Biometric Research in the
United States, Europe and Israel

Joseph Zubin
Professor Medical Psychology, Columbia University, and Principal Research Scientist, Biometrics Research, N.Y. State Department of Mental Hygiene.

I. Introduction

On January 16, 1956, the Department of Mental Hygiene, through its commissioner, Dr. Paul H. Hoch, invited me to assume the direction of the newly created unit designated as Biometrics Research, whose purpose was to introduce biometric research methods into the state hospital system. With this mandate I began to survey the on-going research in this area and after an extensive review of the work going on in various centers in the United States, concluded that two important features characterize these efforts: 1) statistical surveys and cohort studies of admission, residence, release and mortality rate; 2) biometric assays of individual patients by means of objective measures. The first feature has a long history going back to the days of Pinel and Esquirol who conducted some of the earliest surveys of this kind. The second aspect of biometric research began only recently with attempts to obtain objective measures of the characteristics and behavior of mental patients at the time of their admission, during the course of their illness and on follow-up, and with accompanying retrospective studies of their premorbid characteristics. Two trends have emerged in the latter type of study. The first is primarily an attempt to use the available information for prognosis, while the second seeks this information for the purpose of rehabilitation. The new Biometrics Research Unit initiated studies in both of these areas and also began intensive examination of actuarial data dealing with the outcome of mental illness.

At the end of the first year of its existence, Biometrics Research had initiated biometric assays of the mentally ill with respect to premorbid state, morbid state, course of illness, and follow-up. The premorbid period was studied by case-history methods. A survey of the literature on premorbid prognostic indicators yielded a list of several hundred prognostic traits and information on these traits was collected for a group of 300 patients admitted to the Brooklyn State Hospital. The morbid characteristics of the patients were examined by means of experimental techniques which sampled their behavior at time of admission in terms of physiological, sensory, perceptual, psychomotor and conceptual functioning; and a focused interview, employing reinforcement techniques was developed to measure liability of affect. For the evaluation of the course of the illness, special rating scales were designed to record objectively the observations of the various members of the therapeutic team, e.g. the psychiatrist, psychologist, social worker, occupational therapist, nurse and ward attendant. Finally, evaluation of the outcome of illness was undertaken with specially devised rating scales based on sociological and social work methods.
It soon became apparent that many of the attempts of Biometrics Research to provide objective measurements of patient characteristics and behavior were hampered by the meagre number of suitable techniques. In order to enlarge the repertoire of methods and techniques for biometric work, application was made to the Commonwealth Fund for a fellowship to travel to the various centers of research in psychiatry, psychology and social work so as to survey biometric methods in use in the countries of Europe. This trip was begun on June 1st 1957 and ended October 3rd 1957. The following countries were visited: England, Finland, Norway, Sweden, Denmark, Germany, Italy, Spain, Portugal, Belgium, Switzerland, France and Israel. Details of the visits to each of these countries will now be presented followed by a summary of the comparative status of biometrics research.

England

The most striking thing about English psychiatry is the "open hospital". One may characterize these hospitals as operating on the "revolving door" principle in which the hospitals are like subway cars during the rush-hour, full at every observation but not with the same people. Upon inquiry, I found that the change in attitude from the custodial point of view to the "revolving door" was attributable to two important factors: the introduction of socialized medicine, and the somatic therapies. The introduction of socialized medicine brought each person closer to medical and hospital care of all kinds, and with the increased availability of medical care, mental illness began to be dealt with on a par with other types of disease. Secondly, the somatic treatments brought about an attitude toward the mental disorders which placed them on the same level as other types of disorders. Whether these methods were effective or not, they did serve as a placebo for the family. When a patient receives treatment, the best that is available, the family tends to regard the patient as likely to recover even if he does not show immediate improvement in his behavior. Consequently, mental patients who had received treatment were regarded as on the mend and were taken home for convalescence. Some of them remained home; others returned to the hospital.

A salient feature of British psychiatry is objectivity and close ties with experimental medicine. In contrast with the United States where the large group of psychoanalytically oriented psychiatrists and state hospital psychiatrists were until recently for the most part, out of contact with universities and research hospitals, English psychiatry has been closely tied to universities and to research hospitals. Basic research in biochemistry, physiology and experimental psychology is more likely to flourish under these conditions. More recently, too, sociological and epidemiological methods have been introduced to widen the scope of psychopathological research.

A good example of the range of research activities going on in England might be found at the Maudsley Hospital, which is organized along the lines of the New York State Psychiatric Institute. It is the only University School in England devoted to postgraduate education in psychiatry. It constitutes a postgraduate school in the University of London. It has the following departments: Psychiatry (Professor A. Lewis), Biochemistry (Professor H. Mc Ilwain), Clinical Neurophysiology (Dr. Denis Hill), Neuroendocrinology (Professor C.W. Harris), Neuropathology (Professor A. Meyer), and Psychology (Professor H.S. Eysenck).
The research in the department of psychiatry is concerned among others with the following problems: natural history of mental illness, including follow-up; rehabilitation through organization of an industrial hospital workshop and application of incentives; evaluation of insulin coma treatment; geriatric care; drugs. Some of the work in the department has special significance for Biometrics Research, for example, Dr. Lili Stein's follow-up studies of mental patients. One of the interesting questions we discussed was the cause of a recent dip in first admission rate for males aged 25-50, while the corresponding rate for females keeps on increasing. There is a possibility that men overseas who become mentally ill are not all counted, although males generally may nevertheless have a lower rate than females in England.

Shapiro, who is in charge both of the clinical service and of clinical research at the Maudsley, has been concerned with perceptual constancy and with the effect of rotated stimuli on the performance of copying.

Biochemical research is centered on tissue metabolism and on tryptophan metabolism. The department of clinical neurophysiology is studying temporal lobe function, the effects of temporal lobectomy, and personality and sleep. The department of neuroendocrinology has been studying hypothalamic stimulation and lesions of the amygdaloid nucleus. The department of neuropathology has been investigating temporal lobe epilepsy, leucotomy, and enzyme distribution among other things.

The department of psychology has been concerned with a systematic exploration of the dimensions of behavior proposed by Professor Eysenck, especially with reference to psychoticism, neuroticism, extraversion-introversion, drug effects, memory disorders, psychological effects of leucotomy, perceptual functioning of mental patients, conditioning of mental patients, and myographic studies of mental patients. Some of their current findings are: 1) resistance of schizophrenics to establishment of a set as evidenced by their anomalous responses to problems of the Inuchina type; 2) elimination of a habit by satiation, viz., stuttering or enuresis; and 3) failure of schizophrenics to show day-to-day improvement in reaction time as contrasted with normals, although they show transitory improvement during the course of a day.

An important feature of current research in psychology is the repeated measurement of various psychological functions. At least in the field of abnormal psychology, measurement, until recently, has been a one-shot affair, little or no attention having been paid to the effects of repetition or to the implications of changes with repetition. In many research procedures the patient performance must be compared under various conditions, so that it becomes necessary to investigate the effect of repetition per se. American psychologists too are beginning to devote attention to this problem.

Turning from the Maudsley, I should mention the work of Dr. Frieda Goldman-Eissler who is studying the variations in breathing during the interview. She has found that by increasing the gain in her recorder she can hear the breathing which accompanies speech. Breathing characteristics appear to be related to the content of speech.

Dr. Lionel Penrose, who heads the Galton Laboratory at University College, spent some time with me discussing his work on the problem of mental deficiency.
He is collaborating on biochemical studies of mental defectives which may lead to better classification and understanding.

When I visited the Wallingam Park Hospital to see its "open door" policy at work, I was shown around by an alcoholic patient who, though a repeater at the hospital, seemed to be quite a well-adjusted gentleman. There were some hallucinating patients, but they did not seem in need of any additional care. At the moment the hospital was suffering the consequences of being such a good home, for it was difficult to get the patients to leave. I was also shown a home for chronic patients, an old house in which about 20 male and female chronic live, taking care of both their house and of themselves. They are given certain duties and chores and seem to lead a quiet calm existence, a physician visiting them occasionally. The general feeling I carried away from this hospital is that a lot of good work is going on, including group therapy, but that there is no attempt at evaluation. It is taken on faith that what is done is good for the patient, and the need for verification is not recognized. An interesting phenomenon is that the trained nurses seem to do not only the work that is usually assigned to nurses but also occupational therapy, social work, etc. It is difficult to judge whether this represents a phase prior to the differentiation of hospital personnel, or whether it is due to some specific intent not to admit new types of specialties.

I also visited the Coulson Hospital which is quite similar to Wallingam Park. Dr. Freudenberg, the director, showed me graphs of male and female releases. There is an excess of females in the hospital, but the prognosis for males is much better, contrary to the trend in the U.S.A.

The general release rate in England is about 70%, but about 40% relapse. Because of this high relapse rate, "revolving door" is perhaps a more suitable term for British policy than "open door."

