# Letters

## LSD: Tamed for Research

Henze presents justifiable support for the Sandoz Foundation's position on LSD (Letters, 12 Aug.). Henze and Sandoz had a tiger by the tail. With NIMH now taking responsibility for distribution of LSD, the situation will improve. More research will be authorized than in the recent past, since Sandoz only felt free to give the drug to government sponsored projects.

Lowinger (Letters, 2 July) asks for "carefully designed double-blind study" of the merits of LSD as an adjunct to psychotherapy. Our group at this Institute has been conducting just such a project for the past year under a grant which NIMH was farsighted enough to give us. We hope to have significant results in another three years.

The hysteria certainly exists, as I have discovered by corresponding with about 30 of my colleagues working with LSD. In the wake of recent publicity, projects have been called off, doctors have been attacked by hospital associates as "kooks," and I have been diagnosed (the psychiatric method of character assassination). Lowinger will be relieved, however, to hear that almost all of the work on LSD is proceeding as planned.

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## Language Requirements for the Ph.D.

An unresolved issue in graduate education is the foreign language requirement for the doctorate. Language requirements have never been universally fixed, and there are many proposed solutions, which vary from discarding foreign languages, and substituting mathematical, statistical, or computer language, to strengthening skill and use requirements in one language. Local enforcement methods vary, but the traditional requirements of French and German appear to be the most frequent. One argument supporting the language requirement is based on issues of cultural sophistication, general education, and technical needs.

A suggestion is offered here which may not only be sensible for the sciences, but useful in all areas of scholarship and research. Our proposal recognizes that the decisions about relevant languages should not be arbitrary, that each specialized area may have its own needs, and that foreign language specifications are not inflexible but may need updating at intervals.

From citations in recent literature in any area of science, it is possible to determine where the activity is high. Studies of the primary language of scientific reports are now being carried out in the life sciences. For example, in the area of biochemistry and endocrinology, a review of primary and secondary languages in the world's serial literature (2617 journals) shows that English is used in almost 50 percent of the reports, followed by French, German, Russian, Italian, Spanish, and Japanese. In the pediatrics literature the order is English, Spanish, French, German, and Italian, with English constituting one-third of the total. In 1627 aquatic biology serials, the order is English, German, French, Japanese, and Russian; in 1066 dealing with drugs (pharmacology, toxicology, and cosmetics), the five most frequently used languages are English, French, German, Spanish, and Japanese.

Such data can reveal a nation's scientific and technological progress. In aquatic biology, for instance, the country of origin of 1627 serials shows the U.S. has 392 publications, Japan 148, U.S.S.R. 92, Canada 78, and the United Kingdom 65. In a study of Russian literature citations, 2100 U.S. scientists were asked to estimate their ability to describe to a colleague the content of an article in a foreign language. Ability in French (1517) and German (1498) accounted for 68 percent of the total who reported (*1*).

From such analyses a small group of relevant foreign languages can be determined, in addition to a larger group of currently irrelevant languages. Diversity is to be anticipated across the various sciences and specializations. We propose that each faculty group involved in Ph.D. training analyze its area in relation to national contributions, activity, and trends, and then recommend acceptable and unacceptable foreign languages to the graduate dean. We see three major advantages to the proposal. First, it should bring language requirements up to date. Second, it offers a rationale for acceptable and unacceptable languages. Third, it is empirically based on the leadership and responsibility assigned to the involved scientists, scholars, and teachers. Fourth, the requirements are subject to change. The final characteristic is that enforcement can remain the responsibility of the present administrative officers and university structure.

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**Note**

These findings have been reported in the BSCP Communiqué series from 1963–65 of the Biological Sciences Communications Project, George Washington University, Washington, D.C.

