous activity was constantly observed. Apart from oligodendrocytic oscillation which was again confirmed, Geiger reports slowly pulsatile movements of the cytoplasm of the perikarya and neurites, maximal in the axon; rhythmic changes in size and optical density of the nucleus and nucleolus; recurrent transfer of nucleolar substance into cytoplasm; polar movement of nucleolar satellites to and from nucleolus and nuclear membrane. Some additional observations are particularly intriguing. From time to time Geiger noted the processes of one neurone becoming orientated towards the cell body or processes of another. Some contacts made might persist for only a few hours, others for days, a few others for weeks. The contacts might appear as cytoplasmic bridges (cf. J. Z. Young, 79) or alternatively as

boutons terminaux apparently identical with those seen histologically in cortex. More rapid oscillations are seen in this latter type of synapse, spontaneous rhythmic activity characterizing the movement of the thicker endings of the neurites, of the fine fibers and end feet and of the mitochondria and other granules of the end feet. It is obvious how important to the possibility of forming neuroanatomical patterns of association such spontaneous cellular activity must be.

Spontaneous activity in sense organs. In 1955 Ragnar Granit (30) published the first critical review dealing specifically with the spontaneous activity of sense organs. At first these discharges were thought to be episodic but by 1950 regularly periodic oscillations were being described. Arguing from the results of his investigations on the retina, Granit defined the functions of these spontaneous discharges: They permit a rotation of activity between individual sensory units; they allow a measure of central excitability to be maintained when sensory input ceases; and they contribute importantly to maintenance of the waking state of awareness through extra-lemniscal pathways joining the mesencephalic, diencephalic, and thalamic ascending reticular activating systems, and acting, therefore, as desynchronizing arousal mechanisms.

It is not so much with the central nervous system, however, as with the autonomic system and metabolism that biological psychiatry is concerned. Evidence is growing rapidly that both these aspects of physiology have their own time sense and serve as examples of biological clocks. Hoagland's studies (e.g., 34) on chemical reaction velocities and the activation of different enzyme systems stemmed directly from Adrian's (1, 2) observations of spontaneous rhythmic activity in the deafferented nervous systems of fish. His findings are now classical. They argue strongly for the existence of a chemical clock in man which has body temperature as a dependent variable and which operates in terms of differentially catalyzed neurochemical reactions capable of description by the Arrhenius equation. Hoagland (35, 32) has extended his findings to a wide variety of studies involving cellular oxygen consumption and carbon dioxide production and the electro-encephalogram in man. Such catalytic processes appear extraordinarily responsive in time to changes in the climate of their operation, for it has subsequently been shown (14) that the change-over from a set of enzymes adjusted to a very low level of oxygenation to a set of enzymes adjusted to a high level of oxygenation can take place in a very few minutes in the human newborn.

Another application of this metabolic aspect of biological clocks is seen in some work currently in progress in our Toronto laboratories. We are studying the stability of capillary blood-lactate levels against time.

When blood samples are withdrawn at three-minute intervals from the resting human subject, we find (52) that the lactate values move up and down in sine-wave cycles and that a periodicity factor does reliably differentiate between healthy subjects and psychotics and between epileptics and schizophrenics. We have found, for example, that a recurrence rate of some 18 minutes characterizes the schizophrenic's pattern of lactate accumulation and distinguishes him from the 8-minute periodicity of the healthy subject. Such findings serve to confirm our hypothesis that oxidation processes in schizophrenia differ from those of healthy people. One explanation may be that the Embden-Myerhof cycle of carbohydrate breakdown operates anaerobically down to the level of pyruvic acid, while the alternative pathway of Dickens is aerobic. Short-circuiting of one route by the other would lead to an unstable capillary blood-lactate, the energy of activation of which may well be different because of a changing pacemaker control.

Spontaneous activity in autonomic effector systems can be hypothesized from the foregoing. It has been demonstrated for eccrine sweat gland secretion as long ago as 1924 and Kuno's group have confirmed this. Randall's work between 1947 and 1950 shows that these sine-wave cycles occur simultaneously with vasomotor tonus waves. Rothman's book (72) contains an excellent review of this literature. A rhythmical pattern of blood flow in nailfold capillaries was first demonstrated by Müller (58), and Chambers and Zweifach (17) suggested that this periodicity was a function of the rhythmic opening and closure of precapillary sphincters.

We are now getting close to psychiatry, for Burch (13) in 1942 reported his plethysmographic studies showing correlations between personality differences and the type of spontaneous variations seen in volume changes monitoring blood-flow in man. In 1958 Lacey and Lacey (41) used two monitors, the skin resistance and the heart rate. By means of amplitude analysis of the sine-wave periodicities, they demonstrated differences between "labile" and "stabile" subjects. In an excellent paper they noted the existence of spontaneous activity and showed that this activity possesses characteristics similar to those reviewed by Granit for the central nervous system. They concluded that autonomic effectors are as capable as other cell aggregates in evoking potentials "spontaneously" which will discharge at rates unique to themselves. The Laceys further suggest that spontaneous autonomic discharges have a significance for behavior in that the frequency of their oscillation bears a relationship to the relative susceptibility of the individual to environmental stimulation.

Work in progress in our laboratories has amply confirmed these find-

ings. Using such autonomic monitors as capillary blood-oxygen saturation, capillary and arterial pressures, alveolar gas tensions, capillary blood flow rates, respiratory frequency and amplitude, finger plethysmography, skin resistance, cardiotachometry, skin temperature, etc., perceptual monitors, such as the CFF, metabolic monitors, such as the capillary blood-lactate studies already referred to and tissue cell changes, we have demonstrated spontaneous oscillatory variations the periodicities of which appear significantly related to the mental health or type of mental ill-health characterizing the subject under study.

Summary

We can conclude from our review of three of the many possible physiological dimensions which could have been discussed:

1. That much of the future prevention of psychiatric disability must be concerned with the relative decades (in biological time units) of growth and development experienced by the child in his fetal, perinatal and infantile months of life.

2. That traumata operating during these crucial phases of the child's development have been insufficiently investigated and urgently demand further interdisciplinary research.

3. That these traumata, whether they are present as physical or as psychological stressors, have at least one common denominator, that of tissue anoxia, and at least two common sequelae: that of growth deceleration, and that of morphodysgenesis—if indeed spontaneous abortion does not occur and a viable child is born at all.

4. That one aspect of maturation is concerned with those influences determining the pacesetting of our biological clocks, since it would seem that both the frequency and the amplitude of spontaneous, periodic, oscillatory activity of the central nervous system, the autonomic nervous system and of metabolic processes is the very stuff of personality.

Such activity enables us to preserve that pattern of homeostasis the tempo of which typifies us as individuals and persuades us toward the vigor and hope of mental health or toward its miserable tangent of mental illness. Periodic oscillatory activity, the setting of our biological clocks, is thus the very substance of our destiny and it is logical to equate our sense of inward time with awareness for, as Pierre Lecomte du Noüy has remarked: "All our experience leads to the admission that continuity exists nowhere: one of the roles of consciousness is to manufacture continuity from discontinuity."

REFERENCES

1. Adrian, E. D., "Potential changes in the isolated nervous system of *Dytiscus marginalis*," *Journal of Physiology* 72:132-151, 1931.

2. Adrian, E. D., and F. Buytendijk, "Potential changes in the isolated brain stem of the goldfish," *Journal of Physiology* 71:121-135, 1931.

3. Bailey, C. J., "Interrelationship of asphyxia neonatorum, cerebral palsy and mental retardation: Present status of the problem," *Neurological and Psychological Deficits of Asphyxia Neonatorum,* (see Windle, reference No. 77 below), pp. 5-30.

4. Bakwin, H., "Cerebral damage and behavior disorders in children," *Journal of Pediatrics* 34:371-382, 1949.

5. Belknap, W. D., C. F. McKhann and C. S. Beck, "Cerebral birth injury in retrospect," *Journal of Pediatrics* 37:326-340, 1950.

6. Benda, C. E., "Acromicria congenita, or the Mongoloid deficiency," *The Biology of Mental Health and Disease,* Milbank Memorial Fund (foreword by S. Cobb), 27th annual conference of the Fund; (New York: P. B. Hoeber, 1952), pp. 402-21.

7. Benitez, H. H., M. R. Murray and D. W. Woolley, "Effects of serotonin and certain of its antagonists upon oligodendroglial cells in vitro," *Proceedings of the Second International Congress of Neuropathology,* London, 1955 (Amsterdam: Excerpta Medica Foundation, 1958), vol. 2, pp. 423-28.

8. Bergson, Henri, *Creative Evolution* (trans. A. Mitchell), Modern Library Edition, (New York: Henry Holt, 1911), pp. 7-8.

9. Bland, J. O. W., D. S. Russell and R. G. Canti, "Tissue culture of gliomata," cinematograph demonstration, International Cancer Research Congress, Brussels, 2:250, 1936-37. See also Canti, Bland, and Russell, *Proceedings,* Association for Research in Nervous and Mental Disease 16:1, 1935.

10. Bowlby, John, "Adverse Effects of Maternal Deprivation," *Maternal Care and Mental Health,* Part I, Monograph Series No. 2, World Health Organization, Geneva, 1952.

11. Bowlby, John, *Child Care and the Growth of Love* (London: Pelican Books, 1953).

12. Bünning, E., "Endogenous diurnal cycles of activity in plants," *Rhythmic and Synthetic Processes in Growth,* D. Rudnick (editor) (Princeton University Press, 1957), pp. 111-26.

13. Burch, G. E., A. E. Cohn and C. Neuman, "A study by quantitative methods of spontaneous variations in volume of the finger tip, toe tip, and postero-superior portion of the pinna of resting, normal white adults," *Amercan Journal of Physiology* 136:433-447, 1942.

14. Byers, R. (quoting C. Smith), *Neurological and Psychological Deficits of Asphyxia Neonatorum* (see Windle, reference No. 77 below), p. 82.

15. Cameron, G. R., *New Pathways in Cellular Pathology* (London: E. Arnold, 1956).

16. Carrel, Alexis, *Man the Unknown* (London: Pelican Books, 1948), p. 158.

17. Chambers, R., and B. W. Zweifach, "Topography and function of the mesenteric capillary circulation," *American Journal of Anatomy* 75:173-205, 1944.

18. Christie, R. V., "Some types of respiration in the neuroses," *Quarterly Journal of Medicine,* 4:427-432, 1935.

19. Cooper, L. R., and M. H. Erickson, *Time Distortion in Hypnosis* (Baltimore: Williams and Wilkins, 1954).

20. Courville, C. B., *Contributions to the Study of Cerebral Anoxia* (Los Angeles: San Lucas Press, 1953).

21. Courville, C. B., and J. M. Nielsen, "Cerebral anoxia and epilepsy. Some observations on the effects of oxygen want as a causative factor in the production of convulsive seizures," *Bulletin* Los Angeles Neurological Society 18:59-73, 1953.

22. Dement, W., and N. Kleitman, "Cyclic variations in EEG during sleep and their relation to eye movements, bodily motility, and dreaming," *EEG Clinical Neurophysiology* 9:673-690, 1957.

23. Despert, J. L., "Anxiety, phobias, and fears in young children with special reference to prenatal, natal and neonatal factors," *Nervous Child* 5:8-24, 1946.

24. Draper, G., C. W. Dupertuis and J. L. Caughey, *Human Constitution in Clinical Medicine* (New York: P. B. Hoeber, 1944).

25. du Noüy, P. Lecomte, *Biological Time.* (London: Methuen, 1936).

26. Fender, F. A., W. B. Neff, and G. Bengera, "Convulsions produced by fetal anoxia: an experimental study," *Anesthesiology* 7:10-13, 1946.

27. Féré, Ch., "Notes hématospectroscopiques sur les hystériques et les épileptiques," Société de biologie, *comptes rendues* 41:104-110, 164, 1889.

28. Geiger, R. S., "Subcultures of adult mammalian brain cortex in vitro," *Experimental Cell Research* 14:541-566, 1958.

29. Gooddy, W., "Time and the nervous system: the brain as a clock," *Lancet* I:1139-1144, 1958.

30. Granit, R., "Spontaneous activity in sense organs and its functional significance," *Receptors and Sensory Perception* (Yale University Press, 1955), Chapter III, pp. 81-112.

31. Harker, J., "Factors controlling the diurnal rhythm of activity of *Periplaneta americana*," *Journal of Experimental Biology* 33:224-234, 1956.

32. Hadidian, Z., and H. Hoagland, "Chemical pacemakers: catalytic brain iron; activation energies of chemical pacemakers," *Journal of General Physiology* 23:81, 1939.

33. Hick, F. K., A. W. Christian, and P. W. Smith, "Criteria of oxygen want, with especial reference to neurocirculatory asthenia," *American Journal of Medical Sciences* 194:800-804, 1937.

34. Hoagland, H., "The physiological control of judgments of duration: evidence for a chemical clock," *Journal of General Psychology* 9:267-287, 1933.

35. Hoagland, H., "Pacemakers of human brain waves in normals and in general paretics," *American Journal of Physiology* 116:604, 1936.

36. Hogue, M. J., "Human fetal brain cells and tissue culture and their identification and motility," *Journal of Experimental Zoology* 106:85-109, 1947.

37. Horwitz, O., G. Pierce, and H. Montgomery, "Oxygen tension of tissues by polarographic method; effect of local heat on oxygen tension of skin of extremities," *Circulation* 4:111-115, 1951.

38. Hughes, J. G. and B. C. Davis, "Early detection of cerebral injury," *Journal of Pediatrics* 40:606-620, 1952.

39. Kretschmer, E., *Physique and Character* (trans. by W. J. H. Sprott) 2nd English edition (London: Kegan Paul, 1945), Chapters 3-5. (See also American edition published by Harcourt, Brace, 1926.)

40. Kroetz, C., "Physiologische und pathologische schwankungen der Sauerstoffdurchlässigkeit der Lungen," Deutsche Gesellschaft für Medizin, (*Verhandlungen* der) 43:105-119, 1931.

41. Lacey, J. I., and B. C. Lacey, "Relationship of resting autonomic activity to motor impulsivity," Chapter V, *Brain and Human Behavior, Proceedings,* Association for Research in Nervous and Mental Disease 36:144-209, 1958.

42. Lelong, M., *Anoxia of the Newborn Infant,* a Symposium; Council for International Organizations of Medical Sciences, edited by J. F. Delafresnaye and T. E. Oppé, Blackwell Scientific Series, Oxford, 1953; (Springfield, Illinois: C. C. Thomas, 1954), p. xi.

43. Levi, G., and H. Meyer, "Nouvelles recherches sur le tissu nerveux cultive in vitro: morphologie croissance et rélations réciproques des neurones," *Archives de Biologie* 52:133-278, 1941.

44. Lilienfeld, A. M., and E. Parkhurst, "Association of factors of pregnancy and parturition with the development of cerebral palsy," *American Journal of Hygiene* 53:262, 1951.

45. Lilienfeld, A. M. and B. Pasamanick, "Association of maternal and fetal factors with the development of cerebral palsy and epilepsy," *American Journal of Obstetrics and Gynecology* 70:93, 1955.

46. Little, W. J., "On the influence of abnormal parturition, difficult labor, premature birth and asphyxia neonatorum on the mental and physical condition of the child especially in relation to deformities," *Lancet* II:278-380, 1861.

47. Lovett Doust, J. W., "Studies in the physiology of awareness: oximetric evidence of the role of anoxia in certain psychiatric states," *Proceedings*, Royal Society of Medicine 44:347-352, 1951.

48-a. Lovett Doust, J. W., "Psychiatric aspects of somatic immunity," *British Journal of Social Medicine* 6:49-67, 1952.

48-b. Lovett Doust, J. W., "Spectroscopic and photoelectric oximetry in schizophrenia and other psychiatric states," *Journal of Mental Science* 98:143-160, 1952.

48-c. Lovett Doust, J. W., "Dysplastic growth differentials in patients with psychiatric disorders: Studies on the morphology of maturity," *British Journal of Social Medicine* 6:169-177, 1952.

49. Lovett Doust, J. W., "Dysplastic growth differentials in patients with psychiatric disorders: assessment of the profile of emotional immaturity," *American Journal of Psychiatry* 110:651-662, 1954.

50-a. Lovett Doust, J. W., "The capillary system in patients with psychiatric disorder: the ontogenetic structural determination of the nailfold capillaries as observed by photomicroscopy," *Journal of Nervous and Mental Diseases* 121:516-526, 1955.

50-b. Lovett Doust, J. W., "The capillary system in patients with psychiatric disorder: diminished capillary resistance as shown by the Göthlin positive pressure test," *Journal of Clinical and Experimental Psychopathology* 16:272-280, 1955.

51. Lovett Doust, J. W., *The Constitutional Anatomy of Immaturity* (to be published).

52. Lovett Doust, J. W., and E. Fox, "Spontaneous periodicity of lactate accumulation in capillary blood" (in press).

53. Lumsden, C. E., "Aspects of neurite outgrowth in tissue culture," *Anatomical Record* 110:145-180, 1951.

54. Lumsden, C. E., and C. M. Pomerat, "Normal oligodendrocytes in tissue culture," *Experimental Cell Research* 2:103-114, 1951.

55. Mall, F. P., "A study of the causes underlying the origin of human monsters (third contribution to the study of the pathology of human embryos)," *Journal of Morphology* 19:3, 1908.

56. Meier, G. W., "Prenatal anoxia in relation to behavioral phenomena," *Neurological and Psychological Deficits of Asphyxia Neonatorum* (see Windle, reference No. 77 below), pp. 55-66.

57. Merloo, L., and J. A. M. Merloo, "Some psychological problems in cerebral palsy children," *Quarterly Journal of Child Behavior* 2:381-389, 1950.

58. Müller, O., *Die feinsten Blutgefaesse des Menschen in gesunden und kranken Tagen*, vol. II (Stuttgart: F. Enke, 1939).

59. Murray, M. R., and A. P. Stout, "Adult human sympathetic ganglion cells cultivated in vitro," *American Journal of Anatomy* 80: 225-250, 1947.

60. Pasamanick, B., F. K. Constantinon, and A. M. Lilienfeld, "Pregnancy experience and the development of childhood speech disorders," *AMA Journal of Diseases of Children* 91:113, 1956.

61. Pasamanick, B., and A. Kawi, "Association of prenatal and paranatal factors with the development of tics in children," *Journal of Pediatrics* 48:596-601, 1956.

62. Pasamanick, B., and A. M. Lilienfeld, "Epilepsy," *Journal of the American Medical Association* 155:719, 1954.

63. Pasamanick, B., and A. M. Lilienfeld, "Association of maternal and fetal factors with development of mental deficiency," *Journal of the American Medical Association* 159:155, 1955.

64. Pasamanick, B., M. E. Rogers, and A. M. Lilienfeld, "Pregnancy experience and the development of behavior disorders in children," *American Journal of Psychiatry* 112:613-618, 1956.

65. Penfield, W., and H. H. Jasper, *Epilepsy and the Functional Anatomy of the Human Brain* (Boston: Little, Brown Co., 1954).

66. Penfield, W., and J. S. M. Robertson, "Growth asymmetry due to lesions of the post-central cerebral cortex," *Archives of Neurology and Psychiatry* 50:405-430, 1943.

67. Pittendrigh, C. S., and V. G. Bruce, "An oscillator model for biological clocks," *Rhythmic and Synthetic Processes in Growth*, D. Rudnick (editor) (Princeton University Press, 1957), pp. 75-109.

68. Pomerat, C. M., "Pulsatile activity of cells from the human brain in tissue culture," *Journal of Nervous and Mental Diseases* 114:430-440, 1951.

69. Ray, G. B., L. H. Ray, and J. R. Johnson, "Factors influencing reduction time of blood in the capillaries of the skin," *American Journal of Physiology* 147: 630-635, 1946.

70. Ribble, M. A., "Infantile experience in relation to personality development," *Personality and the Behavior Disorders*, vol. II, J. McV. Hunt (editor) (New York: Ronald Press, 1944), pp. 621-51.

71. Rosenfeld, G. B., and C. Bradley, "Childhood behavior sequelae of asphyxia in infancy, with special reference to pertussis and asphyxia neonatorum," *Pediatrics* 2:74-84, 1948.

72. Rothman, S., *The Physiology and Biochemistry of the Skin* (University of Chicago Press, 1954). (See Chapter 6, "Sweat Secretion" pp. 153-200, for discussion of work of Kuno and Randall.)

73. Scheidler, C. H., "The effects of prenatal anoxia on learning in white rats." Doctoral dissertation. Washington University (St. Louis) 1953.

74. Stott, D. H., "Some psychosomatic aspects of casualty in reproduction," *Journal of Psychosomatic Research* 3:42-55, 1958.

75. Werner, H., "Perceptual behavior of brain-injured, mental defective childen: an experimental study by means of the Rorschach technique," *Genetic Psychology Monograph* 31:51-110, 1945.

76-a. Werner, H., and B. D. Thuma, "A deficiency in the perception of apparent motion in children with brain injury," *American Journal of Psychology* 55:58-67, 1942.

76-b. Werner, H., and B. D. Thuma, "CFF in children with brain injury," *American Journal of Psychology* 55:394-399, 1942.

77. Windle, W. F. (editor), *Neurological and Psychological Deficits of Asphyxia Neonatorum;* with consideration of the use of primates for experimental investigations, by 28 contributors (forewords by E. H. Hinman and Pearce Bailey); National Institute of Neurological Disease and Blindness, Symposia in Neurologia; (Springfield, Illinois: C. C. Thomas, 1958).

78. Windle, W. F., "Brain damage in the guinea pig after asphyxia neonatorum," *Neurological and Psychological Deficits of Asphyxia Neonatorum* (see Windle, reference No. 77 above), pp. 31-43.

79. Young, J. Z., "Fused neurones and synaptic contacts in the giant nerve fibers of cephalopods," *Philosophical Transactions of the Royal Society* (London) 229: 465-503, 1939.

DISCUSSION

Moderator: DR. LACEY
Panel members: DR. BLYTH, DR. FILLEY, DR. HOWELL, DR. NORRIS, DR. OZARIN

Dr. McCandless: Dr. Lovett Doust has already introduced John Lacey to you by quoting some of John and Bea Lacey's research. John Lacey received his Ph.D. at Cornell University in 1941. He did some work with the Psychological Corporation, taught at Queens College, and during the war served with the Adjutant General's offices and in the air force. Since then, he has held academic appointments at the Ohio State University and at the University of Louisville. He is now chairman of the Department of Psychophysiology-Neurophysiology at the Samuel Fels Research Institute in Yellow Springs, Ohio. And now, here's your moderator, my good friend, John Lacey.

Dr. Lacey: Dr. Lovett Doust's presentation was one of the best I've had the privilege of listening to in a long, long time, not only in the details of what he said, but in the subtleties of information that lay under his presentation. It was an extremely impressive job, a very provocative one.

One aspect of my job as moderator this afternoon is to make sure that some of the really rich details of Dr. Lovett Doust's presentation do not slip by because, unavoidably, a certain amount of technical terminology was used with which not everyone in this audience might be familiar. This is a richly diversified audience.

Of course, this assumes that I know everything that Dr. Lovett Doust talked about, and I'm frank to admit I don't! However, at any point at which I could check Dr. Lovett Doust in terms of my own experience and knowledge, he was not only correct and cautious in his presentation of data and studies, but he always added just a little something, a little insight that I wish I had had.

I'll try to review the main points, and I will kick off the discussion by asking a few questions. They will be critical questions. There are one or two points upon which I disagree; there are one or two additions and amendments I would like to make, but they're very friendly criticisms and I bring them up in order to provide some clarifications.

In facing this tremendously complicated and controversial area of the physiology of behavioral disorders and mental illness, Dr. Lovett Doust chose, I think wisely, because of their relevancy and importance, to discuss three aspects or three areas of physiological investigation which he feels have theoretical implications for our understanding of behavioral disorders. If I understand the purpose of this institute, it might be well if, in our discussion, we try to point up what some of the

practical applications are of some of this theoretically abstruse-seeming work.

The three areas are these: first of all, the relationship—the surface relationship, if I may say so—between certain morphological characteristics in people and their predisposition to psychiatric breakdown. And in this area, he made some statements which are very challenging and which you may care to challenge yourself. If I heard Dr. Lovett Doust correctly, he said at one point that morphological immaturity predisposes the individual to behavioral disorder. Now it is no discredit to these investigations to suggest that perhaps the morphological immaturity is not a *pre*disposing factor but simply a concurrent one; that the morphological immaturity is correlated, perhaps more closely, with other immaturities, other dysplasias, other physiological dysfunctions bearing a more intimate etiological role. With respect to some of these morphological immaturities, these dysplasias, Dr. Lovett Doust has presented some fascinating work that goes back, I think, to Powdermaker's investigations[1] on the development of the form of the capillary loops in the nailbed. You may be interested to know, incidentally, that Dr. Lovett Doust himself is responsible for the development of an extremely ingenious and innocuous technique for the measurement of blood oxygen saturation and the concomitant (or somewhat concomitant) observation of the form of the capillary loops. If you aren't familiar with this work, I suggest you make yourself familiar with it.[2] It's tremendous stuff, very easily applicable to testing school children. No pain is involved, no real discomfort. It doesn't take very long—really a delightful technique!

However, with respect to this particular morphological immaturity and its associated physiological dysfunctions, Dr. Lovett Doust went to some pains to point out the action of the arteriovenous shunts, the anastomozes, and how they can send the blood now here and now there; and he makes a case, perhaps a very strong case, that here we are at the center of the metabolic activities of the individual; for until the blood gets into the capillaries and its contents diffuse through it, the tissue cannot be nourished and waste products cannot be taken away. Now for the first critical comment: I should like to ask Dr. Lovett Doust if there is any reason other than expediency and convenience for restricting consideration to the nailbed. Blood flow in the digits is a very special kind of blood flow. During stress, for example, one instantly sees vaso-constric-

---

[1] See F. Powdermaker, "Capillary forms in relation to certain problems in development," *Archives of Neurology and Psychiatry* 22:1207, 1929.

[2] See J. W. Lovett Doust and M. E. Salna, "A stroboscopic method for estimating nailfold capillary blood flow in the skin of man," *Journal of Nervous and Mental Disease* 121:511, 1955.

tion. As Dr. Lovett Doust has shown, the presentation of symbolic stimuli relevant to an individual's inter- and intra-personal conflicts produces relative anoxemia and does this very quickly. In particular, we see this in the examples shown of a psychiatric patient being interviewed and a law student being interviewed, with rather dramatic shifts in physiological functioning accompanying the changes in the content of the interview. But from this I do not think we can infer what is happening elsewhere in the vascular system. Dr. Lovett Doust said this is what might happen in the placenta. Well, I think we all would like to know what physiological warrant there is for this statement. Do changes seen in the capillaries of the nailbed necessarily tell us anything about interchange across the placental membrane?

Now for critical comment number two: Dr. Lovett Doust then moved on to this very interesting area of sensory deprivation. He made a quick switch on us. He went from sensory deprivation with its very real implications to maternal deprivation, and I'm not quite sure that I really see this bridge. I gathered that Dr. Lovett Doust is talking about more than deprivation of sensory cuddling, of stroking of the skin; for we went from Ribble's work to Spitz to John Bowlby's work on emotional deprivation. Here, too, there is a bridge that I think needs to be supported a bit more.

And then third: Dr. Lovett Doust came really close to my heart when he talked about spontaneous oscillation. No biological tissue is ever quiescent. You can bring ambient-stimulating conditions to a close approximation to zero and the biological tissue discharges rhythmically and periodically. The fact of oscillation cannot be denied any longer. It took a long, long time for it to be accepted in biological circles. In the history of this controversial area, all sorts of reasons were suggested which made of this oscillation an artifact. Ambient stimuli were coming in that the experimenter didn't control, and so on. There *are* oscillations; as Dr. Lovett Doust points out, wherever you look in the organism, you find them. You find them in the central nervous system; you find them in the autonomic nervous system; you find them in retinal elements, in isolated slabs of cortex, and in intact slabs of cortex.

And here I have no argument; nor do I have any argument with the fact that they are periodic. Sometimes they have a very complex periodicity indeed. Dr. Lovett Doust talks of these as biological time-clocks; and underlying the use of this phrase is an assumption that these oscillations are timing oscillations. He seems to be thinking like an electronics engineer. When you want to time something in electronics, your most accurate way of timing is to set up a crystal and make it vibrate under constant temperature conditions. It vibrates at a very constant rate, and you use this as a frequency standard while counting pulses, frequencies,

and intervals. This suggestion might be correct. I think, however, an alternative view might be propounded. It doesn't detract one bit from Dr. Lovett Doust's insistence on the basic psycho-biologic importance of these oscillations but perhaps enables one to look at them in a somewhat different light. I'm not sure that all these oscillations are there for the purpose of timing. And I think in Dr. Lovett Doust's presentation there were some implications that these are not just time-clocks. I think, perhaps, this is a convenient figure of speech.

The periodic wiggling (we all have little worms in our heads wiggling around all the time!) of the oligodendroglial cells serves as a vascular pump, according to current physiological theory. This has no timing function. The phenomena so beautifully described and demonstrated by Granit and his collaborators on the oscillation of retinal elements are not timing oscillations. They exist to maintain input into the core of the brain-stem which subserves keeping us alert, awake, and conscious. This includes the so-called ascending reticular-activating mechanism. These serve to keep input coming into the organism even if the environment removes it. Otherwise, we should all fall instantly asleep when the lights go out! (This is the substance of a phrase Granit used, but he put it much better than that.)

Similarly, the autonomic oscillations, about which I have more intimate knowledge, serve not as a timing function (at least not in my theory) in the sense that they enable the organism to detect the passage of time or to time events, but rather as a gating function [i.e., as a gate], permitting at one moment easy sensory motor integration of the organism with the environment and inhibiting that easy sensory motor integration with the environment at another moment.

The point that I want to develop here is that these oscillations are not necessarily imperious ones. Their existence does not mean that the organism is absolutely mechanistically bound by them. By this phrase I mean that the brain has more controls than we know of now. The functioning of the brain and its associated structures must be at least as complicated as the behavior we think it explains. Therefore, we have every right to look to the brain for controls and mechanisms that are extremely complicated. These autonomic oscillations (in the theory that we are developing in our own department) do modulate, direct, govern, and control behavior—socially significant behavior—by means of feedback mechanisms, by means of visceral afferent fibers. When the autonomic viscus discharges, it activates these fibers just as the light activates retinal cells and a tactile stimulus activates touch receptors. These responses of the autonomic nervous system then become stimuli which are

fed back to the central nervous system. One of the known mechanisms is that they're fed back by the carotid sinus.

If these visceral afferent fibers are like other sensory afferent fibers (and they are—they differ a bit in structure but their function is the same), then they're subject to the same kind of controls as, say, an optic fiber or an auditory fiber, or a touch fiber. It has been shown that there exist mechanisms within the brain which will shut off incoming sensory messages, even at the level of the first synapse—that is, even at the level of the receptor. We don't ignore things by letting them come into our brains and ignoring them there. The way we ignore things is by the brain reaching way out to the periphery and affecting the operation of the receptor. We can shut off the incoming impulses right there; or (we have many lines of defense) we can shut it off at different places. Therefore, these autonomic oscillations, which are fed back to the nervous system and thereby haven't a chance to direct, modulate, or govern behavior, need not necessarily do so; for the brain can, in essence, shut them out and refuse to listen to their message. What I'm suggesting here is that the different forms of oscillation described by Dr. Lovett Doust may all have different functions and that these functions need not be imperious, need not necessarily govern the behavior in some all too automatic and mechanistic way.

Now with these critical comments, I want to say once more that these are just points of controversy. We have been treated this afternoon to one of the most penetrating discussions of the biological aspects of psychiatry that I have ever heard.

And now I will open the panel for discussion. Dr. Howell, would you like to start?

Dr. Howell: Since I am interested in public health, there appear to be —for me at least—some possible implications for this field in the presentation we have had this afternoon. Some of the material certainly suggests that some of the crying needs that people working in the preventive field have had for a long time are at least being aimed at and are appearing as goals. We have certain evidences that there are ways in which people can now be looked at which seem almost comparable to some of our biological tests which are used for purposes of diagnosing disturbances other than those having to do with emotional stability. I'm thinking particularly about what we heard this afternoon that there is a series of experiences through which one goes while growing and living and that some of these experiences seem to be more critical than others. As we continue to advance our knowledge in this, we may very well come up with some kind of a schedule that would enable us to pay particular

attention to certain kinds of processes at certain times in the life of the individual. For example, what kinds of approaches could a person interested in prevention make toward understanding certain periods of pregnancy which seem to be very critical in the developmental pattern of the fetus? Should we be thinking of the possible relationship between the oxygen level in the maternal blood and the important developmental patterns that are taking place in the fetus? And if we can spot critical periods in this development, would there be any sense in our paying special attention to see to it that mothers did not suffer the kinds of experiences that tended to interfere with an adequate blood supply to the fetus?

I am thinking, also, of the rather encouraging aspect of the fact that a physiological process is not a beginning, functioning, and stopping sort of thing. We are accustomed, as we think about illness, to speculate about the cause as being something that happened at one time and *that* caused the disease and the disease went on from there. It is encouraging, however, to be able to think in terms of a longer process; and to think that when we acquire the skills, we might very well be able to interfere with this process, perhaps even before it starts. (This would be lovely!) But the fact that a process does go on and can, therefore, be interfered with at some time—according to the level of our understanding of methods that might be used—seems to me also to imply that we're on the road toward understanding certain ways of preventing illness.

I have one question which I'd like to ask Dr. Lovett Doust. It seems to me that we've heard about a number of different factors which seem to influence these different parameters through which we've been approaching behavior. For instance, I'm wondering about the possible relationship between certain biochemical processes in the body—which might be processes which we can look at and perhaps do something about—and the patterns of behavior and development that we've been hearing about this afternoon.

Dr. Lacey: Thank you, Dr. Howell. Your comments provoked another question in my mind. If morphological immaturity is associated with the later development of psychiatric disorders, it might be possible to pick up children early whose developmental course is askew, then study them and study the impact of various stresses on them. Perhaps we might learn to treat them in special ways so that psychiatric disorder becomes not inevitable. This program becomes feasible only if we have some accurate information (and I'm sure Dr. Lovett Doust has) on how strong the relationship is. If this becomes a diagnostic and prognostic test, we'll need to know what proportion of false positives and false negatives we might

expect. I hope you will take occasion to comment on this practical possibility, Dr. Lovett Doust.

Dr. Filley: I've been most impressed with Dr. Lovett Doust's tremendous contribution in terms of the physiological dimension of this whole question of mental health and preventive psychiatry. My own efforts have been much more directed in the psychological dimensions. I'm forced to realize how much ahead of the psychological students the physiological students are. I think it is important to try to establish some relationship between the psychological and the physiological dimensions. The question came up this morning on the dichotomy between these two.

I'm reminded of the fairly recent accomplishment of the rocketeers, who sent an Aerobee rocket above the atmosphere and were able to take ultraviolet photographs of the sun with special equipment, filters, etc. This contributed a picture of the sun which would not have been possible from the surface of the earth because the ultraviolet is too much filtered out before it reaches the surface of the earth. And I think in our various approachs to human behavior, mental health, and mental illness, we are in somewhat the position of looking at the same phenomena through different filters. Dr. Lovett Doust has been looking through a physiological filter; I look through a psychological filter; others look through anthropological or various other sorts of filters. We see the same things but we understand them in somewhat different ways. Now I certainly agree that eventually we're going to have to reach a level where our findings can be tied together—if we're ever really going to understand the nature of man. But one of the major difficulties we have in making these connections is that the physiologists have progressed so much further in gaining detailed information than the psychologists have.

As I understand what Dr. Lovett Doust has said, he has presented to us some very intricate details of the physiological mechanisms on which all psychological functioning is based. (Obviously psychological functioning doesn't go on without physiological functioning going on!) But I find it very difficult to make the jump from what he tells us of the physiology to the things I have learned about psychology. Dr. Lovett Doust presents relationships, for instance, between anoxia in various forms, between physiological functions and changes in behavior or changes in emotion, as seen in an individual. I'm not at all sure that we have understood the behavior or the emotional expression well enough as yet to make this relationship.

For instance, Dr. Lovett Doust has largely left out the area of learn-

ing. Now certainly, learning goes on on a physiological basis. Physiological mechanisms operate in order for the infant to perceive the world around him and to begin to learn what this world is all about. But we don't know yet how to relate the process of learning to physiology. This is particularly apparent, I think, in relation to the question of sensory deprivation, of which Dr. Lovett Doust spoke.

He had in mind, I think, the sensory deprivation that's been worked out experimentally in the laboratory dimension—Hebb's work and the work of others who have set up situations in which a person can be grossly deprived of sensory experiences. However, I don't think we can translate this, in most cases, to the situation of the infant whom we consider to be deprived of sensory experience or in circumstances of maternal deprivation. Seriously, I don't think the infant is deprived of sensory experience. He simply experiences a different kind of sensation, with different sorts of sensory phenomena. Since he has had different material with which to work in his learning, he therefore learns different things. He learns a different way to live and, naturally, his behavior will be different. This doesn't need a distortion of physiology to explain the different learning and the different behavior.

So my major question is, really, how do we tie in learning phenomena and can we ignore these as much as I think Dr. Lovett Doust has?

Dr. Lacey: I'm going to anticipate Dr. Lovett Doust's answer to that question. I think that was a low blow! Dr. Lovett Doust *ignores* the physiology of learning for the very good reason that this is the most baffling problem of the age. And I hereby absolve him from answering that question!

Dr. Ozarin: I am going to continue along the lines that Dr. Filley started!

With greater knowledge, awareness, and skills in obstetrics and pediatrics coming along, one might envision that the psychiatrists might be out of business very soon because the obstetricians will be bringing healthy babies into the world and the pediatricians will start them out to meet life with the necessary resources—but this probably won't happen for a while!

The neurophysiological material we heard about in Dr. Lovett Doust's paper is highly interesting and significant, such as the data from sensory deprivation experiments and the vascular changes in schizophrenia. In terms of prevention I did wonder whether the vascular changes he described were results or causes, however. Hopefully, what we have learned thus far in neurophysiology and neurochemistry can be fitted together to provide some theoretical basis for preventive action in the field of mental health and illness. One aspect is of particular interest to

me. We know that the nervous system responds to stimulation by activation of neural circuits which lead to motor visceral or humoral action. My question is this: What can we put into the nervous system, what sort of stimuli have to be provided that will result in behavior and visceral functioning that is considered healthy?

This brings up the matter of the conditioned response. Russian psychiatry, I understand, is based on Pavlov's work, whereas our psychiatry is based on a dynamic rather than on a physiological approach. I don't know if the incidence of mental illness is any less there than in this country, or whether their therapeutic results are different. From the few statistics that I have found in the literature, there may not be much difference. But the Pavlovian theories do offer some tempting approaches. We know that in conditioning experiments, it is possible to put certain stimuli into an organism and to obtain predictable results. Is it possible to determine what kind of input should be channeled to the human cortex in order to secure the response that is most desirable for optimal functioning of the individual in the intellectual and emotional areas of life? Dr. Lacey told us that stimuli can be shut off at any point in the neural pathway so that messages go to the cortex in different patterns at different times. The human cortex is large and complex, much more so than in other animals. Man has a high degree of capability in remembering the past and foreseeing the future as well as a tremendous capacity to act as an integrator of stimuli. Therefore, simple conditioning experiments such as we see in animals may not work out in humans where more complex types of learning may be involved. We can teach a child to be safety-conscious, to look each way before he crosses the street. But when we consider the learning of other values, values such as we heard discussed this morning in the panel on creative mental health, we wonder whether it is possible to use conditioning theories of learning. Still, it is very inviting to think that if we knew what to put into the growing human being and if we tried to determine what this input should be, then good mental health would follow. However, I know it's not that simple.