I visited Professor Oliver Zangwill's laboratory in Cambridge and found him a very astute and interesting research man. He has a biological orientation and seems to regard the brain-injured patient as akin to an animal "preparation" to be studied experimentally. He expressed an interest in our work on memory loss after ECT.

Dr. Leslie Wilkins and Dr. Lodge at the Home Office are both concerned with delinquency and its prognosis and they expressed interest in our work on prognosis in schizophrenia.

I also met Dr. J.M. Tanner, Senior Lecturer in Physiology at St. Thomas Hospital Medical School, University of London, and Secretary of the research committee of the Mental Health Research Fund. We discussed the problem of growth curves for physiological, sensory, perceptual, psychomotor and conceptual functions. He pointed out that the shapes of the curves are largely determined by the units used. Moreover, for some organs, much of the growth takes place in the intra-uterine period. Whether any psychological functions begin developing so early remains to be seen.
Finland

Professor Martti Kaila of the University Clinic, which is the oldest in the country, built in 1924, has gradually relaxed restraint so that nearly all the wards are open now. There is a considerable amount of shock therapy and drug therapy but Professor Kaila himself is most interested in psychotherapy. He blames alcoholism and juvenile delinquency on the decline of religious faith among the populace. Dr. Kaila believes that the new pension system for invalids will uncover many more mentally ill than now come to attention. He has published several epidemiological studies of mental disorder. As is the general custom in Europe, the clinic covers not only psychiatric cases, but also neurological and epileptic cases. There is a rather high incidence of multiple sclerosis in Finland, in keeping with the general gradient of higher incidence in the northern hemisphere, and investigations of this illness are in progress.

I visited a state hospital some 30 miles outside of Helsinki where Dr. Alivirta is the director and Dr. Hakola, formerly a student of Whitson and Bets at the Phipps Clinic, is the assistant. It is a very well run hospital. They have done 200 lobotomies but have now discarded this method. They use EOT and insulin but there is no research going on.

Dr. Martti Takala, an experimental and educational psychologist interested in perception, is at the Department of Psychology, Institute of Pedagogics, Jyväskylä. He has recently turned to the problem of alcoholism and its effects on psychological functioning. The problem of alcoholism is absorbing much of the interest of scientific research workers. Among them in the Finnish Foundation for Alcohol Studies is Sakari Sariola, who has studied drinking patterns in Finnish Lapland; Potka Kusi who reports an alcohol sales experiment in rural Finland; Allardt, Markkanen and Takala who have worked on drinking and drinkers, and the effects of distilled and brewed beverages (with Pohjanen). Apparently drinking is a very severe problem since Finns drink heavily and are prone to commit acts of violence while under the influence of alcohol. In the animal work conducted at the Finnish Foundation for Alcohol Studies it was found that mice and hamsters take readily to alcohol, but rats do so only when their blood sugar level is reduced by insulin.

Mr. Jacko Kihlberg, M.A. is the statistician at the Institute of Occupational Health. He showed me an array of publications on dental care, selection of dentists, prediction of supply of dentists, evaluation of amalgams, distribution of mortality and morbidity by seasons, stature and weight of secondary school children, longevity of champion skiers, etc. Dr. Johan Wockroth, the psychologist at the Institute, is interested in psychomotor tests for the selection of drivers and is studying performance in psychomotor tests under stress-producing loads.

Norway

At Professor Gabriel Langfeldt's clinic at the University of Oslo, I met Dr. Leo Eitinger who is second in command and who was directing the clinic during Professor Langfeldt's vacation. We discussed the problem of prognosis and the fact that the prognoses in this clinic are made impressionistically. After seeing my list of prognostic traits, Dr. Eitinger undertook to apply them in the future. The clinic uses all the modern therapies, including drugs, and is
a well-kept institution. Dr. Eitingen has been interested in prognosis and evaluation of therapy and has published in this area. One of his recent studies deals with the evaluation of the mental health of displaced persons. I discussed with Dr. Eitingen the hypothesis proposed by our anthropologist, Mrs. Hammer, that the difference between hospitalized schizophrenics and those that remain in the community inheres partly in the patient's and in the community's attitude towards violence or the threat of violence. The differential between socio-economic groups with reference to the incidence of hospitalized schizophrenia might be explained on this basis. Eitingen felt that his findings with displaced persons were consistent with this hypothesis since displaced persons in Norway tend to be hospitalized within 4 weeks of the appearance of the first symptoms of illness, while the usual case of mental illness in Norway requires several months to a year from the appearance of the first symptom to hospitalization.

Professor Langfeldt was recuperating from a minor operation at his summer home in Kristiansand, in the South of Norway. He met me at the airport and drove me to his home where we spent several hours on his veranda discussing his work. He believes that all schizophrenics can be divided into two groups, the schizophreniform psychotics with a 60% improvement rate and the nuclear psychotics with only a 5-to-20% improvement rate. He tried to relate our findings on prognostic traits to this dichotomy. He is very cautious in diagnosis and believes that there are a few primary traits which must be present before a diagnosis of schizophrenia can be made, such as depersonalization, autistic thinking, etc. In confusional states it is difficult to make a diagnosis or a prognosis and he believes it is better to wait until the patient clears up before making a diagnosis and prognosis.

I visited the Gaustad Hospital in Vinderen where Professor Einarv Sægård is the director. He has established a register of all the mentally ill in Norway and has analysed the data in this register from time to time with regard to important epidemiological variables. One of his recent studies was a comparison of the patients who are hospitalized soon after the onset of symptoms with those who are hospitalized five years after onset. He confirmed our hypothesis of violence as a factor in the delay of hospitalisation, but he seemed to feel that the delay in hospitalisation did not produce the ill effects which those who favor early hospitalisation predict. He also feels that schizophrenia is the kind of disease in which only about 20% fail to become hospitalized, mostly the ones whom death claims first. His hospital, though old, is quite well run. Occupational therapy is exceptionally well developed. Shoe-making, book-binding, weaving, and gardening are among the skills taught. Sægård believes that the new drugs have been helpful in quieting down the hospitals somewhat. They have not had the same impact in Norway as in the United States. Sægård's psychologist, Mr. Christensen, is doing a follow-up study of psychosurgical cases, as is Dr. Astrup, a recent arrival from East Germany. The latter is also conducting experiments on conditioning along Pavlovian lines. Each man does his own personal follow-up instead of entrusting follow-up to social workers.

Sægård's studies in epidemiology are classics. In Norway, as in the United States, the release rate has jumped. In Norway it rose from 44% in 1935 to 58% in 1950.
Because the register of all the mentally ill is available to him, Øiegard thinks he can make genetic studies of mental illness in Norway. According to his statement, investigation revealed that nearly all the mentally ill relatives of a sample of his patients were already registered. He followed up a suggestion of Slater that the offspring of consanguineous marriages would contain an excess of schizophrenics. If schizophrenia is genetically recessive, the offspring of consanguineous marriages should have an excess of schizophrenia compared to the rest of the population. Øiegard collected data on inbred populations in Northern Norway and found, to his great surprise, not an excess of schizophrenia but of manic depressive psychosis, which is supposed to be dominant, and one case of Huntington’s Chorea which is also dominant. Why he should get such an anomalous result, is a puzzle.

I visited the Institute for Social Research which supports a group of young people with grants provided by the income from football betting which is carried on as a national lottery. Half of them carry on research in the humanities, the rest in technical subjects. The director of the institute is a lawyer named Erik Linde. At the time of my visit, there was no research going on in psychological problems.

Then I visited E. Wulf Rasmussen in the Biological Laboratory of the University of Oslo. Rasmussen is interested in studies of rats with special reference to their sexual behavior. He believes that since rats are nocturnal in their habits, a research worker should accommodate himself to them and work only during the night. I found him on his day off and he showed me around his laboratory. One of his most interesting findings is the negative correlation between measured strength of sex-drive and fertility.

I visited the department of psychology where the acting head is Professor A. Gruda Skard who is in charge of the Institute of Psychology during the absence of Professor Schjeldrup. Professor Schjeldrup has been interested in psychoanalysis and its evaluation and has conducted one of the few follow-up studies in this field. Although his evaluations are impressionistic, he makes out a case for the value of psychoanalysis to many of his patients, though not to all.

Professor Skard is training child psychologists and is engaged in a longitudinal follow-up study of children and their mothers by means of interviews.

She has recently completed a developmental study of children in Norway from birth through their early years of life. It was directed at 21 families in the lower socio-economic levels, beginning with interviews at the 8th month of pregnancy with both the father and the mother. The data collected would serve well for cross-cultural comparison of child-development.

Dr. Per Saugstad is the experimental psychologist in this department. He has replaced Jens Clausen who is now at Vineland. He is interested in the psychology of thinking and believes that the gestaltists are wrong in supposing that there is more to solving a problem than the knowledge of the elements involved. Once the elements are known, the solution can be predicted, he maintains, and he is conducting some experimental work to test this hypothesis.

