Letters

Reversibility of Psychiatric Diagnoses

The many replies (27 Apr., p. 356) to Rosenhan's article "On being sane in insane places" (19 Jan., p. 250) virtually ignore what may be its most important contribution. The pseudopatient experiment does not merely illustrate that psychiatric diagnoses are fallible or inconsistent; we knew that, and it is illustrated again by the varied responses of Rosenhan's critics. Nor is the study simply another demonstration of the familiar grimness of mental hospitals, although that is well worth restating. Rosenhan goes beyond these points to show something which I, at least, had not fully realized—that psychiatric diagnoses, unlike those in other branches of medicine, are almost *irreversible*. Internists, neurologists, and pediatricians sometimes have to admit errors, but a psychiatrist never does; it is not he who was remiss, but the schizophrenia which is in remission.

The psychological dynamics which lead to this apparent infallibility are easy to understand. The initial diagnostic criteria are vague anyway; the psychiatrist has little genuine contact with the patient and thus obtains little trustworthy new information; a certain reluctance to admit error is characteristic of people and of institutions generally. In the absence of any countervailing social pressure, it is thus much easier to conclude that the schizophrenia is in remission than that it never existed in the first place.

A medical diagnosis is much like a hypothesis in science; it should lead to further predictions and be subject to disconfirmation. In science, hypotheses that cannot be disproved by any conceivable evidence are not hypotheses at all. Should we not conclude that diagnoses which cannot be disproved are equally meaningless? By showing that the diagnosis of "schizophrenia" is essentially irreversible, no matter how the patient subsequently behaves, Rosenhan has dealt the scientific pretensions of psychiatry a serious blow.

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Agricultural Research

I am disturbed, as are many other ARS (Agricultural Research Service) scientists, by the National Academy of Sciences report on agricultural research and Nicholas Wade's subsequent comments (News and Comment, 5 Jan., p. 45; 27 Apr., p. 390).

As a "bench" scientist, I am convinced that the freedom for basic research in agriculture does exist within the current system. Basic research needs more than freedom; it needs scientists' own initiative and dedication, plus support by management. In a limited funding situation, the management has to choose between basic research and mission-oriented research. To a scientist, mission-oriented research may not be as rewarding (or glamorous) as basic research, but it requires at least the same dedication.

The panel pointed out the poor support of basic research, especially in the study of photosynthesis and of nitrogen fixation. But how about the achievements in genetics, breeding, pathology, entomology, agronomy, and many other fields of agricultural science? Did photosynthesis contribute to solving the problem of corn blight? Did either photosynthesis or nitrogen fixation contribute to the success of the "green revolution"?

I am strongly of the opinion that crop-oriented research should be the chief effort of the ARS. Let us take tobacco as an example. Many pioneer findings of a basic nature are the result of tobacco crop research on photoperiodism, essential mineral nutrients, viruses, genetics, breeding, disease resistance, air-pollutant effects, organic acid metabolism, physiological disorders (frenching, tumor formation), and, most recently, parasexual hybridization. No handicap has been placed on any scientist who really knows his crop and his research objective. It has not hurt to have a mission in mind. Most scientists realize the importance of, and wish to take part in, basic research or apply basic results in their work. The only question is the degree to which we develop basic or applied research which will attack problems of immediate significance. The "mix" in ARS has not been a poor one. One can not develop basic research at the expense of applied research.

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The NAS Pound committee has charged that "the agricultural research establishment" supports "pedestrian and inefficient work and neglects basic research" and that basic studies of photosynthesis and nitrogen fixation, which are by no means the special province of agricultural scientists, have been neglected by the agricultural research sector.

The science of agriculture encompasses many disciplines. It could logically be argued that agriculture should substantially fund and conduct basic research in cancer, because farm animals suffer from several types of cancer, or in nuclear physics, since some farm machinery is driven by electricity derived from nuclear reactors, and so on. To a degree (*what* degree is the question) agriculture should involve itself in these fields, but the *major* function of agricultural science is to knead, weld, knit, and fabricate the results of basic research from many disciplines, including our own, into special innovative packages to alleviate the constraints on food production, ameliorate soil pollution, use land more efficiently, and attempt to improve the quality of life for people in diverse situations. Agricultural scientists must consider not only the physical increments of the environment, but the economic, social, and political mores of the people. When considered in this light, perhaps the charge of "inefficiency" could be reduced to a lesser one.

To describe agricultural research as pedestrian is unfair. What could be more imaginative or have more of the spirit of adventure than growing crops where few had grown before, controlling disease and pests with biological agents, developing seeds for greater yields, initiating more efficient marketing and crop-management systems, improving the diets of undernourished people, creating new recreational areas, developing plans for rural-urban expansion, and much more?

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