Dr. Lacey: Thank you, Dr. Ozarin, for your extremely provocative questions. Of course, you come right to the core of what should be our consideration. I'd like to point out that you made an interesting transition there. We physiologists, when we think of what we're going to do to change the input into the nervous system—if this is going to be a proper preventive measure—think of rather direct tampering with the nervous system. And your proposal is to change the inputs via the experience given to the subject—the specific training experiences, that is. This is a most difficult problem.

It may well turn out, may it not, that the more we learn about these

intricate physiological mechanisms, the less possible it will be to change inputs directly in any but the crudest of fashions, as in electric shock therapy. It may be that the proper approach to tampering with the physiology of the individual is going to be via the experiences that we subject that individual to. But I don't think we'll ever be able to teach a person to speak French by administering a drug!

Dr. Blyth: I appreciated Dr. Lovett Doust's focus on the products of pregnancy. Recently I had an opportunity to review an article published by an obstetrician in which the emphasis was entirely upon the problem of fetal death, with no emphasis on the need to pay attention to those that lived. I also liked the focus not only on the prenatal but also the perinatal and postnatal phases—although these latter were not covered in any detailed determinant studies showing that anoxia might result from things happening in these areas. Certainly we ought to be able to do much in the way of prevention here.

I disliked the notion that "clocks are the stuff of personality." After reading Dr. Lovett Doust's references, I appreciated the notion that the clocks are located in the very cells of vertebrate organisms and that they are extremely important. This reminds me of the implication which came up this morning that there is a dichotomy between psychology and physiology. This dichotomy is, of course, more artificial than actual. Science through semantics may have created levels of description, but that doesn't alter the fact that we are dealing with a unitary organism. However, my feeling is that when we discuss the "stuff of personality," we are more in the area of psychology than physiology. At the same time it is true that any event or phenomenon can be described in terms of any level of description—psychological, physiological, or what have you—and we're certainly not very sophisticated in correlating these levels at this point. Surely this is an important area for research.

I would like to point to one of the articles that Dr. Lovett Doust had us read concerning plants [see Bünning, reference 12 preceding]. A certain species has a leaf that turns approximately every 24 hours, and one might believe that this had to do with external events, such as the rising and setting of the sun. However, when the light is removed, the plants still turn at approximately the same rate except that some of them are off-beat, with some in a 26-hour cycle and some, a 22-hour cycle. What does it take, then, to bring this into balance? It takes some daylight striking upon that leaf to make it perfectly synchronous with the 24-hour cycle.

So, by parallel, I'd like to move to what I think it takes to make human clocks work, and that would be the environmental influences. For instance, in my work in the clinic, we find with great frequency that children have brain injury and that along with the injury there has been

a behavioral change. Sometimes this behavioral change is of such a nature that the unsophisticated mother gets the notion that her child is rejecting her (i.e., he may be stiff and doesn't want to be held). Now we have coming into play the environmental and, in this case, psychological influence which has something to do with creating personality.

I wanted to mention one more thing and that is the work of Dr. Richard Masland [Bowman-Gray School of Medicine, Winston-Salem, North Carolina]. He has a very interesting study in progress, a collaborative project having to do with cerebral palsy, mental retardation, and other neurological and sensory disorders of children. This may be complete in another two years and then we may have more of the answers to some of these problems. He intends to investigate the conditions of pregnancy, such as infections, traumata, bleeding, drugs, progress of labor; the environmental factors influencing the mother, such as social and economic conditions, emotional stress, and medical care; the biological factors in the parents, such as age, health, medical and reproductive history, and genetic background. This is a well designed study and lots of work will go into it.

Dr. Norris: I want to defend Dr. Lovett Doust. I don't think he needs defense—he can do it much more adequately himself—but I do want to express my own feelings and ideas about this.

I'm sure he does not equate anoxia with behavior in a one-to-one way. We know that there are cultural and personality differences which are fairly uniform for different cultures. These are learned and do not occur because one culture has more anoxia than another, although different birth practices could make this a possibility. However, it is interesting that when something goes wrong, when mental illness develops, it's amazingly similar throughout the world. Schizophrenia is schizophrenia, whether in Ghana or in Iowa. There are some differences, but primarily it is the same condition; and this, I think, would offer some support to Dr. Lovett Doust. Certainly I think that anoxia can disturb capacity to learn, just as I think deprivation can also disturb the capacity to learn; and I mean capacity, not simply the kinds of things that are learned.

The biological time-clocks I can interpret most satisfactorily (to myself, at least) as a kind of rhythmic activity which does exist, which probably is important to personality formation but which represents actually a background of activity against which other things occur. I would point out, however, that sensory deprivation produces an immediate psychosis. Apparently our time mechanism is disturbed when we do not have any sensory stimulation; and when stimulation is absent, the ego and other concepts break down.

If I may respond to one of Dr. Lacey's questions, we are projecting

work here as part of the Preventive Psychiatry Research Program and are utilizing some of Dr. Lovett Doust's concepts. We are beginning with children at the earliest age we can get, using the school population. We have a control group and an experimental group now. Perhaps children who have immature capillaries could be pinpointed during the first school term. Conceivably these children may have more difficulty in school and perhaps those who are in the causally oriented teaching groups may have less difficulty than those in the control groups. These are all the comments that I have to make at this time.

Dr. Lovett Doust: I'd like to start off by thanking the moderator and the lady and gentlemen of this panel for the nice things that they've said about what I tried to say earlier on. Having said that, I'll go on to some of the more difficult or nasty things that they implied!

Of course, as you must realize, I don't think that this physiological approach is a panacea or that it has all the answers. I don't think it can answer questions which befuddle the minds of those of you who are engaged in other disciplines. I don't think it's the be-all and end-all of psychiatric and personality understanding. It's my field as much as it's the field of Dr. Lacey and, therefore, we enter into it prejudged in its favor, but I think Dr. Lacey would agree it is only part of the answer.

Now, dealing with some of the comments and questions which have been made, I'd like to offer a few remarks about them, in the order in which they were presented. Dr. Lacey gave an excellent review of the points that seemed to him relevant and entered in upon some masterly criticism with which I cannot quarrel. For example, he was concerned about whether morphological immaturity is predisposing to mental illness, or whether it's correlated with mental illness. All that we can say is that if one looks for the seeds of mental illness in the premorbid personality of the patient, we find the immaturity, and it's just as likely to be predisposing as any of the other factors which are found by such a search. We can't say, of course, logically and scientifically, that immaturity is any more than correlated with mental illness, but we feel that it's probably predisposing all the same.

Why did we choose the digits for our examination? Well, they're very *handy!* So handy are they that they can be employed, as Dr. Lacey suggested, in children and in very young children indeed. In fact, we are examining a small group of severely disturbed schizophrenic children, ages two to five, and making some interesting observations on them.

We are beginning to employ capillary vascular observations in other parts of the body, and I think the obvious one that Dr. Lacey had in mind would be the capillary vessels of the orbital conjunctiva. We're going to use these vessels along with our nailfold studies in future work.

Eli Davis, Bloch and Knisley, and other workers have shown that the relationship between the orbital conjunctival vessels and the nailbed vessels is very close indeed. What one learns from one, one learns from the other. A tremendous amount of work has been done in the past on capillary vasculature of the brain; and, seemingly, the more we know about the characteristics of those vessels, particularly in anatomically important areas such as the visceral brain, hypothalamus, and so on, the more we realize how similar the whole network throughout the body seems to be.

Now, of course, we've no evidence that maternal anoxemia produces fetal anoxemia. We have no evidence for the transfer of lessened amounts of oxygen through the placenta, and it's not possible to obtain this evidence from pregnant women. What we can say is that there has been a tremendous interest in this ever since Sir Joseph Barcroft[3] sacrificed so many goats in his experiments searching for answers to just such questions as these. Now to transfer this information to man is the subject of a tremendous amount of on-going research at the present time. William Windle has edited a book [see reference 77 preceding] which was published late last year entitled *Neurological and Psychological Deficits of Asphyxia Neonatorum*, and I suggest that anybody who is interested in the problem of what-happens-to-the-mother-happens-to-the-fetus and in the whole problem of asphyxia neonatorum should read this volume.

I dealt with deprivation, to continue with Dr. Lacey's comments, in a rather general way, feeling that it's a general concept of great and implicit importance in psychiatry. Certainly I switched not very subtly from maternal deprivation to sensory deprivation and back, feeling essentially that these were aspects of an identical problem. We can cull evidence from the one source or the other and come to very similar conclusions.

Dr. Lacey is worried about the existence of biological clocks in the organism. In this he shares the views of about half the contributors to this subject during the last eighteen months. Half of these scientists are against the concept; half of them are for it—and now it's up to me to resolve this! I would go along with him and say that here is one explanation of rhythmicity. He was at pains to point out that these clocks are not imperious, and with this conclusion I would heartily agree. Of course they're not! And Dr. Blyth, who pointed out that plant rhythms are desynchronized by environmental stimulation, answered him. Every environmental stimulation which can get through perceptually to the

---

[3] See Sir Joseph Barcroft, *Researches on Prenatal Life*, vol. 1 (Oxford: Blackwell Scientific Publications, 1946).

organism is fundamentally going to be active in causing change of the setting of these clocks.

I think it is interesting that when one admits that premise, one has also to admit that *all* those conditions under which perceptual sensitivity is reduced are conditions, by that very token, which lead to an automaticity, a separation from potential environmental stimulation, and which lead to a rigidity in the organism. If we want a perfect example (or as near perfect as we can get in our society of human beings), it is in the schizophrenic, who perceptually is an isolate in society. In these people one sees examples of spontaneous activity far better demonstrated than in non-schizophrenic subjects. It's because of this relative insulation from society that the rhythmicity is seen in these patients and can be so clearly demonstrated.

Dr. Howell was interested in the critical epochs of pregnancy. These are very well recognized indeed and have been known for many decades. The application of this knowledge, however, towards preventing insults to the fetus is very recent indeed. I say very recent even though I will recall that Dr. Little a hundred years ago was just as aware of them as are present-day pediatricians, obstetricians, and embryologists. If the oxygen level in the maternal blood goes down, says Dr. Howell, what happens to the fetus? I think the answer to that can be found in Windle's book.

I can't give Dr. Howell a good relationship between biochemistry and maturation in order to satisfy the preventive idea that he would have me handle. All I can say is that in everything that I said (and I think in most of what the panel members have said in their comments and criticisms) there has been an obvious preventive aspect. This is one of the few areas in psychiatry where prevention can take over here and now.

Morphological immaturity in children was an interpolated question by Dr. Lacey, who got excited by this stand taken by Dr. Howell; and he [Lacey] wants to know if we can study such children and prevent illness, what's the nature of false positives and false negatives, whether one can actually influence the growing up of the child and lead the child into a better direction as far as a normal maturity process is concerned. He asked the question; we have to do the research. This is an obvious area in which to do research and we're making a small beginning. Dr. Norris here at Iowa is also making a beginning, a larger one by the sound of it. The meaning of these bits of evidence, as they accumulate, is only beginning to be realized.

Dr. Filley (I must say, I think a little unfairly, and I think Dr. Lacey agreed with me) said we omitted learning. If we omitted learning, we omitted thousands of other things, too; we omitted learning because we

couldn't cover everything, and because, as Dr. Lacey pointed out, learning is one of the most difficult things to talk about. What we know about learning, we know largely from rats (with all due respect to the department of psychology of this university!)

We just don't have the facts. We have lots of theories and we have lots and lots of folklore! We can use this folklore and, in fact, we do. We give it to our mothers as if it were the Bible (but with each edition it's a different Bible!) and we believe in it implicitly.

Dr. Filley: May I interject? If I sounded unfair, it's simply because I'm trying to understand this, and I hoped you could help me!

Dr. Lovett Doust: As for Dr. Filley's comments on sensory deprivation not typifying infancy, I would remind him of the definition of William James about consciousness in the child. "Consciousness," said James, "in the infant is one big, blooming, buzzing confusion."

This may or may not relate to sensory deprivation, but it certainly bears a relationship as to the potential perceptual competence of the infant. This has to be acquired. I think we might gain knowledge about how it's acquired through following up Konrad Lorenz's[4] interest in the time in which it can be acquired. A study of the IRM's (innate releasing mechanisms), which has been so rewarding in Lorenz's experimental laboratory in Germany in terms of his geese, ducks, and so on, is going to be as rewarding in human children.

Dr. Ozarin was interested in whether vascular changes are results or causes, and I can't tell her. I can't begin to discern a result without a cause and a cause without a result. The whole discussion of this, of course, goes back to the Middle Ages where psychophysical parallelism waged bitter war with other ways in which relationships might be undertaken. Sometimes, of course, these changes are results; at other times, causes. It depends upon the circumstances and the variables that are involved.

And, she wants to know, how can we put something into the nervous system to give us mature behavior. How can we put something in to get good responses? What must be the nature of the input? I wish we knew! I'm not going to attempt to answer this. We can't answer it in monkeys; certainly we can't answer it in man. I would say, though, that in terms of the better defined areas of neurophysiology that the work going on does seem to be providing some limited answers. For example, we find Woolley's hypothesis most interesting, about the pumping

---

[4] See Konrad Lorenz, "Uber angeborene Instinktformeln beim Menschen" [On innate instinct formulae in man], *Zeitschrift für Menschliche Vererbungs und Konstitutionslehre* 32(5):385-389, 1954. (Also, No. 30884 in *Biological Abstracts*, 1956).

action of the oligodendroglial cells and the relationship of this to the oxidation potential of the brain and how we can influence this from time to time by dropping onto the tissue culture all manner of active metabolites, reserpine, serotonin, etc., which cause dramatic change. And we know, as Woolley has been quick to point out, that if we give tranquilizing drugs to our excited and disturbed patients, they may well react, tranquilizing-wise, through this very pumping action [see reference 7 preceding].

Dr. Blyth didn't like the notion that "clocks are the very stuff of personality," a little poetic turn of phrase which I hoped he would excuse, but he obviously doesn't!

His point is that the psychology of the organism is being neglected, that these physiologists (despite the fact that they're called upon to talk physiology) are leaving out psychology. But what *I* would like to ask him is this: Where is the psychology located in the organism that we can study? We make studies of cells and tissues; we make studies of physiologic responses, parameters, and so on, which we measure—all studies of the organism. Now he claims that the psychological aspects of the organism is just as much a part as the physiological aspect. As reasonable people, we would have to agree with him. But this psychological aspect has no being and no meaning outside the organism itself. It is a way of looking at the organism, just as physiologically is a way.

Thus we are left with man, and this point was well brought out during the discussion this morning. I'm not going to go into the background philosophically, as when the soul was thought at one time to be an epiphenomenon, sitting like the rider on the back of a horse, guiding it, or whether the soul is a spiritual purpose, or whether the soul is *in* the body. What is mind and what is matter? The whole dualistic concern of natural philosophy goes down the ages. There is no one answer to it. You take your stand and you defend it from there. But I suggest to you that if one is going to look at functions, then these functions must have operant details which can be looked for and found in the structure and function of the organism itself.

And finally, I was very pleased to hear about Dr. Norris' contribution, which is, in a sense, an application of the theory into practice, and I wish it well.

Dr. Lacey: Dr. Lovett Doust, all I can say is that you have added to a masterful paper a masterful discourse (due, of course, to the masterful comments provided by the panel!). Now, who in the audience, has a comment or question?

Mr. Taylor: I would like to ask Dr. Blyth to elucidate further on his comment that the organically damaged children he sees are distant from

their parents or don't want to be held. I recall that Lauretta Bender writes that the organic children need the extra security that the parent can give them. Dr. Blyth seems to come close to the autistic child here, and what's the division, then, between the autistic child who doesn't want contact and the organic child who does want the support of the parent?

Dr. Blyth: I've seen a great many of the brain-damaged children of our community, both within the framework of the child guidance clinics and also in the cerebral palsy evaluation centers and through their neurologists. I also had an opportunity last year to review some of the literature about brain-damaged children, and I am in complete agreement with Dr. Bloch that there is no such thing as a syndrome attached to brain-damaged children. There may be syndromes, but I fear that the brain is so infinitely complex that it would be almost like saying each has his own personality. There is such an infinite variety of injuries possible in the human brain.

My comment referred to children whom pediatricians, as well as psychologists and psychiatrists, note early in life as being quite rigid. Sometimes we have noted that the mother's comments about this were to the effect that she felt the child was rejecting her, in the sense that he did not want to be held. On the other side of the coin, there are children who are brain-damaged who are particularly passive; others are overactive. All these patterns have their psychological meanings for the mother and also for other people in the environment and this feeds back to the child in terms of psychological defense in his own life.

Dr. Ozarin: In going through some of the literature on neurophysiology, I could find descriptions of the nervous pathways that enter into such matters as attention, perception, integration, and arousal to anger and fear; but I never came across the word "motivation," which is an important word in terms of prevention. I'm wondering if Dr. Lovett Doust might have some thoughts on the subject of motivation and its role in preventive applications in psychiatry, approaching this subject from a neurophysiological view rather than from a philosophical one (without getting into the business of the soul, in other words!).

Dr. Lovett Doust: I don't think that we find much talk about motivation in neurophysiologic work because motives can only be understood by means of fairly adequate communication with the subject. Motivation must, therefore, remain largely a human concept. What we do find in neurophysiologic literature are many comments concerning *drives* and probably the neurophysiologic equivalent of motivation is drive. These drives can be considered as specific (hunger drives, sex drives, and so forth) and they can be considered general. When they're considered as

general, then we speak of drive *per se*, libido *per se*, or conation. And conation is a very interesting concept with quite a respectable psychological history, which has been (to my way of thinking) almost completely neglected in the last twenty or thirty years. Essentially it is that aspect of drive which underlies specific drives, rather like Spearman's G-component of intelligence which underlies all the specific "S" factors. And as Dr. Lacey has said, it is in the septal area that we find the source, the anatomical source at any rate, of both these specific and non-specific aspects of drive.

This is probably the area which is important in Dr. Ozarin's concept of motivation, though I don't know that such neurophysiological information would yield very much help in sorting out predisposed children. I think that there must remain a tremendous gap between the mammal physiologist and the child psychiatrist. I don't know that one can apply the findings even in monkeys to men.

Dean Loehwing: I thought I might take a few moments to share with you a story which I have just heard which has biological connotations, although it was told to me by a physicist. He was asking an academic colleague what this thing of guidance and counseling was—what was it really that these people were trying to do?

The colleague attempted to explain it to the physicist, and this is how the story went: "We like to get children early in order to determine their aptitudes, and there are many ways we do this. For instance, we have a group of youngsters in a kindergarten. We ask them questions and watch them and interpret their reactions. One of our questions runs like this. We ask the children to think of an elephant.

"Then we say, 'Now if the elephant's trunk and tail were each considered an extra foot, how many feet would the elephant have?'

"There will be a variety of responses, but right away several of the youngsters in the group will immediately say, 'Yes, but—' Well, those are the lawyers of the future.

"Then there are some who will start counting on their fingers. Those are the engineers of the future.

"Finally there'll be some sunny-faced youngsters look up at you and say, 'That's a good question.' Those are the future psychiatrists!"

It has been a stimulating experience for me to hear being discussed some of the advances which have been made, the pooling of information and the give-and-take, both at the First Preventive Psychiatry Institute in 1957 and at this one. As a biologist, I am tremendously interested in hearing tonight about Dr. Hinkle's professional interest in human ecology. I might say that some of my colleagues used to tell me that there wasn't any such thing as ecology—as a discipline, that is. However, certainly the relationship of the individual to his environment is a factor which has come to the forefront in a dramatic way with the world upheavals which have occurred during and since World War II. Dr. Hinkle's work with the displaced Chinese in America and the Hungarian refugees must have had many dramatic aspects. I myself have always wondered about the effects upon people of voluntary emigration, on the one hand, in contrast to the effects of forced emigration thrust upon people by the march of events over which they had no control.

Dr. Hinkle, who will tell us about some of these things, is affiliated with The New York Hospital-Cornell Medical Center and has been there since 1946. Originally from Raleigh, he received his A.B. degree from the University of North Carolina and his M.D. from Harvard University.

Permit me, also, to say a few words about Dr. Phillips, our moderator this evening. He did his undergraduate work at Brown University, re-

ceived the M.D. degree from Yale University, and later went to Massachusetts General Hospital. He was a practicing pediatrician for several years before taking up his present work as director of the American Child Guidance Foundation. He also serves as an adviser to the National Congress of Parents and Teachers.

CHAPTER IV

Physical Health, Mental Health, and the Social Environment: Some Characteristics of Healthy and Unhealthy People°

LAWRENCE E. HINKLE, JR., M.D.

Thank you, Dean Loehwing. I am glad to hear that you are interested in human ecology from the biologic point of view because this is the point of view from which we are interested in it. I am a physician—an internist, not a psychiatrist. I am speaking to you tonight because over the course of several years Dr. Harold G. Wolff and I have been investigating the circumstances under which people become ill and the way that a man's relationship with his environment affects his health.

Our conception of ecology is that it "deals with all the interrelationships between organisms and their environment." Dean Loehwing has said that ecology is not necessarily a discipline. I agree. J. W. Bews, the great South African botanist, who was one of the first to indicate the usefulness of the naturalist's attitude toward the study of man, said that "ecology represents not so much a branch of biologic science as a certain attitude of mind with regard to life." The members of our group look upon themselves as naturalists who study man in his natural environment. We feel free to study any of the pertinent interrelationships that we see by any method that is applicable, knowing full well that we cannot be global in what we do, and that we must study one problem at a time; but at the same time we are always aware that there are many

---

° From the Study Program in Human Health and the Ecology of Man, Departments of Medicine and Psychiatry, The New York Hospital-Cornell Medical Center, New York City.

possible approaches to any problem and that many factors operate in each natural situation.

Tonight I should like to discuss illness as a form of biologic behavior, and inquire into some of the characteristics of "healthy" and "unhealthy" people. One of the first morbidity surveys carried out in this country, the Hagerstown Survey of 1921-24, revealed that illness is not distributed evenly over a lifetime. People develop new illnesses far more frequently in childhood. Between the ages of 15 and about 45, the number of their new illnesses falls off; and then, later in life, it rises somewhat. While the number of new cases of illness is not so high in later life as in childhood, the "prevalence" of disease—the number of people having disease—is very high, because after age 55, almost everyone in the population has some "chronic condition," from which recovery is nearly always incomplete.

Thus, if we wish to compare people in terms of health, we must compare them over similar age periods. We have chosen to study the period from age 15 to 45—the so-called prime of life when the incidence of illness is lowest and people are at their healthiest. My statements tonight are based on seven years of observations, involving some 3,600 people falling into six population groups[1, 2] as follows:

1. 1,700 semiskilled American working women,
2. 1,527 skilled American working men,
3. 100 Chinese graduate students and professional people,
4. 76 Hungarian refugees,
5. 132 recent graduates of American colleges,
6. 84 American supervisors and foremen.

Each of these population groups was selected because of its "homogeneous" character. These are groups of similar people, living under similar circumstances, over a similar period in life. The two American working groups were selected because there were available long-term, unbroken records of their health, and of their attendance and performance at work. The members of these groups lived for many years under benign and rather unchanging circumstances. The Chinese and Hungarians were selected because each group had been exposed to unusually changing, and sometimes threatening circumstances. The recent graduates of American colleges were from a segment of American society different from the working men and lived in a different part of the country. They provided the possibility of a "prospective" or forward-going study, necessary to complement the "retrospective" studies of the other groups.

A good deal of time and the efforts of many able people from several disciplines were required in order to obtain the data about the back-

ground, the life experiences, the social environment, and the health of these people. The methods used are listed in Table 1. In dealing with foreign groups, we had the help of the cultural anthropologist as well as that of people of the same nationality. We used psychiatric interviews, sociological interviews, and a considerable battery of psychological tests.

Table 1

METHODS

DATA ON BACKGROUND, LIFE EXPERIENCES, AND SOCIAL ENVIRONMENT WERE DERIVED FROM:

1. Family Histories
2. Detailed Biographies — by Internists, Psychiatrists, and Sociologists
3. Interviews with Cultural Anthropologist
4. Interviews with Sociologist
5. Interviews with Psychiatrist — 2-4 hours each
6. Psychological Tests (Rorschach, Wechsler-Bellevue, Thematic Apperception, Projective Questionnaire, Sentence Completion, and others)
7. Reports of Family, Associates, and Employers
8. Observations of Behavior

DATA ON HEALTH WERE DERIVED FROM:

1. Analysis of Comprehensive Medical Records, Covering Repeated Observations over Periods as Long as 25 Years
2. Analysis of Comprehensive Attendance and Personnel Records, Covering Similar Periods
3. Reports of Private Physicians and Hospitals
4. Detailed Medical Histories (by Internists)
5. Direct Observations of Health Patterns
6. Laboratory Diagnostic Procedures
7. Physical Examinations
8. Psychiatric Interviews
9. Psychological Tests

Our data on health are derived not only from medical records, attendance records, and reports of private physicians, but also from extremely detailed, four-hour, questionnaire-guided medical histories taken by internists, as well as the usual medical examinations and tests. To obtain our subjects we went out into the general population and selected whole groups of people who were ambulatory, working, and not known to be ill.

In defining, counting, and describing health, we have been guided by the considerations of the Study Group on the Measurement of Health of the World Health Organization.[3] We have appraised mental health on the basis of indicators which are dependent on the value system inherent in the community from which the individual is drawn. We have tried to judge the Chinese against Chinese standards, the Hungarians

against Hungarian standards, and the American working people against the standards of American working people.

A brief characterization of the group of 1,700 American working women will illustrate the statement that these are similar people in similar situations. The health of these women was studied between the ages of about 20 to 45. There were 1,297 with more than one year of service and complete records. Nearly all were second-generation Irish and Italians of lower middle class, living in New York. They all had had a grammar school education, but little more. They all had the same occupation in the same city, and they lived in an area where one could assume that safety, sanitation, nutrition, and exposure to infection would, over a long time, be essentially the same for the whole group. They had all been healthy on a physical examination made at the time when they were first employed. A subgroup of these women, 336 in all, had had more than 20 years of unbroken employment. It is this segment of the group, and some of the people in it, that I should like to call to your attention.

From these 336 women, with the aid of a statistician and the usual sampling techniques, we selected 96—as many as we could study intensively. We reviewed all of the recorded episodes of disabling illness of each woman over a 20-year period, from approximately age 20 to age 40. These illnesses are distributed over the group in a manner such that 25 per cent of the women had 52 per cent of all the episodes that occurred; that is, one quarter of the women had more than half of all the episodes of illness that occurred over this period of life (Figure 1). Those who are statistically oriented will note that these illnesses are not distributed according to a Poisson distribution. The distribution is skewed. The risk of having an episode of illness is about twice as high in the highest quartile group as it is at the median, and about half as high as the median in the lowest quartile, which had only 6 per cent of the illness. In other words, among these similar women over the same period of life in the same environment, some had a great deal more illness than others. Illness was distributed as if some were more likely to become ill than others.

We immediately conjectured that some of these women were susceptible to headaches, or to intestinal upsets, or to respiratory infections, and that probably such women had the same little episode of illness over and over again. To test this, we ranked each woman according to the number of episodes of illness she had over a 20-year period. We also ranked her on the number of disease syndromes, or different kinds of illness, that she had had. We found that our conjecture was wrong. As you can see, the more episodes of illness each woman had, the more different types of illnesses she had (Figure 2).

FIGURE 1

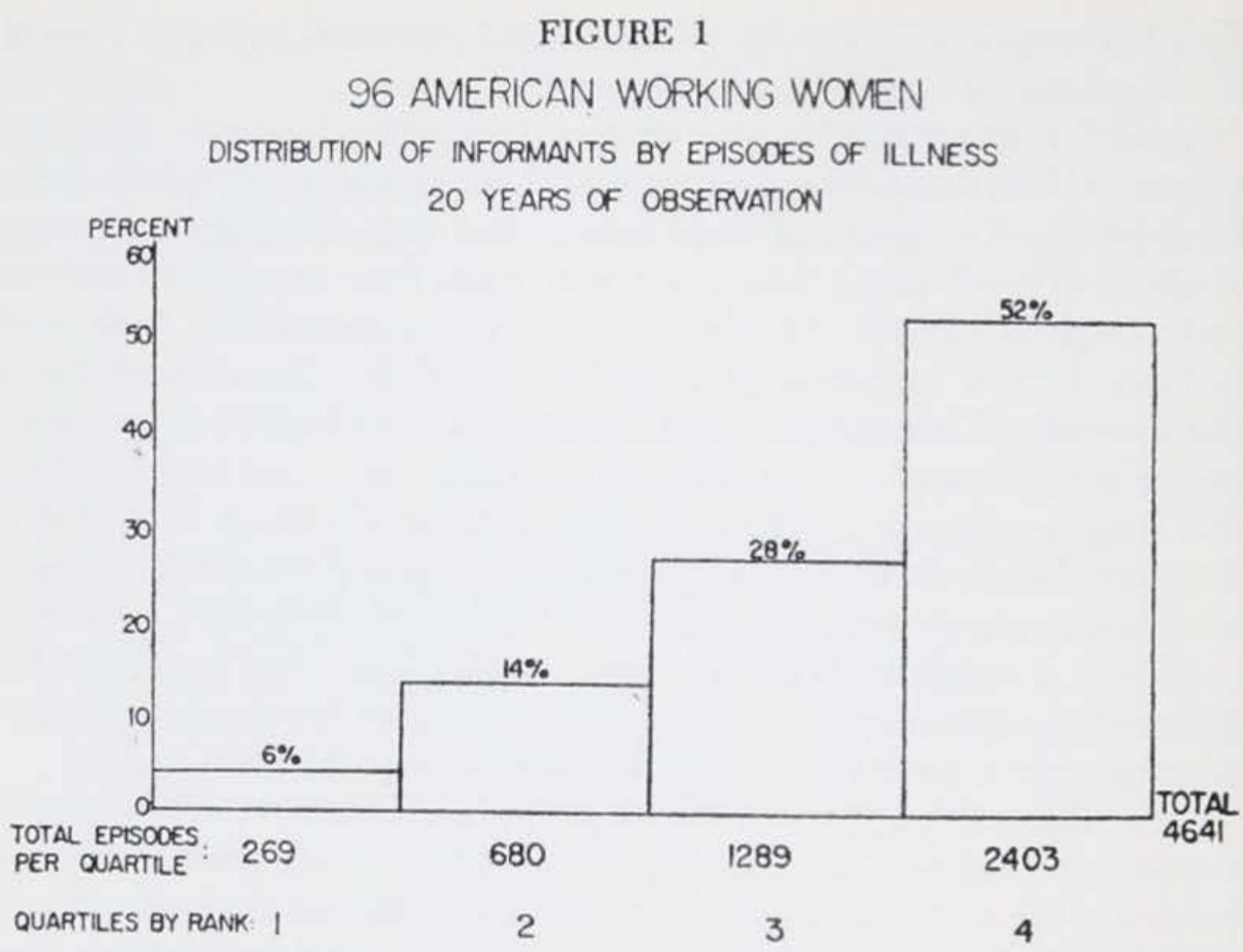


FIGURE 2

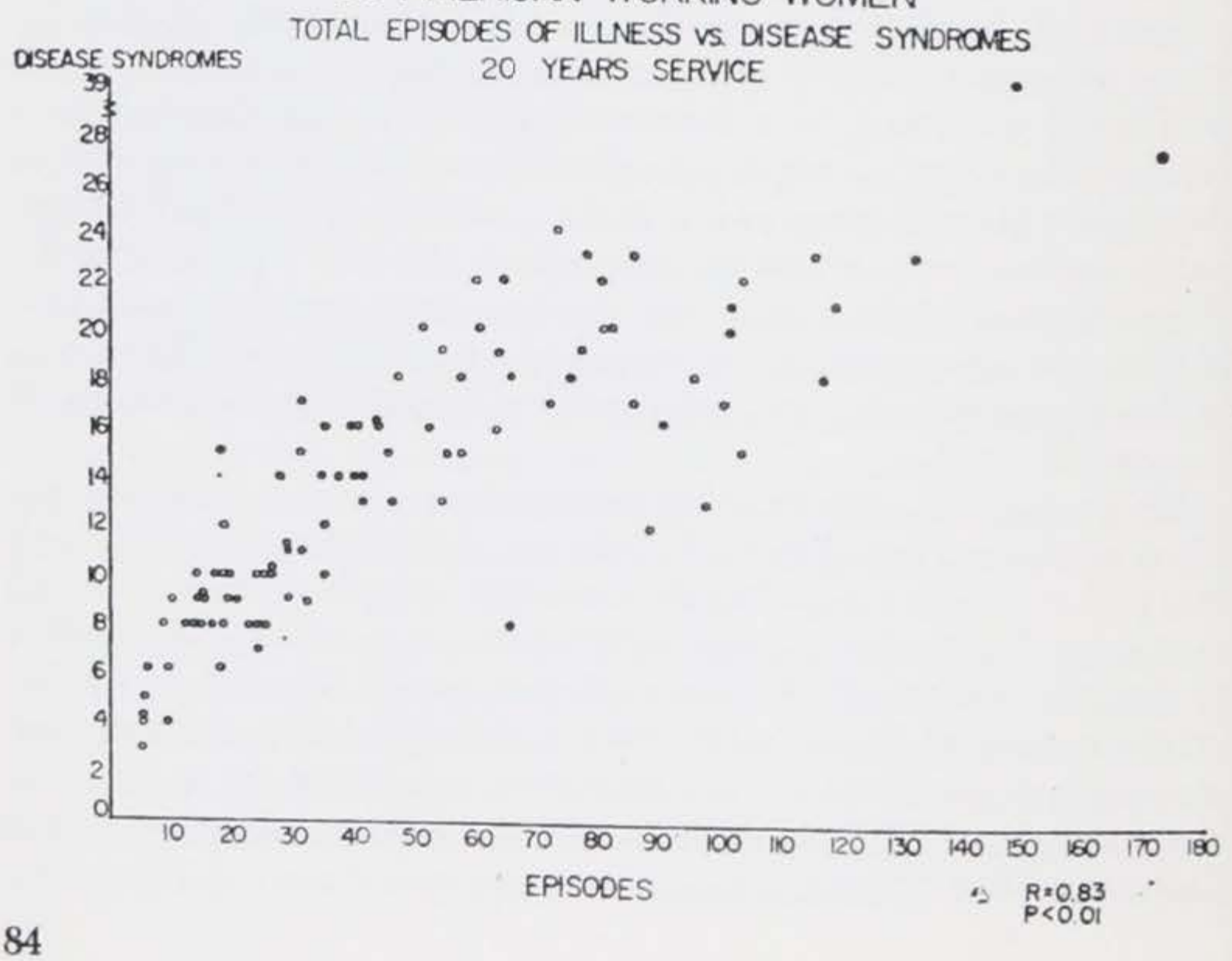
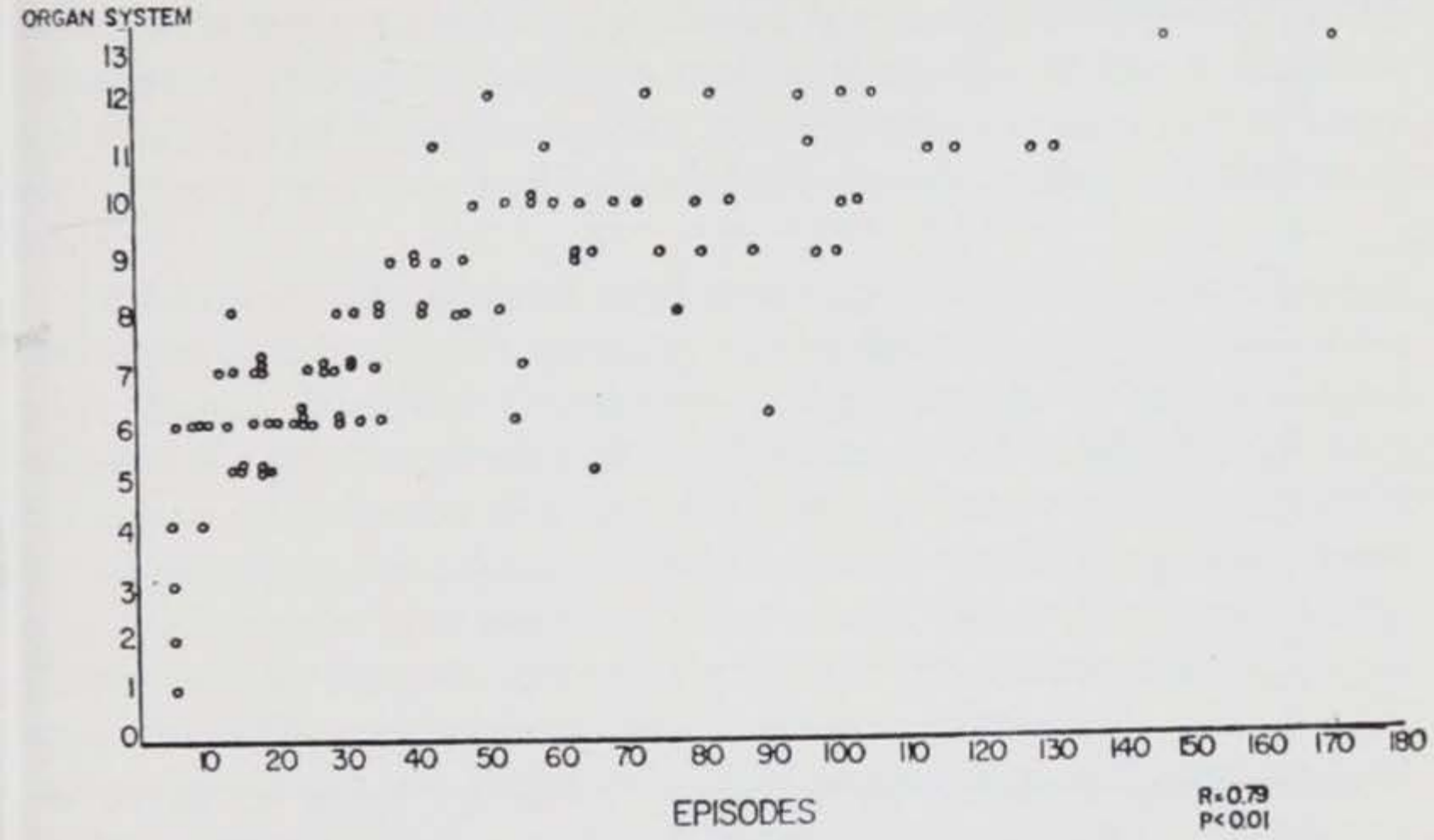


FIGURE 3

96 AMERICAN WORKING WOMEN

TOTAL EPISODES OF ILLNESS vs. "ORGAN SYSTEM" INVOLVED

20 YEARS SERVICE



This did not convince us. We suspected that the ill woman had defective organ systems. A woman with a defective respiratory system might have many colds, sore throats, sieges of "grippe" and pneumonia and thus accumulate many syndromes as well as many episodes. Therefore, we ranked the women according to the number of episodes of illness experienced and the number of their organ systems primarily involved in the illness, assigning each episode to only one organ system (Figure 3). Those who had the greatest number of illnesses had illnesses involving many of their organ systems.