I visited the Dieckemark Hospital where Dr. Frehanger is the director and met his young sociologist, Mr. Yongvar Løchen, as well as a clinical psychologist
named Von Krang. The psychologist is interested in follow-up studies, the sociologist in role-taking, in interaction between patients and staff, and in the lines of communication among the staff.

I also visited Dr. Mic Waal, who is apparently the current rage in Oslo psychoanalytic circles. She has been deeply influenced by Wilhelm Reich, who spent several years in Oslo. Following his technique, she palpates the musculature of her child patients, massages them, mothers them and through bodily contact tends to reduce their anxieties. This is presumably related to the concept of oral, anal and genital fixation. By examining the musculature in these erogenous zones, the level of fixation can be determined. This man-handling of the children, not soothingly, but provocingly, as she states, may seem brutal to an outsider, but to the children it seems to be therapeutic. Certain rhythmical petting and tickling in specific locales is undertaken in this form of therapy to relieve the child's tensions. It is said that she does her diagnoses while blindfolded — a truly blind analyst! She is training the younger generation of child guidance workers in her method.

Sweden

In Stockholm I visited first the department of psychology at the University of Stockholm and met Dr. Künnapas, an experimental psychologist, who was the only one on hand, Professor Eklöf being on vacation near Lund, where I later met him. Dr. Künnapas is interested in visual perception. He has found that vertical lengths tend to be overestimated in relation to horizontal lengths. His hypothesis is that the visual field must be oval with the major axis in the vertical direction. If you lie down on your side, he finds that now the horizontal is overestimated, which is consistent with his hypothesis since the visual field moves with reference to the head's position. Such simple techniques could easily be applied to schizophrenic patients to see whether they tend to exhibit any distortions.

I next visited the Department of Psychiatry, Karolinska Institut Medical School, University of Stockholm, of which Professor Torsten Sjögren is the head. He was away on vacation but I saw his assistants, Dr. Farsborg, who was a Commonwealth fellow at Yale, and Dr. Lastrom, who had visited us several years ago. Dr. Farsborg is following up 100 patients in the community for comparison with 100 chronic schizophrenics who are in the hospital, to see whether social and background factors might differentiate between them. Dr. Lastrom is determining flicker-fusion threshold and reaction-time with apparatus modeled after what he saw at the Psychiatric Institute when he visited here several years ago. He is also measuring time-judgment with an apparatus in which a sound of specific duration is delivered to the patient through earphones, it being the patient's task to reproduce the duration of the sound manually. With these techniques Lastrom is investigating the effects of chlorpromazine and other drugs and is finding some interesting changes in flicker-fusion threshold, reaction time, and time judgment.

The Psychiatric Clinic at this institution has a great interest in heredity, but social factors that may be important in determining outcome of mental illness are also being followed, especially in the work with out-patients in their clinic.
I went on to visit the University of Uppsala. Professor Johansson, the newly appointed chairman of the Department of Psychology, was not in the University because of the vacation period. However, I later met him in Brussels and we spent a good deal of time together discussing his perceptual work. He is a most ingenious investigator and has developed several interesting techniques for the study of motion in its relation to personality development. One of his studies, conducted at the Psychiatric Clinic with Dureman and Säde, compares schizophrenics with normals. The study employs as stimulus two moving spots of light. The two spots of light move towards each other at the same constant speed, cross over, and move back again. The task of the subject after the two stimulus spots have disappeared, is to set a third spot of light in motion so as to approximate the speed of the stimulus. The subject may respond to the constant speed or to the relative motion which becomes apparent where the two spots cross over.

Normals set the variable spot moving at a speed twice the basic speed of the first two spots. Schizophrenics tend to adjust the speed of the third spot to that of either of the first two spots. In other words, patients fail to take account of the relativity of motion. There were other psychophysical tests which Dureman and Säde were engaged in, but unfortunately, I lost my notes on this part of the trip and I am unable to recall details. However, I have written to Dureman to send me whatever material they have on this work so that we can duplicate some of it in our own laboratory. The Psychiatric Clinic at Uppsala, in which Dureman is the psychologist and Säde the psychiatrist, was one of the most interesting places that I visited throughout Europe. They are very keen about the introduction of objective techniques into the field of clinical psychology. As a matter of fact, Dureman is involved in establishing clinical psychology on an objective basis in Sweden. He is avoiding American techniques of the projective variety and is trying instead to build up an objective battery of tests for the evaluation of behavior. I gave him all of the information we have collected and sent him some of our reprints as well as our textbook on Experimental Abnormal Psychology as a guide for further development in this area.

From Uppsala I went to Gothenburg to visit the hospital under the direction of Professor Hakon Sjögren who is interested in geriatrics and has a well-managed geriatric unit. I met Dr. White and Dr. Torsten Söson Frey. The latter introduced me to some old literature on the question of the relationship between general paresis and syphilis which had been written by his father. I have since received the original reprints of this article. The Department of Psychology was closed at the University and the Department of Psychiatry, though open, was rather at a standstill because of summer vacation.

I then proceeded to Lund to visit the University Clinic of Professor E. Ljung-Möller. His assistant received me and asked me to address the staff on our work, which I did. They are interested in genetic research, but are also concerned with the problem of follow-up and prognosis. They have a well-trained clinical psychologist on their team.

From Lund I went to Bremen to visit Professor H. Schulte who is director of a state hospital on the outskirts of Bremen. He has a rather large institution which is primarily clinical in orientation, although several people are devoting themselves to research. Professor Schulte is well versed in Gestalt psychology and has been attempting to integrate his clinical psychiatric findings from the gestalt point of view. One interesting feature of this hospital and
some of the other German hospitals I visited, is the lack of any control of house flies. Flies roam all over the hospital and apparently no efforts are made to curb them.

From Bremen I went to Berlin where I visited the Departments of Psychology and Psychiatry at the Free University in West Berlin. The Department of Psychology is still without a chairman. The work now under way is primarily in social-psychology. The Department of Psychiatry, under the leadership of Professor H. Selbach, Berlin-Dahlem Nervenklinik der Freien Universität, is quite active in basic research and in drug therapy. They are chiefly concerned with biochemical problems at this time, through training is offered and interest is high in clinical psychiatry.

I managed to make a trip to East Berlin and visited the Charité where the University Clinic is located, and the Department of Psychology at the Humboldt University. Apparently, there is (or was) no difficulty in entering East Berlin and none in leaving either, although there was some difficulty in getting appointments since there are no direct telephone connections between East and West Berlin. Professor Thiele has recently retired as Head of the Clinic and Professor Leonhard has just arrived to succeed him. I chatted with Professor Leonhard about his work in prognosis. He is a pupil of Kleist and has followed the rather highly detailed subclassification which Kleist has developed. His prognoses, like those of Langfeldt, are based primarily on clinical impressions. Although they are quite impressive, the practical assistance which others can obtain from his studies is rather problematical. We have, however, carefully studied his findings and included, wherever possible, the traits that he found useful for prognosis.

As Professor Leonhard had not yet become acquainted with his new hospital, he turned us over to one of his assistants. (With me were several residents from the West Berlin Clinic, who had never previously visited the Charité.) The assistant took us to several wards in each of which he inquired of the male nurse whether there were any interesting cases present. In one ward we saw a stocky young patient, who fixing his teeth to the edge of a table, lifted it from the floor, as is sometimes done by the strong man in a circus.

I had to return the next day to visit Professor Gottschaldt, who is head of the Psychological Institute in the Humboldt University. He described his studies of the personalities of twins whom he has been following up since the early '30's. He regards the war as an experimental variable, so far as his sample is concerned, whose differential effects on identical vs. fraternal twins can be studied by comparing the alterations in personality noticeable after the war. His methods of estimating personality are based primarily on the interview and on observational techniques, with objective tests playing a lesser role; but his case records are very full, offering a wealth of material for the evaluation of personality. He spoke freely of the administrative conditions which affect his laboratory. Apparently he gets all the financial support that he needs. He has even sponsored a dissertation which was critical of Pavlov's concept that sleep is due to general inhibition. He hinted that the reason why testing of intelligence and educational achievement is at a low level in the USSR is that certain educators had made a survey of natives in Siberia and declared them to be uneducable. This so incensed the government that psychometrics fell out of favor.
From Berlin, I went to Hamburg where I visited Professor Body in the Department of Psychology. He has recently completed a translation of the Wechsler-Bellevue Test into German. He also has several research projects in the field of social psychology. One of the most interesting of these studies deals with the approximately 6,000 children born by German mothers to negro soldiers in the occupation forces. These children are now in their adolescence. The attitudes of the German community to the problems raised by these children, such as dating, is being investigated through surveys.

From Hamburg I flew to Copenhagen to visit Professor Villars Lunn and his staff at The Psychiatric Clinic of the University of Copenhagen. I addressed his staff on the general problem of prognosis and discovered that they too had been working in this area. They have studied about 300 patients, using biochemical tests, interviews under sodium amytal, responses to amphetamine, and certain psychological tests. They are evaluating their prognosis against both a two-year and a five-year follow-up. Their evaluation, like that of Langfeldt, is for the most part intuitive and subjective; but they were interested in our attempts to be more objective in prognostic studies.