## Oleomargarine Territory

My attention has been called by R. K. Boutwell, associate professor of oncology at the University of Wisconsin, to an error in my article "The ethical basis of science" (3 Dec. 1965, p. 1254). In speaking of the need to defend the freedom of scientific investigation, I coupled the fate of Mendelian genetics in the U.S.S.R. and the nutritive qualities of oleomargarine in Wisconsin. It is evident from a consultation of *Time*, 11 October 1943 and 27 March 1944, that I pointed the finger at the wrong state. It was in Iowa, at Iowa State College, that the unfortunate suppression of a pamphlet by Oswald H. Brownlee by the college president, at the insistence of the Iowa Farm Bureau, occurred. Brownlee, in what *Time* called a "frank and popularly written [study] of wartime farm economics," had stated that "margarine is as palatable and nutritious as butter,

and more sensible to use in wartime because it requires less manpower." As a consequence of the suppression of the bulletin, the head of Brownlee's department, Professor Theodore William Schultz, resigned and joined the faculty of the University of Chicago, and, by March, 19 other faculty members had left Iowa College in protest. One of them, W. W. Wilcox, actually found refuge at the University of Wisconsin, where much of the work establishing the nutritious qualities of oleomargarine had been carried out by C. A. Elvehjem and his co-workers. In an article entitled "Vegetable fats equal butterfat in mixed rations," R. K. Boutwell, R. P. Geyer, C. A. Elvehjem, and E. B. Hart concluded, on the basis of their own research, that "butterfat is superior to vegetable fats when young animals are restricted to a diet made up almost entirely of milk, but not when the diet includes a mixture of such carbohydrates as starch, sucrose, and dextrose. These are supplied by such common foods as cereals, potatoes, sugar, and molasses" ("What's new in farm science," *Bull 461, Ann. Rept. Agr. Exp. Sta., Univ. Wis.* (December 1943, p. 45). I sincerely regret the mistake, which might seem to impugn the distinguished work of the Wisconsin group. I further deplore that the same error was printed in my book *Science and Ethical Values* (Univ. of North Carolina Press, Chapel Hill, 1965, p. 92), in a more extended form of the essay printed in *Science*. To confuse the rescuer with the drowning man or the bystander with the thug may not be uncommon, but it is truly regrettable.

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## "Bootlegging" in Research

Although Greenberg is perhaps strictly correct in stating in his article on "bootlegging" in research (News and Comment, 19 Aug., p. 848) that this problem has not been the subject of any published study or conference, it has, nevertheless, been aired and the discussion recorded. At the 12th National Conference on the Administration of Research, University of Denver, 1958, a participant asked how the willingness of research directors to tolerate "bootleg research" accorded with managerial efforts to program and direct research activities toward major objectives of the laboratory and parent organizations. The ensuing discussion revealed two opposing camps, one for "legalizing" and encouraging such efforts by specific allocation of discretionary budgeted funds for extracurricula exploratory studies, the other for excluding any effort not clearly a part of the approved program, on the basis that any "undercover" work is objectionable. The issue was not then and has not been settled but one should take note that there are two kinds of "bootlegging." One involves undercover or diversionary effort and the other, as Greenberg points out, involves clouding the real purposes of approved programs. Perhaps the latter is less harmful, particularly if the effort is not really a departure from the commitments of management and the researcher.

A summary of the above NCAR discussion will appear in a forthcoming text, *The Administration of Research—An Interpretive Summary of the Proceedings of the National Conference on the Administration of Research, 1947–1964*, now being edited by the undersigned.

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## Calcium and Fluoride

D. M. Hajimarkos discussed the high content of fluoride in fish flour (Letters, 17 June) and called for studies to be undertaken regarding the effect of ingesting fish flour on dental caries and the degree of mottled enamel that might develop in children's teeth. In this letter he has omitted one important paragraph which is found in his reference report [*J. Pediat.* **65**, 782 (1964)] as follows:

> However, since the calcium content of fish flour is appreciable, it should be pointed out that experimental evidence has shown that absorption of fluoride from the intestinal tract is considerably depressed by the presence of high amounts of calcium.

My interest is merely to bring out this information, so that any judgment rendered by readers will also be based on this statement.

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