We then conjectured that some of these people were susceptible to infections, others had metabolic disorders, and others were allergic, and so on. We therefore placed each illness of each woman in its proper etiological category, as this is listed in the *Standard Nomenclature of Diseases* issued by the American Medical Association.[4] We found that the women who had had the greatest number of illness episodes had illnesses of many different causes (Figure 4). It appeared that this difference in susceptibility to illness was "general" rather than simply "specific."

We investigated whether some women had "major" illnesses, and others had "minor" illnesses. The association between these is a weak one, but definite and positive. The women who had the greatest number of minor illnesses also had the greater number of major illnesses (Figure 5).

FIGURE 4

96 AMERICAN WORKING WOMEN

TOTAL EPISODES OF ILLNESS vs. ETIOLOGICAL CATEGORIES

20 YEARS SERVICE

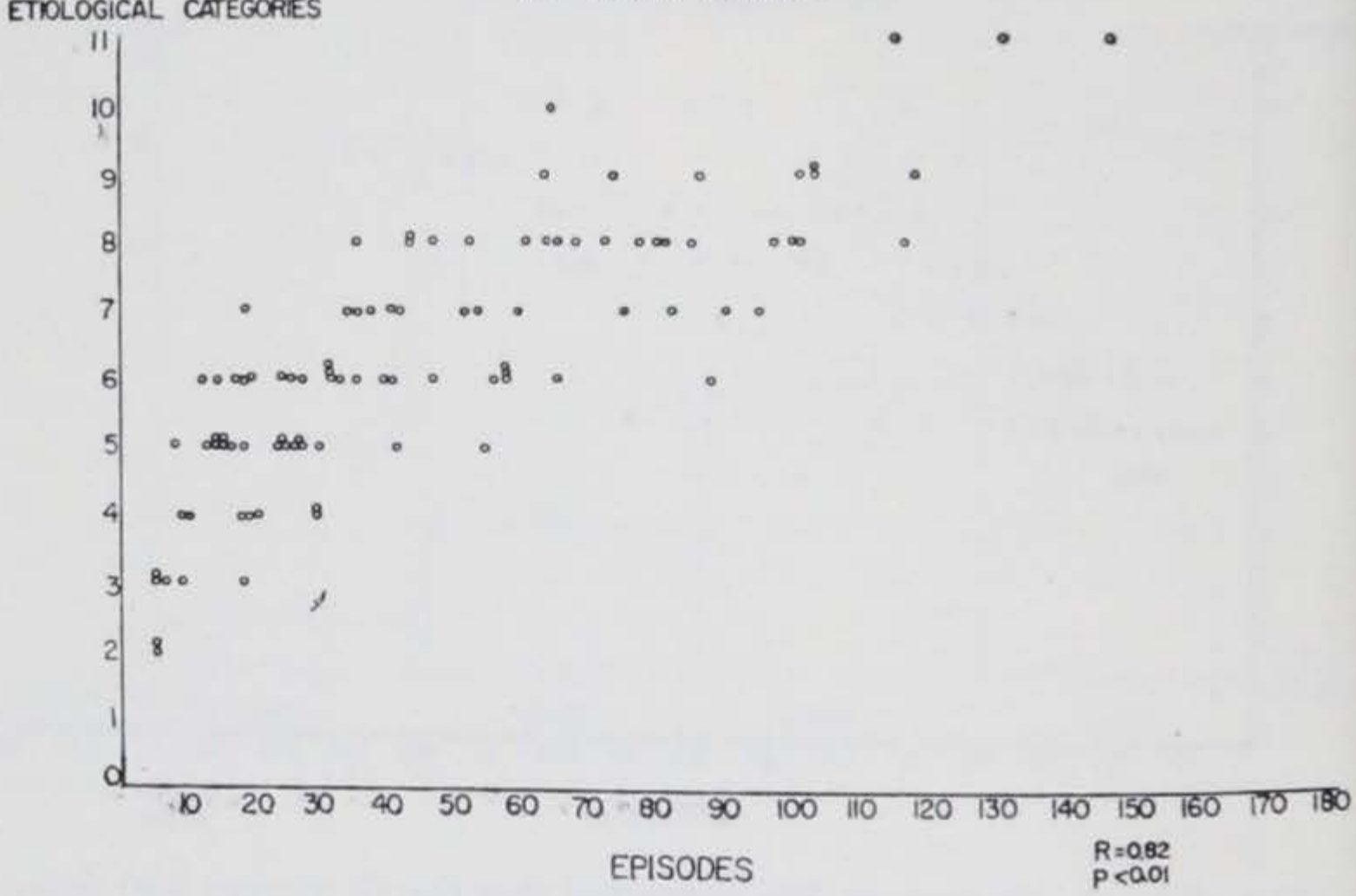
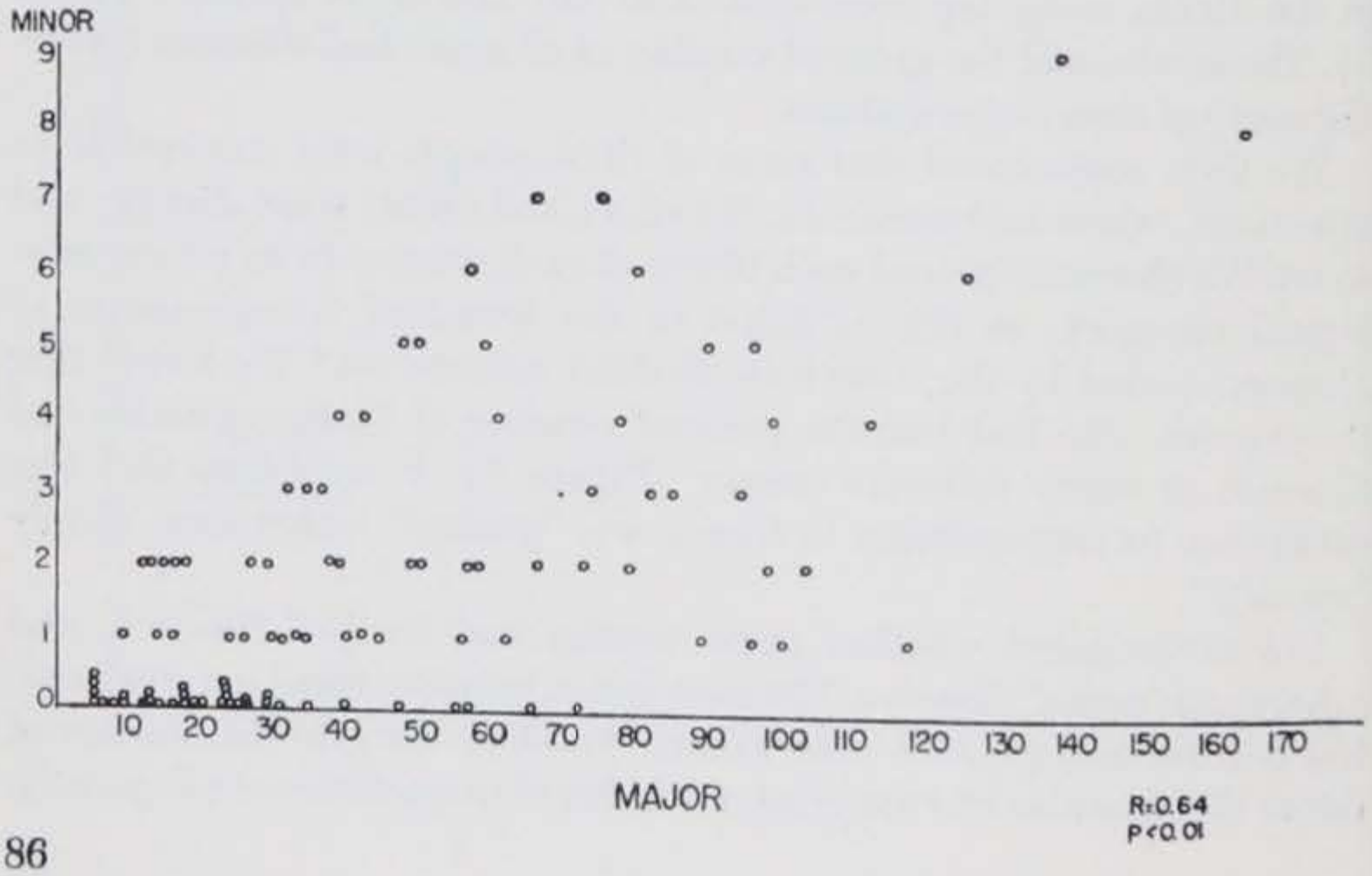


FIGURE 5

96 AMERICAN WORKING WOMEN

MAJOR vs. MINOR EPISODES OF ILLNESS

20 YEARS SERVICE

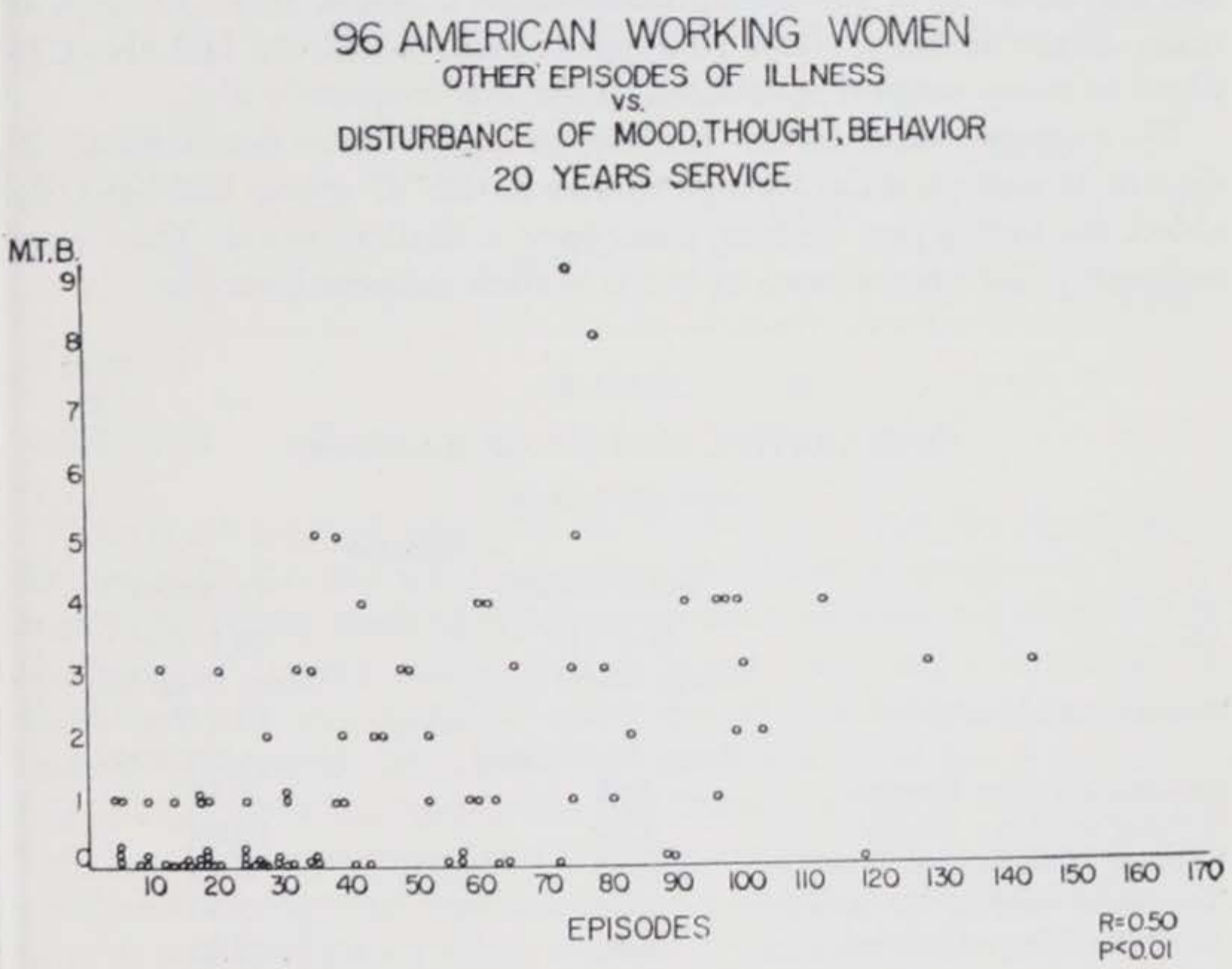


Finally, we asked, are there *two* different kinds of illness? Are there "bodily illnesses," which the physician treats, and "disturbances of mood, thought and behavior," which the psychiatrist treats? In investigating this, we discovered that episodes of disturbance of mood, thought, and behavior in these young women, drawn from a healthy segment of the population, were quite common, even in the prime of life. I hasten to add that most of these were minor, and that these women had no more such illness than we, and others, have found in the population at large.[5, 6]

We found that there was a weak association between bodily illnesses and disturbances of mood, thought, and behavior. In this, as in all of the other groups, there was a tendency—a significant tendency—for those who had the greatest number of bodily illnesses also to have the greatest number of disturbances of mood, thought, and behavior. Unfortunately for the physician, the population does not divide itself neatly into people who are "neurotic" and people who have "real" illness. The more bodily illness that one has, the more likely he is to have some disturbance of mood, thought, and behavior, and vice versa (Figure 6).

So to sum it up, we found that these women were different in their susceptibility to illness in general. Some women had more episodes of

FIGURE 6



illness per unit time than others. Those who had the greatest number of episodes of illness had more disease syndromes; they had more organ systems involved in illness; they had illnesses falling into more etiological categories and illnesses of more different causes; they were likely to have more major illnesses; and they were likely to have more disturbances of mood, thought, and behavior. I assure you that this is a statistical statement. Exceptions to it can be found; but over every group that we have studied, it has held true. In practically every group, 25 per cent of the people have had about half or a little more than half of all the illness episodes over the prime of life; and another 25 per cent have had fewer than 10 per cent of the episodes. Since these are quite diverse groups of people, I should not be at all surprised if this were true of the population in general (Figure 7).

We wished to look still more intensively at some of these people. So we went back to the whole group of 336 working women who had had 20 or more years of service. We took from the whole group the 20 women who had had the smallest number of days of illness over a 20-year period, and the 20 who had had the greatest number. We selected these women from their records, and they were sent to see us. We found that they were comparable in age and length of service (Table 2). All had lived and worked in the same place for a long time; yet the more frequently ill had had about 10 or 15 times as many major illnesses, about 10 times as many minor illnesses, about 10 times as many accidents, and about 10 times as many surgical operations as the less frequently ill.

The average woman in the "healthy" group had been disabled only 33 days in 28 years, but the average woman in the "ill" group had been disabled the better part of four years over a similar period. They were noticeably different women in terms of their sickness behavior.

Table 2

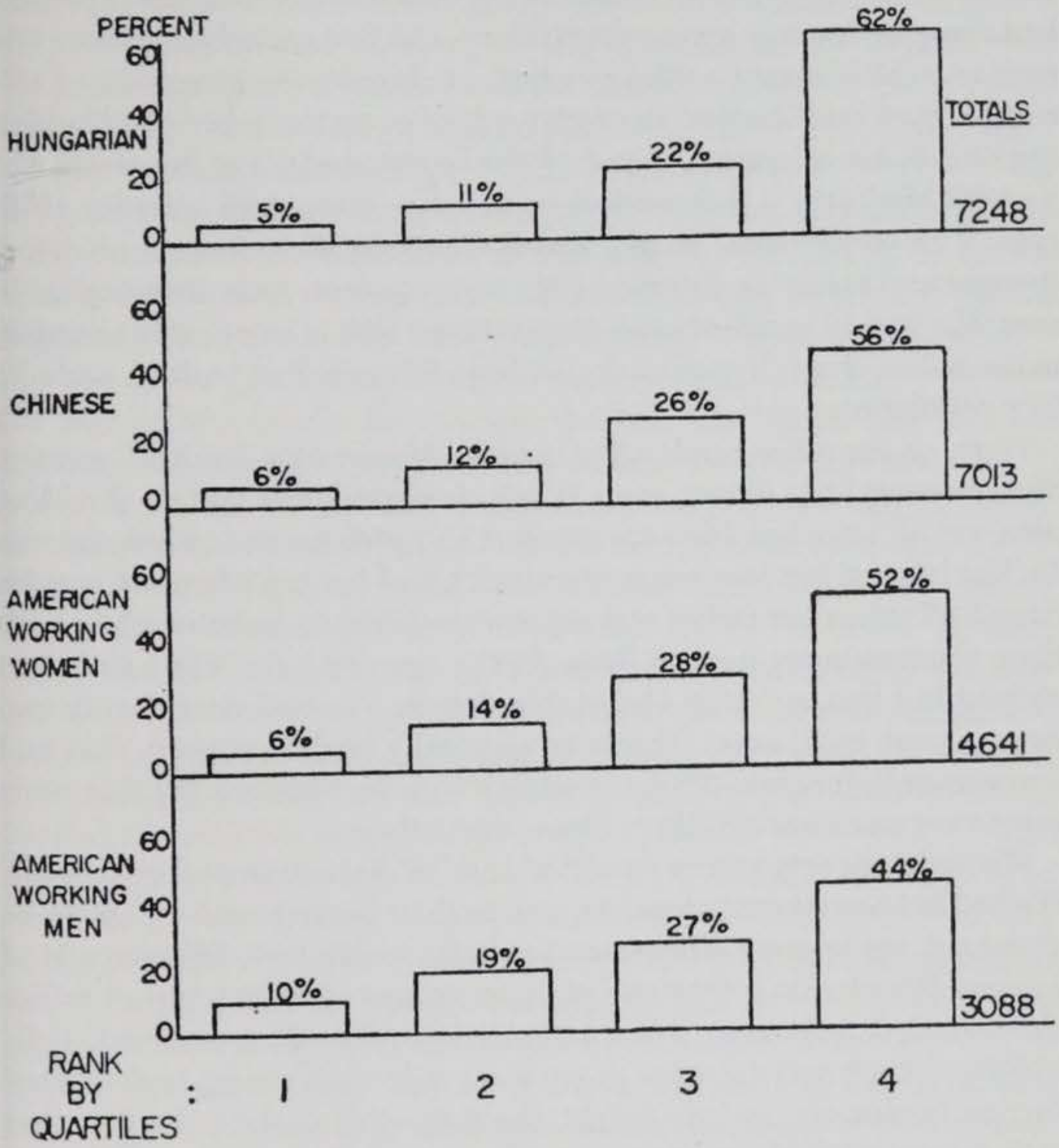
COMPARATIVE NUMBER OF ILLNESSES

(PER INDIVIDUAL)

	AVERAGES	
	"WELL GROUP"	"ILL GROUP"
Age	48.8 Yrs. (Range 40-60 Yrs.)	46.1 Yrs. (Range 39-56 Yrs.)
Period of Observation	28.8 Yrs. (Range 23-38 Yrs.)	25.9 Yrs. (Range 20-31 Yrs.)
Number of Major Illnesses	0.65	10.10
Number of Minor Illnesses	6.10	62.05
Number of Accidental Traumata	0.90	6.90
Number of Surgical Operations	0.25	2.50
Number of Days Disabled	33.30	1,209.20

FIGURE 7

DISTRIBUTION OF EPISODES BY QUARTILES



Here is the medical history of an "ill" woman. From the age of 16 to the age of 51 she had influenza; she had whooping cough; she had at least 44 disabling respiratory infections and two episodes of tonsillitis. She had gall bladder disease and gallstones. She had a hernia of her diaphragm and post-operative symptoms of dysfunction of her biliary tract. She had many gastro-intestinal upsets and lower bowel symptoms. She had high blood pressure; she had fibroid tumors of her uterus; she had chronic dysmenorrhea; and after her menopause she had many post-menopausal symptoms. She had pyelonephritis, or infection of the kidneys, as well as infection of her bladder. At one time she was anemic; she

had "low back pain"; she had arthritis; she had many headaches; she had middle ear disease and later she developed a disturbance of her balance apparatus. She had conjunctivitis; she lost all her teeth; she had the hives; she had a benign tumor of her breast; she was overweight. She had three moderately severe depressions, and five periods of anxiety and tension, which were disabling as well as chronic—as symptoms of this nature often are. She lost, through surgical operations, her gall bladder, her uterus, her ovaries, a tumor of the breast, and all of her teeth. She was disabled over a thousand days, and experienced 95 episodes of illness, 9 of which were major, and 8 disabling disturbances of mood, thought and behavior. Fifteen of her organ systems were involved in illness. She had 12 accidents and 4 operations. This is an extreme example; nevertheless, this is a woman drawn from the so-called healthy, ambulatory population.

Here, on the other hand, is the medical history of a "healthy" woman. She had very little illness, even in her childhood. She had no disabling illness at all from age 15 to 25. She had an upset stomach when she was 25. She bruised her foot when she was 29, and her toe when she was 31. At age 35, when her father and sister were killed in an automobile accident, she was upset for two days. At the age of 42 she was a little farsighted but had no other observable defect. She had missed only two days of work in 27 years. This is an unusually healthy woman. She, and the woman before her, illustrate what we mean when we say that some people are more susceptible to illness than others.

We had designated these "healthy" and "ill" women from their records. We had not seen them before. As soon as they began to come to us to be examined, we became aware that we were seeing two different sets of women. We observed that one of these groups was made up of rather old and dowdy-looking women dressed in shapeless, styleless, dull-looking clothes; and the other group was made up of young, neat-looking women in shapely, stylish, bright clothing—this despite the fact that both groups were of the same age. The women in the first group were relaxed, easy, pleasant, and co-operative; those in the other group were tense, vibrant, defensive, suspicious, and hostile. As one talked to the first group, one found them to be placid, contented people; one found the second group to be discouraged and resentful. The first group were taken up with concerns having to do with themselves and their own welfare. The others were worried about their jobs, their children, their husbands, and whether or not they were getting ahead. The first group were quite contented and self-satisfied people, but the second and younger-looking group were full of doubts and conflicts. The first group

had very little ambition; the second had much. The first group had many friends and associates, but they were not emotionally involved with these people; the second group were intensely involved with people around them. The members of the first group seemed to assume little responsibility for those around them, while the members of the second were very much concerned about the welfare of others. The first group found their jobs easy and pleasant; the second, in the same jobs, found them dull and confining. Both groups led rather the same kind of life, but the first group saw this life as interesting and satisfying, while the second found it extremely insecure and frustrating. It was the first group of old-looking, dowdy, dull women who had had almost no illness and superb attendance records. It was the young-looking, bright, intense women who had had a great many illnesses and atrocious attendance records. The less ambitious, the less aware, the less intelligent, and the less feminine of the two groups of working women was the healthier.

Here is the life history of a woman who had *few* episodes of illness. Her father was a drunken longshoreman; her mother a teen-aged immigrant girl, who had been orphaned. She (the healthy woman, that is) was born into a household of great poverty, constant conflict, and turmoil. Four of her nine siblings died in infancy of malnutrition and neglect. When she was three, the father deserted the family; when she was five, she was placed in an orphanage by community action because her mother was neglecting her and had been adjudged unfit to raise her. She had a barren life in orphanages. When she was 13, she was put out to work as a servant. At age 16 she left the place she was working at and lived—as she put it—"all around town" with another teen-aged girl. During this time she had a number of irregular sexual episodes and many jobs. When she was 23, she got her present job. At the age of 27 she married a chronically ill, neurotic plumber's helper, whom she had to support thereafter. They had no children. He died in her arms of a massive gastric hemorrhage when she was 44. At the age of 54 we found her to be a well liked, highly respected employee, who had had only two episodes of sickness in 31 years. The only other illnesses that we could uncover on intensive questioning and examination were a few colds. She did have a few days' "nervousness" after her husband's death. By medical and psychological examination, by the testimony of her friends and employers, and by the testimony of unbroken records going back many years, it was evident that this woman had been an effective worker, well liked, and healthy throughout the entire period.

This is far from the only example that I might cite from our studies to show that a person may be quite healthy while living through what to

other people seem to be extremely difficult circumstances; but I do not wish to give the impression that all of the healthy women had histories such as this.

We looked at these two groups of women from many different points of view. From the geneticist's point of view we had nothing more than the best of family histories that we could obtain. From these it seems probable that there is a difference in genetic background between the two groups. Familial diseases were more frequent in the "ill" group. About three-quarters of them had illnesses which we know to be of familial occurrence. However, one could find no great difference between the two groups in the health of their parents and their brothers and sisters nor in the longevity of their parents. Though we had to rely upon retrospective histories of childhood health, it seemed that there were more unhealthy children among the "ill" group than among the "well."

There was no major difference in social and economic backgrounds of the two groups, nor was there any evident difference in their exposure to infection or trauma during childhood. There was a difference in the psychosocial environment in childhood, but it was not absolute. Most of the "healthy" had grown up in what one would regard as a benign and protective psychosocial environment, but five had not. Conversely, most of the "ill" had had a poor psychosocial environment in childhood; but six came from childhood environments that, so far as the unbiased observer could make out, must be pronounced "good." All of the "ill" people had regarded their adult lives as full of conflict, insecurity, frustration, and deprivation; but at least eight of the healthy had regarded their adult lives in the same manner.

The healthy women were, in many instances, old maids with very little heterosexual drive, and no desire to get married. They had got settled into a rather dull, routine life, for which they were well suited, and they had done well in it thereafter. Even those who did marry had few offspring—there were only two in the whole group, as compared to 16 children in the "unhealthy" group. Those healthy women whose marriages had broken up had, in the main, "drifted apart" from their husbands, for these women were not greatly interested in marriage. Thus we found that a group of rather dull old maids, doing a routine, undemanding job for a long time, had been quite healthy; and that a group of vibrant, intense, often better educated, much more ambitious, responsible, and concerned married women, struggling with broken homes and sick relatives, trying to work, take care of their children and educate them, had been unhealthy in the same job. It seemed very much as if the women who had been most healthy in this circumstance were the

ones peculiarly fitted for it; for certainly the rather dull old maid is not the prototype of the American woman of 45. Nor is she, in the nation at large, healthier than her married sister. Quite the contrary!

From this and similar experiences, we have developed the hypothesis that those who are healthy are those best suited for the particular ecological niche in which they find themselves. Let us consider some examples from the American working men.

From the 1,527 men in this group we obtained 20 "healthy" and 20 "unhealthy" men in the same way that we obtained the women.

Here is the medical history of a man who had many episodes of illness. He was a nervous, thin child. He had many colds; he had chronic, running ears; he had scarlet fever. He almost drowned when he was six—had to be pulled out of the river by the police. He had a compound fracture of his femur when he was eleven. When he went to work, he very soon began to have colds; then he developed tuberculosis. Later he had a recurrence of his tuberculosis. He also developed a peptic ulcer, and he became somewhat deaf. He was tense and depressed a good deal of the time, and often constipated. Then, after a somewhat better period, at age 47 he had a recurrence of his ear infection, followed by difficulty with his balance apparatus (Menière's syndrome), and an acute glomerulonephritis. He lost all his teeth, too. At the age of 52 he was deaf, farsighted, had lost his teeth, and had inactive tuberculosis and chronic glomerulonephritis. He had been ill 862 days.

His father was a hard-working Irish blacksmith, and his mother was a rather meticulous, nervous housewife. He was born into a large, poor, but quite cohesive, second-generation Irish Roman Catholic family. It was a stable and reasonably happy family. He went to parochial school, was a good boy—a conscientious, hard-working student—a small fellow, but active. He tried to show off and to be a leader by being a daredevil. It was while showing off that he was nearly drowned in the East River. In a similar manner he later fractured his femur.

He wished to have a better job than his father had had before him. He wanted to be a skilled workman, and he was determined to get ahead. But shortly after he started to work, his father became chronically ill. So he undertook the care of his father and mother, while going to school at night as well as working at his regular job. He soon found that he was not getting ahead as well as he thought he should. He blamed his assistant and complained that the latter was inept—which made him unpopular with his fellow workers. It was in this setting that he came down with tuberculosis. This had something to do with his becoming discouraged and developing an active ulcer. His prolonged illness and many absences led to difficulty with his foreman, slowed up his promotion still

further, and caused further disappointment for him. His health became better after he married a woman of similar background, but he was not able to get ahead in his job. He was never happy about this, although he had fewer conflicts with his superiors. Over the course of years he managed to save enough money to send his son to college. At age 53 we found him still a conscientious, striving, hard-working, responsible man, worried and discouraged, in the same job, and frustrated. He now owned his own home, and his son was a college graduate.

Let us now look at a "healthy" American working man. This man opened the interview by saying, "Never was sick, doc, when I was a child. All the other kids got sick, but I never got sick very much."

During the period from age 12 to 24, he had one laceration and a few colds but he recalls no other illnesses or accidents. His unbroken record from age 24 to 59 shows 9 minor respiratory infections, 2 acute "stomach upsets," a hemorrhoid, a boil, farsightedness, one sore tooth, and a few cuts and bruises. He had one disturbance of mood, thought, and behavior, precipitated when he was suddenly told that his son, for whom he cared very much, had been injured in an automobile accident in Albany. He and his wife drove all night to get there. He was disabled by anxiety for about three days, but recovered promptly as his son recovered. He had a total of 7 days of disability in 35 years, and only 22 episodes of illness, none of which was major.

His background was very similar to that of the previous man—a stable, cohesive family, Roman Catholic, second-generation German rather than Irish. He was just a fair student at parochial school. He was remembered as an active sort of fellow, who had a lot of friends, a lot of fun. Nobody thought him outstanding but everybody liked him. He did not do very good work, and he didn't try very hard. When he was 16, he went to work, as he had anticipated he would, but he had no special career in mind. He had hardly got to work when he was sent overseas in World War I. He had a great time there—one year in France, one year in the Rhineland, and no military action at all. He came back and more or less fell into his present job. He liked it, soon married a second-generation Irish Catholic girl, liked the marriage, liked the work, had three nice children—a contented fellow, who never wanted to get ahead. He said, "I never stick my neck out, doc, further than I can draw it back!" At age 59, we found him owning his own home; his son—like the son of the "ill" man—also is a college graduate.

So the more striving, the more conscientious fellow—possibly the more unlucky fellow—was the man who had the illness. The pattern among these men was rather like that which we saw among the women. Without giving the details, I shall say that it was quite the same.

We studied the Chinese because we wanted to look at people of a different ethnic and social background who had lived lives involving culture change, social dislocation, geographic dislocation, danger, and life in unsanitary areas. You will recall that—in the days when we were friends—the Chinese used to come over here to complete their education. It was quite usual for a Chinese who had been to one of the Western-style universities in China to come to the United States for postgraduate study afterwards. There used to be upwards of 10,000 of them in this country at one time. When the Communists took over in 1949, about 5,000 students and professional people were stranded here, of whom there were many in the New York area. These were upper-class, educated Chinese. Most of them did not dare go back to China, yet they had no future here. They were left in limbo. A considerable number of these people had been born in Chinese villages in which the ancient Chinese culture was, for the most part, unchanged. They had lived through the turmoil, the wars, and the diseases of China—the change from one social system to another, the trek to Chungking, the war with the Japanese—and they had come over to the United States, leaving their families behind.

One could pick out from the 100 whom we studied, the healthiest 10, some of whom had had fewer than one episode of illness per annum.[7] These had done rather well for themselves (Table 3).

One could pick out 10 others who had had a great many episodes of illness per annum—as many as 20. They had done equally well for themselves (Table 4).

Given the names of these 20 Chinese, but no knowledge of their precise illness rates, the psychiatrist could separate them into two groups, based on his own criteria. He found that half of them recalled their childhood as very pleasant and the other half recalled their childhood as very

Table 3

LOW FREQUENCY (CHINESE GROUP)

INF.	AGE	ILLNESS EPISODES RATE PER ANNUM	OCCUPATION
L1	37	0.5	Insurance Broker
L2	72	0.6	Widowed Executive
L3	37	0.65	Chemical Engineer
L4	34	0.7	Graduate Student
L5	37	0.75	Graduate Student
L6	32	0.75	Housewife, Mother
L7	32	0.8	White Collar Worker
L8	44	0.85	College Instructor
L9	33	0.85	Department Store Manager
L10	27	1.3	Recent Bride

Table 4

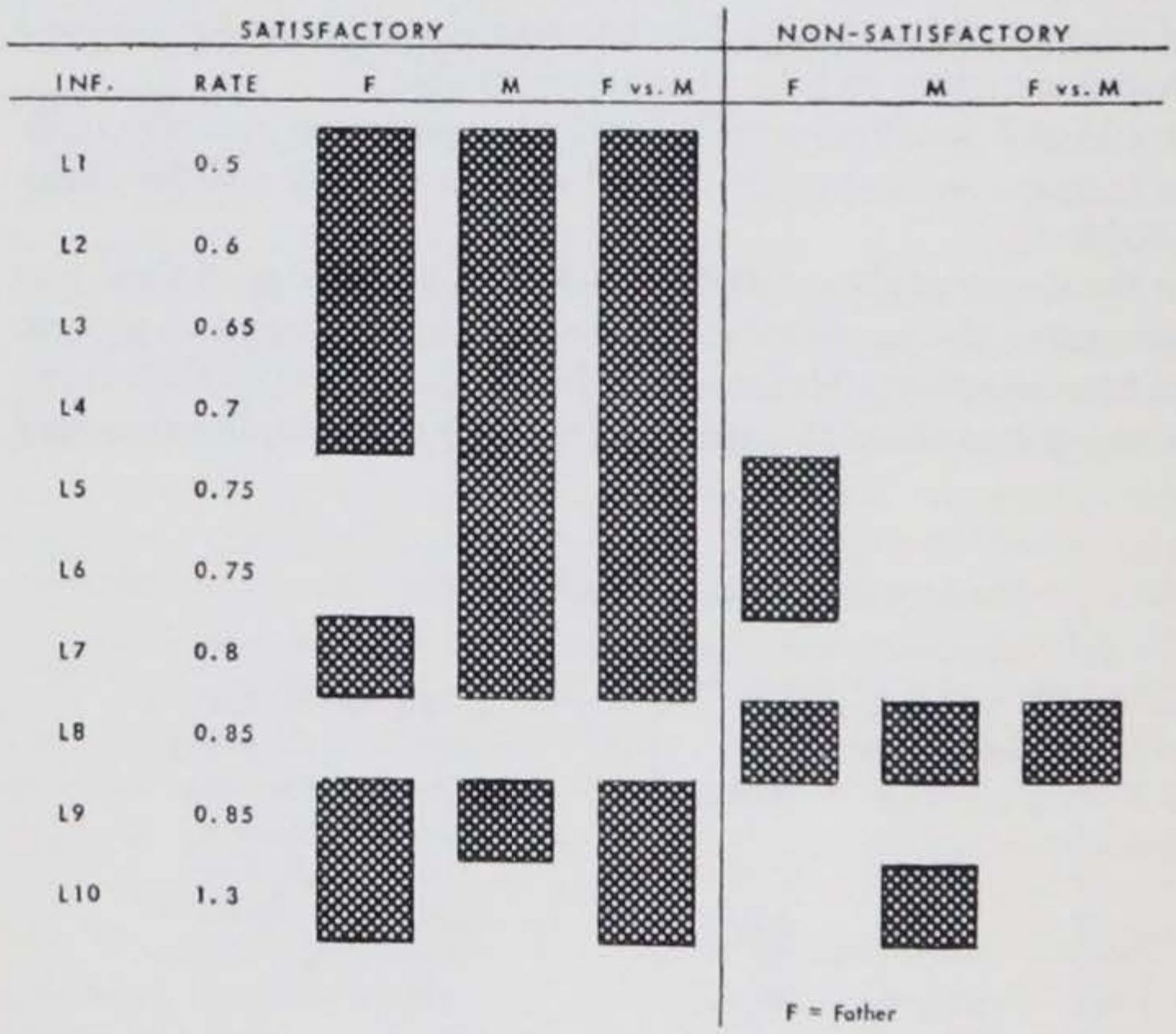
HIGH FREQUENCY (CHINESE GROUP)

INF.	AGE	ILLNESS EPISODES RATE PER ANNUM	OCCUPATION
H10	31	5.3	Chemical Engineer
H9	31	6.0	Certified Public Accountant
H8	33	6.1	Graduate Student
H7	32	6.2	Graduate Student
H6	52	7.1	Philosophy Lecturer
H5	36	9.5	Surgical Resident
H4	33	9.6	Graduate Student
H3	33	13.6	Secretary
H2	37	15.0	College Instructor
H1	30	20.2	Housewife, Mother

FIGURE 8

PSYCHIATRIST: PARENTAL RELATIONS IN CHILDHOOD

LOW FREQUENCY



F = Father

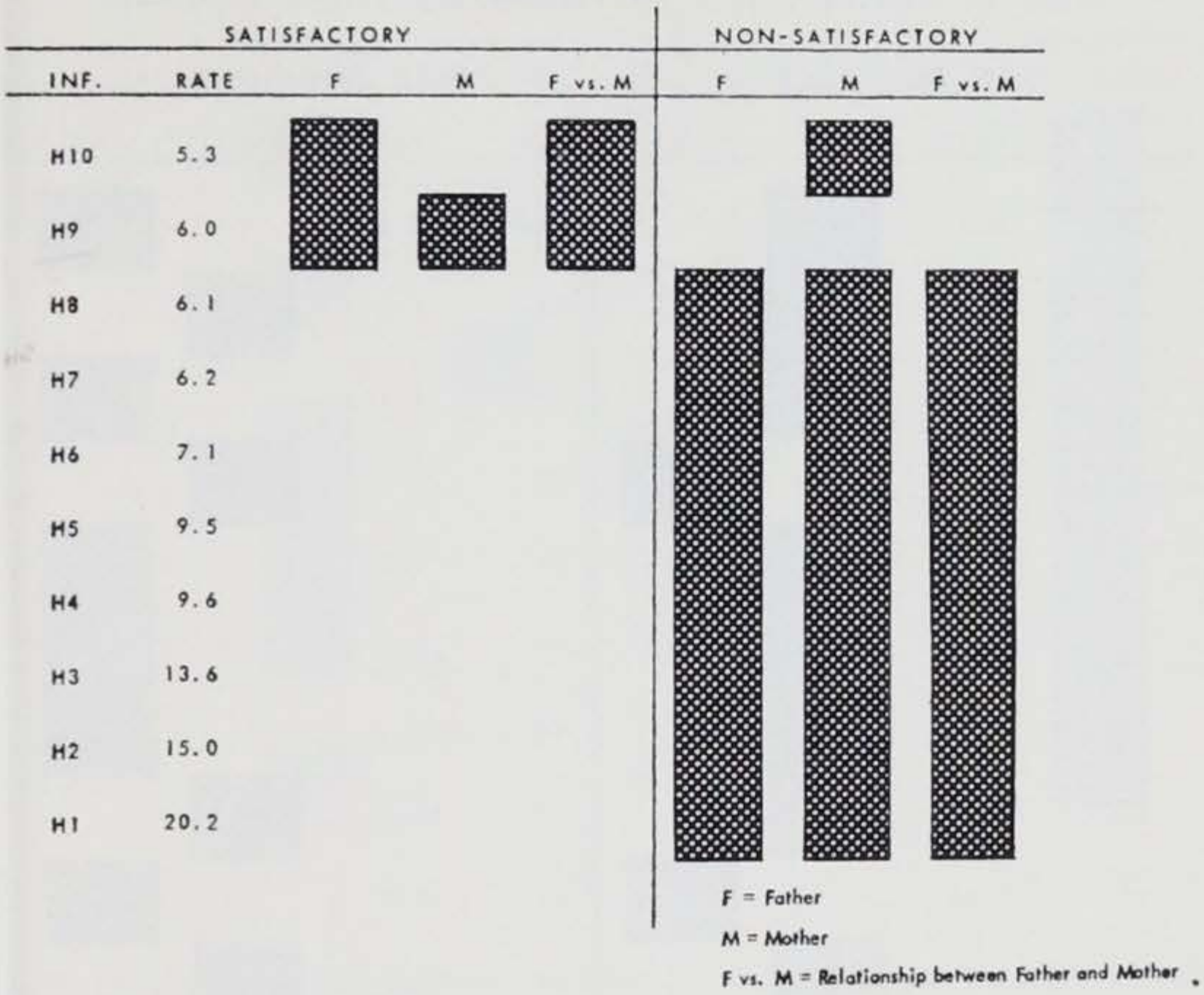
M = Mother

F vs. M = Relationship between Father and Mother

FIGURE 9

PSYCHIATRIST: PARENTAL RELATIONS IN CHILDHOOD

HIGH FREQUENCY



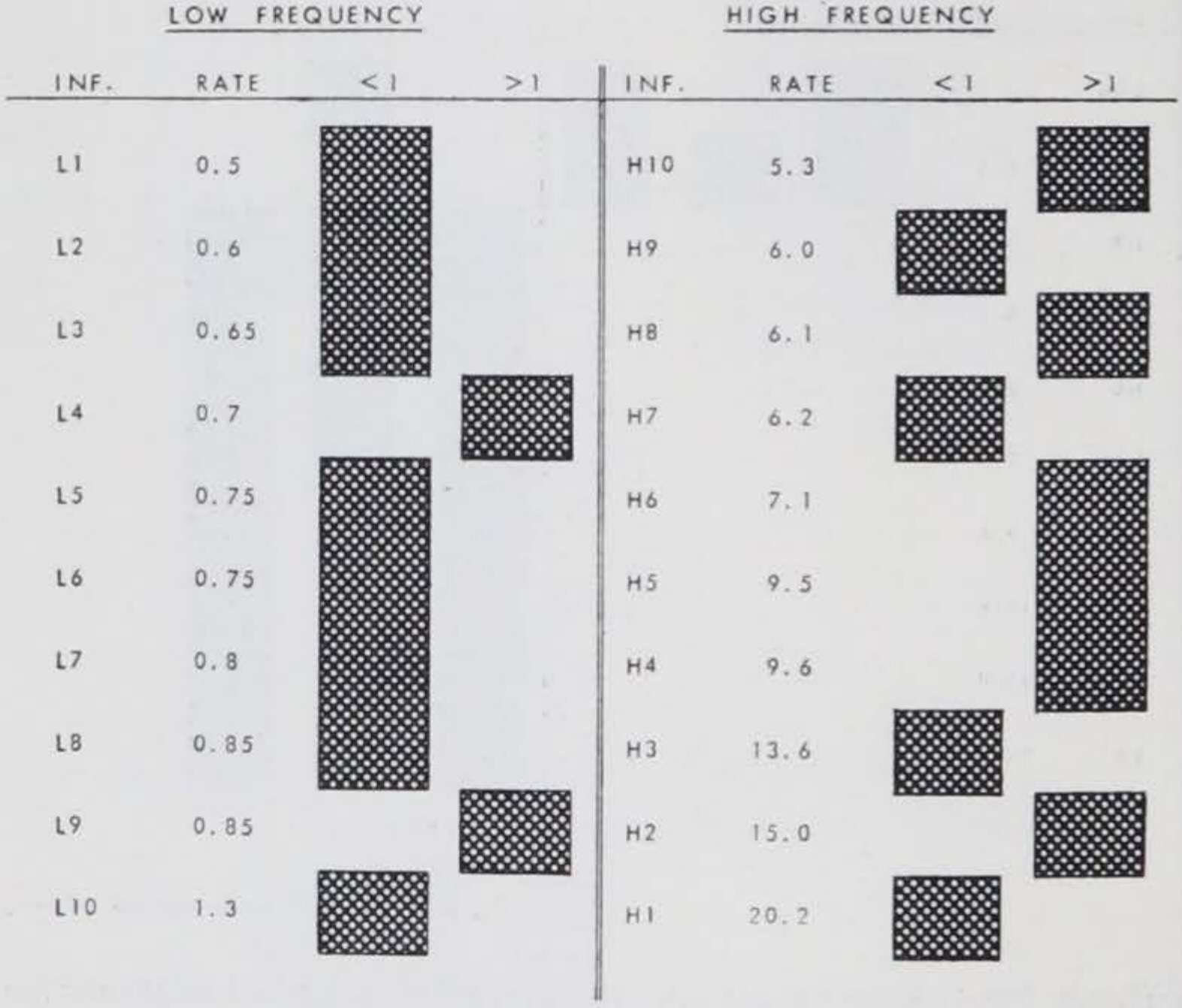
difficult. Most of the people who recalled their childhood relationships as "good" turned out to be in the "healthy" group (Figure 8); most of those who recalled their childhood relationships as "poor" were in the "unhealthy" group (Figure 9). Between the two groups, there was a far higher tendency among the "ill" people to give a gloomy response on the Rorschach test (Figure 10).