I visited Dr. Gunnar Rasch who lives in a suburb of Copenhagen (Holte) and who was formerly statistician of the Serum Institute. He is now a consultant in statistics and experimental design to all the various governmental agencies. He has developed some new ideas in psychometrics. One of these is to construct psychological tests around comparisons of individuals instead of on a standard population.

I next visited Professor E. Tranekjaer Rasmussen, Head of the Department of Psychology at the University of Copenhagen. He holds the chair previously held by Professor Edgar Rubin, the noted gestalt psychologist who did so many original experiments in perception. Like Rubin, Professor Tranekjaer Rasmussen is interested in perceptual phenomena, especially in studies of perspective. He pointed out that several well-known perceptual experiments of a simple sort have never been tried with schizophrenics. Individuals whose perception is likely to be distorted might throw light on the perceptual mechanism involved in these experiments. For example, in Michotte's experiments on inferred cause, a moving picture is projected in which a ball rolls up to a second ball which starts moving at the moment of contact. The observer's experience is that the motion of the second ball has been caused by the impact of the first ball. However, if the movement of the second ball is delayed by one tenth of a second, then the impression of causal connection is dispelled. Whether schizophrenics have the same threshold for this discrimination has never been established. Another perceptual experiment requires the subject to look at a circle in which one diameter has been drawn in with arrowheads at each end, another diameter at right angles to the first, with inverted arrowheads at each end so as to produce the Müller-Lyer illusion. To the normal observer the circle appears elliptical. A similar effect can be obtained with three vertical rods of equal length lined up in the same plane so that the first, a, is as much to the right of the middle one, b, as the third, c, is to the left of it. A fourth rod, d, is then brought in behind a and the subject is required to place it as much to the right of c as c is to the left of b. Because of perspective, the subject will usually place the fourth rod intermediate to a and b, although the three horizontal distances are supposed to be equal. When the discrepancy is called to his attention, he is likely to become confused.
In a third interesting experiment, which Rubin introduced a long time ago, two subjects, the experimenter being one, work at rotating a wheel which is mounted somewhat like a spinning wheel, but with a handle on either side instead of a treadle. As the wheel starts moving more smoothly, first one, then the other feels that he is leading. Which of the two is actually in the lead can be determined from an electrical contact. The contrast between the feeling of being in the lead and the actuality may be related to feelings of dominance and submission. At any rate, the technique offers an interesting opportunity for the study of aspects of personality.

The rest of the afternoon I spent with Dr. Eric Strømgren, who is one of the outstanding epidemiologists and research workers in psychiatry in the Scandinavian countries. We talked a good deal about prognosis and the methods to be applied. He is a very gentle soul, extremely devoted to psychiatric research and to the improvement of mental hospitals. He thinks that the university clinics in Denmark enjoy an undeserved reputation because they get rid of all the chronic by sending them to the state hospitals. He is in charge of a state hospital and is also a professor at the University of Aarhus, so he has both sides of the picture. And he is waging a campaign to make the state hospitals more respectable. He has recently obtained a grant from the Ford Foundation for a survey of all the mentally ill in Denmark, and more intensively, of all the mentally ill on a small island of some 7,000 souls. He is offering them extra service so that they will seek the hospital facilities for whatever ailment they may be suffering from. He also wants to find out how the extra service will affect estimates of incidence and prevalence of mental illness. When I inquired why the suicide rate in Denmark was so high he replied that there were certain artifacts that had to be taken into account. For one thing, it was clear that the ignominy of suicide tended to reduce the number of suicides reported in Catholic countries. That the threat of violence might differentiate between hospitalized and non-hospitalized schizophrenics appealed to him very much, and he thought it might be a good clue to follow.

I subsequently visited the Institute of Human Genetics at Tagensvej 14, N. Copenhagen, Denmark, where I met Dr. N. Juel-Neilsen. As Denmark is a small country, the number of twins is not very large. Dr. Juel-Neilsen has been trying to collect and study all the twins in Denmark. His interest arose accidentally because of the presence of a pair of twins at the clinic. He became especially interested in twins who were separated at birth, because this particular pair had been separated at birth, with the rather astonishing consequence when they were reunited that one of the twins complained that he could not stand the reunion with his co-twin because it enhanced his own neurosis. Juel-Neilsen got the impression that the reunion of twins separated at birth is a phenomenon deserving careful study. He has located nine pairs of twins who were separated early in life and is studying their personalities. Unfortunately, (for psychiatry) there is no psychosis, although there is considerable psychopathology. In one of the pairs one co-twin was a psychopath; in another, one was a neurotic. In both cases, the pairs were identical twins. Dr. Juel-Neilsen had previously collaborated with Tage Kemp in a study of prostitution. He is now following up the individuals in that study. Half of the group of prostitutes have been found mentally defective.
I spent the evening with Dr. Svendsen, who had visited the Psychiatric Institute in New York some years ago and who is interested in epidemiology. He is in charge of the outpatient clinic of which Dr. Villars Lunn is the director. They are just finishing a follow-up study of manic depressives. Svendsen has recently published a study of the effect of war on the hospitalized mentally ill.

From Copenhagen I went to Munich, where I was entertained by Dr. Herschel Leibowitz, a former student, now visiting fellow at the Max Planck Institut für Verhaltensphysiologie, of which von Holst is director. From Munich I went on to Merano to attend the Geriatric Congress. The congress itself was rather unexciting, but the surroundings were magnificent. I had a chance to get acquainted with Welford of Cambridge, with whom I discussed our entire program for testing the mentally ill. He is impressed with the model of perceptual behavior based on the mathematical theory of information, according to which delay in the response to a perceptual stimulus is solely the consequence of noise interfering with the signal. Welford himself would like to know what the subject does during the additional time required for carrying out a response, that is, how he overcomes the noise. Dr. Welford was especially interested in contrasting the psychomotor and conceptual components in behavior. He liked our tabulation of behavioral responses against methods for eliciting such behaviors, but he thought a time dimension should be added. He regards our notion of a load as simply a crowding of the communication channel. The work presented at the Congress was rather weak, although the problems were important. This is an area where much needs to be done to improve the quality of research before we can hope to find out more about how to deal with the problems of aging. From Merano the congress moved on to Venice, where for two days reports on psychiatric and neurological aspects of aging were presented.

After the Geriatric Congress I flew to Milan, where I visited the Psychological Institute of Gemelli. Unfortunately, Gemelli himself was away, but I took the opportunity to see the institute. They are doing a good deal of work in the application of psychology to industrial and personnel problems. Unfortunately, my Italian was not adequate, nor did my interlocutors speak any other language. From Milan I went to Brussels, where I arrived at the tail-end of the Neurological Congress. I heard a panel discussion on the impending dismemberment of neurology. The neurologists are beginning to realize that each of the specialties wants to have its own little organization. The effort to keep them together seems to be futile. The weekend preceding the Brussels Congress of Psychology was devoted to a meeting of the military psychologists from the various nations of Europe, as well as from America. During this congress, Dr. Wilson of the British Admiralty asked me to discuss a paper by a Finnish worker on the utilization of mental defectives in the Army. I didn't have much to say about the paper but it occurred to me that the military effort might pay its debt to society by providing us with more detailed information on the mental health of the conscripts in the various countries that have conscription. The conscript group can be considered to constitute a statistical population of males within certain age brackets, so as to avoid the pitfalls of sampling which ordinarily beset population studies. Furthermore, the individuals who are already hospitalized or institutionalized by the time they reach draft age and those who die before reaching draft age can also be obtained from the records of each generation of conscripts. Such a population could provide a basis for the evaluation of the mental health of a country and could also be used for follow-up.
studies of the generations of individuals who come through the draft procedure. All that would be needed are better measuring devices to apply at the time of screening, instead of summary dismissal of unsuitable individuals without a thorough examination. Moreover, in some countries, like Israel, both men and women are conscripted. The idea of surveying the mental health of military conscripts was picked up by several national representatives, and a meeting was held at which a committee was organized to look into this matter. Dr. Marilyn Van Goethem, an American psychologist who is stationed at Brussels, was appointed temporary secretary.

