The Development of the Concept of Interdisciplinary Research for the Biometrics Research Unit

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Paper delivered at the Sterling Forest Conference, Wednesday, October 18, 1972, 8:00 p.m., Sterling Forest, New York, October 18-19, 1972.

The text for my talk this evening is taken from The Ethics of the Fathers and translated loosely it reads: "He who chaseth after interdisciplinary research, interdisciplinary research will elude him" (Harodef acharai hacoavod, hacoavod boreach mimenu) and I shall illustrate it with a case history of the development of interdisciplinary research in our own Biometrics Research Unit. Actually, I didn't intend it that way, but as a matter of fact, since I probably did not know how to set up an interdisciplinary team, it grew up by default. I could not initiate it, nor control it once it got started, but I did manage to run interference for it and thus enabled it to survive.

It is somewhat out of character for a biometrician to base his case on a case history, but this is the only experience I have in the area of interdisciplinary research except for the short-lived Columbia Greystone Study of Topectomy. Why interdisciplinary research failed to develop viably earlier is an interesting question. Perhaps the directors of the laboratories and clinics in the 1930's and 1940's modeled themselves after the state hospital superintendents of the day who were lords of their territory and brooked no interlopers. But whatever the reason, it was not until the '50s
that interdisciplinary research began to develop at the Institute. Our own case history begins in 1956.

It was fortunate for us that we were created in 1956 when new winds were wafting through the wasteland of psychopathology: the doors of the custodial hospitals were being thrown open, drugs were coming in and the community mental health movement was beginning to stir. The late Commissioner of Mental Hygiene, Paul Hoch, thought he would like to have someone take the pulse of psychiatry before and after these changes were introduced to determine their efficacy. We were essentially to serve as the evaluation arm of the Commissioner. As it happened, the Commissioner was too busy to even formulate the specific purpose of the Unit for the Budget Bureau, and we had to do it ourselves. It soon became apparent that functioning as the Commissioner's evaluation arm was an impossible task for a team consisting of only two researchers and a secretary, and we had to go it alone and interpret our task the best way we knew how.

Thus it was that the original plan for the Biometrics Research Unit as we envisaged it was to develop a specially directed research program for the purpose of the objective assessment of the behavior of mentally disordered persons with the view of improving diagnosis, prognosis and evaluation of outcome.

The very first undertaking begun before the Unit was established, focused on prognosis of outcome in schizophrenia and the entire unit consisting of two state appointees and a half dozen project-supported research workers from various disciplines engaged in the common undertaking. This project in retrospect was somewhat of a disaster since it yielded rather
minimal results in the form of correlations between outcome and tests of the order of .30 or .40. The drugs and open hospitals had developed while we were engaged in prognosis and knocked out our criteria of outcome. We all decided that such grand interdisciplinary undertakings were premature and each retreated to his own bailiwick presumably to develop better strategies and tactics for another assault when the time was riper. We remained in retirement for a long time and no grand assault on a common problem ever developed. I began to regard the whole idea of an interdisciplinary team as a pipe dream. In the quiet stillness that ensued, however, certain flowers began to bloom. Here and there coalitions developed spontaneously between various individual members of our unit because they became interested in a common problem or in overlapping problems. Thus, our sections on behavior analysis and modification combined with the section on anthropology to investigate communication problems between members of social networks; our section on psychophysiology combined with the section on psychopathology to develop better diagnostic classifications; our section on gerontology combined with the section on psychopathology to study diagnosis of the aged; our section on evaluation combined with the community mental health service at the Psychiatric Institute to evaluate outcome of treatment; our section on biostatistics combined forces with internal medicine to study typology of depression and genetic markers in bipolar depressions etc. Apparently, such interdisciplinary research can best develop only gradually when provision is made for the opportunity for its development indirectly rather than by ukase. Our chief advantage inhered in the fact that we were not discipline-centered but were problem- or issue-centered. The membranes separating our
various disciplines were not rigidly impermeable as is often the case with departments in universities and even in institutes, but had a high degree of permeability. Why this was the case is a little difficult to fathom. Perhaps we were lucky in our personnel selection policy or, since most of the staff was recruited from graduate students who developed their interest in psychopathology as part of their training program under my initial guidance, this background inadvertently made possible the coalition across disciplines by providing for the interaction of psychologists of various persuasions (clinical, social and experimental), psychiatrists, sociologists, anthropologists, statisticians and public health workers. They were each brought in to the Unit either as undergraduates or graduate students in connection with an ongoing research project, and had to either sink or swim in interdisciplinary waters, and that may have been our secret weapon for forging interdisciplinary research. They never got the chance to be isolated along disciplinary lines, but engaged in interdisciplinary work from the very start. They did what came naturally!

Thus, although each staff member received intensive training in his own field, he also, simultaneously, became aware of the cognate fields and their potential contributions to solving the problems of mental disorder. Our anthropologist, Dr. Muriel Hammer, offered an anthropological investigation of mental disorder as her dissertation but, contrary to most dissertations in anthropology, presented many statistical tables to buttress her findings — much to the surprise of her tradition bound faculty. Our biostatistician, Dr. Joseph Fleiss, offered to the Department of Mathematical Statistics, a puristic department if there ever was one, a dissertation on the reliability
of the interview and in similar fashion our sociologist-gerontologist, Dr. Ruth Bennett, studied the causes of institutionalization in individual cases rather than in groups.

What moral can we draw from our experience? Is it unique to our group, or, can we generalize to other groups or situations? Can such spontaneous problem-centered coalitions be formed across disciplinary lines in larger institutions such as institutes. This is indeed an interesting question and its answer may perhaps lead to the abolition of rigid departmental lines. Instead, conclaves of individuals could be recruited for solving special problems and as these problems are solved or relinquished, the coalitions could also change. At all events, our case history can perhaps serve as a guide for future development of interdisciplinary research.

Summary

One might liken the contrast between the interdisciplinary and disciplinary approach to the contrast between the nationalism which characterized Western Europe before World War II and the currently developed Common Market. Nationalism led only to wars, competition and destruction; the Common Market should lead to more cooperative productive lines of endeavor and useful outcomes to the solution of common problems. Similarly, departmentally based structures often lead only to rivalries while interdisciplinary structures based on common problems often lead to productive solutions.

But even the Common Market can not prosper without well structured component countries. Similarly, we must have individual workers well based in their primary discipline who can cooperate across disciplinary boundaries to attain a common goal.