In going over the test results, psychologists, who had never seen the Chinese, were struck by a certain feature of the "healthy" group. They described these healthy people as persons who do not get involved with other people; that is, who live around other people, but don't become emotionally entwined with them. The psychologists described them as "emotionally insulated." The ill people seemed to be deeply involved with others. Intense, and often unpleasant, feelings, such as hate, resentment, and anxiety, as well as love and affection were features of their lives (Figure 11). These psychological findings were not absolute. There were some individuals who did not fall into the proper pattern or into any pattern at all; but the trend was clear and significant.

FIGURE 10

RORSCHACH TEST:

RATIO OF DISPLEASURABLE TO PLEASURABLE AFFECT RESPONSES

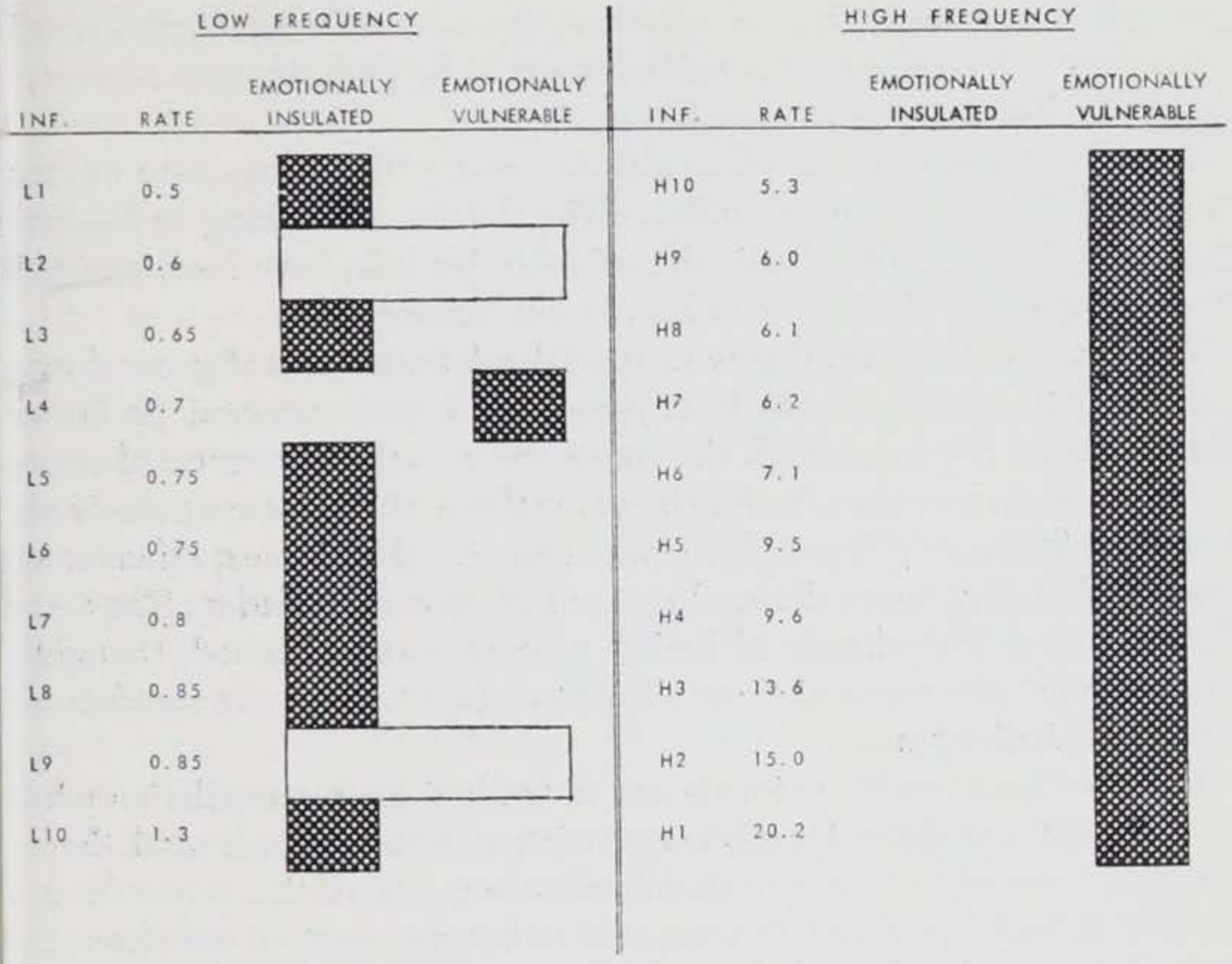


The physicians likewise were impressed that the healthy and the unhealthy were notably different in the way that they had perceived their lives and the various situations they had encountered. Some of the "healthy" group had shown an unusual lack of concern when confronted by situations which the external observer would have expected to cause them great concern. They were more preoccupied by fulfilling those particular social expectations that seemed to advance their own well-being and welfare.

By way of example, one thinks of one of the healthy Chinese—a bright fellow, who had worked his way up in the Chinese diplomatic service, and was one of the members of a mission in the capital of a large country when the home government collapsed and he lost his job. He did not seem to worry about his career, but rather seemed to take the attitude—"Well, that is over." So he came to the United States and made another career selling insurance to the local Chinese; soon he was doing very well

FIGURE 11

INTEGRATION OF DATA FROM PSYCHOLOGICAL TESTS



at it. In the meantime, his wife and family were at home, and there was the usual pressure, the usual letters from home—"Come back, or so-and-so will happen." In point of fact, his parents were shot, and the family fortune confiscated. His wife finally wrote that she would have to divorce him if he did not come back. His reaction to this was, "Well, if that's the way it must be, it must be. If I go back, I shall be imprisoned; so I expect I shall have to stay here." He sympathized with his wife. He was not totally unfeeling about this; but he was rather matter-of-fact, nevertheless.

On the other hand, the ill people were much concerned about events and situations that they encountered. The news that something had happened to somebody at home would be a great shock to them, and upset them for weeks. They were often oriented toward socially determined goals, goals outside of themselves. For example, one of these "ill" Chinese women had decided, while she was in China, that she was going to become a teacher of English. She had not been able to complete her studies in China. She was in the United States working for her degree when the Communists took over, and her income was cut off. She had to go to work. Though she could scarcely speak correct English herself, she

refused to give up her goal. She attempted to get a job teaching English in American schools. The rebuffs and difficulties that she encountered are easy to imagine. When we saw her, she was still working in a small school out west, trying to be an instructor of English. In spite of everything, she had refused to alter her goals.

I shall not describe the observations among the Hungarians except to say that they are quite similar. [The details concerning individual Hungarians, which Dr. Hinkle described in his talk, have been omitted from this published account at his request. Editor.]

In summary, I may say that we regard the determinants of general susceptibility to illness as being both genetic and environmental. So far as life situations are concerned, the situations actually encountered seem to be less important than the way in which these situations are perceived. The more frequently ill people seem to perceive their life experiences as more challenging, more demanding, and more conflict-laden. They experience more disturbance of bodily processes and of mood, thought, and behavior as a result of their efforts to adapt to a greater number of perceived challenges.

We have been unable to locate *any* individual in *any* population who is utterly without illness for any length of time. As I have indicated, there are many evidences that genetic inheritance is one of the major determinants of health patterns. But I should rather comment on our observations of the social and psychological characteristics of "healthy" and "unhealthy" people.

We have found both "healthy" and "unhealthy" people at every level of every society that we have studied. Very healthy people have been found among the lowest marginal and least privileged members of our own society—I described the life history of one such woman. Monetary income itself, above a subsistence level, does not seem to be an important determinant of health. Good health can be present despite severe economic and social deprivation, and despite the experience of profound culture change and social dislocation. However, in our experience, deprivation and social dislocation are often associated with ill health. Mobility within one's own society, either upward or downward, is quite often associated with ill health.

Religion, as such, seems to have little bearing on health. The healthy and unhealthy people that we have studied have included, on both sides, Christians, Jews, Buddhists, and Confucians—as well as non-believers of all grades. Various sects and various intensities of belief have turned up in approximately equal numbers among the most healthy and the least healthy. Very healthy people generally find their religion comfortable. It causes them little conflict, and many of them attribute their good

health to it. The unhealthy people often find solace in their religion, although they generally have religious conflicts about their behavior. Frequently they believe that religion alone has made it possible for them to stand the trials that they have had to face.

Very healthy people, in general, are inclined to conform to the requirements of the particular niche in the particular society in which they live. Many of the unhealthy are nonconformists, but not all of them are. In terms of the values of the segment of society from which they come—that is to say, in the attainment of honors, titles, and material possessions—we find very little difference between the very healthy and the unhealthy. In fact, except where the possession of good health is a prerequisite for attainment, the attainments of the unhealthy, it seems to us, are likely to exceed those of the very healthy.

In the groups which we have studied, the unhealthy people are somewhat more likely to be productive, creative, or otherwise outstanding people than are the very healthy. However, the *most* productive and creative people do not fall into *either* end of the distribution curve but usually near the middle. Having poor health is no touchstone of success, and it is often crippling.

The most healthy people are often described as likeable, unobtrusive, reliable people, who are accepted, but are rarely admired. They are almost never disliked or hated, but are seldom emulated. The unhealthy, by contrast, are often described as annoying, disturbing, unreliable people, who are frequently rejected, often disliked and hated, but sometimes are admired and emulated.

The healthy are likely to have grown up in a stable and cohesive family with good and protective interpersonal relations, but sometimes, as you have seen, they originate from broken families or families in which there is turmoil, conflict, and rejection. About half of the unhealthy people we have seen have grown up in an atmosphere of conflict, rejection, deprivation, and illness; but the other half originated from "good" backgrounds.

In adult life the very healthy usually exist in an environment, whatever it may be, in which their relation to their group, to their marriage partners, and to their occupations is bilaterally satisfactory. But sometimes one sees healthy people for whom one, or even two, of these relationships may be unsatisfactory. I do not think I have ever seen a healthy person for whom *all* of these relationships were unsatisfactory. Usually when we find that a man's job and his relation to his group are not good, we find a conspicuously strong relationship to his family, or vice versa.

The unhealthy usually exist in an adult environment in which two or three of these relationships are conspicuously poor; but sometimes un-

refused to give up her goal. She attempted to get a job teaching English in American schools. The rebuffs and difficulties that she encountered are easy to imagine. When we saw her, she was still working in a small school out west, trying to be an instructor of English. In spite of everything, she had refused to alter her goals.

I shall not describe the observations among the Hungarians except to say that they are quite similar. [The details concerning individual Hungarians, which Dr. Hinkle described in his talk, have been omitted from this published account at his request. Editor.]

In summary, I may say that we regard the determinants of general susceptibility to illness as being both genetic and environmental. So far as life situations are concerned, the situations actually encountered seem to be less important than the way in which these situations are perceived. The more frequently ill people seem to perceive their life experiences as more challenging, more demanding, and more conflict-laden. They experience more disturbance of bodily processes and of mood, thought, and behavior as a result of their efforts to adapt to a greater number of perceived challenges.

We have been unable to locate *any* individual in *any* population who is utterly without illness for any length of time. As I have indicated, there are many evidences that genetic inheritance is one of the major determinants of health patterns. But I should rather comment on our observations of the social and psychological characteristics of "healthy" and "unhealthy" people.

We have found both "healthy" and "unhealthy" people at every level of every society that we have studied. Very healthy people have been found among the lowest marginal and least privileged members of our own society—I described the life history of one such woman. Monetary income itself, above a subsistence level, does not seem to be an important determinant of health. Good health can be present despite severe economic and social deprivation, and despite the experience of profound culture change and social dislocation. However, in our experience, deprivation and social dislocation are often associated with ill health. Mobility within one's own society, either upward or downward, is quite often associated with ill health.

Religion, as such, seems to have little bearing on health. The healthy and unhealthy people that we have studied have included, on both sides, Christians, Jews, Buddhists, and Confucians—as well as non-believers of all grades. Various sects and various intensities of belief have turned up in approximately equal numbers among the most healthy and the least healthy. Very healthy people generally find their religion comfortable. It causes them little conflict, and many of them attribute their good

ealth to it. The unhealthy people often find solace in their religion, lthough they generally have religious conflicts about their behavior. requently they believe that religion alone has made it possible for them o stand the trials that they have had to face.

Very healthy people, in general, are inclined to conform to the require- nents of the particular niche in the particular society in which they live. Many of the unhealthy are nonconformists, but not all of them are. In erms of the values of the segment of society from which they come— hat is to say, in the attainment of honors, titles, and material posses- ions—we find very little difference between the very healthy and the nhealthy. In fact, except where the possession of good health is a pre- equisite for attainment, the attainments of the unhealthy, it seems to us, re likely to exceed those of the very healthy.

In the groups which we have studied, the unhealthy people are some- vhat more likely to be productive, creative, or otherwise outstanding eople than are the very healthy. However, the *most* productive and reative people do not fall into *either* end of the distribution curve but sually near the middle. Having poor health is no touchstone of success, nd it is often crippling.

The most healthy people are often described as likeable, unobtrusive, eliable people, who are accepted, but are rarely admired. They are lmost never disliked or hated, but are seldom emulated. The unhealthy, y contrast, are often described as annoying, disturbing, unreliable eople, who are frequently rejected, often disliked and hated, but some- imes are admired and emulated.

The healthy are likely to have grown up in a stable and cohesive family vith good and protective interpersonal relations, but sometimes, as you ave seen, they originate from broken families or families in which there s turmoil, conflict, and rejection. About half of the unhealthy people we ave seen have grown up in an atmosphere of conflict, rejection, depriva- ion, and illness; but the other half originated from "good" backgrounds.

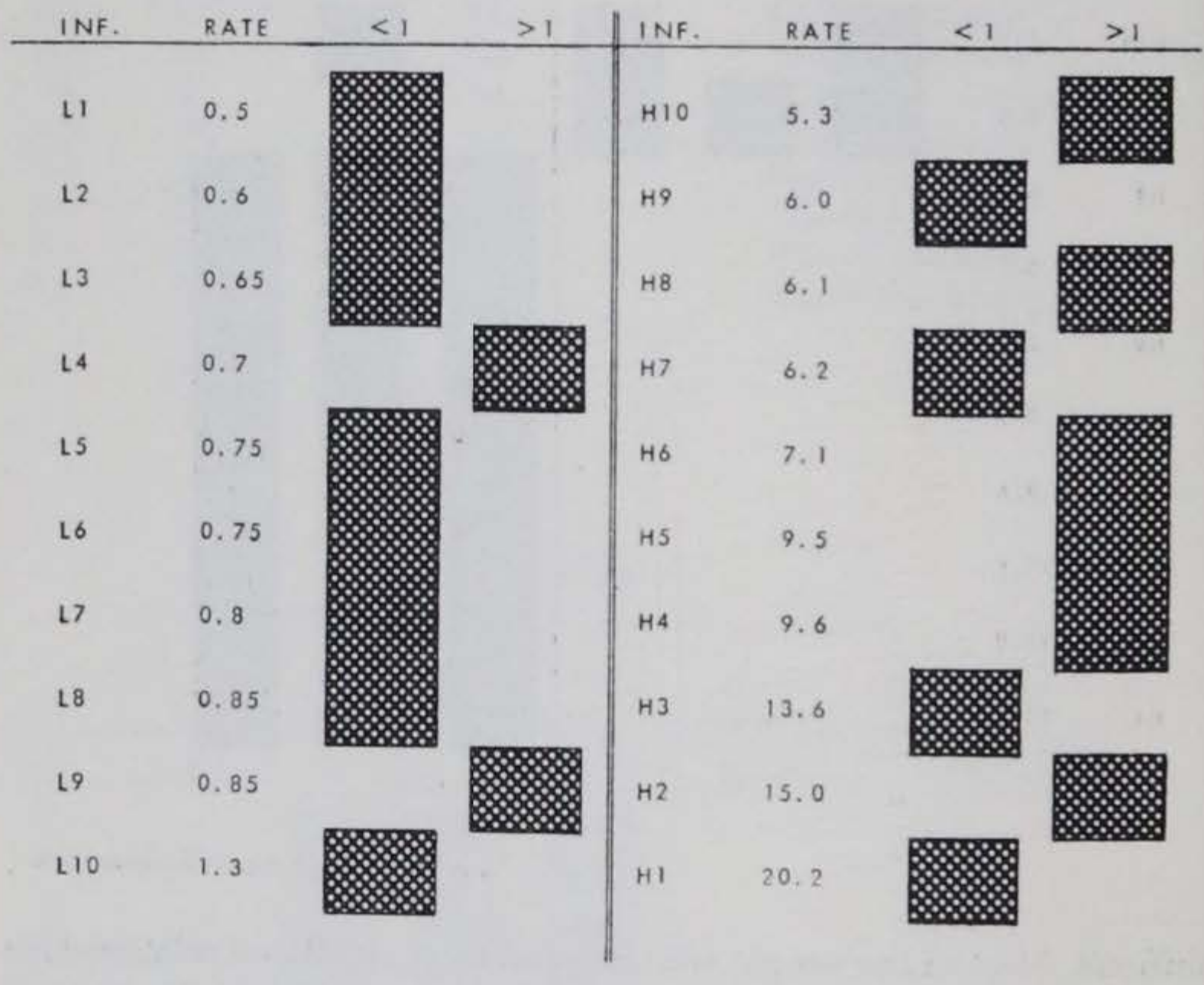
In adult life the very healthy usually exist in an environment, what- ever it may be, in which their relation to their group, to their marriage partners, and to their occupations is bilaterally satisfactory. But some- imes one sees healthy people for whom one, or even two, of these re- ationships may be unsatisfactory. I do not think I have ever seen a ealthy person for whom *all* of these relationships were unsatisfactory. Usually when we find that a man's job and his relation to his group are ot good, we find a conspicuously strong relationship to his family, or ice versa.

The unhealthy usually exist in an adult environment in which two or hree of these relationships are conspicuously poor; but sometimes un-

FIGURE 10

RORSCHACH TEST:

RATIO OF DISPLEASURABLE TO PLEASURABLE AFFECT RESPONSES

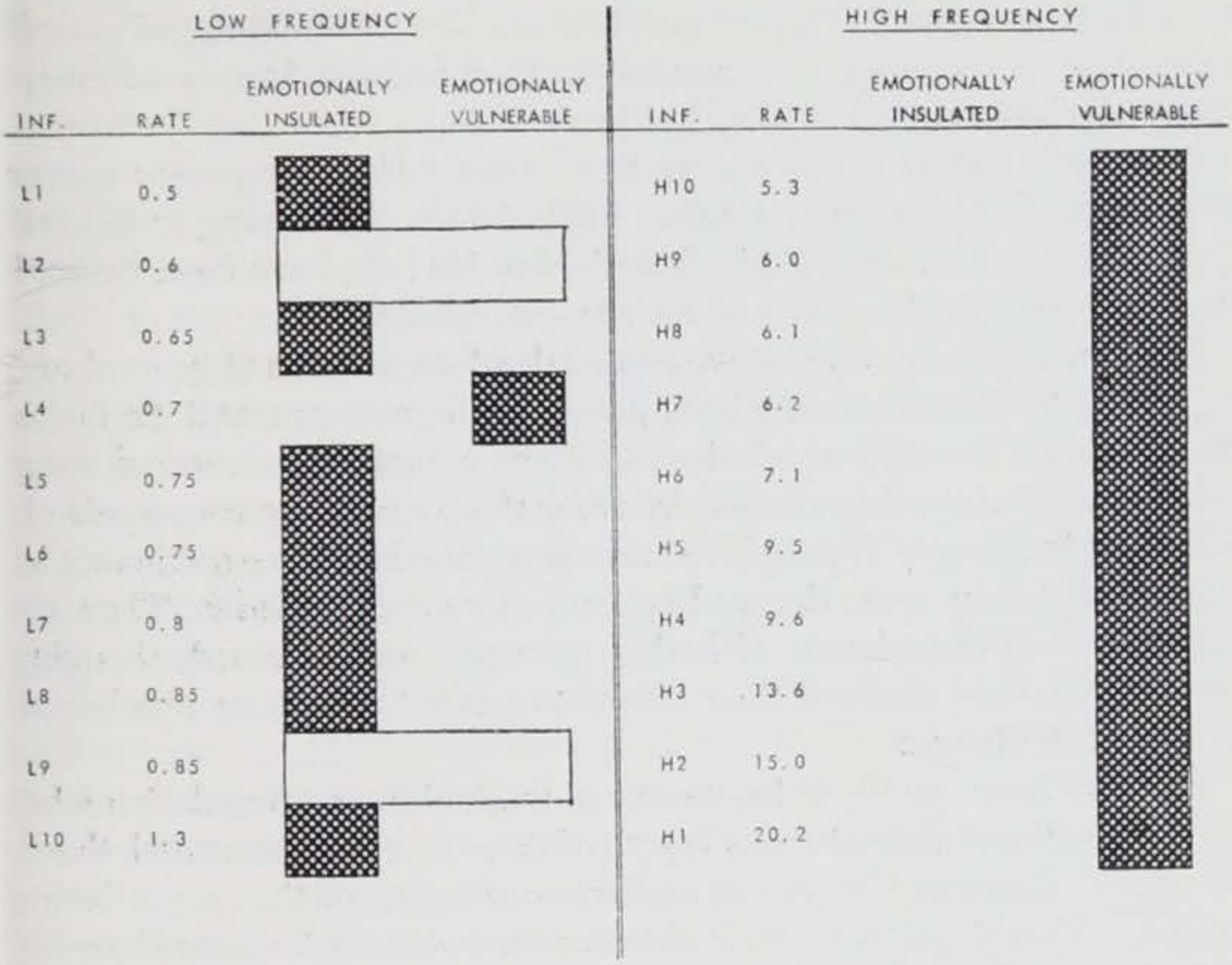


The physicians likewise were impressed that the healthy and the unhealthy were notably different in the way that they had perceived their lives and the various situations they had encountered. Some of the "healthy" group had shown an unusual lack of concern when confronted by situations which the external observer would have expected to cause them great concern. They were more preoccupied by fulfilling those particular social expectations that seemed to advance their own well-being and welfare.

By way of example, one thinks of one of the healthy Chinese—a bright fellow, who had worked his way up in the Chinese diplomatic service, and was one of the members of a mission in the capital of a large country when the home government collapsed and he lost his job. He did not seem to worry about his career, but rather seemed to take the attitude—"Well, that is over." So he came to the United States and made another career selling insurance to the local Chinese; soon he was doing very well

FIGURE 11

INTEGRATION OF DATA FROM PSYCHOLOGICAL TESTS



at it. In the meantime, his wife and family were at home, and there was the usual pressure, the usual letters from home—"Come back, or so-and-so will happen." In point of fact, his parents were shot, and the family fortune confiscated. His wife finally wrote that she would have to divorce him if he did not come back. His reaction to this was, "Well, if that's the way it must be, it must be. If I go back, I shall be imprisoned; so I expect I shall have to stay here." He sympathized with his wife. He was not totally unfeeling about this; but he was rather matter-of-fact, nevertheless.

On the other hand, the ill people were much concerned about events and situations that they encountered. The news that something had happened to somebody at home would be a great shock to them, and upset them for weeks. They were often oriented toward socially determined goals, goals outside of themselves. For example, one of these "ill" Chinese women had decided, while she was in China, that she was going to become a teacher of English. She had not been able to complete her studies in China. She was in the United States working for her degree when the Communists took over, and her income was cut off. She had to go to work. Though she could scarcely speak correct English herself, she

refused to give up her goal. She attempted to get a job teaching English in American schools. The rebuffs and difficulties that she encountered are easy to imagine. When we saw her, she was still working in a small school out west, trying to be an instructor of English. In spite of everything, she had refused to alter her goals.

I shall not describe the observations among the Hungarians except to say that they are quite similar. [The details concerning individual Hungarians, which Dr. Hinkle described in his talk, have been omitted from this published account at his request. Editor.]

In summary, I may say that we regard the determinants of general susceptibility to illness as being both genetic and environmental. So far as life situations are concerned, the situations actually encountered seem to be less important than the way in which these situations are perceived. The more frequently ill people seem to perceive their life experiences as more challenging, more demanding, and more conflict-laden. They experience more disturbance of bodily processes and of mood, thought, and behavior as a result of their efforts to adapt to a greater number of perceived challenges.

We have been unable to locate *any* individual in *any* population who is utterly without illness for any length of time. As I have indicated, there are many evidences that genetic inheritance is one of the major determinants of health patterns. But I should rather comment on our observations of the social and psychological characteristics of "healthy" and "unhealthy" people.

We have found both "healthy" and "unhealthy" people at every level of every society that we have studied. Very healthy people have been found among the lowest marginal and least privileged members of our own society—I described the life history of one such woman. Monetary income itself, above a subsistence level, does not seem to be an important determinant of health. Good health can be present despite severe economic and social deprivation, and despite the experience of profound culture change and social dislocation. However, in our experience, deprivation and social dislocation are often associated with ill health. Mobility within one's own society, either upward or downward, is quite often associated with ill health.

Religion, as such, seems to have little bearing on health. The healthy and unhealthy people that we have studied have included, on both sides, Christians, Jews, Buddhists, and Confucians—as well as non-believers of all grades. Various sects and various intensities of belief have turned up in approximately equal numbers among the most healthy and the least healthy. Very healthy people generally find their religion comfortable. It causes them little conflict, and many of them attribute their good

health to it. The unhealthy people often find solace in their religion, although they generally have religious conflicts about their behavior. Frequently they believe that religion alone has made it possible for them to stand the trials that they have had to face.

Very healthy people, in general, are inclined to conform to the requirements of the particular niche in the particular society in which they live. Many of the unhealthy are nonconformists, but not all of them are. In terms of the values of the segment of society from which they come—that is to say, in the attainment of honors, titles, and material possessions—we find very little difference between the very healthy and the unhealthy. In fact, except where the possession of good health is a prerequisite for attainment, the attainments of the unhealthy, it seems to us, are likely to exceed those of the very healthy.

In the groups which we have studied, the unhealthy people are somewhat more likely to be productive, creative, or otherwise outstanding people than are the very healthy. However, the *most* productive and creative people do not fall into *either* end of the distribution curve but usually near the middle. Having poor health is no touchstone of success, and it is often crippling.

The most healthy people are often described as likeable, unobtrusive, reliable people, who are accepted, but are rarely admired. They are almost never disliked or hated, but are seldom emulated. The unhealthy, by contrast, are often described as annoying, disturbing, unreliable people, who are frequently rejected, often disliked and hated, but sometimes are admired and emulated.

The healthy are likely to have grown up in a stable and cohesive family with good and protective interpersonal relations, but sometimes, as you have seen, they originate from broken families or families in which there is turmoil, conflict, and rejection. About half of the unhealthy people we have seen have grown up in an atmosphere of conflict, rejection, deprivation, and illness; but the other half originated from "good" backgrounds.

In adult life the very healthy usually exist in an environment, whatever it may be, in which their relation to their group, to their marriage partners, and to their occupations is bilaterally satisfactory. But sometimes one sees healthy people for whom one, or even two, of these relationships may be unsatisfactory. I do not think I have ever seen a healthy person for whom *all* of these relationships were unsatisfactory. Usually when we find that a man's job and his relation to his group are not good, we find a conspicuously strong relationship to his family, or vice versa.

The unhealthy usually exist in an adult environment in which two or three of these relationships are conspicuously poor; but sometimes un-

healthy people exist in an adult environment in which these relationships are "good."

The healthiest people that we have seen sometimes have purely personal or selfish goals, concerned with their own comfort and security. About half of those whom we have studied have shown conspicuous lack of emotional involvement with other people. They are described as isolated, insulated people who "don't let things bother them." A great many of them behave as if they felt no deep responsibility for the welfare of other people. In general, they behave as if they were quite content with their lot in life, whatever it may be. About 70 per cent of them have been conspicuously without "ambition" as we view this in our society. Four-fifths, approximately, have seen their occupations as "satisfactory," their marriages as "good," and their life situations as interesting, satisfying, and rewarding. Inwardly, one finds them placid, certain, self-satisfied, without conflict, and with few doubts.

The least healthy people we often find to be people who are outwardly directed, with socially determined goals—people who desire to improve their status, to get ahead, to "be a good son," to "become a teacher," to "do something creative," to "fight for a better social system," and so on. Some 80 per cent of them have been people with great emotional involvement with other people; love, hate, compassion, sympathy, liking, and disliking are features of their lives. They are described by others as sensitive, feeling people. Often they behave as if they were entirely responsible for the welfare of others, for whom they may not necessarily have any direct responsibility. Among them we have seen people who support aged parents, care for sick relatives, educate children, try to do the job right, "fight on to the last," and so forth—often at the expense of their own welfare. The majority of them have behaved as if they were utterly discontented with their lot in life and would have liked it to be very much different. They are often described as ambitious people. They are inclined to regard their lives as dull, frustrating, and hateful, and their marriages as painful, unpleasant, confining, and demanding. They look on life in general as frustrating, threatening, demanding, challenging, and insecure. Inwardly one finds them to be disturbed, uncertain, self-condemning, full of conflict and doubt—often discontented, bitter, anxious, discouraged, and brooding or ruminating.

Our general conclusions are these: Very healthy people—that is, people who have few or no evidences of bodily illness or of disturbances of mood, thought and behavior, and whose general attitudes, outlook and behavior conform to the norms of the social groups of which they are members—usually are people who are peculiarly well fitted for the particular ecological niche in which they find themselves, although they

might be peculiarly ill fitted for some other niche. One cannot, therefore, draw specifications for a generally healthy person without specifying his age, sex, cultural and social background, and many facets of his immediate life situation. There appears to be room in the world for many types of people—all healthy.

A good state of health is not necessarily associated with other characteristics that are socially valuable. Specifically, healthy people are not necessarily more creative, productive, responsible, respected, successful, compassionate, honored, or emulated than other comparable and less healthy people in their own social group. Sometimes the personality characteristics of healthy people and the social value placed on their behavior, make them less attractive than people who are less healthy.

Freedom from illness, or maximal health, therefore, must be looked upon as only one measure of the adaptation of the individual to his environment. It is not always the best measure of this adaptation. The unhealthy do not necessarily do less well than the healthy in other departments of life. Sometimes ill health or even death is the price of superior performance as a human being.

REFERENCES

Figures 1 through 7 were first published in the *Annals of Internal Medicine* (see reference 2). Figures 8 through 11 originally appeared in *Psychosomatic Medicine* (see reference 7). We wish to thank the editors for granting permission to republish. Editor.

1. Hinkle, L. E., Jr., and H. G. Wolff, "Health and the Social Environment: Experimental Investigations," *Explorations in Social Psychiatry*, edited by A. H. Leighton, J. A. Clausen, and R. N. Wilson (New York: Basic Books, 1957), pp. 105-37.

2. Hinkle, L. E., Jr., and H. G. Wolff, "Ecological investigations of the relationship between illness, life experiences, and the social environment," *Annals of Internal Medicine*, 49:1373, 1958.

3. *Measurement of Levels of Health;* Report of a Study Group, World Health Organization, Technical Report Series No. 137, Geneva, 1957.

4. *Standard Nomenclature of Diseases and Operations*, 4th edition, edited by R. J. Plunkett and A. C. Hayden for the American Medical Association (New York: Blakiston Division, McGraw-Hill Book Company, Inc., 1952).

5. Rennie, T. A. C., L. Srole, M. K. Opler, and T. S. Langner, "Urban life and mental health: socio-economic status and mental disorder in the metropolis," *American Journal of Psychiatry*, 113:831, 1957.

6. Leighton, A. H., J. A. Clausen, and R. N. Wilson, editors: *Explorations in Social Psychiatry* (New York: Basic Books, 1957).

7. Hinkle, L. E., Jr., W. N. Christenson, F. D. Kane, A. Ostfeld, W. N. Thetford, and H. G. Wolff, "An investigation of the relation between life experience, personality characteristics, and general susceptibility to illness," *Psychosomatic Medicine* 20:278, 1958.

DISCUSSION

Moderator: DR. PHILLIPS
Panel members: DR. BELL, MISS LAY, DR. RANKIN, MISS ROBERTS, DR. SWITZER

Dr. Phillips: I certainly appreciated Dr. Hinkle's presentation of this material because I think it's a very important part, certainly, of pediatrics because of the value systems that exist in this country at the present time. Some of the people in pediatrics have been interested in the "accident-prone" child lately, and we certainly find among children who have a lot of accidents a lot of emotional disorders, which has a relationship to some of the information which Dr. Hinkle presented. I think, again, that our value systems are something we should take a look at in terms of child development because, sometimes, as our sort of work shows, the children whom we meet who have the highest type of motivations often have the most emotional difficulties; and those who just seem to be happy with life—getting along with their particular ecological factors, as Dr. Hinkle put it—make out very well indeed.

Dr. Bell: It seems to me that this study has been much better shaped statistically than many of the studies of accident-prone children and accident-prone drivers because of the time span used. This is very important. Very frequently, when we try to identify a special group as prone in some way, we do it over a short interval; or we do it over a longer interval and see if we can get some audits and relations over a shorter period. But it's interesting here that covering a remarkably long time span, the researchers had those two groups that looked so very different.

Another thought occurred to me—on the relationship to parental neglect, marital discord and so on, did you say that the "illness" group was made up of people who showed high interpersonal involvement?

Dr. Hinkle: Generally speaking, yes.

Dr. Bell: If this were the case, and if, in this instance, you were given the report on the early family relations from the individuals themselves, would it be possible that there is no real difference between those two groups in the early parental relationships, but that these people merely *thought* there was?

Dr. Hinkle: We regard that as a distinct possibility. The thing that we *can* attest to is that they *saw* it differently. They certainly recall it or describe it in a different light. However, if you start counting things such as divorces, and so on, which might have been realistically reported, there still seem to be differences. I think to really nail this down, you'd have to have an on-going study of the people at the time.

Dr. Rankin: I, too, listened with a great deal of interest. One of the

last things you said was something to the effect that the people who might not be happy at work had a satisfactory marriage, and vice versa, or something to that effect. Is that substantially it?