My next stop was Lisbon. Professor Vitor Fontes sent one of his assistant physicians to meet me at the air field and take me to my hotel. Dr. Fontes speaks only French, and I soon found that I could communicate in this language with him pretty well. Although he is an anatomist by training, he has organized a psychiatric clinic for children because, as he told me, professorships in Portugal don’t pay very much, and he has to supplement his income with clinical work. He has made very good progress in child psychiatry, having developed a large institution with classes for mental defectives of various grades, as well as for epileptics and for other child deviates. When I inquired about childhood schizophrenia, he told me that of the one thousand children who had passed through his institution in the last ten years, only about seven were schizophrenic. He wondered why there were so many more schizophrenic children in the United States. He believes this is primarily a question of diagnosis. He expressed interest in prognosis, although he has not done much work in this area. After this, I went to visit the University Clinic, which is under the supervision of Professor Henrique DeBarahona Fernandes. His associate, Professor Pedro Polonio, met me and showed me through the clinic. They have a large well-run hospital. Professor Polonio is interested in prognosis and has done some studies on his own as well as with Slater. In collaboration with Slater he has developed a prognostic index with five components: duration of illness, type of onset, type of personality, body build, and precipitating factors. He finds that good outcome is most closely related to duration of illness before the application of insulin therapy. Professor Fernandes himself, who heads the Justo deMatos Hospital, as well as the psychiatric clinic of the University of Lisbon, is more concerned with teaching and organization of psychiatric services. Both Professor Fernandes and Professor Polonio are involved with the problem of ambulatory schizophrenia. They find it difficult to differentiate from manic depressive psychosis, although they believe it to be a distinct disease. Professor Fernandes also has some abstract philosophic notions about the whole problem of mental disease. Of the two, Professor Polonio is the empirical experimentalist.

The next morning I went off to Madrid. There I was met by Dr. Pinillos, who is assistant to Dr. Germain. The latter is director of the psychological laboratory in Madrid and also a practicing psychiatrist. Here again, each of these men has had to supplement his university income with private practice. Dr. Pinillos is devoting his spare time to applied psychology in industrial situations. He spent some time in Germany studying in Kretschmer’s clinic and then went on to study with Eysenck in London. He is rather enthusiastic about factor analysis as a method for solving some of the problems in experimental and clinical psychology. His primary concern now is to see whether individuals who are classified as extraverts or as introverts on the basis of questionnaires, will show differences in rate of fatigue for such activities as the pursuit rotor.
Both Dr. Pinillos and Dr. Germain work at the Institute of Applied Psychology, which is headed by Dr. Germain. This is a governmental institution and does examinations of drivers and other civil servants. The laboratory has many mechanical devices for studying sensory responses in vision, hearing, touch and kinesthesia. Some of these sensory and perceptual tasks could be readily applied to schizophrenics for testing intactness.

One of the more interesting men in Spain is Dr. Josto Gonzalo, a physiologically minded psychiatrist who is devoting his time to the study of brain injured cases. He has come up with some very interesting theories about localization vs. mass action. He proposes a compromise in terms of a gradient theory which assumes that when the locus of an injury is near area 17 of the cerebral cortex, the distance from that area will determine the amount of visual defect. In other words, both localization and mass action account for altered behavior, distance from the center of localization determining the degree of involvement. In the same way, other sense modalities may be expected to show impairment in proportion to their distance from the locus of a lesion. Dr. Gonzalo has noted what he regards as a new phenomenon, namely, the tendency for some people to see things rotated at a certain angle and sometimes even turned upside down, depending upon the type of lesion that they have. He also reported a finding which has been reported elsewhere, that individuals who see the world turned upside down or even those who see hallucinations of soldiers walking upside down, can convert their visions or hallucinations to the upright direction if they flex their muscles or involve the body kinesthetically in some other way.

I visited several private hospitals but no state hospitals in Spain. The religious orders in Spain seem to provide the major share of the nursing staff as well as a large proportion of the physical facilities. However, the state pays the religious orders for the care of the mentally ill. I also visited Professor Juan Lopez-Ibor, who is interested in the evaluation of the various therapies, including drug therapy, and in prognosis. He has written quite a number of articles and books on a variety of topics in psychopathology. Among other things, he is head of a nicely appointed private hospital, primarily for well to do patients. One innovation which seems somewhat unusual is an attempt at preventing the patient from knowing whether they have received electric shock treatment. This is done by applying the treatment to them while they are asleep. There are electrode outlets in each room so that the doctor can adjust the machine in a central coordinating room for the particular treatment, attach the electrodes while the patient is asleep and so administer the therapy. This is supposed to do away with the pre-treatment fear or anxiety. In this way, no patient knows whether he is getting treatment or whether his neighbors are getting treatment.

Upon leaving Spain I flew to Rome. Dr. Alberto Giordano met me at the hotel and brought me to the hospital where Professor Bonfiglio had formerly been director but which is now headed by Professor Umberto B. Giacomo. There is a mental hygiene clinic known as the Centro d’Higiene Mentale, located at Villa Fornovo #12, which serves the community. I was shown some data which indicated that during the German Occupation the number of mentally ill increased, while subsequently it has been climbing steadily. I was promised a copy of their report. From there I went to the State Hospital, an overwhelming place, large and quite undermanned. Here too, the staff works only part of the day because the rest of the day they
have to earn their livings. The patients milled around the resident who took me through in an alarming manner. They hadn’t seen a doctor for so long that they all wanted to shake his hand. They pawed at him. Occupational therapy is limited to farm work and a few crafts, such as shoemaking.

The next morning I visited the Psychological Institute organized by De Sanctis who has also apparently organized the receiving hospital which I visited in the afternoon. The psychologists working in this institute all had M.D. degrees. It is the custom here to do graduate research after earning the M.D. so as to develop psychological skills. Professor Luigi Meachiari met me and told me of his work in military psychology which reinforced my interest in the possibility of using military conscripts to develop further knowledge about mental health. Some very important work has come out of this laboratory. For example, this was the laboratory that first studied the effect of one trial in a reaction time experiment on the latency of the next trial. Dr. Meachiari and I then visited a receiving hospital where Dr. Grada is in charge. This was originally organised by De Sanctis. It is now headed by Professor Guzzo, who was away on vacation, but whom I later met in Zurich. This hospital has a well-equipped children’s ward, some of the staff being quite enthusiastic about the work with children. They have a variety of psychological techniques which, in the European style, are crucial experiments rather than standardized tests. I was impressed with the emphasis on tests which involve color. Apparently in Europe there is more interest in the problem of color than in America. Perhaps this represents a cultural difference.

From Rome I flew to Israel, landing at Tel Aviv. I was met there by Dr. Solomon Kugelmass, who was formerly my associate on the prognostic project, and who is now executive officer of the Department of Psychology of the Hebrew University. I had a visit with Dr. Feldman, head of the Mental Health Service in the Ministry of Health, who described the variety of techniques that they use in attempting to develop Community Health Services throughout Israel. One of the outstanding features of the Israeli situation is that they have such a shortage of man power that even mental patients are put to work. This seems to have a beneficial effect on them. Most of the Israeli hospitals are old police stations which the British had built. One of these hospitals is that of Dr. Winnick, known as Talpiot. This hospital received patients for evaluation from Jerusalem and the neighboring regions. It is simply a receiving and observation hospital. The staff is enthusiastic and ambitious to do research. They have some research facilities and are building up a biochemical laboratory. The next day we visited Kfar Shaul, a mental hospital for chronic patients. The director is Dr. Schossberger. This is an open hospital except for two wards for intractable cases. This hospital is on the grounds of an old Arab village which had been partially destroyed during the war. It was rebuilt by the patients themselves stone by stone. The patients are a mixture of psychotics, defectives and epileptics, all of whom seem to receive proper care. The mental defectives are grouped together with the seniles with whom they seem to get along very well. As soon after admission as a patient is capable of doing some constructive work, he is assigned either to the carpentry shop or the shoemaker shop; or he is allowed to paint and draw or to work in the garden. Dr. Schossberger is quite a capable director. He knows every patient by his first name. There are several hundred patients and each one is dealt with individually. There’s a very good occupational therapy staff, a good nursing staff and energetic psychologists. Even if the patients here do not recover enough to go home, they are prevented from deteriorating and
made useful to themselves in their immediate environment. One of the most interesting men I met in Jerusalem was Professor Halpern, a neurologist by training who is also in charge of Hadassah’s mental hospital work.

Professor Halpern and Dr. Kugelmass have been testing patients who are suffering from unilateral disequilibrium. The have noticed a type of behavior in these patients which they designate as a "sensory motor induction syndrome." This refers to the fact that these patients who have lesions in various parts of the cerebellum seem to behave as if the lesion alone was not the important determinant of their defective behavior. Other factors are also involved. For example, when asked to lift their arms with their eyes closed, they tend to lift the arm which is contralateral to the lesion, not quite as high as the ipsilateral arm. However, if instead of closing both eyes they look through a red filter with the contralateral eye, the discrepancy between the height of the two arms is enhanced; if they look through a blue filter, the discrepancy disappears. Similarly, displacement of the head to the side of the disequilibrium will tend to make for a greater inequality in the lifting of the arms whereas displacement to the opposite side will tend to remove the inequality to some extent. Dr. Kugelmass has introduced psychological tests, such as reaction time, and has found that with a red filter placed over one eye the reaction time of either arm is increased, but with a blue filter, reaction time returns to normal.

