Not only do we have a responsibility for the development of professional psychology and a very down-to-earth investment in its future but, for those of us who get satisfaction from participating in and fashioning new movements, there is an opportunity to make a contribution to the first *deliberately designed* profession in history.

I know relatively little about the past of the medical or the legal or the engineering professions, but I suspect they have been Topsy-like phenomena, growing more or less unconsciously according to ill-perceived social pressures. I think that psychology has a chance to do better. I think we are already doing better [*American Psychologist,* 1951, 6, pp. 75–76].

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Sexism in Psychology

Recently, as chief psychologist, I have been reading résumés. Our clinic had a vacancy and advertised for a clinical psychologist. After reading upward of two dozen résumés and interviewing a smaller number of candidates, I surmised that (*a*) of our applicants, the number of men submitting résumés was about equal to the number of women; and (*b*) the qualifications, both personal and professional, of the women were distinctly higher.

This led me to some speculation, to wit: since there are more male than female psychologists, and since the proportion of applicants did not reflect this, there may be a higher proportion of unemployed qualified women psychologists than men; and since the men appeared to be substantially less qualified than the women, there is reason to suspect that among our "colleagues," a great deal of discrimination exists—to the extent that a qualified woman psychologist may not be in any fair competition with a man.

The only men applying were either professionally unqualified or of such dubious personal qualifications that they otherwise disqualified themselves. I can account for this blatant discrepancy only on the basis of rampant sexism in the profession.

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Psychobiology as a Form of General Education

One of the consequences of specialization is that scholars in neighboring fields become unable to understand one another. Zoology, psychology, and anthropology are three such fields. Although each has made a commitment to the scientific method, underlying each is an implicit set of premises, a code of intellectual etiquette that guides inquiry into traditional channels and dictates the kinds of facts and arguments that will be acceptable. Very often the facts, arguments, and premises that belong to the intellectual etiquette of one of these disciplines are strictly proscribed by a neighboring discipline. For instance, young psychologists are taught that inferences made from uncontrolled situations are probably invalid; such inferences, of course, make up the largest part of anthropological literature; contrariwise, young anthropologists are taught that inferences made from "unnatural situations" are probably invalid; such inferences, of course, make up the largest part of the social psychology literature. To a member of one of these disciplines, literature of another will often seem at best irrelevant and at worst incompetent.

The inability on the part of one group of scientists to understand another is not in itself particularly distressing. The unity of inquiry is not so great that every man need understand every other. What makes this inability distressing is that these three fields are all making contributions to the same problem, the biology of human behavior. If a psychologist, a zoologist, and an anthropologist were together to observe a chimpanzee throw a stick at a lion, they would all instantly agree on the importance of this observation. The psychologist would call it an instance of complex instrumental behavior; the zoologist, an instance of aggressive display; and the anthropologist, an instance of weapon using. Here the discussion would stop, for no one of the three would understand the premises on which the others' descriptions were based. The chimpanzee's behavior would remain fragmented into its psychological, zoological, and anthropological components.

Legitimate reasons for the isolation of these academic fields are discernible. Although the frontiers of these fields are arbitrary, their heartlands are not. They are soundly and legitimately based on disciplines. An academic discipline is an organization by which men who share attitudes toward knowledge and methods for attaining it indoctrinate students in those methods and attitudes. From his professors, the student learns the crafts of the discipline—to perform an experiment as a psychologist would, to record the behavior of a free-living species as a zoologist would, to blend with the social ambience of a primitive tribe as an anthropologist would. To become steeped in the attitudes and methods of a discipline is one of the most desirable experiences a student can have. It can transform his perception and galvanize his enthusiasm more effectively than any other experience in his formal education. Such indoctrination is an essential aspect of his educational experience.

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Desirable though this indoctrination is, it often carries with it very undesirable properties. Because of the controversial nature of methods and information in many scholarly areas, indoctrination in one discipline tends to be indoctrination *against* other disciplines. Colleges and universities have attempted to correct for this drawback by insisting that students take courses outside areas of primary concentration. The notion is that even casual contact with any other discipline will immunize the student against overindoctrination.