Dr. Hinkle: I would say, sir, that I don't think we have ever seen people who were generally healthy and for whom *every one* of their important relationships was bad; that is to say, you don't see a man whose marriage has gone on the rocks, who hates his job, who is an outcast from his social group, who is, nonetheless, blooming with health! However, you do see, sometimes, people who don't like their jobs, who are swimming upstream against their social group; but they usually have a strong family behind them or something like that.

On the other hand, you do see people with a lot of illness (you recall we're talking about illness in general, not just mental illness) who have pretty good relationships all round, but nevertheless are ill—because there are many things which enter into being ill.

Dr. Rankin: That reminded me of a statement that I've heard Dr. Rabinovitch make quite a number of times (he's our speaker tomorrow afternoon). He talks to our teachers, and I've heard him say that when we look at the records of children who get into trouble, either with the law or through becoming emotionally maladjusted to a very serious degree, we tend to find that more of those children come from broken homes than do well adjusted, so-called normal children. "But," he goes on, "I always look then at the cases that are *not* that way, the kind of youngsters who are very well adjusted in spite of having come from broken homes. I think it pays to look at those children," Dr. Rabinovitch would say.

I don't think he's adduced any evidence, but he always raises this hypothesis, saying, in effect, that he thinks what happened in those cases where the cards seemed to be stacked against the youngster in his home life was that there was somebody else who came in—maybe a pastor, maybe a boy scout leader (and then, of course, since he's talking to teachers, and I think he knows it does happen sometimes), maybe a teacher—somebody, that is, who was sensitive to that particular child's need and who took the place of an understanding and sympathetic parent.

Dr. Rabinovitch was trying, I think, to explain the exceptions to what seem to be more or less general rules. I gathered that there was this other element that somewhere along the line there was somebody who sensed the child's need and helped meet that need. And I couldn't help wondering whether that kind of situation might be an element in the conclusions which you presented so cogently as to the differences between those two groups—which, I think, surprised many of us.

Dr. Hinkle: I agree that some people do very well who have come from environments that most of us would regard as not benign. However, my hypothesis would be that the explanation for this is less likely to be the intervention of teachers and boy scout leaders than it is our tendency to apply middle-class perceptions to non-middle-class situations (or, in other words, apply our own perceptions to somebody else's situation). The girl I described to you, who was so well in a poor situation, came, actually, from the lowest marginal group in New York, from a group in which poverty, illegitimacy, and other irregularities of this sort were not so threatening or stigmatizing as they are to us, nor quite so unexpected. She perceived her life as better than we would perceive it to be. She recalled it as a real break for her when she was put in the orphanage, and some of the first kindness she had ever known came from the nuns there. She had never expected anything else than to go out to work as a domestic when she got through school at the orphanage; nor was her behavior when she left the job regarded as unusual by her or by the other girls. She was not a very bright girl. The job that she got was better than she had ever expected to get. She had never hoped to be married, and to be married to this neurotic man meant a great deal to her. As she said, "Doc, he was sick a lot, but he meant a lot to me, and while I had him, it was great."

I think it's also true that the human being is a hardier soul than we think of him as being and that people *can* grow up in log cabins, with no formal education, and become president! (Even though such a man is likely to be sick after he is president.)

Miss Lay: I think this is a fascinating thing, though I wonder what it does to our day. What *are* our goals that we talked about all day long? What is the nature of man? What *do* we want to breed? I don't know.

I think you posed some sticklers here that are extremely important for us to look at, especially your comment just now, Dr. Hinkle, to the effect that our own perceptions color, naturally, what we think about the experiences of others. We are not in their shoes and do not see from their viewpoint. I think this is an extremely significant conclusion that should turn the spotlight on us as professional people who are interested in trying to shape and influence the lives of others.

It's very interesting to have studies that tend to invalidate some of the concepts that many of us have more or less accepted through the years. Some of your conclusions challenge these accepted concepts and put a new dimension on the whole thing, making it extremely important to try to find out just what the strengths are that have helped these people to adjust to their environment. Whether or not we can simply settle for the adjustment of the ones who are more or less sheeplike; or whether we

should recognize that the others—for all their periods of unhappiness, their ups and downs—perhaps get more fun out of life, is really something to look at!

Dr. Phillips: I was thinking of this afternoon when the question came up about motivation. It was directed to Dr. Lovett Doust, who spoke a little bit about drive from the standpoint of seeking a more organic basis, say, than a psychological basis.

We certainly want our children to do well and get ahead in the world; and when statistics like this come along, we don't immediately think—well, maybe we shouldn't desire them to be creative or have a lot of push. On the other hand, the correlation between illness seems very definite here among people of this nature. I was just wondering if there is any way to look at a possible correlation other than with a possible psychological or emotional motivation. I wonder if some of these people who are in a hurry to get on in the world and are dissatisfied with things, aren't perhaps involved with some sort of organic drive that has been influencing them, possibly just as much as their learning, or the teaching that is going on around them in their family situation, and so on. Dr. Lovett Doust, would you care to make any comment about this?

Dr. Lovett Doust: No physiological comment, Mr. Chairman!

"He who fights and runs away, lives to fight another day." This is what, in essence, Dr. Hinkle has told us. This is something which we believe, and have believed, for a long time.

Are these people, then, socially desirable people? Of course they are, insofar as society needs them. But they're not going to be the leaders of society. If I can pass moral judgments on people (which I'm not really entitled to do), these would be the *hoi polloi*, the masses. These would be the people we need to work in the fields, to maintain the public lavatories in the big cities, and so on. They're Aldous Huxley's "Gamma" people. I'm sure we've got to have them; and if they maintain themselves and are free from illness, so much the better for the balancing of the budget!

But when we ask ourselves, do we want these people as leaders, as creators, artists, as people in whom the riches of the human soul are seen at the maximum, I would say, "No!" If we have to pay the price of illness to obtain creative people, then I think that illness must be our destiny!

I would like to remind Dr. Hinkle of the study carried out in Toronto about the population of a certain area in that city (Forest Hill Village), which was written up a couple of years ago in the form of a book. What this group of sociologists, anthropologists, and other scientists found, in essence, was that this very rich area of Toronto was full of—or at least half full of—highly successful businessmen, the other half being leaders

of feminine society; and it was *full* of illness. In fact, the authors of this book[1] come out and say quite bluntly that if you're going to be successful, you've pretty well got to be neurotic! And by "neurotic" they didn't mean (and don't blame the sociologists who are the authors of this book) neurotic in the sense a psychiatrist would use the word. They meant emotionally labile people, people who are always ready to take chances, people who are ready to believe in something, and people who have to suffer the consequences of that belief.

Dr. Hinkle: Dr. Lovett Doust has stated it very well. He used much the same simile that has often occurred to me—though I might have said that when the captain shouts, "Charge!"—it's those who stay behind in the trench who don't get hurt. Of course, they don't get medals, either!

I think the goal is to do as much as you can at as small a cost as possible. You don't want to have illness unnecessarily. But when the baby cries in the night, and you have to decide between your sleep and the baby's comfort, the chances are that you'll get up with the baby! And I guess this is the way it has to be. I don't believe that the nature of man, the physiologic nature, that is, is such that challenges are met without some cost. And I think I should prefer, as you would, the people who meet life's challenges, even though they do so at a cost.

I wouldn't imply that to be successful you have to be ill. But I would say that the price you have to pay to do anything that men regard as important often includes illness.

Dr. Phillips: Before too many coughs and symptoms develop, we'd better go on!

Miss Roberts: As I listened to the paper, and earlier while reading Dr. Hinkle's publications, I found myself viewing the material from the point of view of the individual person because the relationships of the individual to other people and to institutions of society are my particular interest. I found myself thinking: Here's a study that is concerned not only with the *quantity* of living, but also with the quality of living. I saw this as looking at life management where the effectiveness in maintaining health is somewhat determined by the adult's ability to adjust to the reality of the situation in which he finds himself. I found myself remembering that in most of life's circumstances, we're somewhat limited in the range of solutions that we can bring to bear on situations in which we are enmeshed. And, therefore, I wondered whether these people became ill because illness may have been one way in which they could resolve certain problems in an acceptable way, whereas any other recourse would not be acceptable to them.

---

[1] Seeley, John R. et al. *Crestwood Heights* (New York: Basic Books, Inc., 1956).

As I read the case illustrations, I found that what I'd been wondering about had something to do with the self-concept of each person; as the person's story unraveled, it seemed plain that there was not an opportunity in the ill person's life to develop an integrated self-concept—as one would talk about this in clinical studies. It was interesting to me (and this would support Dr. Rankin's comment) that there were other people who had meaningful relationships to those persons in deprived situations who had healthy childhoods and became healthy adults. There seemed to be somebody who maintained enough relationship with them so that they could have some basis for building a needful frame of reference with which to cope with life situations. This was judged from brief material and perhaps would not hold, Dr. Hinkle, but at least this was my impression as I read the case history examples.

Now along with this, I found myself thinking about the San Mateo study[2] which classifies five kinds of families. As I went through some of the illustrations, I kept wondering what would happen if one tried to correlate these family types with kinds and prevalence of illness. There was the normal family, the anxious family, the ineffectual family, the hostile family, and the socially effective family (which had to prod and manipulate the children). What would one find in the way of illnesses in correlating such family structures as these?

Dr. Hinkle: Just as I find it not possible to specify who will be a healthy person, unless I specify very precisely the circumstances in which I find him, likewise I can't specify the unhealthy person. In other words, I can't see that there is any one special type of personality which will be associated with ill health under all circumstances. There seems to be a niche somewhere in the world where almost anybody can fit. As you know, they have even found seven men who want to go up in a satellite!

Personality type is only one of the many, many variables that have to do with people's becoming ill. I would not wish to put blame or to impose value judgments upon any of these people or their families; because I can see that had the situation been different (as I tried to bring out in describing the working women), possibly those who were healthy might have been unhealthy. Except as we define certain manifestations of mood, thought, and behavior as "illness," I don't think that I can specify a "healthy" or an "unhealthy" personality type, even though, as you saw, some traits are very often associated with illness.

Dr. Switzer: Ever since the beginning of recorded medicine, the physicians have been clamoring about the fact that you can't separate the

---

[2] Buel, Bradley, Paul Beisser, and John Wedemeyer, "Reorganizing to prevent and control disordered behavior," *Mental Hygiene* 42:2, 155-194, April, 1958.

"psyche" and "soma." One of the most remarkable things about this paper is that the new word "psychosomatic" was not mentioned at all! It is a tribute to Dr. Hinkle that he's an internist and didn't say psychosomatic! Many of us feel that using the word implies a separation that doesn't exist.

It seems to me that Dr. Hinkle has gone beyond the dynamic concept of illness which was put forth by Alexander in terms of "when you think about illness, you have to think about the constitution that the individual came into the world with and everything that has happened to him up to the time of that particular illness." I think that these studies have gone beyond that concept and have added to it and refined it. What these studies say is that the constitution is important, the differences are important, the personalities dealt with in individuals are important; but, in addition—and I think this is the essence of all this tremendous amount of work—one's self-perception of the world around himself, as well as his perception of himself within that environment—these have to do with his susceptibility to illness and the frequency with which he becomes ill.

Now I think that Dr. Hinkle has played a trick on you—not on purpose, but because of the tremendous amounts of material that he had to squeeze down into a short presentation. What he did was to give you the extremes, the examples of the most ill and the least ill. I think that maybe skews the importance of the paper. What seems important to me in this paper is this idea of one's perception, one's response, in terms of one's susceptibility to illness related to the perception of the world around one and the self-perception of oneself within the world.

I'm particularly grateful to Dr. Ojemann for inviting me to this conference for many reasons, but especially because it drew my attention to this work. I read the bibliography that Dr. Hinkle sent around, and I would recommend it to all of you, particularly his papers in the *AMA Archives of Internal Medicine* and in the journal of *Psychosomatic Medicine*.[3]

There are things in this research which have great implications for us in terms of prevention. When I say "prevention," I want to narrow it down and not include early recognition and treatment. I want to talk about prevention even before early recognition. Within the last five years, in our inpatient unit for severely disturbed children, we have had approximately 450 cases come to us from 48 states and eight different foreign countries. We cannot escape the tremendous problem with which we are faced. If we think about it just in terms of child psychiatry, which

---

[3] See Hinkle, L. E., Jr., and H. G. Wolff, "The nature of man's adaptation to his total environment and the relation of this to illness," *AMA Archives of Internal Medicine* 99:442, 1957. See also reference 7 preceding.

is an area which I'm familiar with, manpower-wise, there are in this country less than 45 places that are nationally approved for training in child psychiatry. There are currently 120 individuals in the two-year training program for specialty with roughly half this number finishing each year.

Even if we could turn out ten times as many, which is a wild dream, we still could not possibly come close to treating the new supply of disturbed kids that our society produces each year. So there is only one solution, if there is any solution at all when you come right down to it, and that is not going to be early recognition, although we must go on doing as much of that as we can. What we can do is to impinge upon the people who impinge upon the kids. That is why I say that mental health is everybody's business because it's the business of everyone who relates to children.

We have to keep remembering this—at least we clinical people do, and maybe it's my obsession—that we have dealt so much in pathology that we don't know much about health. Studies such as the one we are discussing this evening gives us a chance to look at pathology and also see the strengths that are within people in spite of their physical illness. In our work we can also learn in terms of the negative things what positive things are needed.

In some way we have to find a way to take the information as we get it and impart it to the people who can really use it. One avenue is parent education. I think there's some resistance and lack of enthusiasm about parent education in terms of health—broad health, physical as well as emotional—but it seems to me that professional clinical people in this area are not strangers to resistance because we work with resistances all the time. I think we can and we must learn to find ways to use educational measures to make for better emotional health.

We must find ways to use the mass media. If we could just find ways to convert the trivia we're exposed to into positive influences, if we can get what we know about preventive mental health and a broad concept of total health across to the people, and if we keep working at it and using the methods that we keep finding, then we can begin to accomplish something in the area of prevention. I hope that Dr. Phillips will say something about this because I know that this is a subject dear to his heart, too.

Dr. Phillips: Thank you very much. I won't say anything just now because some of these people in the audience have questions.

Dr. Brown: I have a question I wanted to ask Dr. Hinkle. In studying the life histories of the ill people, are you sure the illnesses didn't come regularly? Was there any opportunity to study what happened that

might or might not have been different in the periods when there was relative freedom from illness?

Dr. Hinkle: That's another long story in itself that I can't tell you tonight. But we do have longitudinal health studies. We place these things in time. Dr. Lovett Doust was talking today about oscillating cycles. And I thought to myself that the ups and downs of people's health behave in a manner such that these could be oscillations of a natural cycle, rather like that which one sees in the complex wave forms of the EEG. They do seem to correlate to a certain extent to what happens to people. In all these groups, over a lifetime, about one-third of all the illness episodes of people will occur in about one-sixth of their years. People are somewhat more likely to become ill during periods when they perceive their lives as threatening, challenging, or over-demanding—somewhat more likely to do so is the way I would put it. However, people who are frequently ill usually run a higher rate all the time than people who are not so ill.

Miss Lay: One of the things that struck me was a little relief that our society doesn't seem to breed people who find it difficult to get into the right niche any more than other societies do. In other words, some of us tend to think that there is so much stress laid on getting ahead—two cars in every garage and that kind of thing—that we create the kind of tension that in our culture causes some of this illness. But you find this tension in other nationality groups, I judge?

Dr. Hinkle: Oh, yes.

Miss Lay: Which, I think, is something of a relief!

Dr. Hinkle: Yes, we have even seen a few Russians!

Miss Lay: I think we have this mandate because of the way in which the states—and I'm in the middle of one of them—are voting funds for prevention, treatment, education, and everything else. I think the mandate which is on us now is going to spread through the country even more. The literature is becoming more and more replete with the suggestion that mental health must be public health. But with all this emphasis, what is the magic twist that's going to make it work? Has anybody come up with an answer or a blueprint that we're going to be able to use in order to take sensible steps forward?

Dr. Phillips: We've been working at it for five years and we hope that maybe if enough people get together in an organized way, it might be possible to make a little sense. I think we have a mandate to deliver a lot of information and results very quickly, but I wish we had a mandate to do some of the things that are going to have to be done for fifteen years before there's going to be much of any progress at all. That was my argu-

ment in San Francisco [at the Orthopsychiatric meetings] and I'll fight anybody on it because I'm sure that's what we need. There's a lot to be done and it isn't all going to be exciting or glamorous to the people who pay for it.

Are there any other questions?

Mrs. Fields: I'd like to ask if the Chinese student ever did become an English teacher.

Dr. Hinkle: She had a job as an English teacher. She may not have been much of a teacher, but she was plugging ahead at it. I don't think she changed. *We* didn't attempt to change her.

Dr. Norris: I question that cultural differences don't make a difference. Your Chinese group and your Hungarian group were both highly selective and subjected to great stresses. Your American groups included both traumatized and non-traumatized, passive and aggressive subjects. If we accept the concept of the Oriental—at least the old-fashioned Oriental—as being passive, not very ambitious, not having made much progress for the last thousand years, if this were so and if they corresponded to your passive American group, shouldn't they have less illness?

Dr. Hinkle: Many of our percepts are culturally determined. That is one of the reasons why we selected people from different cultures. Our purpose was to get people who had a different set of built-in expectations.

The fact is, however, that the concept of the placid Oriental is not a correct one. There were not only Chinese—they were upper-class Chinese. The upper-class Chinese have a two-thousand-year history of success in academic examinations—this being the way to get ahead. Civil service in China actually goes back to before the birth of Christ. And these were old families, some of whom could trace their genealogy back for over a thousand years. These fellows were a striving, somewhat compulsive lot. Those of you who've had Chinese graduate students must have observed this.

It would be my hypothesis that placid people are necessarily healthy. I should imagine that a placid, unreactive fellow who was forced to be an actor or a musician would probably be notably unhealthy.

Of course it is true that all the groups were highly selective. These are not representative population groups. These are small, homogeneous, highly definable populations which we chose to study. I was using these groups merely to point out that some of the characteristics which we value highly occasionally run contrary to health. But there are no fixed characteristics necessarily associated with health in every case. I don't want to be absolute about any of this.

Dr. Blyth: I'm wondering if the study wouldn't indicate that we should increase the occupational fluidity of people in order that they can more easily shift from a niche where they don't particularly fit into . . .

Dr. Hinkle: . . . into one where they do!

Dr. Blyth: Yes, and then our college students might have greater opportunity to "flow around" before finding their own level, or niche, to settle down into!

Dr. Hinkle: Well, I think it's going to be a very long time before any simple conclusion can be drawn from studies like this, and much longer before such a conclusion can be applied. I am not one of those who would be optimistic about the rapid solution of social problems, especially about adjustments to the environment affecting health. We have been a long time in this country simply trying to discover whether people with different colors of skin can go to school together without shooting each other! Things like this can be very hard to work out.

Now about social mobility—one of the things that the sociologists well know is that when you move from being what Lloyd Warner would call an "upper-lower-class" individual to being an "upper-middle-class" individual that, in addition to having to adapt to a new type of job, you have to adopt a whole new set of friends, behavior, value systems, and so on and leave behind those which you had. So if I were to generalize, I would say that socially mobile people (class-mobile people, who are mobile either upward or downward) are more usually ill. The fact that society so readily finds people to fit into the niches which are available seems rather to be a part of the fact that people in general tend to go into the same type of things that their fathers went into. Most of the boys who grow up to be farmers here in Iowa are the sons of farmers here, and very few are the sons of factory workers from Manchester, England! And isn't it remarkable that all the southerners grow up to be Democrats! Otherwise it would upset everything.

Dr. Phillips: I don't want to get out of here because this is very interesting, but I'm going to have to turn the platform over now to our chairman, Dean Loehwing.

Dean Loehwing: Dr. Hinkle, may I on behalf of the group, thank you very warmly for sharing with us the results of this extremely comprehensive and informative investigation. Speaking as a layman, but as a scientist, I think there is a great deal to be said for ecology bringing experts from many disciplines together in a single common co-operative enterprise. I think your own work has demonstrated that and we certainly will be glad some day to hear another chapter of this very extensive and famous investigation.

Dr. Grams: [By letter] As I listened to Dr. Hinkle's paper and the dis-

cussion following it, I was struck by the fact that although this was a report of a descriptive study, several strong causal interrelations were implicit in many of the remarks. It seemed that health or illness were conceived of as dependent variables with much concern about illness as the price one must pay to possess some of the characteristics found in the "ill" group.

"If you want to get ahead, if you plan to be a striver, if you wish to be problem oriented, then just expect that you are more likely to become ill than the person who has quite opposite traits." This conclusion I question.

Is it not possible that the people who experience much illness in childhood (and such incidence significantly differentiated the groups in each case, as I recall), learn to face and cope with problems from the very beginning? Life for them is a struggle, and in the surmounting of obstacles they receive considerable gratification. This, in turn, would tend to reinforce vigorous endeavor in them, accounting for—at least in part—their striving and their problem-oriented behavior, with its concomitant frustration, uncertainty, and dissatisfactions. But such individuals are also less likely to take precaution regarding themselves, their need for appropriate amounts of food, exercise, and rest, as well as their need to avoid exposure to contagion and other potentially endangering situations. With the consequent more frequent breakdown in illness of various kinds, we have completed the cycle.

I believe this characterizes the majority of people. We are problem-solvers, we are strivers; our ethic has always extolled many more of the characteristics found in the "ill" group than in the "well" group. Tension and difficulty surround each developmental hurdle, and I think that Dr. Hinkle's data underscore this fact again in the area of physical health and development. As developmental psychologists and clinical workers, we occasionally lose sight of early childhood illnesses as a developmental hurdle in our somewhat more substantial concentration on psychological factors. Work such as that of Dr. Hinkle and his associates is for this reason doubly important.

Dr. Hinkle: [By letter] Dr. Grams raises several questions which are separate and which I shall deal with serially. He asks first whether illness is "the price one must pay to possess some of the characteristics to be found in the 'ill' group." I have stated that some socially approved behavior appears to be carried out at a price which entails the development of illness or injury. As the simplest sort of demonstration of this, I cited the fact that people who perform as good soldiers in time of war entail a risk of injury or even death much greater than that which they might face if they avoided military service. As examples more applicable to

daily life, I implied that the extra effort required to do such things as attain an education against economic obstacles, achieve a state of excellence in the arts or sciences, take responsibility for the welfare of others who are ill, immature, disturbed, or economically dependent, may under some circumstances involve demands upon a human which enhance the likelihood that he will become ill.

Since this conclusion has been questioned, I shall state it again flatly: "The bulk of experimental and clinical evidence indicates that a man's adaptation to his social environment may be causally connected with the development of illness in him." Constant adaptation is a characteristic of the living organism. The maintenance of the dynamic steady state necessary to life is dependent upon a continual interaction between organism and environment. Each adaptive reaction made by the organism is made at some cost to it, in that it limits the other adaptations that the organism can make at the same time. We are quite familiar with the fact that a man who exhibits the syndrome of lobar pneumonia—evidence of a vigorous effort to cope with an invasion of the lung by pneumococci—has, during the period in which this syndrome is present, a limited ability to carry out the muscular effort necessary to escape if his house catches fire or, in fact, to carry out the majority of his everyday social roles. Conversely, a person vigorously engaged in attempting to adapt to a new way of life in a new community may exhibit a diminished capacity to cope with the assaults of various organisms, such as the tubercle bacillus. Some of the accumulated evidence in regard to this is very nicely outlined in René Dubos' recent book, *Mirage of Health; Utopias, Progress and Biological Change* (New York: Harper and Brothers, 1959).

The organs of special sense, the brain and the nervous and humoral effector pathways of the central nervous system, together provide man with an apparatus which enables him to cope with those aspects of his environment that are distant from him in both time and space, those aspects of the environment which we have here called the "social" environment. It is easy to demonstrate in the laboratory (and it has been abundantly demonstrated) that when men are exposed to situations significant to them, their reactions, mediated by the activity of the central nervous system, may be associated with profound alterations in their bodily processes as well as their mood, thought, and behavior. In the clinic, one observes repeatedly that adaptive reactions significantly influence the course of disease; and indeed, when a disease is present, it is sometimes possible to precipitate in the laboratory exacerbations of illness which would be lethal if continued. For a summary of some of the evidence on this point, I suggest Dr. Harold G. Wolff's book on *Stress and Disease* (Springfield, Illinois: C. C. Thomas, 1953) and the proceed-

ings of a symposium carried out a few years ago under the auspices of the Association for Research in Nervous and Mental Disease, *Life Stress and Bodily Disease* (Baltimore: Williams and Wilkins, 1950).

Thus, when I say that men's adaptations to life experiences bear a causal relation to the course of their health, I speak on the basis of a great body of experimental and clinical evidence. In terms of the studies which were described in the foregoing paper, I speak on the basis of some 500 life histories examined serially, both prospectively and retrospectively.

Dr. Grams also asks whether, if one wants to get ahead, one must expect that he is more likely to become ill than one who has quite opposite traits. So far as I am concerned, it would be my belief that people who strive to get ahead will be more likely to become ill only insofar as they are more likely to encounter challenges to which they react in a manner conducive to the development of illness. My experience has been that only a portion of the striving or mobile people react in this manner. I could not say whether striving people, as such, are more likely to become ill than people who do not strive, but I suspect that they are. The evidence from our studies will not answer this point. Our findings merely reveal that when a relatively small number of people who have had little or no illness during their adult lives were compared with an equal number of people who have had a great deal of illness during their adult lives, there were more striving people found among the ill group than among the group who were not ill. The Americans whom we studied were chosen from groups in which it might be expected that striving people would encounter unusual difficulties. Had we chosen them from groups in which striving was an expected aspect of life, we might have found that those who did not strive were the ones who had been more frequently ill.

Dr. Grams asked if it is not possible that people who experience much illness in childhood learn to face and cope with problems from the very beginning. It seems to me that this is possible. I should expect that if we looked for it, we would find that it occurs. However, this would not explain the findings in our own studies. While it is true that many of the ill people had been ill during the childhood, a significant proportion of them were, so far as we could ascertain, quite healthy as children. Conversely, there were some in the *healthy* group who had been ill during childhood. I do not recall any instance of a person encountered in our studies who was thought to have become a striving person *because* of childhood illness. For most of the striving people in these groups, an increase in the frequency and severity of illness occurred temporarily after the person encountered a situation frustrating to him.

Dean Ladd: It is fitting that we open this morning's program with words of welcome from the president of the State University of Iowa, who is a graduate of this school, a Rhodes scholar who attended Oxford, and a lawyer who had wide experience in the practice of law in the city of Chicago, and, moreover, a man who has had an opportunity to observe many of the problems with which you are interested in your conference here. I am pleased to introduce to you President Virgil M. Hancher.

President Hancher: Dean Ladd and members of the institute:

I want to bring you greetings from the University and, at the same time, express my thanks to those who have made this institute possible: to the Grant Foundation for its generous support of the Preventive Psychiatry Research Program, to the Iowa Mental Health Authority, to the participants, distinguished men and women who have been willing to come and take part in the Second Institute, and to those of you whose interests are so great that you have felt impelled to attend this meeting.

I have heard the observations of some of those who have listened to the discussions so far and have been impressed both with the variety and with the depth of the pursuit of this topic of preventive psychiatry. I suppose it is particularly fitting that any words of mine should come on this particular segment of the program inasmuch as I do have a legal background.

Lawyers are supposed to be very much bound to precedent, a charge which has always seemed to me quite unfair because you can go into any line of endeavor and find that precedent is a very controlling factor. Those of you who recall your reading of Whitehead's delightful little essay on foresight will remember his statement that routine is the god of every organized society. But if we have mere routine, then we have antlike societies which seem to operate without any conscious direction and certainly without any organized arrangement for making changes or for making progress. In human societies, therefore, there is another factor at work and that is the drive for change and the drive for progress, which involves the exercise of foresight, and foresight, of course, necessarily involves a continuous preparation for change and anticipation of it.

As a professional man myself, I have been interested in what seems to me to have been a rather parallel development of the professions in the last century, or century and a half. If you take the professions which have been established, or well established, throughout most of that period, you will find that in their early days, the professional men were ordinarily concerned with catastrophe, with crises which had arisen,

with imminent disaster—whether it would be a lawyer who was engaged in the trial of a lawsuit after the parties to a controversy had become irreconcilable, whether it was a doctor who was called in for some dreadful ailment which turned out to be incurable because it had been approached too late, or whether, to take a simpler illustration, it was a dentist who was merely called in to remove a tooth which was beyond repair. But then, as time went on, the professions developed a remedial attitude. They were called in more quickly. They were able to do things that would prevent the catastrophe from happening. And now in the professions, it seems to me, the stress is altogether on the prevention of the catastrophe, the prevention of the crisis. The lawyer certainly is engaged, at least by intelligent people, to keep them out of the clutches of the courts and the law. Doctors are consulted very early in order that catastrophic illnesses may be avoided if it is humanly possible to foresee them. And so it goes.

And you people particularly, in the field of psychiatry, have advanced to the point where you are in the forefront of this development. To avoid the onslaught of catastrophic mental illnesses, the losses to the individual and to society which result, involves the taking of those steps and of those measures which will enable us to obviate these periods of crisis so that we will not have the traumatic experiences which were a commonplace a generation or two ago. In this very important work I commend you. I am delighted that you have come to this university for your discussions and consultations. I sincerely hope that the remaining part of the program will be as good and as well received as the reports were which I have had concerning the first part, and I would look forward with hope to the occasion when you might return to the State University of Iowa once again. Thank you very much.

Dean Ladd: Thank you, President Hancher.

We are concerned in society with many activities in which there is an interrelationship of people working deeply in different fields and where it is advantageous in the interdisciplinary sense to have an overall picture of the total situation. Wherever such circumstances occur, it is nearly always true that the law finds a place because law is related to most of the activities that go on in society—the business world, the professional world, industry, matters pertaining to government, matters pertaining to health and the problems of medicine, including problems of the mind. Perhaps we have even a closer relationship to the area of psychiatry in the field of behavioral sciences because we are constantly dealing with the defense of insanity in criminal cases, with problems of probate of wills where mental incapacity is charged, and the like. The psychiatrists and the medical people here realize that you are more or

less regularly called upon to bring before the court and the triers of fact your learning and experience with regard to these matters. I regret that sometimes in the legal process we are not able to use more scientifically the learning which you present; but I feel that those who are the experts in medical matters and the lawyers who administer and practice in this field are coming closer together with a much deeper and better understanding, and this co-ordination of their work is to their mutual advantage.

Now we're going to have a look this morning at a man whom I've not known very well personally but whom I've known very well through his writings and his work. Professor Berman of the Harvard Law School has had some rich experiences in the field of study of Russian law and Russian problems. He has written extensively on the subject, and I keep thinking how very important it is for us to explore this area, to know more about the Soviet way of life, their problems and their laws; I know of no one who has done so more than has Harold Berman. A graduate of Dartmouth College, he was granted the Master of Arts degree in history from the London School of Economics and Political Science, and his degree in law is from Yale University. He served in the Signal Intelligence Service of the army during the war and since 1948 has been a member of the faculty of the Harvard Law School. I'll not name the many books he has written because we want to hear him now, a man who has visited in the Soviet Union three different periods of time, who was the recipient of a Rockefeller Foundation grant to spend an academic year in Europe (1956-57) studying legal and institutional structures of trade between Communist and non-Communist countries. I am happy to introduce to you at this time Professor Harold J. Berman.

CHAPTER V

Law as an Instrument of Mental Health in the United States and Soviet Russia

HAROLD J. BERMAN, LL.B.

I must say that my feeling here confronting particularly the psychiatrists is one of fear, anxiety, depression, neurosis, etc. I don't mind the

lawyers, though they are very distinguished, and I can somehow control myself with regard to my feelings about the panel discussion which will take place after I'm through. But as far as confronting the psychiatrists is concerned, while Dean Ladd is right that lawyers are accustomed to meeting and dealing with professional groups of all kinds and feel at home in the interdisciplinary contacts, I suppose that it's harder for a lawyer to understand psychiatry and to feel at home with psychiatrists than it is for him to understand many other types of professions. I feel like the man who is described in a short verse you may be familiar with:

To the counselor's lair
Went a man in despair,
Who wished to regain his composure
But, with his psyche revealed
And his ego laid bare,
He perished from overexposure!

Much has been written in recent decades about "the place of psychiatry in the law," and especially about the need to incorporate into the law insights derived from psychiatric research. Far too little attention has been given, however, to the closely related question of the place of law in psychiatry and the need to incorporate into psychiatry insights derived from legal research. For one who believes, as I do, that the road between psychiatry and law is a two-way street, it is particularly gratifying, therefore, that those who have planned and directed this Institute on Preventive Psychiatry here at Iowa have decided to devote a session to the influence of law in shaping human personality—the influence of law, as I should like to put it, as an instrument of mental health.

Those who think of the road from psychiatry to law as simply a one-way street are misled, I believe, by the sharp distinction which is often drawn between the lawyer's concern with social order and the psychiatrist's concern with individual personality. In one of the best expositions of what law may learn from psychiatry, we are told that "the focus of the law is on society primarily, and only secondarily on the individual; in psychiatry the emphasis is almost exclusively on the individual."[1] But the truth is that society and the individual are really two dimensions of the same thing—man. The law, at least, cannot separate the two, and psychiatry, I submit, separates them at its peril.

The word "individual" is, in fact, quite misleading, for it suggests an isolated being, sufficient unto himself and devoid of relationships with others. Psychiatrists are concerned, of course, not with individuals in this abstract sense but with real people, people who have mothers and

---

[1] Manfred S. Guttmacher and Henry Weihofen, *Psychiatry and the Law* (1952), 4.

fathers, husbands or wives, children, friends, teachers, fellow-workers, and so forth. But it should not be forgotten that these more intimate relationships of family, neighborhood, school, church, factory, farm, office, or other face-to-face groups, are part of a larger system of social relationships of city, region, country, civilization, and indeed mankind. The so-called individual is not only a father, brother, son, husband, machinist, alumnus, churchgoer, and the like; he is also a state-licensed driver of an automobile, mortgagor of his house under state and federal law, member of a national labor union, veteran, citizen, American, Christian, and a possible victim of a nuclear war. The larger communities in which he lives, and the law by which they are to a considerable extent governed, play an important part in shaping his inner life. Social order and human personality being inextricably interdependent, the law which helps to create social order at the same time and by the same token helps to shape the ideas and emotions of the people living in that social order.

It is interesting, in this connection, to recall that the great French sociologist Emile Durkheim, in demonstrating the social causes of suicide—the fact that the rate of suicide varies among different societies according to differences in social structure and social values—used the term *anomie*, literally "absence of law," to denote the type of social emptiness which is conducive to emotional breakdown.[2] One can carry this idea further if one tries to imagine a complex society such as our own existing without law. Unless some substitute were found, fears, frustrations, aggressive desires, and other emotional disturbances would be likely to become overpowering. Indeed, the weakness of law in the international order gives rise to such emotional disturbances today.

In helping to give order to people's relationships with each other—and not only order, but order corresponding in some degree to the community's sense of justice—law thus performs a therapeutic function for the members of society. As the English psychiatrist Ranyard West has put it, law controls human aggressiveness, giving a peaceful outlet to the destructive dispositions which exist in all men and in all societies. "We ought to be able to regard the law as controlling for us those qualities in us which we never really master ourselves," West writes.[3]

Each of the *social* functions of law has a corresponding *psychological* function for the individual members of society. Thus the punishment of

---

[2] Emile Durkheim, *Le Suicide* (1930 ed.); cf. Talcott Parsons, *The Structure of Social Action* (1949), 324 ff. See also Sebastian de Grazia, *The Political Community: A Study of Anomie* (1948).

[3] Ranyard West, *Conscience and Society: A Study of the Psychological Prerequisites of Law and Order* (1942), 166-67.

a criminal—to speak of that aspect of law with which psychiatrists are, perhaps, most familiar—may be viewed in social terms as a means of expressing the community's condemnation of the criminal act (its retributive—or perhaps better, its expressive—function), *or* in psychological terms as a means of appeasing the desire for vengeance felt by the offender's victims and of those who identify themselves with his victims; in social terms, as a means of discouraging people generally from committing crimes (its deterrent function), *or* in psychological terms as a means of instilling the moral values of the community in people's minds; in social terms, as a means of isolating the offender from the opportunity to commit new crimes at least during the period of incarceration (its preventive function), *or* in psychological terms as a means of strengthening the sense of personal security of people—their freedom from fear of criminal attacks; in social terms as a means of correcting the offender and helping to make him a socially useful person (its rehabilitative function), *or* in psychological terms as a means of encouraging him to change his emotions, attitudes, and beliefs. I do not speak now of the extent to which these various functions are justified or are fulfilled, but only of the interaction of their social and psychological elements.

Underlying these social and psychological functions of criminal law is a broader function which is rarely, if ever, mentioned. That is its function of maintaining the community's sense of community—its function of giving the members of the community a sense of belonging to the community and of sharing its values. Criminal law is important to society not only because of its effects upon people who commit crimes or upon people who are deterred by it from committing crimes. It is also important because of what might be called its *integrative* function. Criminal law integrates us into our community—and even into the larger community of mankind—by teaching us all what is absolutely required of us as fellow-members of society; absolutely required, in the sense that we are held responsible, held punishable, by society itself, for a breach of the requirement. We are taught by our family, our neighborhood, our church, our school, and other intimate groups that it is wrong to steal, wrong to use violence, wrong to tell lies, wrong to evade responsibilities, etc. When we learn that society itself—the larger community of city, state, nation, and even the international community—condemns theft, aggression, slander, tax-evasion, etc., as publicly punishable offenses, we are brought into a relationship with that larger community, we are made to feel our membership in it; and that feeling of membership provides an essential element of personal stability, of belonging. Thus criminal law performs a supporting and integrative

function in the life of every person, by re-enforcing and expanding the social dimension of his personality.

In considering the therapeutic functions of law we should not confine our attention to criminal law, however, but should view criminal law in the context of the larger body of law of which it is a part. As in dealing with crimes, so in resolving conflict between individuals or groups of individuals over personal injuries, family responsibilities, labor relations, contract and property rights, civil liberties, and hosts of other matters which give rise to dispute and require regulation, the legal process—whether judicial, administrative, or legislative—helps to maintain not only social equilibrium but also the psychological equilibrium of individual members of society, helps, above all, to give them a sense of their relationship to the community as a whole, a sense of their participation in its values. More particularly, all branches of law serve to reduce grievance tensions, to protect normal expectations, and to teach right attitudes toward each other and toward society as a whole.[4] We need a traffic signal at an intersection (to use the homeliest of illustrations), with its attendant legal obligation to slow down or stop, because otherwise people coming from opposite directions might give vent to aggressive impulses toward each other—either before or after a collision; otherwise people might have no basis for calculating what the consequences of stopping or going would be; otherwise people might more readily yield to the temptation to go, even though they know they ought to stop; and otherwise people might feel that the community has failed to give guidance in an area in which community guidance is needed.

I have been speaking thus far about the psychological functions of law in general. But it is apparent that whether or not law adequately fulfills these functions depends upon whether or not certain assumptions about human personality, implicit in law, are in fact valid. Every legal system presupposes certain qualities in the nature of the people who are subject to it—certain ideas, certain atitudes, certain emotions, certain capacities and incapacities. To what extent are the values which are expressed or implied in legal norms and legal procedures actually shared by the individual members of society? To what extent can they be instilled by law? To what extent does the human personality actually correspond to the image of man reflected in legal institutions?