The psychologists of the Hadassah Medical Organization work in clinics, in child guidance, and in schools. One of them reported on some studies with chlorpromazine at the Telpia Hospital. Another spoke of developmental problems among children of immigrants. I addressed the meeting of the association of psychologists and psychiatrists in Israel, all of whom expressed interest in our plans for objective measurement of patients with a view to prognosis. The next day I visited the hospital at Be’er Jakov which is under the direction of Dr. Maier. They have a very unusual hospital in which they attempt to utilize group therapy with suitable cases. They seem to have proper supervision and care for chronic as well as for new cases. It was one of the best-run hospitals I have seen. I visited one of their group therapy sessions in which four patients, apparently schizophrenic, discussed their personal problems with Dr. Maier and the staff. There is a good deal of occupational therapy available, including gardening, carpentry, and a variety of other activities. Patients are never lacking for something to do.

With the help of some friends we obtained a car for several days so as to visit some of the Kibbutzim. At Ein Harod, which is one of the older Kibbutzim in Israel, parents can see their children in the evening when they are put to bed and on the Sabbath. The children are tended by nurses and regularly appointed caretakers. We visited the nursery and the place where the older children are housed and educated. It seemed to be a very well-run institution. Everyone at this Kibbutz seemed to be dedicated to a common goal, despite the hardships for both children and adults. Devotion to the goal permeates all their activities and probably makes up for some of the hardships. Two or three problems were raised in the discussion by members of the Kibbutz. One was whether the amount of enuresis noted was something to be worried about. I explained to them that we still do not know how frequent enuresis is in the general population. Kibbutz dwellers are probably more aware of such difficulties because of their communal life so that their concern may be exaggerated. They were also concerned with the problem of retirement. In this particular Kibbutz there had been continuity
between the older settlers and the present generation so that the old folks in the Kibbutz were actually the parents or grandparents of the workers. Thus the only problem was to find appropriate work for the olders such as would not tax their strength. For example, the oldest women in the Kibbutz who had many grandchildren there, had been relieved of her former duties and assigned to the task of collecting the eggs from the chicken coops in the mornings, something she could do effectively despite her 70-odd years. There were similar reduced loads for the other oldsters. But in a kibbutz where there had been some discontinuity in composition, the newcomers tended to regard the older generation as something of a burden.

Upon leaving Israel I flew to Vienna where I visited the clinic which Dr. Hoff now directs. This is the famous hospital where Freud lectured, Krafft-Ebing worked, Wagner von-Jaurreg made his discoveries and Kraus worked. It is a very well-run University Clinic. Professor Hoff was both amiable and interesting. He is trying to integrate psychoanalysis, whose birthplace was Vienna, with the more objective methods that are now invading his clinic. He introduced me to his associate, Dr. Arnold, who is much interested in prognosis, has in fact written a book about it. I had a long discussion with Dr. Arnold as we were touring the hospital. In common with all the other university clinics they have many neurological cases. There is considerable interest in multiple sclerosis which they suspect may be attributable to certain bacteria found in the spinal fluid. As they have quite a bit of formidable-looking apparatus lying around which is not always in use, they take advantage of its presence to apply the power of suggestion to hysterics, with particularly good effect on the naive ones who come from the country.

A good deal of attention is being devoted to the study of vascular distribution. Continuous x-ray photographs of the skull are taken after the blood has been impregnated with appropriate dyes to make its course visible. These continuous films are taken at the rate of 100 per second, providing a picture from various angles of the cerebral artery and various other vascular beds. It is their practice to do this before an operation so as to determine the general vascular bed of the area involved.

They have one or two psychologists who use projective tests in the usual way, depending more on their intuitive subjective impressions than on any quantitative techniques. In general, even in their prognostic work they depend mostly upon subjective clinical impressions, such as "the open mind" phenomenon. This last refers to the observation that a schizophrenic's reaction to a stimulus is accompanied by an after-thought which corresponds to the question, "What does this signify for me?" This phenomenon, previously reported by psychopathologists, fits in well with the widespread existentialism which is current in Europe. The notion of the "open mind" leads them to look in each patient for the additional component, the sign value that an idea has. In giving insulin, for example, they do not stop the treatment until this type of sign has disappeared from the repertoire of the patient. When it disappears the psychiatrist knows he has begun to succeed in the treatment. Of course, all other signs and indications of the illness must be removed too before the treatment is regarded as finished. With the aid of these signs which determine the end point of treatment and with proper selection, Dr. Arnold claims that he can improve the lot of 85% of his patients. In fact, he believes he can cure them. They work not only with the patients themselves, but also with the family and the combined effort of family,
improved treatment situation, physiological techniques, physical and psychological techniques, bring the patient back to his premorbid level in 85% of the cases by the end of the 2nd year, according to their estimates. Professor Hoff admitted that they do not have a five year follow-up yet, and that it is possible that by the end of 5 years their results may be no better than those obtained by other methods or by spontaneous improvement.

From Vienna I went by train to Innsbruck. I visited the Department of Psychology at the University of Innsbruck of which Professor Ivo Kohler is in charge. By repeating Stratton’s experiment of inverting the visual field, but keeping the subject in the inverted field for quite a long time, Kohler has demonstrated that the uprightness of the visual world depends not only on visual receptors but also on the concomitant feedback from kinesthetic, auditory and other senses. One of his associates, a Doctor named Schaffler, has improvised an apparatus which produces random music by selection of randomized frequencies as well as random colors by projecting light through crystals of assorted shapes and colors. I got in touch with Professor Rohracher, who is the professor in Vienna but who was summering some 30 or 40 kilometers outside of Innsbruck. He has been studying the vibratory sensitivity of the skin and thinks he has been able to measure increase and decline of emotional tension by this indicator. Indeed, he considers the vibratory sensitivity to be as basic for the skin as the EEG is for brain function. Dr. J.G. Williams, whom I later saw in England, has repeated these experiments on both patients and normals and has found that the technique discriminates between these two groups. He has however, dispelled some of the mystery with which Rohracher invests it, for he attributes the phenomenon to the fact that this particular technique summerizes the activity of groups of muscles. It has been known for some time that the muscle tonicity of catatonics is quite different from that of normals. There is a psychiatric clinic at Innsbruck, one of whose resident physicians came over to talk to us. Apparently, not much research is going on there.

From Innsbruck I went on to Zurich. The Zurich Congress was a strange admixture of existentialism and objective psychiatry, but with very little psychology. The only psychological session was sponsored by the group for the rapprochement between psychiatry and psychology, several of their meetings being devoted to problems of teaching psychology to medical students. There were a few research papers on such topics as abstract thinking in schizophrenia, prognosis, etc. At the session on social psychiatry I seized the opportunity to raise again the suggestion to use the military conscripts in the various countries for a cross-cultural study of incidence of mental illness. This had a mixed reception from the group, but several people present, including Brigadier Phillipson of the British Army, became quite interested and we laid plans for further discussion when the time is ripe. Dr. Krapf of the WHO and Lieutenant Colonel Dieguito Ferrado, the chief psychiatrist of the military service in Portugal, as well as others, jointed in exploring various methods for implementing the suggestions. They proposed that I get in touch with Dr. Albert Glass at the Pentagon and with Dr. Sivadon at Paris. Unfortunately, my itinerary did not permit me to get in touch with Dr. Sivadon, nor have I got anywhere with Dr. Glass. It was generally felt that as a start, a questionnaire should be sent around to discover what is going on now. As for standard techniques, we might start with such objectively determinable qualities as mental deficiency, as there would be less variation in methods for detection of this condition than there would be for schizophrenia. This project might be sold to the military if it were presented so as to focus
attention on the detection of the mentally unfit in the military service. It should be possible to separate those who are too inept for any service from those who are capable of limited duty, at least during a manpower shortage. The Scandinavians, Stegner, Stromgren and Essen-Moeller are all in favor of this idea, as it could throw light on the relation of culture to the incidence of mental deficiency.

Next morning I left by air for Munich where I was met by Dr. Herschel Leibowitz who is working at the Max Planck Institut für Verhaltensphysiologie just outside of Munich. Von Holst and Lorens are at this institute, the former being the director. I had a long conversation with Von Holst who, being the son of a psychiatrist, has seen mental disease at first hand. He was very much interested in our work and in turn told about the work in his laboratory. He has devoted much effort to the problem of feedback from the cortex to the sense organ during sensory stimulation. He has been stimulating animals through electrodes implanted in the brain in an attempt to locate specific points which mediate certain responses. For example, he would like to show that the brooding response in hens can be elicited by stimulation of one point, the pattern of response exhibited when hens flap their wings, say "Qua Qua," and prepare to take off in flight, by stimulation of a different point. He would then proceed to determine which of the responses was prepotent and to measure differences in threshold. Eventually, he hopes to explore all the basic behavior of the hen in this way so as to distinguish the relative dominance of each reaction pattern.

I visited the Kraepelin Institute where Professor Bruno Schultz is still in charge of the genetic unit. The daughter of Rikin, who established the genetic unit at the institute, is working there now on a part-time basis. The institute seems moribund, but they are trying to revitalize it. There is a section on virus research, a section on chemistry, and a section on neuropathology, but there are no patients. The only clinical work that appears to be in progress is in the out-patient clinic, headed by Muttseck who apparently aspires to become head of the Institute. There are also plans afoot for starting an experimental psychology laboratory.