That such techniques have much effect is doubtful. To teach a psychologist a little Shakespeare may increase his appreciation of Shakespeare and may affect his leisure reading for many a year; but it is doubtful that it will increase in any way his open-mindedness to alternate interpretations of the bar-pressing behavior of the albino rat. Similarly, a dalliance with Cicero is unlikely to convince the young zoologist that the same bar-pressing behavior is anything but an artifact of highly artificial and irrelevant experimental conditions. Thus, contemporary efforts in general education do not get us out of our basic double bind: the successful teaching of a discipline seems to be inextricably bound with counterteaching cognate disciplines. Small wonder that the products of these educational processes have difficulty understanding one another.

Our problem is clear. We are determined to continue teaching a discipline to students; we would like, however, to teach them something about the limitations of disciplines at the same time. The psychobiology program proposed here is designed to teach well-disciplined young zoologists, psychologists, and anthropologists something about the limitations of disciplines. It is offered as an example of how teaching areas of specialization at the frontiers of disciplines can teach something fundamental about disciplines in general.

Psychobiology (or sociobiology) is the study of human behavior from a biological perspective. A biological perspective sees not only the machinery of the individual organism but also the forces acting upon whole populations of organisms which results in their adaptation and evolution. Psychobiology is not yet itself an organized discipline, but it is an area of concern to which many disciplines have made contributions. Anthropology has contributed information about past evolution and present variation in primate and human morphology and behavior; psychology has produced a body of evidence on the development of behavior and the physiological control of behavior in a limited number of standard laboratory subjects; and zoology has developed the theories of behavior evolution and a large body of facts concerning the social systems of animals.

A rapidly developing, eclectic field such as psychobiology presents a unique opportunity to integrate the research and teaching functions of a professor. Being a macrocosmic field, its subjects are readily observable and its problems relatively accessible even to a layman's intuition. Being an interdisciplinary field, its language has resisted the tendency to develop a specialized jargon and holds closely to the *lingua franca* of common sense. Being a rapidly developing field, its strength lies not in its present theories and data, but in its methods and approaches. In such a field, a professor's responsibility is more to orient and direct his students than to impart knowledge in the usual sense. Students properly guided in a research project may rapidly make a contribution to the literature on a problem. Students properly directed in a reading project of current literature on a psychobiological problem can rapidly get a better command of that particular problem than the professor who directs them but does not do the reading. In such a field, mutually beneficial "colleague" relationships can be readily established between a professor and his students.

Because psychobiology is an area in which three disciplines are dealing with the same content, it presents an ideal opportunity for students to assess the influence of disciplinary outlook upon the interpretation and presentation of facts. Discussions about the same facts between students of the three disciplines would reveal that each discipline is in possession of information badly needed by all. A thoughtful discussion of our stick-throwing chimpanzee, for instance, would show that the psychologist knows about complex learning in apes; the anthropologist, about the ins and outs of primate weaponry; and the zoologist, about the patterning of aggressive behavior in hundreds of species. The question, "Why did the chimpanzee throw the stick?" cannot be answered comprehensively without reference to these three points of view.

The gist of the program is thus to bring together advanced majors in all three disciplines to discuss issues that they all concede are important but that they approach with different disciplinary perspectives. In these discussions, each student finds himself called upon to interpret and justify (or repudiate) the perspective of his discipline to colleagues who are as well trained as he but who approach the problem with different methods and assumptions. The student is encouraged by these discussions to see himself as a source person, "expert," in possession of information and theory vital to the problem under discussion.

A variety of settings are appropriate for this kind of discussion. Some which come to mind are courses whose content is in an area overlapped by the three disciplines, seminars that consider the methods and

theory of the three disciplines with respect to a few critical problems, and joint research projects that attempt to collect data on some problem of admitted interest to all three. All are proven ways of initiating the desired interdisciplinary discussion.

To recapitulate, the educational program in psychobiology is designed to counteract the parochialism of the academic disciplines which seems to accompany their ever-increasing specialization. It does so without interfering with the sound training in a discipline basic to a liberal arts education. Like all general education schemes, it calls on at least two and perhaps three of the traditional "divisions" of the academic community. Unlike such schemes, it creates formal settings in which students trained in three disciplines must discuss content which all recognize as important but which they approach with different premises. Its goal is to increase the well-disciplined student's awareness of the limitations implicit in a disciplinary approach to knowledge.