Here we may profitably turn to a comparative study of legal systems, for different systems of law reflect different conceptions of the nature

---

[4] For a fuller elaboration of these functions of law, see Harold J. Berman, *The Nature and Functions of Law* (1958), 29 ff.

of man. A thorough study would include many widely divergent systems. One would like to compare the various conceptions of human nature reflected in primitive law, in the Canon Law of the Church, in the law of Islam, in the law of Calvin's Geneva, and in many other legal systems. Yet here are advantages in confining our attention, as I propose to do, to two systems, our own and that of Soviet Russia, which have enough in common to make them truly comparable and yet are sufficiently different to provide a perspective.

Let me speak first of some of the features which Soviet law shares with our own legal system and with the legal systems of continental European countries (to which it is closer by tradition and inclination). Soviet law, contrary to what many Americans would suppose, is a highly developed system, with a large body of legislation, with trial and appellate courts, with codes of criminal law, civil law, labor law, and family law, with sixty to seventy thousand lawyers and a substantial amount of private litigation. Soviet citizens may own property—houses, cars, television sets, and the like (but not land or shops or factories), may save money, and may (within limits) dispose of such property and money by contract and by will. In addition, Soviet state enterprises—which conduct the bulk of the economic activities of the Soviet Union—are regulated by law and enter into contracts with each other for the purchase and sale of goods, under limits imposed by the planning and administrative authorities; there is a very large amount of litigation between state enterprises in a special system of courts established to adjudicate disputes arising out of such contracts. In short, the Soviet social and economic system is regulated to a high degree by legal norms and procedures, which form a complex and mature system, as contrasted with a primitive legal systems such as that, for example, of the Cheyenne Indians or of the Melanesians.

Turning particularly to criminal law and procedure, we again find similarities to Western systems, both in general outline and in many details. The criminal codes make punishable not only crimes against the state but also personal and property crimes: homicide, rape, assault, theft, embezzlement, and so forth. Criminal procedure follows the continental European model: Investigation of crimes is conducted by an examining magistrate who questions the suspects and witnesses preparatory to issuing an indictment; after indictment the accused is tried by a court; the burden of proof rests with the prosecution, and the accused is entitled to a defense counsel. A Soviet court is interested in the same questions which would concern an American court: Did the accused commit the act with which he is charged? Did he commit it intentionally? If not intentionally, ought he to have foreseen the conse-

quences of his act? Was he sane—the Soviet term is "imputable" ("responsible")—when he committed it?

Indeed, the Soviet tests of imputability or non-imputability are not essentially different from the tests of our M'Naghten Rules taken together with the "irresistible impulse" rule which prevails in some 18 states. Specifically, Soviet law defines non-imputability as the inability of a person "to realize the consequence of his actions or to control them, as a result of a chronic mental disease, temporary mental derangement, mental infirmity or other pathological state."[5] Thus the intellectual factor—absence of capacity to realize—and the volitional factor—absence of capacity to control—are both essential to non-imputability. Interestingly enough, Soviet law, like ours, also suspends punishment of a person who is non-imputable at the time of sentencing, permitting the imposition of punishment upon him after his recovery.[6]

Psychiatrists may well be shocked and disappointed to discover that the Soviet lawmakers, starting all over again in the twentieth century to make a new legal system, have adopted Aristotelian and Thomistic conceptions of reason and will, and have developed a legal system which, like our own, assumes that in general people are rational and should be punished for their misdeeds. Indeed, the Soviet experience is some evidence that a belief in freedom of will and in the capacity of man, through reason, objectively to know reality, are implicit in all modern systems of law: We can hardly imagine today a law of contracts which assumes that men do not have intent and knowledge; or a law of torts which assumes that it is meaningless to say: "He ought to have known that if he didn't put on his brakes he would have hit me"; or a criminal law which exonerates a defendant on the ground that his parents brought him up to hate society. Psychiatrists may complain that such conceptions rest on a false view of human nature; they may deride the notion that each of us has two little men in his head, one called "Reason" and the other called "Will." The lawyers in all countries will answer, "If there is no knowledge, no reason, no choice, no will, then there can be no law; we will not sacrifice the legal order to the vagaries of your science!"

Yet when we take a closer look at both Soviet and American law, we find that neither system has been immune to important changes in concepts of human nature which have come about in the twentieth century and which are reflected in modern psychiatry. And in looking closer we shall also find some of the crucial differences between Soviet and American law as well as between Soviet and American psychiatric theories and practices.

---

[5] *Fundamental Principles of Criminal Procedure,* 1958, Art. 11.
[6] *Ibid.*

The influence of modern psychiatric concepts—especially Freudian concepts—upon the American legal system during the past 40 years, though subtle and indirect, has nevertheless been far-reaching. The influence is felt less in explicit changes in legal rules than in the interpretation and application of the rules. The law of divorce, for example, remains more or less unchanged in the books; it is based on the concept of breach of marital duty, of fault, with overtones of sin. Divorce law in practice, however, has come to be based on the concept of incompatibility, or maladjustment, of two individuals. Similarly in many areas of the law of personal injury the concept of fault has given way to the concept of distribution of losses among those better able to bear them than the injured parties; here the explanation is usually conceived in social and economic rather than psychological terms—the worker injured in the course of employment, even though by his own negligence, requires compensation for he is unable to protect himself out of his savings—the plaintiff struck by an automobile or by an exploding bottle is often awarded damages by the jury though the defendant was not negligent, contrary to the rules expounded in the judge's charge, on the assumption that the defendant's insurer is the better "riskbearer." But the social-economic rationale has important psychological implications: The independent, self-reliant individual who bears the risks of his own negligence and profits from his own prudence has been replaced, in much of our operative legal thinking, by the dependent, indeed virtually helpless, individual who needs protection. I am *not* saying that divorce on grounds of mutual incompatibility or tort liability without fault could not exist without modern psychiatric concepts; they have existed in other societies which had quite other concepts of man. But I suggest that in our society these developments in law *are* connected with a breakdown, at least, of an older psychology. Personal injury law, like divorce law, is more and more seen in terms of the readjustment of an unfortunate situation, rather than in terms of fault. No one needs to be blamed; the parties are simply victims of life—perhaps even of their own accident-proneness.

Many other illustrations of this subtle shift in legal psychology (though it would be wrong to suggest that it is more than a tendency) could be adduced from civil law, not to mention administrative law; but its most striking expression is found in criminal law. We have decided that a youth under 18, or under 16, is not subject to criminal punishment at all; he is to be judged on the basis not of what he did but of his whole personality, and treated in terms of correction rather than penalty. In some states the sex offender, and in some states the alcoholic, although sane in the traditional sense, are also exonerated from public condemna-

tion as criminals and subject only to medical psychiatric treatment. Moreover, in the past few years we have seen the adoption by the District of Columbia courts of a rule hitherto in force only in New Hampshire that a person is not criminally responsible for an unlawful act which was the product of mental illness or mental defect, without reference to whether he had the capacity to know the nature and quality of his acts or the capacity to control his conduct.[7] These special rules for juveniles, for sexual psychopaths and alcoholics, and for the mentally ill, reflect a more general tendency in modern criminal law to view the person who has committed an anti-social act as a victim of his heredity and environment rather than as a free, rational, moral agent—a tendency by no means explicit in the criminal law generally but implicit in much of its administration.

If we turn now to the influence of Soviet psychological concepts upon Soviet law, we find quite a different story. In the first place, since Soviet psychology and psychiatry are required to conform to the general doctrines laid down by the Communist party, and since the law, too, is subject to the same doctrines, it is not surprising that there is no such open clash between psychiatric and legal concepts in the Soviet Union as there is in the United States. Soviet psychologists and psychiatrists are not permitted to publish ideas which the party leadership considers harmful to the social (including the legal) order; but by the same token, Soviet law in general conforms to the concepts of human personality held by Soviet psychologists and psychiatrists. Thus a synthesis is achieved between psychiatry and law—partly at the expense of both, partly to their mutual benefit.

Soviet theories of human personality are conceived in Pavlovian rather than in Freudian terms.[8] Freud's emphasis on the role of the unconscious is rejected. "Conscious understanding" and "conscious, purposive action" are considered the key to human personality. At the same time great stress is placed upon the possibility of influencing human thought, feeling, and action by environmental changes. It is the Soviet view that man is conditioned, but that through conscious effort he can rise above his conditions. Indeed, training and self-training have

---

[7] Durham v. United States, 214 F.2d 862 (D.C. Cir. 1954); cf. Note, "Implementation and Clarification of the *Durham* Criterion of Criminal Irresponsibility," 58 *Col. L. Rev.* 1253 (1958).

[8] See generally Bauer, *The New Man in Soviet Psychology* (1952). A partial retreat from the traditional Pavlovian concepts and the acceptance of some of the basic ideas of Freudianism is reflected in a recent article, S. V. Bassin, "Freudism in the Light of Contemporary Scientific Discussions," *Voprosy Psikhologii* (Questions of Psychology), 1958, no. 5, reprinted in 27 *Soviet Survey*, January-March 1959, 82.

been declared to be categories separate from environment and heredity in the shaping of human personality.

The concept of man expressed in Soviet psychological writings is in many respects close to the traditional Western legal concept of the free, rational, moral agent. Deterministic conceptions which were prevalent for many years have been denounced since the mid-1930's. The individual is said to be responsible for his behavior, responsible, indeed, for his own character.[9]

On the other hand, Soviet psychological theory emphasizes that it is society which sets the conditions for the development of the individual human personality; and in the Soviet Union, at least, society does so consciously and purposively, in order to achieve definite psychological objectives. The family, the school, social organizations, social institutions such as law, and, above all, the Communist party, have the task of seeking to inculcate feelings of social responsibility, duty, courage, love of country, devotion to the party, and a Communist *Weltanschauung*.[10]

A true story of Soviet psychologists in action may reveal more than these generalizations can about their concept of man and of the role of society in shaping his personality. Professor Henry Murray, the Harvard psychologist, reports that during recent conversations with Soviet psychologists in Moscow he was told of an experiment conducted with small children. If a three-year-old child is told that at a certain signal, the flashing of a light, he is to squeeze a certain ball once, it is apparently very difficult for him to obey. He may squeeze the ball before the light flashes, or may squeeze it several times after the light flashes. However, the Soviet psychologists told Professor Murray, they were able to get the child to perform the requested act by first teaching him to say, "When the light goes on I will squeeze the ball once." By teaching him, in other words, to give himself the command, they were able to persuade him to overcome the negativism characteristic of his age-group. The next step was to teach him to form the words in his mouth without vocalizing them, and then to squeeze the ball. Ultimately the child was taught simply to think the words and then perform the act.

The key not only to Soviet psychology but also to Soviet law is the

---

9 "A man takes part in the shaping of his own character and he himself bears a responsibility for that character." Rubinshtein, *Osnovy Obshchei Psikhologii* (1946), 475, quoted in Bauer, *op. cit.*, 149.

10 "The early years of childhood play an essential role in the development of character. However, the Freudian notion that character is fixed in early childhood is erroneous. This error arises from the failure to understand the role of consciousness in character development. Man takes an active part in reshaping his own character to the extent that it is related to a Weltanschauung. . . ." Rubinshtein, *ibid.*, cited in Bauer, *op. cit.*, 150.

conscious conditioning of emotions, attitudes, and beliefs. What I have spoken of as the therapeutic function of law becomes, in Soviet theory and practice, its primary function—its *raison d'etre,* becomes, indeed, one of the principal determining factors not only of legislation but even of judicial decision. Soviet jurists speak of this in terms of the "educational role" of law. Thus Soviet family law is designed to teach the members of the family to accept their mutual responsibilities; since 1944 divorce has been made relatively difficult, especially where there are children to be cared for, and the network of family economic responsibilities is very wide, with grandparents and grandchildren having mutual obligations of support. Soviet tort law is designed to teach people to be careful, and even in workmen's compensation cases the element of fault enters to permit an injured worker to recover from the state business enterprise his full losses, and not merely the statutory tariff, where the injury was due to the negligence of management. Soviet contract law is designed not only to teach respect for contracts ("contract discipline") but also to teach people, especially business managers, how to utilize contracts in the interests of the general economic plan as well as in the interests of their individual state enterprises.

To say that Soviet law has an educational, or therapeutic, function is only to say that it is like the legal systems of other countries; the point which I am making is, rather, that in the case of Soviet law that function is not merely implicit but explicit, not merely incidental but central to the very determination of rights and duties. American contract law, too, helps to teach people what kinds of agreements to make, but that is not often thought to be an express purpose of our contract law; only occasionally are our legislatures concerned with such teaching and it does not generally have a direct bearing upon the decision of a court. The Soviet legislature, on the other hand, is concerned very much with the kinds of contracts people may make, and even when deciding a dispute over an alleged breach of contract the Soviet court will quite often be interested in the question of whether the parties should have made the particular contract and whether it was properly drawn from the point of view of their own mutual interests as well as of society's interests. Indeed, in the sphere of economic contracts between state business enterprises there is a special so-called pre-contract procedure whereby the court in effect writes the contract for the parties, if they are in dispute as to what its terms should be.

The point becomes clearer, perhaps, by illustration from Soviet criminal law, where the determination of the guilt or innocence of the accused may depend upon the educational value of such a determination for him and for society. The extreme case, both in Soviet and Ameri-

can law, is that of the juvenile offender; under either system, a 15-year-old boy who deliberately robs a store, for example, is held to be not guilty of a crime because it is believed that to subject him to social condemnation is not good for him or for society; on the other hand, though his theft might have been a very minor one, he may be subjected to confinement in a reformatory for an indefinite period—a far more severe punishment, perhaps, than a mature man might receive for the same act—not because of what he did but because of what he is. The mature man, however, under our system is not supposed to be punished for what he is but for what he did. Under the Soviet system, however, questions of motivation, of attitude, of character, enter into the very finding of criminal intent and criminal negligence. This has been true particularly in the area of crimes against the state—called, until last December, "counterrevolutionary crimes." It is true also in many other spheres of criminal law. Soviet writers state, and Soviet judicial decisions bear them out, that the specific intent of the accused to do the particular act—to shoot the victim—must be considered in the whole context of his beliefs, his will, and his emotions. Depending on his whole personality, his guilt may be increased or diminished. Indeed, under an express provision of the Soviet criminal code, if the actor no longer constitutes a social danger at the time of trial he may be acquitted.

Thus fault, wrong, duty, will, intent, and other moral and rational concepts of law are retained, but their function is changed: they are not only means of determining legal rights but also, and perhaps primarily, means of training people to be industrious, honest, co-operative, efficient, resourceful, responsible, and above all, loyal citizens. Indeed, rights are conferred by the Soviet state in order to encourage such virtues, in order to help develop the very kind of human personality which Soviet psychologists proclaim to be the "new Soviet man."

But there is an underlying paradox involved: If the "new Soviet man" is what he is said to be, why is so much conditioning necessary? In fact he is not yet what he is said to be. He still needs training. He is therefore treated not as a mature, independent adult but as an immature, dependent youth who must be guided and disciplined. His rights are not his by inherent right but are his as gifts of the State—given conditionally in return for his loyalty to the State. Indeed—and by the same token—when the State has felt itself threatened, it has withdrawn the rights of many altogether and has substituted terror as a means of training. Even where no question of politics as such is involved, individual rights are less secure insofar as they are interpreted as instruments of educating the "new Soviet man" to accept his social responsibilities.

Thus both Soviet psychiatry and Soviet laws have suffered by their

intermarriage. Soviet psychiatry has been almost totally cut off from research into the unconscious area of human personality. Soviet law has been deprived of security against political intervention. Both are used as instruments for the creation of a society unified by the world-view of the Communist party.

At the same time they both have derived certain benefits from their union. The emphasis in Soviet psychology—carried over into psychiatry—upon conscious, purposive action, upon the integration of personal and social goals, and upon the creation of social conditions conducive to such an integration, is not only an important supporting element in the lives of normal, or well, people, but also has certain advantages as a basis for treating some kinds of mental illness.

It is difficult to assess Soviet psychiatric practice in view of the paucity of our information about mental illness in the Soviet Union. Soviet psychiatrists have said that the incidence of "serious" mental illness is about the same, in proportion to the population, as in Western Europe and the United States. We may suppose that the enormous political and ideological pressure imposed by the party leadership (the purges of the late thirties, which sent hundreds of thousands of people to labor camps in remote regions of Siberia on the flimsiest of charges and with secret administrative trials, are an example) coupled with very poor living conditions, especially with respect to overcrowded tenements with a family to a room, and with great inequalities of income, have created very great anxieties, frustrations, fears, depression, and similar emotional disturbances among large numbers of Soviet citizens. At the same time we know very little, do we not, about the social causes of mental illness, and it may be that the psychological effects of regimentation, and even of common suffering and sacrifice, are by no means so debilitating to mental health as is popularly supposed. Certainly one senses in the Soviet Union today that the common suffering which the Russian people have shared during the past forty years contributes to a sense of solidarity and even of mission, among large numbers of people, and at the same time that there is a widespread sharing of pride in the economic, technological, and social progress which has been made by the country as a whole.

If we turn from these speculations as to the state of mind, so to speak, of the people of the Soviet Union, to what we know more surely about Soviet psychiatry, we can say that in 1956 there were 2,327 psychiatric dispensaries in the Soviet Union, of which 119 were outpatient dispensaries, and 115,430 psychiatric beds in all types of Soviet hospitals, out of a total of 1,292,717 hospital beds (the parallel American figures for 1956 are 762,294 psychiatric beds out of a total of 1,607,692 hospital

beds).[11] In addition there are workshops and factories for psychiatric patients, rehabilitation centers, and—perhaps the most significant of these facts—state subsidies for families to take care of the mentally ill at home.

There are an estimated 4,800 psychiatrists in the USSR, compared with about 10,000 in the United States (the total population of the two countries is, of course, about 200 million in the USSR and about 175 million here). In view of the fact that the Soviet psychiatrists are for the most part connected with hospitals and dispensaries, it is not entirely surprising to be told that there is an average of one Russian doctor to every 25 psychiatric patients; we certainly do not come even close to this ratio in most of our mental hospitals.[12] (There are all told about 300,000 doctors in the Soviet Union—one per [illegible] of the population, as contrasted with one per [illegible] in this country.)

I would not be competent to comment on the quality of Soviet psychiatry even if I had more infomation about it. I should like only to say that it seems to me that pervading the Soviet system of care for the mentally ill is the concept that such care is the responsibility not only of the psychiatrist but also of others. The psychiatrist treats the patients who are beyond help from others—treats them in hospitals by means of work therapy, psychotherapy, physiotherapy, and "active" therapy (including various forms of shock treatment and sleep therapy).[13] But the idea is very strong that in many instances the patient's illness may also be treated effectively by changing his social environment—by moving him, for example, to other surroundings, changing his job, or putting him in a special factory for the mentally ill; and of course in a society in which the majority of people live in agricultural communities, care at home can be a major factor in the social treatment of mental illness.

Thus the emphasis of Soviet psychiatry on social conditioning, together with the emphasis of Soviet law on inculcating moral and intellectual attitudes and ideas, combine to create a rather good social atmosphere and rather good social institutions for the treatment of the mentally ill, despite the harm which is done to psychiatry itself, as a science, by the arbitrary exclusion of Freudian insights.

Turning finally to the benefits which Soviet law derives from its mar-

---

[11] The Soviet statistics are from *Zdravookhranenie v SSSR, Statisticheskii Spravochnik* (Health Protection in the USSR, Statistical Handbook), 1957, pp. 84, 103.

[12] One may guess that the 115 thousand patients in psychiatric beds are the "serious" cases of mental illness.

[13] Cf. I. D. London, "Therapy in Soviet Psychiatric Hospitals," 8 *The American Psychologist* (1953).

riage, so to speak, to Soviet psychiatry, I should like to speak briefly of the use of psychiatrists in criminal proceedings.[14]

The fact is that the provisions of Soviet law regarding the use of psychiatrists in judicial proceedings are far more satisfactory from almost any point of view than the provisions of the law of any of the states of the United States. Under Soviet law, the testimony of a qualified psychiatric expert is required both in the preliminary investigation of a crime and upon trial, if any question arises as to the psychiatric condition of the person charged. (In the United States only California and Indiana require that the court call a psychiatric expert in cases involving the defense of insanity, and only Massachusetts has a procedure for a routine psychiatric examination prior to trial of persons charged with certain offenses.) Under Soviet law there is provision for a joint examination by opposing psychiatrists, and in proper cases a joint report. (In the United States this is not provided for—except under the Uniform Expert Testimony Act, which has been adopted in no state.) Soviet law provides for the commitment of the accused to a hospital prior to examination in appropriate cases. (Only 18 American states have similar provisions.) Under Soviet law only a qualified psychiatric expert is permitted to testify concerning the mental illness of the accused. (Under American law, in all jurisdictions, such testimony may be given by any doctor.) Psychiatrists' expenses and fees, under Soviet law, may be assessed to the accused if he is guilty, provided he is not indigent; if he is not guilty, or if he is guilty but indigent, they are assessed to the state treasury; moreover, a psychiatrist, whether called by the investigator, by the court or by the accused, may not without sufficient reason refuse to appear and give his conclusions.

The use of psychiatrists in criminal cases in the Soviet Union is strongly influenced by the work of a special institute, the Serbskii Institute of Forensic Psychiatry, which is under the Ministry of Health of the USSR. American psychiatrists and lawyers might well study the work of this institute with the thought of forming—under private auspices—an American institute of forensic psychiatry, which, like the Serbskii Institute, would be a scientific research institute and at the same time a means of training experts who, on request by a court, could provide psychiatric testimony before, during, or after trial.

As in the United States generally, Soviet forensic psychiatrists must testify not only as to the mental illness of the accused but also as to his capacity to know the nature of his acts and to control his conduct. At the

---

[14] See generally, Harold J. Berman and Donald H. Hunt, "Law and Criminal Psychiatry: the Soviet Solution," 2 *Stanford Law Review* 650 (1950); A. N. Buneev, ed., *Sudebnaia Psikhiatriia* (Forensic Psychiatry), 1954.

same time the Soviet court is required to consider in detail his psychiatric condition in determining the question of his non-imputability, and a conviction (or an acquittal!) may be reversed on appeal if the court has failed to state the medical (as well as the legal) foundations for its decision. Thus the juxtaposition of medical and legal criteria is maintained both in the procedure and in the substantive law. This is more readily possible in Soviet Russia than here, it seems to me, because the distance between psychiatry and law is not nearly so great there as it is here.

It might appear to some that the analysis which I have given leads to the suggestion that we adopt Soviet methods of dealing with the problems of mental illness, especially as they come up in court proceedings. That suggestion is very far from what I am driving at. Soviet law and psychiatry are both distorted by Communist doctrines and Communist practices which are entirely unacceptable to anyone who believes in freedom. The point is, rather, that the study of the Soviet system enables us to understand our own system better. It shows us that our own backwardness in the development of proper procedures for the use of psychiatrists in criminal cases is due not only to the mistrust of psychiatry by the lawyers, but also to the failure of the psychiatrists squarely to face the requirements of a sound legal order. We need, I submit, more effort on the part of psychiatrists to accept whatever there is of value in traditional legal concepts. We need to have more attention given by psychiatrists to the role of the conscious in mental illness and to the possibilities of treatment by environmental and social changes. We must at all costs avoid any solution which would inhibit the freedom and independence either of psychiatry or of law; but surely we can, through freedom, match what the Russians have done by force.

In "matching" the Soviet co-operation between law and psychiatry, we should attempt to build into our law and into our psychiatry a conception of man which is fuller and more balanced than the Soviet conception. Man is not uniformly the dependent and growing youth of Soviet law, nor is he uniformly either the reasonable, prudent man of our legal tradition, or the victim of his fate as assumed in much of our psychiatry. The varieties of social experience call forth many diverse aspects of his personality. Depending on his situation, he may have the helplessness of a child, the youth's capacity for dedication and service, the self-confidence and assertiveness of a young man, the prudent maturity of middle age, the wisdom of old age. A healthy legal system will give reflection and reinforcement in procedural and substantive rights and duties, at appropriate times and appropriate places, to all the various phases of man's nature. A healthy science of psychiatry can play an important part in the development of such a legal system.

Moderator: PROFESSOR WEIHOFEN
Panel: MR. BUCHMUELLER, DR. CROMWELL, MR. FAHR, MR. LIPSON, JUDGE MARTIN, DR. PIERCE-JONES

Dean Ladd: Henry Weihofen has been a close personal friend of mine for a great many years. His special interest is in the field of law and psychiatry and we use his well-known book as our text in our course on law and psychiatry. He is also one of the key men in the field of criminal law, and his writings on that subject have been exceptionally well received all over the country. Mr. Weihofen comes to us from the University of New Mexico, where he is a professor of law. It is indeed a pleasure to present him as your moderator for the discussion of Professor Berman's scholarly address.

Mr. Weihofen: Thank you, Dean Ladd.

We want to start right at some of the essential issues that have been raised here. One seems to be the point that Mr. Berman made that Soviet psychology and Soviet law—because the two work together more closely than they do in this country—have a kind of "Party line" which emphasizes the conscious function of personality and the effect of conscious training and self-training, as distinguished from our emphasis on Freudian concepts of the unconscious; and this Pavlovian (as against, we might say, Freudian) emphasis has implications for our culture and for our legal system, which concentrates more on retribution than on reformation and education.

Mr. Buchmueller: I'd like to pick that one up, if I may. First of all, let me say that I have rather mixed feelings in being on this panel since I am neither a lawyer nor a psychiatrist but am in one of these so-called ancillary professions, so I feel inadequate as well as privileged to participate in the panel.

I think Mr. Berman's concluding plea was for greater study in the area of the conscious, the implication being that American psychiatry has had its research focused more on the unconscious. I'd like to raise the question whether there constantly has to be this kind of dichotomy. It's almost as though they were conflicting kinds of things, as if we had to accept the idea of Freudian principles of the unconscious *or* the other; and I'm wondering whether we shouldn't take more of a look into how these two might be synthesized and really see what both have to contribute to conscious motivations of behavior, rather than constantly staying within this dichotomy of one or the other.

Dr. Cromwell: Certainly in America we don't want to continue this dichotomy; but, on the other hand, the speaker pointed out that it does exist if we try to contrast Soviet practices and American practices.

Mr. Fahr: I would like to emphasize another, perhaps similar, dichotomy which Mr. Berman did not specifically, but at least inferentially, raised. I gathered from his presentation that Soviet law in theory, particularly perhaps in the criminal field, concentrates more upon the individual, whereas American criminal law concentrates, in theory at least, more upon the act. I am of the opinion that this apparent dichotomy or difference in emphasis is *only* a difference in emphasis.

For example, I think of two things: It's a tendency in American law to concentrate, particularly after conviction, upon the individual with regard to sentence, treatment, etc., in a way that was not true even twenty years ago, and this tendency seems to be increasing. In the second place, although it's not to be found in most textbooks (it's more in novels or in the newspapers), there is a good deal of individualization possible through the use of the jury system. Juries sometimes obstinately refuse to convict people of crimes they quite obviously have committed. The juries just don't want to—this in spite of the fact that abundant evidence may have been presented to them. Judges may be horrified, not to speak of county attorneys, at what the jury does, but there is no recourse. If the jury wants to acquit, they do acquit, and that's the end of the matter. I think this is a form of individualization which we enjoy (and I use the verb advisedly) in this country which permits much more concentration upon the individual and more emphasis on him and much less concentration, in many cases, upon the act which he committed and which is, in my opinion, a form of bringing our *practice*, perhaps, somewhat closer to the Soviet theory as enunciated by Mr. Berman.

Mr. Weihofen: Let's take a moment with that. That's certainly one important way that we have in our system of getting individualization; we leave it to the jury. If the jury won't convict for whatever reason, some community sense of justice or the like, it doesn't matter what the law says. Do we have other individualizing techniques?

Professor Lipson, you're a lawyer—how about that? We do have some treatment methods by which we get individualization otherwise, don't we?

Mr. Lipson: I think that at several points in the process from the commission of a crime to the ultimate pronouncement of society's verdict, there are discretionary episodes, not all of them thoroughly studied or even explicitly admitted, one being police discretion, another being the discretion of the district attorney or the public prosecutor. These safety valves or devices for flexibility are not often formally acknowledged or thoroughly studied; and perhaps, from a certain point of view, it's in the public interest that they be not formally acknowledged or thoroughly studied—though this runs counter to some of our research biases.

Mr. Weihofen: But don't we also have some that are more formal than that? I mean, for instance, pre-sentence investigation. That's pretty general now, isn't it?

Mr. Fahr: I'd like to think also of the much-maligned sexual psychopath acts which are a formal attempt at individualization. They haven't been very successful, to put it mildly; but they are an attempt to take a person who has committed a public offense (the law varies from state to state, but the Iowa one is fairly typical) and, rather than sentence him to a penal institution, provide treatment for him, the theory being that this individual in this one narrow, ill-defined area is not responsible for his act.

The difficulty, as I have seen it, with the sexual psychopath acts has been that as matters stand, in many states treatment facilities are most inadequate. Also, if I may insult a good proportion of this audience, even if we can define and diagnose the condition, which is the first thing (which also is very unsatisfactory), the knowledge of how to treat these people is likewise very inadequate. The consequence is that this is a formal statutory attempt to individualize, to use modern psychiatric methods, which has failed; and the facts of life so far are against the success of such statutes. However, I think they show a formal attempt in one very limited area to achieve what, perhaps we may deduce from Mr. Berman's presentation, the Soviets likewise are trying to do.

Mr. Buchmueller: I wonder if there isn't something else that enters into that particular example that you are using there, and that is the element of moral judgment, even a pretty subjective kind of judgment, especially when you get into this area of sexual crimes or other sorts of behavior which we have less capacity to tolerate as a society.

Judge Martin: There seems to be a consensus of opinion here that Russian law is centralizing on the individual; but I feel that that is the principle of the Anglo-American system of law, that it *isn't* built for society but is, rather, built for the individual, while under the Soviet proposition, the individual has no right of selection. He has to conform to society and sometimes he isn't even guilty of crime in our concept when they would call him guilty of a "non-social act."

Dr. Cromwell: Certainly the Iowa sexual psychopath law is an example of one attempt to individualize. We do hold the individual's interest at heart here by ordering that he be sent to a hospital for treatment rather than to the penitentiary for punishment. However, no matter how mildly he acts, he has to stay under treatment until a psychiatrist will practically guarantee that he will never commit such an act again . . .

Mr. Weihofen: . . . which puts a tremendous burden on *some*body . . .

Dr. Cromwell: . . . so the individual either has to stay a long, long time,

or else the psychiatrist has to say something he doesn't believe in or may not be sure of.

Mr. Weihofen: Some of these acts are even broader so far as allowing individualization of treatment. The New York act allows a person convicted of one of these sexual offenses to be restrained in a hospital or whatever facilities, jail or therapeutic, from one day to life. You can't make it much broader than that!

Dr. Pierce-Jones: I am concerned with something which perhaps I would know a little bit more about if I were a lawyer or a psychiatrist. Professor Berman seemed to say that the Russian system provided for investigation of the individual as a pre-trial process, and I seem to be getting the impression from the discussion this morning on the panel that we, too, investigate the individual but as a post-conviction, pre-sentencing process. I am wondering (1) if my impression is correct, and (2) if this timing or position of consideration of the individual is an important distinction in the matter.

Mr. Weihofen: I think your impression is correct, and I think it may be worthwhile to emphasize that to the jury. We have said that we may convict a man because he comes strictly within our criminal law—and the criminal law is aimed at this act: did he do this act? Guilty or not guilty? But then we have been emphasizing the idea that having decided he's guilty, we spend quite a bit of effort in individualizing our determination of what we're doing.

Dr. Pierce-Jones: The judgment has been made and registered!

Mr. Buchmueller: There are certain areas, our juvenile court laws, for instance, that were begun several decades ago, as far as providing for investigation before conviction or before trial.

Mr. Weihofen: There are some situations, as you say, where we do not convict, say "Guilty," and then ask these questions. The juvenile, you see, is a problem which we take out of the criminal procedure entirely. We treat him under the parental power of the state.

Mr. Fahr: Another field in which I think we're approaching this kind of individualism, or individual treatment, during trial and not afterwards is, perhaps, in the defense of mistake of law. It's commonly said that mistake of law is no excuse and by that is ordinarily meant mistake of criminal law. Earlier, persons who thought (mistakenly as far as the law went) that they had been divorced from one spouse and who then married another, were convicted of bigamous cohabitation on the theory that their mistake was no defense; and even if they mistook the criminal law, it was no defense. I've noticed in fairly recent cases the tendency to ameliorate this rather rigid rule—"ignorance of the law is no excuse"—to a question of whether or not the mistake of criminal law was a *reason-*

able mistake of law. At one time, if you were wrong on the criminal law, you were guilty and there wasn't much room for argument. Now there's a tendency to get away from that and ask, "Did he act reasonably? Did he consult an attorney who gave him an unvarnished and unbiased opinion?"

In many modern cases, we find that "ignorance of the law" does furnish a defense so that one of our rather deterministic, if you like, rules (if there are such things in the law) has begun to wither away. That is not after trial but during trial, or it might even prevent trial, which is, possibly from the psychiatric standpoint, an important consideration.

Mr. Weihofen: Are there other examples where we have been getting away from the older orthodox views?

Judge Martin: Is this matter to be confined to the discussion of the end result of the courts in the treatment of criminals; or are we, as the program seems to say, supposed to compare the American and Russian legal systems? The criminal end of our legal system is one of the smallest elements of our law.

I feel that, in a comparison of the two systems, the Anglo-American system has grown up from the people while the Russian system is placed upon the people by a governing group. Under our system, which governs a third of the people of the world (with the Russian system covering a third and the other third more or less uncommitted), is therapy itself within our procedure? To me it's therapy when a man in America under our system can go to his lawyer. He can come into the courtroom; he can lie down on the couch, so to speak, in the witness chair! He is given an opportunity to protect his own rights as an individual, rather than having these rights delimited by what is the best thing for society as a whole. He only runs into trouble when his own rights begin to clash with what the law objects to. Otherwise he's a free agent. In Russia under Soviet law he's not considered a free agent.

Mr. Weihofen: I think it's well to bear in mind that we have here two quite different things, and I'm glad that Judge Martin has called our attention to these distinctions. What the panel has been talking about is individualization of treatment as against a kind of rigid method of treatment which says that if a man commits a certain crime, he gets such-and-such punishment. Such a comparison is wholly different from the fundamental distinction (I think we would agree with Judge Martin) between any totalitarian system and our system, which places its emphasis on the value of the individual and his intrinsic worth, as distinguished from the value of the group and the importance of state interest.

Dr. Cromwell: We want to focus our attention especially on how a legal system influences the treatment of psychiatric patients and the

return to society of a patient. The aspects of the Soviet legal system which appear to me to have some soundness, regardless of how unsound some of their psychology might be in its application, are that the Soviets consider the treatment to be an obligation of the society; and the statutes and the people involved in employing them have as a primary objective the return of the person to society. Professor Berman pointed out that they have a proportionately higher emphasis on clinics and less emphasis on hospitalization. They place far more emphasis on the responsibility of the individual citizen to help with the care of these dependent people and less on getting the person out of the community.

Mr. Weihofen: Dr. Cromwell, you're particularly qualified on this. What should be the trend, do you think, hospitals or these clinical facilities and home care?

Dr. Cromwell: That is a loaded question, but a lot of us in this field believe rather firmly that at this stage of the game the hospital is what we have; but that facilities in the community which will take the place of the hospital will be the only possible future answer. The hospital's shortcomings are so great that we can't really solve the problem by increased hospitalization in a large central state hospital. We need to develop hospitalization at the community level, clinics at the community level, and somehow through legal techniques as well as through a change in social emphasis get the patient into facilities in his neighborhood among his own friends and relatives and not removed from the community.

Mr. Fahr: I can't leave Dr. Cromwell's comment without adding a somewhat lighter note concerning local treatment. I happened to be at Mt. Pleasant a couple of years ago for purposes of instruction—I was the person being instructed. At that time a sheriff from a certain county in Iowa had come there to get a couple of persons who had been accused (and apparently successfully) under the sexual psychopath act of being homosexuals. They were being discharged and he was taking them back to their home county. His therapy, which I thought, under the circumstances, was wise—if non-legal—consisted of instructions which went something like this:

"Now, fellows, before you go back to (shall we say) X . . ., you got into trouble because you conducted your forays in the wrong bars and with the wrong language. Apparently you don't know where in the town of X . . . people of your persuasion are likely to be found."

Whereupon, he instructed them, and he said, "Now, if you will just follow this advice of mine and keep up, as it were, with your pursuits and from day to day know where to go, you'll not get into trouble with us because we don't want to bother you."

Deviators of that ilk are obviously one of the worst problems for law enforcement people, who don't relish them, so he concluded, "Now all I want to do is make it easy for you." He wasn't trying to reform them; he was trying to adapt them, as it were!

Mr. Weihofen: I wonder, members of the panel, if this is (1) good law enforcement? or (2) good therapy?

Dr. Pierce-Jones: This may be one of the therapeutic functions of an agent of the law! Professor Berman in his talk seemed to me to equate control with therapy and the control functions of the law as therapeutic.

Mr. Weihofen: Well, yes, this raises that question, doesn't it? What more should we want to do with these people other than to keep them from making nuisances of themselves in public, in the wrong bars, don't you know?

Mr. Buchmueller: Aren't we leaving one thing out of consideration? We're talking about such things as treatment and control and still not talking about prevention in any way so far. This is something we need to take a closer look at, in this particular case as well as others.

Mr. Weihofen: Our emphasis should be, I think, on what we can learn from this comparative method; that is, one way to look at ourselves is to look at ourselves in relation to another system. What have the Russians to teach us? That's the main selfish interest we have here, I suppose. What about that in the line of prevention?

Mr. Buchmueller: Mr. Berman brought out in the earlier part of his address something which I thought was very stimulating. He was discussing some of the social values of law as well as the psychological values, particularly with regard to Russian law, and he raised some interesting questions as to how in the socializing process law becomes paternalistic and takes responsibility out of the hands of parents and the family (if I interpreted it correctly) and places it more in the area and responsibility of the state.

Dr. Cromwell: I wonder if from Professor Berman's presentation we could gain a little information on the relative degrees to which in Russia the law takes people away from the community. Here if a person is declared insane and committed to a hospital, he does lose certain rights and privileges. We are a little slow, however, in depriving an individual of those rights by gradations; in other words, he is insane, or he is not. We have, of course, some intermediate steps but they are far less defined than is the concept of insanity. Is my impression correct that the Russians have a little clearer way of coercing treatment before the person is finally found to be insane?

Mr. Weihofen: Professor Lipson, you know more about the Russian system than anyone on this panel. Do you have any comments on the

points that Mr. Buchmueller and Dr. Cromwell have been making or on Mr. Berman's point that Russian law attempts consciously by the actions of judges and legislators to teach or to train?

Mr. Lipson: I'm afraid that by a process of progressive over-simplification we may have arrived at an image of the internal consistency of the Soviet legal system which does violence to the facts. I want to emphasize that point by bringing out some of the contradictions in Soviet practice implicit in Professor Berman's talk, and to some extent explicit. (I ought to say that I was very much impressed by his talk.) André Gide, the French writer, who had a checkered history as a fellow traveler—a disillusioned fellow traveler, that is—said, after his disillusionment that the Soviet Union is a land in which the truth is spoken with hatred and falsehood with love. I think Mr. Berman has avoided both these emotional affects in his discussion.