The next morning I visited Professor Kolle at the Nervenklinik of the University. He has done some work on the evaluation of insulin shock. He found results to be no better than spontaneous improvement. His second assistant, Dr. Hans Hanfner, has a Ph.D. in Philosophy and has worked with Professor Lersch in psychology. Dr. Hanfner is trying to introduce objective methods of testing with some of the very techniques that Kraepelin introduced over 50 years ago. By means of Kraepelin's addition tests, he has demonstrated that while organic cases tend to decline in work productivity over time, even with fresh starts, normals tend to remain at a relatively even keel. Schizophrenics, on the other hand, tend to improve every time you ask them to start again, but as their work continues, productivity drops.

I visited Professor Lersch who is now concerned with social psychology and is trying to develop a new method. He gave me a copy of his most recent work on facial mimicry.

From Munich I went by train to Stuttgart. Next morning I left for Tübingen to visit Kretschmer's clinic. Kretschmer himself was on vacation, but I spoke
briefly with his son, who is devoting himself to the study of religious groups in Germany. Dr. Heinz Faulstich, one of the resident physicians, who had taken his internship in the United States and hence spoke English very well, escorted me through the hospital. He took me to see Dr. H. Koch who is in charge of autogenic training, a new type of therapy which is a combination of hypnosis and psychoanalysis. You might call it poor man's psychoanalysis. The patient is told to lie on the couch and is given suggestions to make him somewhat relaxed and sleepy. He is told his arm is getting heavier and that he is feeling warm. As the limbs lose their tonicity and the body gets warmer at the approach of sleep, this is a way of getting the patient to relax. After the patient has been put into the proper state of mind, psychoanalytic techniques are used to discover his sources of difficulty and his trouble. This method seems to work very well with neurotics. They claim to have about 80 to 90 percent improvement. It does not work with psychotics. The method was introduced by Schultz in Berlin in the 20's and resembles the progressive relaxation technique promoted in this country by Jacobson about 20 years ago.

Dr. Schlick, the psychologist at Kretschmer's clinic is interested in projective techniques, especially in handwriting. He wanted to know how to proceed to make handwriting analysis more objective. I told him I'd send him a copy of the study on handwriting analysis we completed at the Institute in 1942 and I also suggested some techniques for improving the recording of hand movements during writing.

Dr. Baumler, a child psychologist, teaches schizophrenic and other types of children and takes advantage of the classroom situation to note the children's personal problems and disabilities. Such use of the educational situation for diagnostic work requires a person trained both in teaching and in psychodiagnosis. I visited Professor Witte, professor of psychology at the Institute in Tübingen. He has been to the United States several times. He is interested in psychological research and has written a book on psychodiagnostics. He is now studying the value systems of individuals by means of perceptual techniques somewhat as Nelson is doing in Texas. For example, he gets people to estimate the lengths of pencils, for he asserts that pencils have been quite uniform in length throughout the world for over 50 years. With these and other such standard objects, he determines people's notions about length, weight, and other aspects of life, thereby gaining insight into their systems of values.

Upon leaving Tübingen I drove through the Black Forest to Freiburg, where I visited the Psychological Institute. I met Dr. Fogel and Dr. Groffmann and then went on to see Professor Faust, who is a most interesting person who has done a lot of work on prognosis. He is currently studying brain-injured cases and he had many interesting experiments and observations to tell of. He invited me to sit in on a case presentation of a mental patient, a German physician, who had murdered his 70-year-old father and mother apparently without provocation. This was a problem in forensic psychiatry for Dr. Ruffin, the head of the hospital, had to present the recommendations of the psychiatric group to the court on the following day. It seemed to be a very complicated case. The big question that the Rorschach expert and the others were trying to answer was whether the patient was dissembling. They looked for evidence of amnesia, and tried to distinguish whether there had been a sudden psychotic break or a slowly developing schizophrenic process.
Dr. Faust has studied the responses of schizophrenics, the brain-injured, and normals to tachistoscopic pictures of varying content. He has found that with very rapid exposures, schizophrenics characteristically misinterpret the meaning of a picture whereas the brain-injured confine themselves to details. This parallels a study that was done in our own laboratory about five years ago by Charles Orbach, with similar results.

From Freiburg I went on to Heidelberg where I visited the University Clinic. I found that Professor Von Bier was still on vacation but I got to see Professor Meyer who is second in command. Professor Meyer devotes a good deal of his time to clinical therapy. He showed interest in our prognostic and evaluation studies. Dr. Kisker showed me around the hospital and then sent me over to see Professor Mitscherlich, who is head of the psychosomatic clinic. I spoke with his first assistant, Dr. Tonne, who had spent a year or so in New Haven. His psychoanalytic orientation is typical of the psychosomatic clinic. They devote most of their time to ambulatory neurotics and are trying to develop a psychoanalytic approach to their problems. This is the institute where Kraepelin worked and where Jaspers served as a voluntary docent. Apparently Jaspers did not have a very long exposure to psychiatry, only about a year or two on a voluntary basis, although his book on General Psychopathology is a classic in the field. Most German psychiatrists are very surprised to find out that no one has ever translated Jaspers into English. In the afternoon I met Professor Kurt Schneider, who had been the head of the Nervenklinik for a long time and is apparently the elder statesman of the hospital. Both Dr. Kisker and previously Dr. Groffmann in Freiburg had tried to explain to me the reason for the split between the social and the physical sciences in Germany. Apparently, about the turn of the century the Naturwissenschaftlen, which had had full sway up to that time, were challenged by the Geisteswissenschaften championed by Dilthey and later by Heidegger. Some of the social sciences fell under the sway of the Geisteswissenschaften; and that is why psychology and psychiatry haven't made any progress in the direction of Wissenschaft in Germany.

I went on to Frankfurt to visit the University Clinic where Professor Zutt is director. He was on vacation, but I did see Dr. Froewein who is a very interesting man. He has just finished a book, soon to appear, on the importance of the vegetative endocrine system in diagnosis. He is at loggerheads with the rest of the clinic who concern themselves with existentialism or what they call the anthropological approach to mental disease. They maintain that at the present time there is no basic science underlying psychopathology and that the anthropological approach is most likely to lead to an understanding of psychopathology. I was introduced to Dr. Kulenkemps, a son-in-law of Professor Zutt, who tried to explain to me the basic principles of the existential approach to psychopathology. They are dissatisfied with both experimental and clinical psychology. They want to build an understanding of the individual based on direct observation and discussion with him. Here too, I found some interest in tachistoscopic studies of mental patients, probably a vestige of the prewar interest in Gestalt psychology. From there I went to visit Professor Rausch, originally a mathematician, who was enticed into psychology by Wertheimer, and has written a book on metric approaches to perception.

From Frankfurt I went on to Marburg. There I visited Dr. Villinger, a child psychiatrist who is now approaching retirement. Dr. Stute is Professor of
Child Psychiatry and this is the only chair of child psychiatry in Germany at the present time. I visited the Psychological Institute of which Duerck is director and as he was away, his assistant, Dr. Lienert, showed me around. They are engaged in a wide variety of work, including the effects of drugs on behavior. One student is investigating the effects of drugs on learning ability, while another is trying to induce anxiety through shock to see its effect on learning. From Frankfurt I went on to Bonn where I visited Dr. Saunders who was Wundt’s last assistant. He is interested in the genetic development of perception, or as he calls it, the microgenesis of visual perception. I visited Professor Peters at the Brain Institute but unfortunately, his psychologist, Kirschbaum, was not there and I lost the chance to see some of his interesting work with the brain-injured. From there I visited Cologne and saw their new Psychiatric Pavilion. Many of the other German Clinics are bemoaning the fact that they weren’t bombed as effectively as Cologne, hence can not get new buildings but must remain in their dingy old surroundings. From Cologne I went to Düsseldorf where I saw Professor Bay, a neurologist who has given attention to brain-injured patients as well as to schizophrenics and who has introduced the notion of Funktionswandel, by which he implies that something more than simple sensory impression goes on during the perceptual act. For example, if one stares fixedly at a stimulus for a period of time, it disappears and is no longer perceived because of Funktionswandel. Bay thinks that Funktionswandel may be the basis of perceptual constancy and may account for various aspects of perceptual behavior that are still not too well understood.

From Stuttgart I went to Paris where I visited Dr. Pichot at Hopital Sainte Anne. He is Chef de Clinique in the Clinique des Maladies Mentales et de l’Encephale, which is headed by Professor Delays and where Dr. Denniker is doing research with drugs. Dr. Pichot is both a psychiatrist and a psychologist, being greatly interested in the application of psychological techniques to mental patients. His assistant, M. Fera, teaches and collaborates in research. One of the medical students, for his dissertation, is working with Dr. Pichot to compare the effects of chlorpromazine, barbiturates, and a placebo on flicker-fusion threshold, tapping time, and on psychomotor performance generally. Thus far he has found no difference in flicker-fusion threshold, but I suggested to him that he follow the pattern of individual analysis which we have used for drug studies at the Psychiatric Institute. We had found that although there were no significant group differences, about half of the subjects, when examined individually, showed significant differences, some in one direction, others in the opposite direction.