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Eminence of the APA Presidents

Election to the office of president of the APA is an honor received by relatively few psychologists, yet even here one would expect to find individual differences in eminence. A recent study of "Important Psychologists, 1600–1967" (Annin, Boring, & Watson, 1968) makes it possible to assess the relative eminence of 45 of the past 78 APA presidents, both individually and collectively.

Essentially, the method used in the Annin et al. study was to prepare a list of 1,040 deceased persons contributing to psychology from 1600 to 1967, each of which was then rated on a scale from 1 to 3 by an international panel of nine judges. A judge was instructed to give the person a score of 1 if he recognized the name in the history of psychology, even if he could not specify the person's contribution; a score of 2 if he could identify the person's contribution to psychology, even if not very precisely; and 3 if he considered the person of such distinction that his name should be included in a list of the 500 most important psychologists since 1600 and not living. Thus, the highest possible score was 27. In the present comment, each score was treated as a separate category of eminence and called an "eminence score." Since the goal of the Annin et al. study was to report on approximately 500 of the most important deceased contributors to psychology since 1600, the 1,040 names had to be reduced by about one-half. A decision to include persons scoring 11 or above yielded 538 names. A list of these 538 persons was published (Annin et al., 1968), while a list of those receiving scores of 10 or below was deposited with the American Documentation Institute. The published list was arranged by score and again alphabetically with dates of birth and death. The dates of birth and death were checked again in a follow-up study (Merrifield & Watson, 1970), and another study was made to ascertain the particular profession, nationality, and temporal period of the 538 persons (Watson & Merrifield, in press). This latter study showed that about one-half of the 538 most important contributors to psychology were psychologists per se, while the others were primarily identified with other fields. The ultimate goal of these studies was to provide the basis for a forthcoming bibliography which will contain about 50,000 primary and secondary references relevant to these important contributors to psychology (Watson, in preparation).

Forty-seven APA presidents were among the deceased important contributors to psychology evaluated in the Annin et al. panel study (see Table 1).

Table 1 contains mostly familiar names and shows a preponderance of high eminence scores. However, it also contains a few relatively unknown psychologists, at least to the nine present-day judges in the Annin et al. study. The lowest scores were 9, received by Joseph Peterson; 10, received by Henry R. Marshall; and 11, received by Walter D. Scott. The presence of these low scorers suggests that there may sometimes be grounds other than scientific eminence for the selection of a psychologist to be president of the APA. This inference agrees with one made previously based on the last 20 APA presidents as part of a study in which scientific eminence was related to journal citations (Myers, 1970).

Of the 47 APA presidents in Table 1, 45 were included among the published list of 538 most important contributors to psychology. How distinguished are these APA presidents as a group compared with their peers? Perhaps the most appropriate comparison is with those contributors to psychology who were later classified as "American psychologists" by Watson and Merrifield (in press), rather than with the whole heterogeneous group of contributors. The most important American psychologists ($N = 129$) and the subgroup of APA presidents ($n = 45$) are alike on the variables of nationality and profession (except for three presidents classified as "American philosophers"—Dewey, James, Royce) but differ in degree of eminence: (*a*) On the scale from 11 to 27, the mean of the eminence scores of American psychologists was 18.50 ($Mdn = 19$), while the mean of the APA presidents was 23.16 ($Mdn = 24$). (*b*) While 13.18% of the American psychologists scored in the highest category of eminence (indicating perfect agreement among the nine judges), 37.78% of the APA presidents scored in this category. These comparisons testify to the emi-

FORTY-SE

President

Gordon W. Allport
James R. Angell
John Dewey
G. Stanley Hall
Clark L. Hull
William James
Wolfgang Köhler
Karl S. Lashley
Lewis M. Terman
Edward L. Thorn
Louis L. Thurston
Edward C. Tolma
John B. Watson
Robert S. Woodw
Robert M. Yerkes

James McK. Catt
Edwin R. Guthrie

James M. Baldwin
Walter S. Hunter

George T. Ladd
Hugo Münsterber
Carl E. Seashore

Harvey A. Carr
Howard C. Warre
Margaret F. Wash

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