We ought to realize that in any social system as large and comprehensive and as total as the Soviet system, a number of contradictions have to be, as it were, held in suspension. As you know, the ideology of dialectical materialism has a built-in principle of holding contradictions in suspension. This is, after all, the principal intellectual function of dialectical materialism. I think as an explanation of reality, it leaves a great deal to be desired; but as a means of quelling inconvenient questions, it has a lot to recommend itself.

Among these contradictions, one can instance such things as the following: First, Soviet science, especially the applications of Soviet science to non- or extra- or para-scientific areas, is built upon a notion, a vulgarized notion to be sure, of nineteenth century determinism. At the same time, for political and cultural reasons, there is a conscious emphasis, as Professor Berman pointed out, on the value of developing responsibility and upon the manipulation of the social environment to effect the training and the maturation of the individual citizen. The participation of the public in the legal process, the development of a sense of community, runs counter, unfortunately, from the Soviet point of view, to the desire on the part of a number of Soviet lawyers to provide guarantees against arbitrary and possibly unjust and tyrannical abuses of the legal system. The anti-parasite laws, for example, about which Professor Berman has written at some length, decree that speculators or people living on unearned income may be sentenced by a *folkmoot*, a neighbors' court, without (so far as now appears) any legal guarantees, any judicial reviews, any participation of a lawyer; and, upon confirmation by a local executive body, the offenders may be sent into exile for as much as two to five years to distant regions of the republic in which the legislation has been passed. These anti-parasite laws do

provide indeed for more public participation in the legal process but they run counter to the reforming aspects of Soviet liberalization of the legal process.

Again, Professor Berman very well pointed out the conflict between the Soviet notion of the citizen as possibly morally dependent, a man who must be educated and trained and brought up to the level of whatever his possibilities are, and the repression which accompanies a notion that a man is entitled to be regarded as fully conscious and fully rational. I would say that the best way to characterize Soviet penal philosophy is not that it is therapeutic so much as moralistic. Therapy in the sense in which you gentlemen and ladies understand it, I think, is rather primitive in the Soviet Union, emphasizing as it does certain very primitive forms of work therapy, and therapy has been in disfavor as a technical subject . . .

Mr. Weihofen: Therapy has been in disfavor as a *what* . . .?

Mr. Lipson: . . . as a technical subject, yes. Psychotherapy has been a stepchild, one of several stepchildren of the psychic disciplines.

Mr. Weihofen: Psychotherapy—but therapy in general?

Mr. Lipson: I'm sorry, I ought to distinguish. As an adjunct of the criminal process, therapy has been somewhat in disfavor. Therapy from the point of view of handicapped children, what the Soviets call the science of defectology, on the other hand, is well supported.

Now there's been discussion of the Soviet Union as flexible in the sentencing process. Certain types of flexibility are built in, and yet a salient part of the discussions on the new criminal legislation over the last two or three years has been "the menu theory," as I've called it, where the criminal law is regarded as two columns with offenses on the left-hand column and the number of years on the right-hand column, the implicit premise being that a man before he commits a crime, is going to look up the law and find out what he stands to lose. If we take alcoholism, for example, the statistics on the association of alcoholism with certain types of offenses, while very rudimentary, seem to suggest that alcoholism is a much more common feature of breaches of the peace in the Soviet system than it is here, and yet the criminal penalties for criminal acts committed in a state of intoxication have been made far more severe rather than less, as a result of recent legislation. I suppose the notion is that a man who is about to get drunk will first take a look at the criminal code and decide that he'd better not!

Judge Martin: Let me make a comment on the penalties we're talking about here. In 1917 they abolished the death penalty entirely but they finally placed it back for certain heinous crimes and crimes against the state. In 1928 the maximum penalty for murder was ten years and the

minimum was six months. They found that was a little rough so they reduced it in 1936 to a maximum for murder of eight years and a minimum of one day. Other penalties were: rape, maximum, five years; larceny from the person, three months maximum; larceny from the state, *eight years!*

Mr. Weihofen: That raises an interesting question because we in this country, on the other hand, have the most ferocious penal penalties of any civilized country in the world! Now which is better? Any comment?

Dr. Cromwell: This presents a real psychiatric problem. Some people would like to see criminals treated as mental patients and believe that sentences should be indeterminate until the offenders are rehabilitated. I'd like to hear you lawyers react to that.

Mr. Weihofen: Professor Fahr said something about that in connection with the sexual psychopath law, which is perhaps the extreme example of substituting treatment for penalties, and yet there's something questionable, isn't there, about locking a man up until he recovers from a mental disorder that's hard even to diagnose. (I gather that sexual psychopathy is a category invented by legislators and not by psychiatrists, by the way.)

Dr. Cromwell: Yes, it's a hard law to administer with fairness to the individual and with a sense of justice.

Mr. Weihofen: This raises the kind of question that is rather central to the distinction Judge Martin emphasized between our system and a totalitarian one; namely, the conflict of interest in protecting the individual against arbitrary interferences with his life and with his liberty and, on the other hand, protecting society. What do you do with the so-called sexual psychopaths? As I said, this is not a medical category, but after all there do seem to be people who have committed at least one crime and others whom we might think *will* commit a crime unless they're caught first. But aren't you going pretty far in looking a man in the eye and saying, "This fellow is going to commit rape if we don't lock him up for life!" How about that? Mr. Fahr?

Mr. Fahr: I don't want to go on record as being the only expert on sex here, but I am dissatisfied with the sexual psychopath act, which seems to have come up as a kind of tackling dummy for everybody. Everybody agrees that it's a good idea; in fact, the Iowa legislature passed it unanimously in both houses and it was signed the very next day by the governor. But some of the difficulties are these: To begin with, we don't require in Iowa, as apparently they do in the Soviet Union, that a qualified psychiatrist testify. It's enough here that any licensed M.D. testify; and I think, with all respect to the medical profession, that there are specialists and that we ought to draw on them when we can. Of course,

oftentimes they're not available. For another thing, we provide in our sexual psychopath act for trial by jury, where the accused requests that he may have trial by jury. If you want my frank opinion, the trouble with trial by jury in many of these cases is that if the testimony is really technical in nature, there is a question whether the jury can, in fact, appreciate the nature of the evidence. Most jurors have not studied psychology or psychiatry very extensively.

Then, assuming that the man is sent away, there are problems in insuring that he is discharged. It seems to me that it puts the psychiatrist in charge of the instiution to which he is sent in an intolerable position. On the one hand, he may be unable to do anything for the man concerned. (Most of the offenders, in fact, all of them in Iowa so far as I know, have been, as the doctors say, "males," but we might call them men.) Whether the psychiatrist can help the man or not, he doesn't want to keep him indefinitely because our fundamental philosophy is against what amounts to a form of imprisonment. On the other hand, as a practical matter, the psychiatrist hesitates to discharge the patient as "cured" because that may bounce back against him in perhaps the not-so-distant future.

Dr. Cromwell: This is a strange inconsistency, too, in the Iowa law, for in all other areas of dealing with mental patients the psychiatrist is allowed to use some judgment. If in his opinion the patient is likely to cause society little damage, the doctor may discharge the patient; but in the case of the sexual psychopath, the doctor has to say very definitely that the person has recovered and will never perform such an act in the future which, of course, no psychiatrist can do.

Judge Martin: In connection with this act there was a point brought up questioning the American jury system. Personally, I am a great believer in the American jury system; and if we can have psychiatrists who will talk in language that people can understand, I think that the jury will take their opinion. There is a need for a common ground of communication between the psychiatrist who appears as a witness on our stand and the court and jury. I think communication is improving. Lawyers are understanding psychiatrists a little better, and I think the psychiatrists are understanding us a little better. I do feel that our greatest protection under our Anglo-American system is the jury system which gets back to the personal problems of a particular individual and American law looks at that person through the jury.

Mr. Linzer: I think that this discussion shouldn't overlook the fact of the tremendous inhumanity that we subject the mentally ill to in this country, and I'm not referring to a sexual psychopath. The most typical admission to a mental hospital in this country is by court order. Volun-

tary admissions and temporary admissions are rare; in fact some states prohibit voluntary admissions because they want the legal restriction. Committing persons by order of a psychiatrist seems tremendously threatened in many states at the present time. There is a fear of thought control, a fear of psychiatrists, and many states are having a tendency to revert back to trial by jury with respect to the mentally ill.

Mr. Weihofen: Is that so?

Mr. Linzer: Yes.

Mr. Weihofen: In what states? That is news to me. The whole trend up to now has been the other way so that practically every state had abolished trial by jury in this particular area. What states have gone back to it?

Mr. Linzer: New Jersey is one; California is another where minority groups are feeling that we should not trust in the hands of medical people the decision of whether a person is mentally ill. This, they feel, can only be done by a man's peers.

After discharge from a hospital, a mentally ill person who has been legally committed faces innumerable problems in finding re-employment. For example, when he reapplies for a driver's license, he's asked (in most states) if he's ever been a patient in a mental hospital; and if he answers in the affirmative, the examiner or the man who gives the driving test has a right to determine the state of the ex-patient's mental health, although we know the examiner is not a psychiatrist. Our therapy is pretty futile if the examiner has the right to say, "I don't believe that this man is well enough to drive a car, and I'll prohibit this man from getting gainful employment."

Dr. Howell: I'd like to emphasize what Mr. Linzer has just said by asking a rather nasty question. (And this ties in with the matter of prevention.) Recently in our outpatient clinic we had occasion to examine a man who came voluntarily to the hospital because he himself said, "I am going to kill someone and I need to have some help to avoid this if I possibly can." He told us the story which was behind his intent. He said he was going to kill a police officer in the suburban area of Detroit because the officer had broken his (the patient's) son's bow and arrow after the son had shot the arrow through the policeman's window and broken it. This man was carrying a gun, but he refused to come into the hospital and his wife would not file a petition for his commitment. All we knew how to do was to call the police officer and explain to him what we had heard the man say and ask him if there was any way in which this could be prevented from happening. Now this is the question which I would like to ask the panel. Is there any way in which we as an agency dealing with people who are in desperate trouble—in this case with a

man giving us the information that he was going to commit a crime—could have handled this so that the man could have been prevented from carrying out his intention? Apparently it is impossible, according to any of the test cases we have available in medical circles, to put such a man in custody to keep him from doing this kind of act.

Mr. Weihofen: Typically statutes will permit this. Dr. Howell is from Michigan. Michigan laws permit commitment on application of any police or health officer, as well as a relative or friend, if a doctor has certified that he's examined the man and is of the opinion that the man is dangerous to be allowed at large. That's true in just about every state.

Dr. Howell: But it doesn't work that way in practice.

Mr. Weihofen: Alas, many things do not work in practice. We have laws against murder, but we don't prevent all murders either. I don't know what we can do about that.

Mr. Buchmueller: A legal order is not going to abolish tragedy.

Mr. Weihofen: No, these cases do happen.

But to get back to some of these aspects of comparative law, may I raise a point that Mr. Berman brought out which I think is central to this comparative idea? You remember that he mentioned that we know very little about the social causes of mental illness, adding specifically that we know very little about the effects of suffering and stress, physical strain, and so forth. During World War II, some interesting facts came to light. People subjected to bombings in London did not break down; mental illness did not spread, rather it lessened. I've heard the case of the Dutch businessmen who, like businessmen elsewhere, had stomach ulcers before the war. During the occupation they were imprisoned by the Germans. I guess their diet was half sawdust and the prison regime was, to say the least, rigorous. Their stomach ulcers cleared up. After the war they went back home, business was good, and their ulcers reappeared.

Is there something here we ought to think about, in connection with the comparative idea? Is there, perhaps, something in the Russian emphasis on the growth of the state and the interests of society as against our interest in individualism? Does group identification give a person helpful support toward mental soundness, and so on?

Dr. Cromwell: I don't want to try to really answer that, but I will point out to you that when a patient is in the hospital, we do try to build group consciousness. A recent development in hospitals is the placing of great emphasis on group therapy. Patients under this regimen do develop a sense of identity and it does help according to the recovery statistics. Now whether group therapy is the cause of the improvement in the statistics or whether we just got a lot more interested in the patient and

used the group technique to further that interest, I don't know; but most of us do believe that a technique which enables a person to relate to a group is therapeutic and techniques which seem to keep the person from establishing wholesome group relationships are non-therapeutic.

Speaking of the stresses of war, I remember that in the Pacific theater there was a period of six months during which I was able to take careful notice of the records. While there were essentially the same number of troops in training in Australia and in battle in New Guinea, admissions to the hospitals for all neuropsychiatric conditions during the six months were considerably higher in Australia than in the battle area of New Guinea, yet life was far more rugged in New Guinea. (I was in New Guinea!)

Dr. Hinkle: Could I possibly say some words about this? This has been a central area of my interest for a long time.

Generally speaking, patterns of illness change and the types of human response change as people change from one situation to another. It would be incorrect to say that the British got healthier under bombing. Many of them were seriously damaged by the physical effects of this! When people have to stay in combat, whether under bombing or in the front line, it can be shown that the length of time a person can stand this (that is, the degree of health of the individual) is almost directly proportional to the length of time spent under these conditions. Among combat troops in the front lines, after about a hundred days of continuous combat, practically everyone is a casualty.

What happened, however, in Britain was that in the excitement of the bombing, people forgot many of their minor and petty complaints and were not so interested in them. The whole country was buoyed up by a sense of on-going events, and psychiatric casualties fell—except among the children who were evacuated to the country as they were not so interested in world events.

We found the same thing to be true among the Hungarians, that actually people who had been sick or in poor health in their situation in Hungary were buoyed up during the period of the revolution and the translation to this country; but as they began to adapt to life in this country, they became ill again.

And it was indeed true that the Dutch businessmen placed in German concentration camps did lose their peptic ulcers and their asthma and their ulcerative colitis while they were in the course of dying of malnutrition and great numbers of them were being gassed! So we can oversimplify these things—although I don't think it's fair to oversimplify.

Now another point I want to make has to do with the Soviet legal system. I was, during the period from 1954 to 1956, the executive officer

of a group of American scientists, from within and from outside the government, who investigated the Communist methods of interrogation and indoctrination used by the state police. In the course of this, I had ample opportunity to see the operation of the Soviet legal system as it moved against people defined as "enemies of the state"; and I also had the opportunity to talk at some length to people who carried out the operation of this system. I would hate to have this audience left with any notion that their legal system might be more benign than ours!

It is true that the rationalistic basis upon which it rests is a very fine one, indeed. As Professor Lipson pointed out, the capacity of these Communists to rationalize what they do, to always have a very high, very fine motive for every act and to leave in abeyance questions of contradiction has been one of the strengths of this system.

I might mention a few things that we saw. One of their legal principles was that arrests should be carried out without disturbing the populace; and it was for this reason that they customarily picked people up in the middle of the night without warning. Another principle was that the examining magistrate should have the opportunity to sit down in peace and seclusion with the accused and find out from him about his crimes. This was to prevent the magistrate from being distracted or prejudiced by the presence of lawyers or friends of the prisoner. So the procedure was to take the man off and lock him up in total isolation and question him like this, often without sleep or rest for weeks on end, until he signed a deposition which the police magistrate believed was the crime he (the prisoner) had committed in the first place.

You gentlemen have been speaking of individualization. I think had this man had the right to have a lawyer with him, to have this proceeding go on in public, to have had even a little sleep, he might have been better off.

The question of considering the background of the individual rather than the act he supposedly committed can also turn out to have some unusual consequences. For if a person happened to have been on the wrong side of some person or functionary in the Communist party, or if a person were a relative of someone who had been in the Tsarist army, or, possibly, in the 1950's to be a Jew, the fact that he might be a member of such a group was taken into consideration in evaluating his criminality. What he might or might not have done seemed to have little or nothing to do with it. So individualization in this setting hasn't always worked to benefit the individual.

Furthermore, in terms of sentencing, individualization seems to work out the same way. The sentencing would be carried out more or less by

agreement among the officers of the state—the magistrate, the state prosecutor, and the judge, with the appointed defense attorney chiming in—and the amount varied anywhere from nothing to death or else the accused was sentenced to a period of useful re-education and labor in a camp in the Arctic regions of the Soviet Union.

So I think that we have to qualify our admiration for this system, at least, I assure you, mine would be somewhat qualified.

Mr. Fahr: I would like to chime in and agree with Dr. Hinkle to this extent. If I were being defended in a criminal case in this country, knowing that the machinery of law enforcement and investigation is large and extensive and that the enforcement of the law (in most communities, at least) is in the hands of professionals, persons who devote their time to the prosecution of crimes, I would feel that this was a heavy adversary. If I also believed that my attorney were a man of low standing in the community because in general attorneys drew very little water in my community, and if I believed that that attorney was not going to fight for me with every ethical and legal resource which he had available, I doubt that my mental health would be very strong. I doubt that it would be as strong as it would be if I lived in a system where I believed that in spite of the size, the magnitude, the efficiency, and the resources of the state, I had defending me a person who would take most of my worries on his shoulders and who would be aided by a system of law in which, for example, confessions not voluntarily made could not be used against me, and, finally, a person who would not get together with the county attorney and the judge and agree what ought to be done to me.

I think we have underemphasized, perhaps, some of the advantages which are built into the adversary system, the advantage, for instance, of feeling that somebody at least is sticking up for you, and that it's not just everybody being kindly and fatherly and sending you off to the Arctic Circle for your own good! Here's a fellow who will do his best to get you out even though it looks as though you did what they said you did. I don't know a thing about psychotherapy, but I know which system I'd rather be defended under, and I suppose that might affect my mental health!

Mr. Weihofen: I think in fairness to Professor Berman it is proper to say that the dispassionate discussion that he gave us wasn't necessarily to imply that he felt that the Russian system was more benign than our own. I also think it's proper at this time to give Professor Berman a last word here by way of any rebuttal that he feels impelled to make.

Mr. Berman: I said to Professor Lipson during the intermission just before the panel discussion that I noted the wolves assembling and that

they were getting ready to devour me; and he replied, "Oh, I don't think you'll be eaten by wolves, although you may be nipped to death by rabbits!"

I do feel that I have been *chased* to further thoughts and research by this tremendously stimulating discussion. I will say that so far from wholeheartedly swallowing the Russian system or considering it benign, I consider indeed that the Russian system, and I tried to bring that out, is quite ruthless. It is an educational and parental system which seeks to guide and train and, as I mentioned, where there is political opposition suspected, then legality itself and law as an instrument of training and guidance disappear.

Law as an instrument of training and guidance is by no means necessarily benign, nor am I entirely sympathetic with some of the ideas that go along with individualization, or even with increased responsibility of psychiatrists in criminal law where there are not judicial controls. My point is really quite a different one and I won't recapitulate it; but I will say that I think that the notion which the authors of this institute voiced in their invitation to me and which was manifest in this program is that law serves a function—I call it a therapeutic function—in any society. That the law has psychological consequences upon the people is a concept that lawyers have not written much about, very little indeed, one that psychiatrists have not dealt with, and one which I think warrants an enormous amount of research and thought on the part of all of us.

As for comparative studies, it seems to me that any comparative study is most difficult, requiring as it does intensive investigation, not only of the legal system of the other country, but of its whole social, economic, historical, and religious background. I believe that what one can learn from a consideration of the Russian system is quite different from some of the implications that have been made. It's not a question of accepting the Russian system, or rejecting it, at this stage in our discussion, but of trying to understand it for what perspective it can give us in the handling of our own problems; and I suppose this was the reason that the Russian system was brought into the picture here today.

Again I say, I have felt richly rewarded by this panel discussion and appreciated it very much.

INTRODUCTION TO CHAPTER VI

Dr. Singleton: Although my function this afternoon is simply to introduce our speaker and the moderator, I'm going to steal an extra couple of minutes to do something which I feel very strongly should be done. I've heard expressed several times today comments about what a stimulating thing this whole conference has been. Bringing together this many distinguished people to consider a topic so interdisciplinary in scope is a sizeable achievement. Thanks have been tendered to the associations underwriting some of the expenses of this conference; thanks have been extended to the Preventive Psychiatry Committee here at the University; but no thanks have been tendered to the particular person who is responsible for this. And this should be done. Thanks should go to the person with the vision necessary to see this whole purpose, to sense the points of contact of all our disciplines, the person able, willing, with the strength, the patience, to push this thing through, to get this many people here, to get support for such a project, to iron out the thousand and one details that had to be done before this conference could meet. We all owe a great deal to Dr. Ralph Ojemann.

Dr. Ojemann: Thank you very much, Mr. Chairman. It's very generous of you. I want to again express my appreciation to all the people who helped because one can't run an enterprise like this, of course, without a great deal of help.

Dr. Singleton: Our speaker this afternoon represents once again the international flavor of the conference. His training in medicine was secured at McGill; his psychiatric training at the University of Toronto and at New York University. From 1949 until 1956 he was chief of the Children's Service at the University of Michigan and associate professor of psychiatry. In 1956 he accepted the position of director of the Hawthorn Center, a newly established facility for treatment, training, and research in child psychiatry under the Department of Mental Health in the state of Michigan. He has served as consultant to many social agencies and schools and is much concerned with integration of child psychiatry, social work, and education on a broad community level.

Dr. Rabinovitch has a tremendous knowledge of and interest in education. As a matter of fact, he is serving as a member of a school board and so is face to face with some of the day-to-day problems of schools and school administration. I'm sure that we're going to enjoy his talk a great deal, and I know that he has brought a great deal for us.

CHAPTER VI

Recent Studies in the Genetic Aspects of Mental Illness and Implications for Prevention

RALPH D. RABINOVITCH, M.D.

[The summary which follows was prepared from Dr. Rabinovitch's oral presentation in order to furnish a background for the panel discussion. Editor.]

Since the turn of the century genetics and psychiatry have tended to develop along generally divergent, or at best parallel, courses with only a few glances in each other's direction. The pendulum now seems to be swinging back as interest is turning to biochemical and physiological considerations. Two factors are stimulating the increased interest in things biological in psychiatry: first, the general recognition of the limitations of a unitary psychodynamic approach, both in research and in clinical work; secondly, the emergence of new techniques of biological and biochemical assessment of individual differences.

To the worker concerned with preventive psychiatry, the obvious first question is: What causes the disturbance that we wish to prevent? In much of our literature there has been the naive assumption that altering the relationships and experiences to which children are exposed will provide the total solution. This is delusional and has led to much frustration and disappointment in the whole child guidance movement. Experiences operate on an organism with its own capacities to respond. The job at hand is to define individual differences and from these definitions find ways to meet varying needs among our children.

How much do we really know about innate determinance in the child? Much less than we should if preventive efforts are to be fruitful. We are aware of a few conditions, such as Huntington's chorea, that are clearly determined by a single gene. Much more common in human inheritance is the polygenic pattern, or the combined action of more than one gene. Controlled experiments to study polygenic mechanisms are, of course, not possible in humans, and we must use extreme caution in extrapolating from animals to humans. [Dr. Rabinovitch then discussed animal studies of several workers in this area.] The results of animal studies give

us several points which may have possible ultimate application to children. One is in relation to the interaction between genetic and environmental variability. The animals who show the greatest variability at the beginning of a learning test also show the greatest variability at the end; in other words, the relative amount of variance due to heredity was the same in the beginning as at the end of the test. Secondly, the time at which an experience occurs in the developing animal is often critical in affecting behavior. Thirdly, the learning process can in certain cases result in a decrease in the expression of genetic differences in behavior while, in other cases, learning may actually magnify differences.

One of the practical problems which such information brings up is the early recognition of basic genetic traits. Recognizing the fact that some traits find late expression, the question may be raised that there are really only a small number of important hereditary traits and that these may be expressed in different ways at different ages. By correlating studies, it should be possible to find out if the early traits are related to later ones and then identify them when they first occur. Now this would be fine if we could apply this to our children, but unfortunately, it's not so easy as it sounds. Animal studies depend on selective breeding and on the measurement of pure strains. Since we can't do selective breeding with humans, our techniques are limited in direct application. Some methods that are available are twin studies and studies of new-born infants. [Dr. Rabinovitch then discussed some research studies on new-born infants.]

Any consideration of the application of genetics to preventive psychiatry must include two approaches: first, the possibility of a eugenics program; secondly, the question of what kind of environment may induce optimum mental growth and adjustment in an individual of a particular genetic make-up. [Dr. Rabinovitch then discussed "an approach to diagnosis" involving "basic operational dimensions" of personality which is being used at the Hawthorn Center. He described the following dimensions: "neurologic integration," "intellectual functioning and intellectual potential," "clarity of ego boundaries," and "capacity for depth relationships." He then gave several examples of a preventive application using this kind of approach.]

Most geneticists are averse to giving advice to individuals regarding marriage and the advisability of having children. They know that they are simply too far away from sufficient information to set up any kind of intelligent eugenics program. There is still very little known about the inheritance of behavioral variations and some of the major diseases. Since psychiatry cannot come close to defining mental disease in biologic terms, although good beginnings have been made in relation to

schizophrenia, it is impossible to even conjecture that certain behavioral traits must be eliminated from the race while others are to be preferred. In fact, as our geneticists point out to us, in any complex society variability of individuals is not only desirable but necessary in order for a culture to survive.

DISCUSSION

Moderator: Dr. Rainer

Panel members: Dr. Barnes, Dr. Blatz, Dr. Lovett Doust, Dr. Reed, Dr. Shaw, Dr. Sontag

Dr. Singleton: Thank you very much, Dr. Rabinovitch, for a very stimulating talk on an extremely difficult subject. It is my pleasure now to introduce Dr. John Rainer, who will moderate the panel discussing this excellent paper. Dr. Rainer is an associate research scientist in medical genetics at the New York State Psychiatric Institute and research associate in the Department of Psychiatry at Columbia University.

Dr. Rainer: In arranging this remarkably comprehensive program that we've had yesterday and today, the committee apparently decided the age-old question of which came first, the chicken or the egg, in favor of the chicken! I refer to the presentations and discussions we've had concerning the prenatal, childhood and developmental, adult and societal vicissitudes of the human organism. But the cycle of life brings us again to the egg, the zygote, the science of genetics, and to what they can contribute to the theory and practice of preventive psychiatry.

As a psychiatrist who does not work as consistently and as thoroughly with children as does Dr. Rabinovitch, I want to express my admiration at hearing his clear, imaginative, understanding and critical presentation of the contribution of the genetic viewpoint to thinking and to clinical activity in psychiatry, particularly in child psychiatry.

Dr. Rabinovitch pointed out that the study of the genetic contribution to normal and disordered behavior or to the predisposition to specific mental illness is subject to methodological limitations. As Dr. Lovett Doust said yesterday, we cannot observe placental blood flow in human beings; likewise we have not been able to observe chromosomal aberrations in man, let alone genic mutations. This is one methodological limitation at present. Furthermore, as Dr. Rabinovitch said, we cannot do controlled breeding experiments in man. So we are left with a two-fold problem. First, we must attempt to define (as Dr. Rabinovitch has done so admirably) the behavioral characteristics or the specific disorders with which we are concerned. We must put down what we consider to

be the basic dimensions of personality in some way so that these dimensions can be applied along some such lines as Dr. Rabinovitch indicated. When this is done, then we may turn to the best techniques available at present in the field of genetics to ascertain the contribution of genic dynamics to these categories. At present we do have a valid and increasingly precise statistical demography in genetic techniques which, when properly applied, will yield presumptive evidence for or against a significant genetic factor. These include twin studies, family studies, and population studies.

In defining the characteristics of disorders with which we work, we start with the most clear-cut ones, and we may certainly use as models such things as Huntington's chorea, phenylpyruvic idiocy, and so on. We then enlist the help of psychology, psychoanalysis, anthropology, physiology, biochemistry, and all the allied disciplines to provide accurate description and delineation of other patterns, other traits and syndromes. We then search for the contribution of hereditary factors to these categories and there, of course, we must be careful to adhere to what can be clearly established. We must separate our hypotheses, our goals, and our hopes from what we know as fact.

Dr. Reed: I might make a few remarks about genetics in general. After Mendel published his work pointing out that you got simple arithmetic ratios when you dealt with single gene traits, everybody expected that all the problems in genetics would turn out to be equally simple—that all you had to do was find the right recessive genes and you had the answer. This, of course, is not so. With the plants and animals that were worked upon very soon after the Mendelian ratios were discovered, it was found that some traits didn't depend upon single gene pairs for their expression. Many of these traits were, of course, pathological, such as particular deficiencies in the genes' chemistry which, in miosis, behaved in the fashion that a single recessive does. However, the traits that were important in animal and plant improvement, generally speaking, did not at all behave in simple Mendelian fashion.

Professor E. M. East was the first to demonstrate multiple factor inheritance, and more recently this has been termed polygenic. Polygenic heredity means that several pairs of genes are concerned with a trait. Perhaps the most important point to remember here is that if you have a great number of pairs of genes concerned with any trait—such as the amount of protein in corn, or egg production of chickens, or normal intelligence in people—that each of these many genes must have a reasonably small effect. (Otherwise, if you added it together, you'd get a product like the national debt!) There would be, then, many environ-

mental factors which would have a greater effect than one of these single polygenes concerned with traits which are of economic importance—whether it be egg yield or normal intelligence in people.

So if we're expecting that we'll soon be able to classify mental diseases and normal intelligence in simple genetic patterns of dominant and recessive genes, we will certainly fail because it's just not that simple. It has long been known that any important normal characteristic is the result of the interaction of the group of polygenes concerned *and* the group of environmental factors concerned and that from individual to individual both the polygenes and the environmental factors will vary.

With mental defects of the simple sort—that is, traits in which a single gene pair is involved, such as Huntington's chorea or juvenile amaurotic idiocy (these are analagous with the gene pairs Mendel worked with in peas)—you can generally find some anatomical correlation. With Huntington's chorea, for instance, the cells of the caudate nucleus break down and an actual hole is left which can be found in histological sections and can even be filled with plastic material to demonstrate the previous existence of the hole. With other things like phenylketonuria, the biochemistry becomes very clear with subsequent research. These are examples of very large genetic deficiencies in the sense that a single gene can cause a process which results in something very obvious and very damaging to the individual, whereas the normal course of evolution depends upon the accumulation of many small genes which improve efficiency or ability of the individual.

Now when we come to the matter of the mental disorders, we should not expect here that we would find some cells or some parts of the brain to be missing. These disorders are obviously associated with relationships among all the cells of the brain in a highly complicated way, perhaps in an electrical manner or something of that sort, so we cannot expect to find either the simple absence of cells or very simple chemical differences for complicated things such as mental disorders. Also, we should be careful not to restrict ourselves to any simple genetic theory to account for mental disorders. There are several schizophrenias, undoubtedly, and they probably rest on different genetic bases. The sane thing to do is to try to see first simply if there is transmission from generation to generation and then from extended pedigree material try to figure out whether some of them do have simple Mendelian kinds of behavior or not.

I might mention also something about eugenics. I'm not sure that all the people in human genetics are quite as uninterested in eugenics as Dr. Rabinovitch stated. They are certainly uninterested in it in the old sense; that is, in the idea that you could simply by passing a law solve

all of the problems of humanity. There is a certain acceptance of eugenic behavior in the population as a whole, even when specific laws are absent. A study in Michigan, for instance, showed that the normal siblings of Huntington's chorea themselves had fewer children than other people in their same social class. In other words, the siblings' motivation against the disease was sufficient so that they cut down their birthrate without having a law or without ever having had a conversation with a geneticist. In other words, there's much intuitive eugenics that goes on all of the time and, in fact, if the gene is deleterious, it eliminates itself at a considerable rate. The reproduction of individuals with mental disorders, for instance, is lower than that of the population as a whole. Our approach to a eugenic program is not that of just trying to list genes which should be eradicated—because most people understand which ones they would like to eradicate already and behave more or less in that way—but rather in facilitating people to behave as they would like to in regard to their genes.

There's still not enough opportunity for people to understand what little genetics is known about various disabilities of one kind or another or about traits which are desirable; so there is need for increased genetic counseling which can be given to couples who have had a child with some gross anomaly and just want to know what the likelihood of a repetition of this difficulty might be. Effective genetic counseling would probably be more or less dysgenic in these cases because the fears of the parents are greater than the statistics would warrant, so that such counseling might lead to an increase in the frequency of carriers rather than a decrease. However, society is able to bear the expense of a certain number of children with anomalies; and the favorable experience that parents get, say, in 97 cases out of a hundred where the child was normal may very well offset the three cases out of a hundred, say, where parents lost in the lottery. So, it is likely that the eugenic program of the future will not be laid out in a legalistic fashion but will be carried on through the medical profession, through genetic counseling and by getting people to understand their biology and what the likelihood might be of having healthy progeny, whatever action they decide to take. With increasing information about human genetics, it is likely that some advances will be made as time goes on.

Dr. Rainer: The problem of eugenics, which Dr. Rabinovitch brought up, is certainly a touchy one at times; but I think that an approach such as the one Dr. Reed suggests can remove much of the stigma which unfortunately became attached to it. There are other eugenic influences that go on whether we want them to or not through population changes caused by social mobility, migration, and the like. I was thinking during

Dr. Hinkle's presentation last night that perhaps the increase in social mobility that we see, which would lead to less assortative mating or inbreeding in the broader sense, might produce more creative workers or more happy executives than some of the ones he described!

Dr. Sontag: I am naturally quite interested in the work of Margaret Fries[1] and in her activity level studies. I've known Dr. Fries's evolution of that subject since she started many years ago, and it seems to me that a simple appraisal of the way the child reacts to his environment (which is really what she is saying in terms of passivity, hyperactivity, etc.) offers the preventive psychiatrist, the mental hygienist, the educator, or the pediatrician some beginning concept of ways in which he may function to help that child adapt effectively to his environment. And, of course, we must accept the adequate adaptation of the individual to his environment as one essential aspect of mental health—if not the major aspect of mental health.

There are, of course, many aspects of the mother's physiology, her genetics, her pregnancy, and so on, which might well have a role in determining the activity level of the fetus. The location of the placenta, for example, may determine the amount of the blood supply to the fetus; the emotional state of the mother may be a factor influencing fetal activity, etc.

Nobody really knows, despite Margaret Fries's assumption, whether congenital activity level, or activity pattern, is pretty much the activity pattern for life; but I am convinced that in a major number of instances, the congenital activity pattern does carry over for a considerable period of time. Actually this conference has stimulated me to carry on some work I should have done a long time ago. We have at Fels Research Institute the fetal activity records of some 104 women taken over a period of 15 years, and almost all of the children of those 104 women came into our nursery school and were rated on activity, aggressive behavior, and dependency variables and other behavioral characteristics. Not only that, they were given Binet tests from the time they were 30 months old up until they were 12, and then they were given Wechsler-Bellevue tests. Some of them consistently went up and some of them consistently went down and some of them didn't go in either direction. I could well postulate that the aggressive, environmental-controlled, environmental-attacked individuals would be the problem-solving, competitive people who had the I.Q.'s which rose and that the passive ones

---

[1] See Fries, M., and P. Woolf, "Some hypotheses on the role of the congenital activity type in personality development," *Psychoanalytic Study of the Child* 8:48-62, 1953.

would turn out to be the withdrawing ones, and there must be other correlates there.

I discussed a paper a week ago at the American Orthopsychiatric Association on the relationship of a variety of things during the prenatal period to the activity level of the fetus. One of the things that was arrived at was that mothers with certain kinds of personalities, essentially the "acting-out" variety as against the passive, non-aggressive sort), were the women who had fetuses which were hyperactive and babies which were more active at birth. Unfortunately, this just isn't true. We happen to have some 32 mothers who've borne more than one child and usually with these mothers we'll find that the two, three, four, or more, children will differ tremendously in terms of fetal activity level and also in neonatal activity level. I picked out a number of families, for example, in which one child was in the fifth percentile of activity level (meaning it was an extremely passive child with very little movement); and the next child was in the 93rd or 96th percentile (an extremely active infant). Nor, may I say, was there any obvious environmental factor to account for this sort of thing, and we had pretty good observation of the environment, too. I *have* to give genetics—gene determination, that is—a great deal of role in these situations.

Now with regard to toxic drugs, which I talked vehemently about way back in 1937, and then again when the sulfa drugs came in, I said that if these sulfas knock out enzymes in the *bacteria* and prevent their growth, it would seem obvious that the headaches, the malaise, and so on, that people get probably came from the sulfa knocking out the enzyme systems in the *brain cells*. So what happens to the brain cells of the fetus or the genes that are being carried? Maybe we're going to find differences in behavior in our offspring as a result of some of these drugs. My study is not conclusive, of course. I was never able to demonstrate with people who did have such drugs that there was a demonstrable effect upon behavior, either in the fetus at the time or in the infant at the time it was born. But I think we should maintain great reticence about this matter of determinants in the field of behavior.

I wish it were a simple matter of mothers' personalities because this would give the geneticists a real tool to work with if you could just say, "Now look, lady, you have such and such a personality and this is the kind of husband for you and that's that!" (Fortunately, we can't say things quite so conclusively.)

Dr. Rainer: It is certainly not simple. I think of a distinction which I always had to make in studying mathematics or logic between something which is necessary and something which is sufficient for a given condi-

tion. I think we may find out that while neither certain genes nor certain prenatal or postnatal circumstances are sufficient to create a condition, all of them may, in some degree, be necessary.

Dr. Lovett Doust: The thing that intrigues me about genetics is its intangibility. It has to be inferred from evidence, and we have to assume, since it's now a science in its own right, that this is a valid inference. But this may lead us to an attitude of "laissez-faire," to saying, "Well, it's genetically determined, and that's that." And in some people this results in an attitude of hopelessness, insofar as research work and the future are concerned. Perhaps this is why, in the remote past of genetics, the hand may well have been overplayed. It supplied us with an explanation, of course, but over and over again in the recent history of medicine, this unknown or *assumed* genetic cause has been replaced by other causes, which very often turn out to be environmental ones.

Epilepsy, you know, until a very few years ago used to be thought of as a genetically determined disease. The Scandinavian worker, Alström, was the man who drove the first effective nail into the coffin of the conservative traditional theory that epilepsy is an inherited disease. His paper[2] is now a classic. However, no alternative explanation for epilepsy was available, and therefore we went on thinking of genetic cause. But then Penfield of Montreal showed the unequivocal mechanical cause of temporal lobe epilepsy in the vast majority of cases and enabled us to change our thinking about the etiology of temporal lobe epilepsy from the day of those discoveries.

I think we can say the same about a good many other diseases. Schizophrenia is assumed to be genetically determined; and, in some cases, there is no doubt of inheritance. Dr. Rabinovitch spoke of Eliot Slater's work on this in Britain. But as Dr. Reed suggested, there are many schizophrenias; and it is probable that only one group of these many varieties is genetically determined. There are many factors other than genetic which come together environmentally to predispose individuals to schizophrenia.

Moreover, when we think of the schizophrenic form of reaction as having a unitary cause, we tend to bypass the good thinking of people who talk about pseudo-inheritance, as Flanders Dunbar[3] does; that is, the apparent genetic predetermination which actually comes about because of identification patterns in the environment. Hence, the saying that a schizophrenic woman is going to bear a schizophrenic child, (or

---

[2] C. H. Alström, "A study of epilepsy in its clinical, social and genetic aspects," *Acta Psychiatrica*, supplement no. 63, Copenhagen, 1950.

[3] See Flanders Dunbar, *Mind and Body: Psychosomatic Medicine* (New York: Random House, 1955).

the implication that there is a genetic equation which can be solved insofar as the expectancy that she will bear such a child is concerned) is, I think, going beyond the facts. With a change in the environment of the child, the schizophrenia might be obviated. The corollary to this, that given a suitable environment, the child *would* develop schizophrenia is, of course, always with us.