I visited Dr. Pierre Oléron at 24 Rue Olivier de Seines, who is in charge of the psychological work at an Institute for the Deaf and Dumb. He is concerned primarily with trying to establish the mental capacity of the deaf-and-dumb inmates with a view to seeing whether the mental deficiency associated with this condition is only apparent. He has been able to demonstrate that in so far as intellectual behavior depends upon intact sense modalities, such as vision and touch, the mental capacity of the deaf-and-dumb is no different from that of normals. But when a task involves verbal concepts, the deaf-and-dumb fall behind. Among other things, he has shown that the deaf-and-dumb are no different from normals on tests of transposition, size judgment and, speed of movement. However, if they have to perform the Révész serial order task which involves verbal symbolism, they fall down.
I next visited Professor Fraisse. He has been interested in memory span for digits as contrasted with memory span for number of taps. Digit span increases with age, tapping span does not. Apparently the digit span grows with conceptual maturity, while tapping involves more perceptual than conceptual activity.

In general, it became quite clear that the deaf-and-dumb, and probably the blind, as well as those suffering from other sensory deprivations, provide an experiment of nature in which the differences between conceptual and perceptual function are highlighted.

The next day I visited the Clinique de Neuro-Psychiatrie Infantile at the Salpêtrière which is headed by Professor Huyer. I managed to see Mr. Jampolski, who heads the psychological clinic, and two of his associates, Miss Nina Rausch, and Mrs. Josette Pepin. I got the impression that the lot of the clinical psychologist in France is not a happy one. They are underpaid and are respected neither by law nor by the associated professions. It is quite clear that they are an underprivileged group in need of organization or reorientation. There are two sources from which students enter the field, science, especially biology, and philosophy. The latter are poorly trained in scientific method.

On Friday, I visited the laboratory of L'Institut National D'Étude du Travail et D'Orientation Professionnelle. I spoke with Dr. Rauclhin, who is in charge of research in vocational guidance. The organization he heads tests all the 14-year olds in France for guidance purposes. Should they ever make a study of army conscripts, the data obtained at the time the conscripts were 14 years old would be invaluable for longitudinal evaluation.

I also paid a visit to Dr. Eugene Schraider, who is Directeur Ajoint du Laboratoire, d'Anthropologie Physique de l'École des Hautes Études and Président de la Société d'Anthropologie de Paris. I had a long talk with him about his work. He is very much interested in variability of behavior and believes that psychological tests are better than physiological techniques for measuring variability because the latter have less regular variability.

On Saturday morning I visited Dr. Zazzo, who is a psychologist at Hôpital Sainte Anne. Quite an active fellow and has quite a large staff engaged in experimental clinical work in an inspirational sort of way. His training is in the humanities and philosophy with less emphasis in science. Here again it is quite clear that the clinical psychologists are at the bottom of the professional ladder. For example, in his entire staff of psychologists there is hardly one male, which I took as an indication that the remuneration must be very low.

I met Dr. Jampolski again who would like to see more complex tests of psychomotor behavior developed. One of his students is repeating the work of Shakov on the effect of regular and irregular foreperiods on reaction time in children.

All in all, one gets the impression that psychological research in mental disease is at a rather primitive level in France. American influence is felt very strongly. In fact, many of the tests are direct translations of American tests.
Summary

The purpose of this survey of biometric research was to discover what new techniques, methods and points of view were in existence in centers of research outside the United States. To this end, a list was drawn up of the various centers in Europe where there was any likelihood of finding biometric research under way. The list included centers in the following countries: England, Finland, Norway, Sweden, Denmark, West Germany, West and East Berlin, Belgium, Holland, France, Italy, Spain, Portugal and Israel.

In general, European centers of research in psychiatry have a good deal to offer in epidemiology and in actuarial statistics but have little to offer in the way of objective measures for the biometric assay of the individual patient. The attitude toward mental illness seems to differ among the European countries. There is on the one hand a strong belief in the hereditary nature, at least of the functional mental disorders (Scandinavia); and on the other hand, there is a belief that even though the mental disorders can not be cured, they can be ameliorated to the point where the patient can be restored to his family and the community. This latter belief has produced what might be called the "revolving door" policy toward release and return of relapsed patients. In England, for example, this policy has produced a 70% release rate accompanied by a 40% relapse rate.

Another interesting contrast is in the appeal of psychoanalysis to European psychiatry. In some centers, psychoanalysis is hardly heard of (Scandinavia, with the exception of Norway). In France, Germany and Switzerland, Existentialism and Dasein seem to have a greater vogue than psychoanalysis. Nowhere, to my knowledge, has psychoanalysis succeeded in penetrating the medical faculties. Interest in clinical psychology and in projective techniques is lower than in the United States, but interest in graphology is still high in certain parts of the continent.

Factor analysis seems to be enjoying a renaissance in Scandinavia and is flourishing in certain parts of England (Maudsley) as well as on the continent. Objective techniques and quantification are poorly developed, most of the studies being on an impressionistic basis. There are nevertheless several centers concerned with prognosis and with objective determination of patient characteristics. Langfeldt in Oslo, Stroemgren in Aarhus, Leonhardt in East Berlin are all concerned with prognosis. In fact, two-thirds of the activity at the Zurich Congress dealing with schizophrenia concentrated on prognosis. Much of this effort, however, is along impressionistic lines. For example, in Langfeldt's clinic a good deal of data are collected for the clinical evaluation of the patient, prognosis being based on these clinical evaluations. No attempt is made to get objective determinations and not much effort is spent on distinguishing the particular traits or combinations of traits on which the prognosis is based. Nevertheless, the fact that the prognoses are accurate in a high proportion of the cases (about 90%, according to Langfeldt) encourages the expectation that examination of the available data might isolate factors related to outcome.

In several places, attempts are in progress to use objective methods of prognosis, viz. in Upsala and in Copenhagen. In Upsala, Silde and Dunsmun are trying to develop a series of psychological tests on which they would like to base clinical psychology. They have successfully adapted certain perceptual and psychomotor techniques for this purpose.
The big difficulty in these prognostic studies, as in our own country, is the lack of adequate techniques for gauging the status of the patient on follow-up. Without a criterion, much of the prognostic work remains aimless. In the Scandinavian countries, however, some progress is being made, for they have ready access to patients for follow-up.

A striking feature of European psychology is the great interest in the study of perception, which has persisted despite the war and which reflects both an older tradition as well as the Gestalt tradition. In laboratory after laboratory investigations in perception employ techniques which could be of value for the study of schizophrenia and mental deviation. Some of the new techniques have been mentioned in the body of this report. Others are included in literature references.

The wide discrepancy among the rates of hospitalization for mental illness that characterize the various countries is noteworthy, national and cultural differences in hospitalization probably accounting for many differences. Perhaps new light can be shed on this problem by examining the data on the rejection of military conscripts for mental causes, in the various countries where military conscription is now in force. Such a procedure will, of course, be hampered by many inconsistencies which will make comparability of the data questionable. But eventually standardization of procedures may come about. A good way to begin is by comparing those rejected for mental deficiency, as adequate techniques are available for testing this condition. The two advantages of studying military conscripts is that they constitute a statistical population instead of a sample and that the age groups are comparable from country to country. Representatives of several European countries expressed interest in such a survey as well as the Israelis. A volunteer committee has been set up with headquarters at Brussels and Dr. Marylin van Goethem as secretary.

There are pronounced differences in terminology from country to country and in the underlying concepts of mental disease. For example, the number of children diagnosed as schizophrenics in Europe is infinitesimal compared to the number in the United States. Conversations with leading foreign biometricians have resulted in plans for an international conference on terminology in the epidemiology of mental disease. This is to be held February 15th-21st, 1959, in connection with the annual meeting of the American Psychopathological Association in New York, if funds for this purpose become available.

The development of a concerted effort to bring about a rapprochement between clinical psychiatry and objective psychology has led to the formation of an International Association for the Coordination of Psychiatry and Psychological Methods, with Professor R. Nyssen of Brussels as president and Professor J. Germain of Madrid as secretary. This is a group of psychiatrists trained in psychological methods and a group of psychologists who have been working in psychopathology. They have held two meetings, one at Brussels and one at Zurich and are planning a third meeting in conjunction with the forthcoming International Congress of Applied Psychology, at Rome in April, 1958. The exchange of information and the fostering of mutual understanding across cultural (particularly linguistic) barriers which this group sponsors augurs well for the future development of international cooperation in the study of mental disease.

The author wishes to take this opportunity to thank the Commonwealth Fund for the traveling fellowship which enabled him to make this survey.