One of the fascinating quirks, I think, in recent years in genetics has been the attitude of the biochemists, which Dr. Rabinovitch referred to. The lethal attitude which used to descend on all our shoulders when we thought about genetics and inevitability seems to be changing. There is, for example, the suggestion that the gene may well be the enzyme, that there may be an identity between these two things. Enzyme systems can themselves be influenced; and if we can influence enzymes, can we not thus influence genetic penetrance and passages? We can influence predetermination if this is considered on genetic lines. There is a whole fascinating field here, biochemical genetics, which is just beginning to open up.

Now there is another angle to this, too, and one which might well be considered in any evaluation of the relationship of genetics to psychiatry and that is in the field of sex. Dr. Rabinovitch hasn't referred to this, except to make one remark on chromosomes, but sex and psychiatry are intertwined; we can't get away from sex in ordinary life and we certainly can't in psychiatry. Murray Barr of the University of Western Ontario has been doing a tremendous amount of work on the sexing of cells. (This refers to the situation of the polar satellites, whether these are present and contain chromatin, or whether they're absent, which very largely determines whether the cell is a male cell or a female cell.) These findings, seemingly incidental at first, began to have application, and a welter of research is being carried on in this area.

There was a recent very interesting paper by Ferguson-Smith of Glasgow, in which he sampled the male defectives of three Scottish institutions. He showed that there was actually an incidence of one per cent of the male defectives in Scotland who looked male but whose every cell was female. Ferguson-Smith regards chromatin-positive Kleinfelter's syndrome (or, as he prefers to name the condition, "primary microorchidism") as the most important single known cause of mental retardation in the male [M. A. Ferguson-Smith, *Lancet* I:928, 1958; *Lancet* I:219, 1959].[4] Also, along this line of research, Prader and his European co-workers [A. Prader, J. Schneider, J. M. Frances, and W. Züblin; *Lan-*

---

[4] Appreciation is expressed to Dr. Lovett Doust for supplementary comments and references which he supplied for this section. Editor.

cet I:968, 1958] found eight cases of the syndrome in a series of 336 male defectives surveyed.

The incidence of chromatin-positive males (i.e., genetic females in the anatomical guise of males) in the general population has been variously estimated as between 1:1,000 [Prader et al., cited above] and 1:10,000 [M. A. Ferguson-Smith, B. Lennox, W. S. Mack, and J. S. S. Stewart; *Lancet* II:167, 1957]. These disturbingly high incidence rates in healthy "normal" people have recently been further confirmed by one of Murray Barr's former Canadian students, K. L. Moore, who employed the buccal smear technique to sex several thousand new-born babies shortly after their birth in the Winnipeg General Hospital. He found *no* evidence of sex reversal among the anatomically female babies, but he did find some among the anatomically male children, the incidence of false maleness being .03 per cent [K. L. Moore, *Lancet* I:217, 1959]. The possible intrauterine causes of this condition, including the chances of an endocrine imbalance of androgen-estrogen factors in the maternal blood stream, are complex [see leading article, *Lancet* I:237, 1959].

That sex reversal in general and chromatin-positive Kleinfelter's syndrome in particular carry grave implications for psychiatry seems certain. In any event, studies such as these have led to a tremendous amount of speculation. How many of us vaunted males are actually hiding our true sexuality behind our penises? Can one grow up and maintain the sexual attitude of a sex not truly one's own? What's going to happen to the wrongly sexed "male" children as they grow up? There's some interesting research waiting to be done in the future, a bit of longitudinal research which could lead to fascinating consequences.

I'd like to ask Dr. Rabinovitch just one question, if I may. I was very much interested in his attempt in his clinic to outline the situation of the child in terms of the dimensions that he showed us on the slide during his talk. You will recall that he referred to "neurologic integration, intellectual functioning and intellectual potential, clarity of ego boundaries, and capacity for depth relationships," and he told us how difficult it is to evaluate a child in terms of these dimensions, how difficult it is to introduce quantification into areas in which research is only just beginning to be done. But he did tell us that on the basis of this approach to diagnosis, he is now beginning to tell these parents what to do. Now it seems to me he's putting the cart before the horse. I'd like to know what is actually being done in his clinic. Is he starting this research? Is he supplied with reliable valid scores? Has he found out the meaning of these scores; and, on the basis of this, does he now have an application which can legitimately be revealed in conclusions to parents because if he has, I think this is tremendously valuable.

Dr. Rainer: Thank you, Dr. Lovett Doust. This sex chromatin technique is certainly exciting. We have just studied a pair of twins, identical male twins, one of whom has been consistently and overtly homosexual, the other, consistently and overtly heterosexual. We had the chromatin sexual determination done. Unfortunately, they both turned out to be males, chromatin-wise! So far I don't think there have been any reports of homosexuality being correlated with the female chromatin, but there may be more definitive techniques coming along.

Dr. Barnes: As a clinical psychiatrist, I found myself in great sympathy with Dr. Rabinovitch and I must express a feeling of great admiration in regard to his presentation. It would be difficult for me to make very many critical comments. The chief comments I would make are perhaps supplementary, things he might have said if he had continued further.

I am so glad that he brought out the importance of clinical psychiatrists recognizing the existence of genetic effects. In many ways this meeting has been an "eye-opener" for me and very worthwhile in clarifying my own convictions that we have, perhaps, been led astray too far by the supposition that things genetically determined were fixed and showed no changes. Perhaps we have shied away from that into an excessive emphasis upon environment because we tended to be a little too discouraged about genetically determined factors.

Actually, as Dr. Rabinovitch brought out, we come into the world with a certain genetic constitution. But people do change; they can be trained and they can be helped. Human beings are very adaptable, very flexible. We have many properties for compensation. Even with a genetic defect, an individual can be helped to compensate for the defect or for the failure to function normally.

There's another thing that has been most enlightening to me, and this is a little more awareness that genetically determined traits do not end at birth; that is, we are probably influenced all through our life by various things that come into play at various times. The phenomenon of anticipation, which is seen in certain neurological diseases, for example, is of this nature; so I'm not sure that we can assume that because a child was born with a trait of "irritableness" (assuming this to be genetic in nature) that this would continue indefinitely. It might well alter as other factors come into play later, even on a genetic basis.

Perhaps the thing I have been most grateful for in Dr. Rabinovitch's presentation has been his emphasis upon the importance of thinking in terms of profiles in regard to classification of people. In many ways we have been most dissatisfied (and I think almost any child psychiatrist will bear me out) with the diagnoses we have had to put up with. We've all been unhappy about this, and yet there doesn't seem to be much that

we can do. We have had to try to correlate "Adjustment Reaction of infancy, childhood, and adolescence"—whatever that may mean—with "habit-disorder," "conduct disorder," and "neurotic traits"—whatever these mean. All this is most unsatisfactory, because we have been aware that the descriptions did not meet the children we saw. These diagnostic "labels" were oversimplified. They did not include the very important factor of the child-parent interaction, and so on. It is almost impossible to make a diagnosis of a child unless you take into account the effect of his parents upon him and their reaction to him.

Another point that was brought out by Dr. Rabinovitch was this—that a "refrigerator mother" may have become so by beating her head against a "refrigerator child." We can realize that this may become a very discouraging kind of thing. You can't assume that the child was autistic because the mother was cold. It could well be the reverse, and, I'm quite sure, often is.

I think that the concept of profiles has a lot of promise. It is much more satisfactory than trying to compare "my" schizophrenia with "your" schizophrenia, "my" adjustment reaction with "your" adjustment reaction. I acknowledge that it might be just about as difficult to compare "my" ego boundaries with "yours," but in these instances, there's a possibility of breaking them down into still finer traits which, in turn, might well have chemical or physiological correlates. This could, in turn, lead us back to the genetic factors with which we began.

From a clinical point of view, it is, I think, very helpful in terms of prevention to think of the child as having certain traits or characteristics with which he needs help. This help can be furnished through the mechanism of one or another of many corrective emotional experiences, of which various psychiatric techniques constitute a few, but of which the ordinary routine activities of society and the activity of the parents probably constitute the great majority.

Once again, I'd like to express my appreciation for what I think has been an excellent and stimulating presentation.

Dr. Rainer: I think it was clear from Dr. Rabinovitch's paper and is becoming clear in the discussion that attention to genetics instead of closing the door on accurate observation of the interactional patterns of development seems to be stimulating more precise classification, more interest in precisely what goes on.

Dr. Blatz: Looking at Dr. Rabinovitch's slide, I was reminded of a story about two ministers of the gospel, each of a different persuasion and each a little jealous of the other and a little scornful and a little critical. Finally after some time they decided that they'd better become a little more tolerant of each other; and towards the end of a reconcilia-

tion, one of them said to the other, "Well, I suppose the best thing is for you to interpret God's Word in your way, and I will in His!"

Here we all are, all working in this field of the examination of children, and I am amazed again (perhaps not really amazed, but rather feeling a little glad) that all of us are so different in the terms that we use and the frames of reference within which we work.

Now, as far as genetics is concerned, I have no contribution to make because in Toronto we minimize genetics because we're interested in the application of our work; and, as far as genetics is concerned—they've had it! The result is that we are very prone there, because of our bias, to accept very few behavior-patterned children as genetically determined. We feel that perhaps if we were ever to define *fundamental capacity*, that would be one, and that is about the only one that we accept. The others differ genetically only in degree, which leads me then to a statement that Dr. Rabinovitch made and to expose one of his inconsistencies (which we all have). If he's going to make a profile—as we're all trying to do—then why doesn't he get rid of this word schizophrenia altogether? We never use it at the Institute [for Child Study] because, as he has pointed out, you can't define it; and, so far as we're concerned, it's a continuum.

Also, if we take all of the possible objective measures of personality and the abnormality we call illness and put them down on a piece of paper and then go into the clinic, as I have done now in the adult clinic for a period of four years to check on work we're doing with children, we do not find a single adult in the outpatient clinic in whom we cannot check almost every one of these objective measures. There isn't such a thing as a mentally ill adult who has only one congerie of so-called symptoms. (I'm excluding those that are frankly structural, the Huntington's chorea, and so on.) In other words, the individual who comes in that we used to diagnose as a paranoic also has certain symptoms (to be sure, some of them slight) that we could interpret as another diagnosis. And so we've gotten rid of these terms. After all, as schizophrenia bucked dementia praecox out of the nosological road, why shouldn't we dump schizophrenia out, and we have up there.

We are concerned with the fact that there is such a thing as genetics. That would be absurd for us to deny. But, we ask ourselves, how should we look upon it? We look at it in two ways: First of all, the general public, in particular the parent who comes in with a child, invariably has an exalted opinion of the influence of genetics. There's hardly a child that comes in but the parents are not perfectly convinced that this condition, whatever it is, is inherited. (At least that's true in Canada. I don't know whether it's true down here or not!) One has to take that into considera-

tion in one's treatment. Of course, it's always possible if you have one of the parents there to say, "Isn't it lucky that all children have *two* parents?" So that way you can blame or praise one or the other!

Now the second and more important aspect of genetics (and this is the one that every clinical psychologist or psychiatrist is greatly concerned with) is this: What does the reversibility or irreversibility of some of these factors have to do with mental illness? For example, is there a fundamental lack of capacity in the child? Is the child retarded, and not one of these with an emotional block? Is the basic (indigenous, if you like) mental deficiency irreversible? In some cases we're quite convinced that here's an individual that, no matter what we do, will never get beyond grade 4, or grade 6, or whatever it happens to be. I'm quite sure that's true across the continent. I know we make mistakes, but nevertheless we have that opinion that you can at some stage of the game make a more or less accurate diagnosis of how far this child is going to go academically. And we can say then that perhaps there's little reason for trying to push a child beyond that. It is wiser to turn into other channels. But that does not mean that a child is necessarily mentally ill. However, there is a factor, namely, fundamental capacity, that we feel is of genetic origin and also irreversible.

Now are there others? We are of the opinion that the factors which make up personality are *not* irreversible, that it is possible, if we can find the factors, to control them and then change them.

Mention has been made of the importance of the intra-uterine lining, the prenatal and postnatal periods, the first six months, second six months, etc. We have been conducting a series of investigations on our longitudinal children on emancipation and the influence on the child of the mother's willingness to permit him to get out from under the immature-dependent-security pattern (that's one of our phrases, and it's illustrative, in a sense). We find that there can be a change at the age of two, at the age of six, at twelve and on up even to 21. In other words, when we make a determination that this is a possessive mother or a possessive family, it may be true for a period but it need not necessarily be true for the whole twenty years of an individual's growing up.

You may ask—what are the factors to be employed? What are these determinants? We think of two things which illustrate, or at least modify, the growth of an individual towards whatever goal he wants to ask for. These are *maturation* and *learning*. Maturation is certainly another of these genetic factors. (It has taken the place, you know, of the instinct of thirty-odd years ago.) It's a term brought into prominence by Olson and Hughes in Michigan. This is a significant contribution because we

know of its effects; we know about reading readiness; we know about training in bladder control, and so on, that there is an optimum time and that sort of thing. Maturation goes on for at least twenty years, perhaps more; and, because we have no way of studying it except through observing growth and development, by definition it is determined genetically, and we can't do anything to change it. Perhaps we can halt it, perhaps not; we can't increase it.

Now these two, maturation and learning, function in a parallel, at least in time. What interferes with that to bring about what we call mental illness? We think two factors, *fixation* and *regression*. We name mental illness as a function of one or both of these. What is the evidence for that? We vary a little, but here's the kind of evidence that perhaps might illustrate why we're thinking this way.

We take an observation in the playroom or in the field of a group of three-years-olds in nursery school and describe the behavior of those children. (We have various categories of description but that doesn't matter as we could use whatever terms you like.) And then we go to the Thistletown Hospital (for disturbed children) and take a group of children there, ages ten, eleven, and twelve, and examine them using the same categorization and the same observers. We find that aside from a little more vigor on the part of the bigger children that the description of these three-year-olds and the description of the twelve-year-olds are almost interchangeable. Also, we discovered that if we examine very carefully the behavior of two-, three-, and four-year-old children (quite aside from infants), which has been done and which we've just published, we find that there is every kind of behavior that later on in adults is going to be called abnormal, including sex behavior of all sorts.

If we can demonstrate that fixation and regression interfere with maturation and learning, we may then be able to introduce some factors in prevention. We say that the individual who refuses to accept the consequences of his behavior, starting, if you like, *in utero*, must develop certain avoidance reactions and these avoidance reactions are, fundamentally, fixation and regression. If a child growing up is forced into a situation to use one or more of these, instead of just learning, he's going to develop a mental illness. (That sounds awfully simple, but you see in Toronto we have to have it simple so that we can understand it ourselves!)

Dr. Rainer: I do want to have some discussion from the participants on the other side of the table, but I think first Dr. Rabinovitch would like to discuss the panel's comments.

Dr. Rabinovitch: First of all, the question was raised that we obviously

can't define too objectively these criteria, yet how can we advise parents? Well, we're physicians working in a psychiatric hospital—we're obliged to!

Some of our more statistically oriented people who want shortcuts seem to be pushing us into objectifying our clinical procedures and I'm not sure we should. I'm a little resistive to it myself. I really think it doesn't take too many years of experience to recognize an autistic child whom the mother brings into your office rocking, who is mute, who is a well-formed child but clearly relates with an entire environment on a sensual level—that is, he chews objects rather than plays with them; he sits alone and doesn't relate. The biochemists haven't yet been able to help us do a test that will show just what is lacking physiologically, or perhaps biochemically, in the child. But we know perfectly well that this is an autistic child, whose mother needs a great deal of help in reaching him. We try to tell her how to do this, and that's how we operate.

The same thing applies to the child who has impulse control difficulties. We can tell from our Wechsler findings; we can tell from the "scatter," from drawings, from play patterns, and the history, of course, many of the signs of encephalopathy in children and so advise parents not to overstimulate and what not.

I would say that if we in medicine waited to have a final answer for everything before we attempted therapy, many patients would die! Much of our work is still empirical, and it will remain so until you biochemists come to our rescue!

That doesn't mean that we shouldn't *try* to objectify. One of the things that bothers me, however, is that some people who are lazy clinically, who don't want to sit down and really get to know children, who find it difficult to work with very disturbed children, are the ones who are most anxious to have the shortcuts. They would love to have us hand them a blueprint, or something on which you could press a button and know exactly what goes on with the child. (I hope we never reach that point!) There is no substitute for clinical experience with parents and with children and for learning to handle them empathically.

Now another question which Dr. Blatz raised relates to diagnosis. I am firmly of the belief, and I think the trend, certainly in American psychiatry, is moving in the direction of much more precise definitions as to what we're dealing with. We're reaching a point where we're not satisfied with clichés, with terms of overprotection and underprotection, and so on. We are very anxious to be able to define specifically as much as possible exactly what we're dealing with, not only in terms of the clinical diagnosis in the child, but in terms of the quality of the relationships as well.

As for the use of the term schizophrenia, the follow-up studies of Lauretta Bender and Leo Kanner, both approaching it from very different points of view, plus our own follow-up studies, all indicate that childhood schizophrenia is adult schizophrenia in children. It is the same disease. Therefore, it is terribly important for us to recognize the disease if we're ever to find an answer or to do research with schizophrenic children. Don't call them atypical children or "different" children if it's shown, and the research is clear, that these are schizophrenics. Let's study them. It's much easier to study young children than adults; the life experience is much shorter, the total study needed is much shorter and we can filter out, or try to understand the relative importance of, influences in children much more easily than with an adult.

There are other very important reasons for being specific about diagnosis, reasons that I feel very strongly about. One can still treat the whole child and know what one is dealing with. There's nothing wrong with being as precise as we can in our scientific approach to children we deal with (and their families) even though we still respect them as whole children. And I hope the term, "the whole child," never again is used for it is a rationalization for ignorance, very often. Many people say, "Let's not worry about the diagnosis, let's not worry about the biological capacities in this child, let's not worry about anything so specific as his brain—let's worry about the *whole* child!"

Well, the whole child has to be understood. If we worried about the whole patient in medicine, we'd never diagnose diabetes, and we'd never know that you have to use insulin selectively. The good physician, who stresses the patient-physician relationship, still studies his patient, treats him as a whole human being, but still tries to be specific. If we don't try to be specific, we'll never increase our knowledge from where we are today.

Let's take the problem of reading, for example. We have a great deal of discussion about reading, but the average teacher thinks reading problems are all due to emotional blocking. And somebody's given this to teachers. Everything is due to emotional blocking today. But we're seeing a lot of alexic children; we're seeing a lot of aphasic children. We strongly suspect (following Critchley's work and that of others) that there is a parietal lobe syndrome we're dealing with and that we have to separate out very clearly the child who is emotionally blocked and *won't* read from the child who has a neurological problem that doesn't enable him to deal with symbols.

The last example I'd like to give is a very important one. I have personally seen a great many mothers with hyperactive, brain-injured children with developmental problems of one type or another who have

been to clinics where the people have not been diagnostic and where very often it's been assumed they're overprotective mothers. They've been *beaten* virtually psychologically by a worker with a bias who has said, "You're overprotecting your child. Let him grow up!" And they do let the child grow up and he falls apart because with his specific problem he needs more mothering and more dependency at that period. And a specific diagnosis not being made has often presented a very real burden to parents.

The parents of a schizophrenic child have really suffered because we are *not* in a position now to say that there is a schizophrenogenic mother. We don't *know* that. (It could be that we're exaggerating the genetic aspect although I firmly doubt this on the basis of Kallman's work.) I don't believe that there are two schizophrenias in childhood. There's just one. There's a *pseudo*-schizophrenic child, who is a neurotic child who looks schizophrenic, but he's not, and we're learning to differentiate these. But there is the truly schizophrenic child, and many times people with the bias have assumed and presented in their treatment of parents the concept that they, the parents, are responsible for this condition. A great many parents with problems which at this point we don't know the real cause of have been made to feel a terrible burden of guilt. It has amounted, in my opinion, to professional sadism sometimes.

These are my reasons for feeling the great importance of specificity in diagnosis and for developing our treatment programs on the basis of these clinical realities.

Dr. Rainer: I think anyone who has been in contact with the field will realize how exciting this discussion is. We'll turn it open now to participants on both sides of the table who want to add to it.

Mrs. Fields: As a rank outsider and very much of a layman, I'm curious to know if in all your studies in genetics and otherwise whether you psychiatrists and researchers always completely ignore the father, or are they considered merely environmental? I never heard fathers mentioned once!

Dr. Rabinovitch: That's a good question. It's true we've neglected fathers. We've been very much concerned with intra-uterine factors in this discussion which, of course, limits us, and our interest in infants has been very much in the one-to-one mothering experience. As we talk of older children, however, past the first year, into the second, and beyond, I think the father's role becomes infinitely more important. I would bring to your attention Dr. Ackerman's book[5] on family dynamics, in

---

[5] Nathan W. Ackerman, *Psychodynamics of Family Life* (New York: Basic Books, Inc., 1958).

which, echoing your thought, he points out that we're no longer justified in treating the patient alone, but that every patient must be seen as a member of a total family—a child with his father and mother, and our adult patients have to be understood as husbands and wives and parents. Ackerman points in the direction of a total family kind of therapy which he hopes will evolve.

Dr. Rainer: Certainly genetically fathers are as important as mothers!

Dr. Cromwell: May I ask a loaded question? At this stage of genetic development, I wonder what the panel would have to say about eugenic sterilization.

Dr. Reed: I think of sterilization as merely being a way of not having any more children—not as a serious or extraordinary eugenic tool. Most families stop having children some time or another, and I will say that sterilization is perhaps the most convenient way to do so. In fact, if you really don't want to have any more children, that is the only way in which you can be absolutely certain that you won't!

However, I don't think that much more can be done in the legal aspects of it if that's what you're thinking about. Generally speaking, at state institutions if a person can be returned to the community and it would benefit this person to have sterilization, it can usually be done now; so there isn't a great deal more to be done in the legalistic aspect of it.

Obviously, if a person who is producing children with some abnormality stops having offspring, then he cannot pass on any defective gene, and here again, sterilization is the certain way of stopping reproduction. Generally speaking, while there isn't a tremendously large demand for it in the legal aspect, there is a large demand for it in the voluntary aspect, which isn't being satisfied today by physicians. There are many mothers who absolutely do not want to take a reasonably large chance of having another defective child—or perhaps they don't want to have any more children of any kind—and they do find it still difficult to find physicians who will willingly carry out the operation for them or on the husband, if he is the one who is asking for it.

Roster of Participants

ABIMERHI, MIGUEL, M.D.
Resident
Psychopathic Hospital
State University of Iowa

ALIKADI, SUZAN, M.D.
Instructor of Psychiatry
Psychopathic Hospital
State University of Iowa

ANDERSON, PAUL E.
Executive Secretary
Cerro Gordo County
Mental Health Center
Mason City, Iowa

BARNES, MILFORD E., JR., M.D.
Chief, Child Psychiatry
Psychopathic Hospital
State University of Iowa

BARNES, MILFORD E., SR., M.D.
Professor Emeritus
Hygiene and Preventive Medicine
State University of Iowa

BARNHART, RICHARD, PH.D.
Assistant Superintendent
Cedar Rapids Public Schools
Cedar Rapids, Iowa

BARRETT, BARBARA C.
Psychiatric Social Worker
Psychopathic Hospital
State University of Iowa

BARTHOLOW, GEORGE W., M.D.
Resident
Psychopathic Hospital
State University of Iowa

BECKWITH, JEAN
Social Worker
Veterans Administration Hospital
Iowa City

BELL, RICHARD Q., PH.D.
Laboratory of Psychology
National Institute of
Mental Health
Bethesda, Maryland

BERMAN, HAROLD J., LL.B.
Professor of Law
Harvard Law School
Cambridge, Massachusetts

BLATZ, WILLIAM E., M.B., PH.D.
Director
Institute of Child Study
University of Toronto
Toronto, Ontario

BLYTH, DAVID D., PH.D.
Associate Director
Children's Mental Health Center
Columbus, Ohio

BOCKOVEN, WILLIAM, M.D.
Instructor of Psychiatry
Psychopathic Hospital
State University of Iowa

BOYD, SUSAN
Writer
Preventive Psychiatry Research
Program
State University of Iowa

BOYD, WILLARD L., LL.M.
Associate Professor
College of Law
State University of Iowa

BROWN, LOUIS F.
Psychologist
Cedar Rapids School District
Cedar Rapids, Iowa

BROWN, MURIEL W., PH.D.
Parent Education Specialist
Department of Health, Education
and Welfare
Washington, D.C.

BUCHMUELLER, A. D.
Executive Director
Child Study Association of America
New York City

BUSSE, GERALDINE, R.N.
Nursing Consultant
Public Health Division
State Department of Health
Des Moines, Iowa

CANINE, PAMELA
Office Assistant in Research
Preventive Psychiatry Research
Program
State University of Iowa

CAOILI, CESAR M., M.D.
Resident
Psychopathic Hospital
State University of Iowa

CHEVILLE, RICHARD
Research Assistant
Preventive Psychiatry Research Program
State University of Iowa

CHURCHILL, RAY
Principal
Harrison Elementary School
Cedar Rapids, Iowa

CLEWELL, GERALDINE, PH.D.
Associate Professor
Home Economics
State University of Iowa

CONN, GLADYS V.
Psychiatric Social Worker
Des Moines County Mental Health Center
Des Moines, Iowa

CRAWFORD, W. MCCULLOCH, M.D.
Psychiatrist
Des Moines County Mental Health Center
Burlington, Iowa

CROMWELL, J. O., M.D.
Director of Mental Institutions
Board of Control
Des Moines, Iowa

DAVIS, HARVEY H., PH.D.
Provost
State University of Iowa

DELMARE, MAXINE
Research Associate
Child Welfare Research Station
State University of Iowa

EASON, JAMES
Psychiatric Social Worker
Psychopathic Hospital
State University of Iowa

FAGER, ROBERT E., PH.D.
Assistant Professor of Clinical Psychology
Psychopathic Hospital
State University of Iowa

FAHR, SAMUEL, LL.B.
Professor
College of Law
State University of Iowa

FIELD, MRS. H. P.
Mental Health Committee
Winneshiek County Mental Health Center
Decorah, Iowa

FILLEY, JOHN P., M.D.
Department of Mental Health
North Carolina University
Chapel Hill, North Carolina

FORE, M. OPAL
Executive Director
Iowa Mental Health Authority
Des Moines, Iowa

FREE, M. D.
Director, Professional Education and Research
Mental Health Institute
Independence, Iowa

GONZALEZ, RAMON, M.D.
Resident
Psychopathic Hospital
State University of Iowa

GOTTLIEB, J. S., M.D.
Director
Lafayette Clinic
Detroit, Michigan

GRAMS, ARMIN, PH.D.
Associate Professor
Institute of Child Development and Welfare
University of Minnesota
Minneapolis, Minnesota

HAHN, DONALD
Principal
McKinley Junior High School
Cedar Rapids, Iowa

HALE, MARK, PH.D.
Director
School of Social Work
State University of Iowa

HANCHER, VIRGIL M., J.D., LL.D.
President
State University of Iowa

HARTUP, WILLARD, PH.D.
Assistant Professor
Child Welfare Research Station
State University of Iowa

HAWKINS, ALICE
Research Associate
Child Welfare Research Station
State University of Iowa

HENDERSON, JANE
Psychiatric Social Worker
Psychopathic Hospital
State University of Iowa

HERRENKOHL, ROY C.
Research Associate
Grant Foundation
New York City

HINKLE, LAWRENCE E., JR., M.D.
Department of Medicine
The New York Hospital-Cornell Medical Center
New York City

HOEGEN, MRS. TOM
Observer
Preventive Psychiatry Research Program
Cedar Rapids, Iowa

HOLLYER, STEWART G.
Executive Secretary
Marshall County Mental Health Center
Marshalltown, Iowa

HOPPIN, MARGERY
Research Associate
Child Welfare Research Station
State University of Iowa

HOROWITZ, FRANCES
Child Welfare Research Station
State University of Iowa

HOWELL, ROGER WILLIAM, M.D.
Lafayette Clinic
Detroit, Michigan

HOYT, KENNETH, PH.D.
Associate Professor
College of Education
State University of Iowa

HUBBELL, ANN E.
Social Worker
State Department of Public Health
Des Moines, Iowa

HUSTON, PAUL, M.D., PH.D.
Head, Department of Psychiatry
Director, Psychopathic Hospital
State University of Iowa

ITZIN, FRANK H.
Associate Professor
School of Social Work
State University of Iowa

JACOBSEN, SYLVELLA
Educational Psychologist and Director of Special Education
Iowa City Public Schools

JOHNSON, HILDEGARDE, PH.D.
Professor
Home Economics
Iowa State University
Ames, Iowa

KELTING, FREDA
Teacher (Special)
Cedar Rapids Public Schools
Cedar Rapids, Iowa

KLOEMPKEN, LESLIE
Principal
Roosevelt Junior High School
Cedar Rapids, Iowa

KORSON, S. M., M.D.
Superintendent
Mental Health Institute
Independence, Iowa

LACEY, JOHN I., PH.D.
Chairman, Department of Psychophysiology-Neurophysiology
Fels Research Institute
Yellow Springs, Ohio

LADD, MASON, S.J.D.,
Dean
College of Law
State University of Iowa

LARSON, ARNOLD F.
Chief, Social Work Service
Veterans Administration Hospital
Iowa City

LASS, ABBIE
Teacher (Mentally Retarded)
Cedar Rapids Public Schools
Cedar Rapids, Iowa

LAY, MADELEINE
Chief Consultant
Community Mental Health Board
New York City

LINZER, EDWARD
Director of Education Services
National Association for Mental Health, Inc.
New York City

LIPSON, LEON, LL.B.
Professor
Yale Law School
New Haven, Connecticut

LOEHWING, WALTER F., PH.D.
Dean
Graduate College
State University of Iowa

LOVELL, LLOYD, PH.D.
Assistant Professor
Child Welfare Research Station
State University of Iowa

LOVETT DOUST, JOHN W., M.B.
Associate Professor of Psychiatry
University of Toronto
Toronto, Ontario

LOW, HOWARD, PH.D.
Instructor of Psychiatry
College of Medicine
State University of Iowa

LUCKEY, ELEANORE, PH.D.
Assistant Professor
Child Welfare Research Station
State University of Iowa

MAIER, ROBERT F.
Psychologist
Lee County Mental Health Center
Keokuk, Iowa

MANVILLE, MRS. JOHN
Observer
Preventive Psychiatry Research Program
Cedar Rapids, Iowa

MARTIN, KENT, LL.B.
Judge
Fifteenth Judicial District Court
Atlantic, Iowa

MAST, CLIFFORD M.
Board Member
National Association for Mental Health
Davenport, Iowa

MCCANDLESS, BOYD, PH.D.
Director
Child Welfare Research Station
State University of Iowa

MCCORKLE, FRANCES R.
Veterans Administration Hospital
Iowa City

MCDAVID, JOHN W., PH.D.
Assistant Professor
Child Welfare Research Station
State University of Iowa

MCKAY, MRS. GORDON
Observer
Preventive Psychiatry Research Program
Cedar Rapids, Iowa

MEREDITH, HOWARD, PH.D.
Professor
Child Welfare Research Station
State University of Iowa

METZGER, BOYD
Research Assistant
Preventive Psychiatry Research Program
State University of Iowa

MILLER, EDWARD R., M.D.
Clinical Director
Mental Health Institute
Mt. Pleasant, Iowa

MILLER, MRS. EDWARD R.
Mt. Pleasant, Iowa

MOELLER, WILLIAM, M.D.
Associate in Psychiatry
Psychopathic Hospital
State University of Iowa

MUEHL, LOIS
Writer
Preventive Psychiatry Research Program
State University of Iowa

Muehl, Siegmar, Ph.D.
Assistant Professor
Child Welfare Research Station
State University of Iowa

Muthard, John E., Ph.D.
Assistant Professor
College of Education
State University of Iowa

Muuss, Gertrude
Iowa City, Iowa

Muuss, Rolf E., Ph.D.
Research Assistant Professor
Child Welfare Research Station
State University of Iowa

Muuss, Rudolf, Ph.D.
Pastor
Stedesand, Germany

Muuss, Theodora
Teacher of English
Stedesand, Germany

Myers, Marvin S., Ph.D.
Psychologist
Cedar Rapids Public Schools
Cedar Rapids, Iowa

Nelson, Norman, M.D.
Dean, College of Medicine
Director, University Hospitals
State University of Iowa

Norris, Albert, M.D.
Assistant Professor of Psychiatry
Psychopathic Hospital
State University of Iowa

Norton, Clyde D., Ph.D.
Associate Professor of Psychology
Director, Testing Bureau
Cornell College
Mt. Vernon, Iowa

Norton, Mrs. Dewitt
Instructor
Cornell College
Mt. Vernon, Iowa

Ojemann, Ralph H., Ph.D.
Professor of Educational Psychology
and Parent and Family Life
Education
Director, Preventive Psychiatry
Research Program
State University of Iowa

Orer, A. I., M.D.
Resident
Psychopathic Hospital
State University of Iowa

Ozarin, Lucy D., M.D.
Chief, Mental Health Services
Department of Health,
Education and Welfare
Kansas City, Missouri

Palmer, Elizabeth
Director, Children's Division
State Board of Control
Des Moines, Iowa

Palumbo, Mary A., R.N.
Cedar Rapids, Iowa

Parris, Waverly V.
School Social Worker
Cedar Rapids Public Schools
Cedar Rapids, Iowa

Peisner, Earl, Ph.D.
Assistant Professor of Psychology
Dean of Men
Grinnell College
Grinnell, Iowa

Pepernik, Max C., M.D.
Assistant Professor of Psychiatry
Psychopathic Hospital
State University of Iowa

Petersen, Mrs. Marlo D.
Member, Mental Health Committee
Scott County Mental Health Center
Eldridge, Iowa

Peterson, E. T., Ph.D.
Dean
College of Education
State University of Iowa

Phillips, Edgar B., M.D.
Executive Director
American Child Guidance
Foundation
Boston, Massachusetts

Pierce-Jones, John, Ph.D.
Associate Professor of Educational
Psychology
Research Associate, Laboratory of
Human Behavior
University of Texas
Austin, Texas

Powell, Robert M., M.D.
Psychiatrist and Director
Cerro Gordo County Mental Health Center
Mason City, Iowa

Rabin, Herbert M., Ph.D.
Supervising Psychologist
Marshall County Mental Health Center
Marshalltown, Iowa

Rabinovitch, Ralph D., M.D.
Director
Hawthorn Center
Northville, Michigan

Rainer, John D., M.D.
Research Associate in Psychiatry
College of Physicians and Surgeons
Columbia University
New York City

Rankin, Paul T., Ph.D.
Assistant Superintendent
Detroit Public Schools
Detroit, Michigan

Rankin, Mrs. Paul
Detroit, Michigan

Reed, Sheldon C., Ph.D.
Director
Dight Institute for Human Genetics
University of Minnesota
Minneapolis, Minnesota

Reid, Mrs. Hale
Observer
Preventive Psychiatry Research Program
Cedar Rapids, Iowa

Roberts, Mary Belle
Consultant, Psychiatric Social Work
Department of Health, Education and Welfare
Kansas City, Missouri

Robinson, Eleanor L., Ph.D.
Assistant Professor of Child Development
Institute of Child Development and Welfare
Minneapolis, Minnesota

Robinson, Paula
Executive Director
Iowa Association for Mental Health
Des Moines, Iowa

Schreiner, Margaret L.
Secretary to Dr. Ojemann
Child Welfare Research Station
State University of Iowa

Shagass, Charles, M.D.
Associate Professor of Psychiatry
Psychopathic Hospital
State University of Iowa

Shaw, Charles, M.D.
Child Psychiatrist
Hawthorn Center
Northville, Michigan

Singh, Har, M.D.
Resident
Psychopathic Hospital
State University of Iowa

Singleton, Carlton, Ph.D.
Assistant Professor
College of Education
State University of Iowa

Sloan, Roy C., M.D.
Assistant Superintendent
Mental Health Institute
Mt. Pleasant, Iowa

Smith, Bette
Executive Director, YWCA
State University of Iowa

Smith, M. Brewster, Ph.D.
Professor of Psychology
University of California
Berkeley, California

Snider, Bill, Ph.D.
Research Assistant Professor
Child Welfare Research Station
State University of Iowa

Snider, Maris
Office Assistant in Research
Preventive Psychiatry Research Program
State University of Iowa

Sontag, L. W., M.D.
Director
Fels Research Institute
Yellow Springs, Ohio

SPAULDING, ROBERT W.
Consultant, Psychiatric Social Work
Iowa Mental Health Authority
Des Moines, Iowa

STINGLEN, ANN
Secretary and Case Aide
St. Luke's Hospital
Cedar Rapids, Iowa

STOMEL, JOSEPH, M.D.
Chief Psychiatrist
Men's Reformatory
Anamosa, Iowa

STROUD, JAMES B., PH.D.
Professor
College of Education
State University of Iowa

SWIM, WILLIAM E.
Principal
Polk Elementary School
Cedar Rapids, Iowa

SWITZER, ROBERT E., M.D.
Director, Child Psychiatry Service
Menninger Foundation
Topeka, Kansas

TASCH, RUTH J., PH.D.
Special Lecturer
College of Adult Education
University of Wichita
Wichita, Kansas

TAYLOR, JOHN R.
Supervisor, Psychological Services
State Services for Crippled Children
Iowa City

TAYLOR, MRS. ROBERT
Observer
Preventive Psychiatry Research Program
Cedar Rapids, Iowa

TOP, FRANKLIN H., M.D.
Head, Department of Hygiene and Preventive Medicine
College of Medicine
State University of Iowa

TUTTLE, ESTHER
Editor
Preventive Psychiatry Research Program
State University of Iowa

UPDEGRAFF, RUTH, PH.D.
Professor
Child Welfare Research Station
State University of Iowa

VAN KREVELEN, ALICE, PH.D.
Associate Professor of Psychology
Grinnell College
Grinnell, Iowa

VORNBROCK, RICHARD P.
Chief, Social Service
Psychopathic Hospital
State University of Iowa

WEIHOFEN, HENRY, J.S.D.
Professor of Law
University of New Mexico
Albuquerque, New Mexico

WELLS, ALBERTA
Research Associate
Child Welfare Research Station
State University of Iowa

WHITING, ALICE
Case Worker
St. Luke's Hospital
Cedar Rapids, Iowa

WHITNEY, CHARLOTTE
Girls' Adviser
Ames High School
Ames, Iowa

WURTZ, CONRAD R., PH.D.
Psychologist
Cedar Rapids Public Schools
Cedar Rapids, Iowa

YOUTZ, MAY P.
Associate Professor Emeritus
Child Welfare Research Station
State University of Iowa

The following experimental teachers in the Preventive Psychiatry Research Program were present at the Institute:

Cedar Rapids Public Schools
Cedar Rapids, Iowa

Lucile Dunn
Franklin Junior High

Margaret Hult
Kenwood

Mildred Hutchins
Washington High School

Marian Kennedy
Kenwood

Leona Knock
Grant Wood

Georgiana Knurr
Grant Wood

Florence Leiter
Washington High School

Mary Jean Palmer
Kenwood

Lois Jeanne Sackett
Grant Wood

Tipton Community School
Tipton, Iowa

Kathryn Gruenwald
Martha Jane Henry
Jean Westphal