well be drawn. Bigness, like smallness, has its own dangers. Large countries, unlike small ones, have the objective potential to become autarchic. Their scientists, and intellectuals in general, may be content with reading only their own literature, and being recognized only by their own public. They can even afford to despise any public other than that of their own society. If, therefore, for any reason a scientific fad will develop in any large country, it will be difficult to remedy it. Small countries will often be afflicted with the malady of scientific particularism, but, at least, they will suffer from it and, therefore, be aware of the need for remedy. Large countries, on the other hand, infected by the same disease, may intellectually decline for long decades without noticing that anything is wrong. Provinces may in such cases provide a useful counterbalance. Being marginal, they may be more immune to the fads and idiosyncrasies of the metropolis, and more open to influences emanating from other centers. The Scandinavian countries and Switzerland seemed to have played such corrective influence for German science at one time or another. The Swedish chemist Berzelius played an important role in the elimination of *Naturphilosophie* from German science early in the 19th century, and, as mentioned before, many great innovators in German science were "made" in Switzerland. Similar instances occurred in England. Canadian influence seems to have played a part in introducing modern methods of clinical research into the somewhat dated structure of British medicine, and Commonwealth anthropologists have introduced sociological concepts to England which, for a variety of non-scientific reasons, were rejected by the English scientific community.

Finally, small countries may usefully develop emphases and specializations neglected in large ones. Lately there have emerged scientific projects, such as space exploration, in which small countries have no possibility of participation. Such projects may, at least temporarily, divert such a large number of scientists in certain disciplines to one or a few types of research that other, perhaps more important, problems will be neglected. Small countries with limited financial resources may exploit such a situation by taking up the neglected problems.

To conclude, the utility of being small and peripheral, for the small countries themselves, for the metropolis and for science itself, will hinge on two things: The first is the realistic recognition that small countries can only become intellectually equal to large countries by attaching themselves to metropoles. They must attempt to become a part of the large scientific community, and discover what they can best do within it. It must be clear that there will only be a few things at which they can excel. In other affairs, they must be content with competent mediocrity. But this latter is certainly more useful than local idiosyncrasy, or nationalistic striving for scientific autarchy.

The second condition on which the small country's utility depends is the necessity for it to preserve its cultural identity. The recognition of interdependence, even unequal interdependence, is not to be confused either with self-effacement or apish imitation. These latter states will only lead to the same result as scientific nationalism, namely, to senseless repetition of scientific efforts or pathetic attempts to excel in those areas where one is at a disadvantage, in the meantime neglecting one's own real chances.

EDITORIAL: APPLIED SCIENCE WITHOUT WARRANT

Critics of the new social science frequently allege that the social sciences, without license or leave, change behavior in the process of discovery. This allegation is not handled well by the advocates of social sciences.

Critics rightly resent countless statements such as the following, found in the Behavioral Science Sub-Panel report of the President's Science Advisory Committee, "Strengthening the Behavioral Sciences," (April 20, 1962):

"The impact of the behavorial sciences on our society is far greater than most people realize. At one level they are providing technical solutions for important human problems. But at a deeper level they are changing the conception of human nature—our fundamental ideas about human desires and human possibilities. When such conceptions change, society changes.

"In the past few generations, many beliefs about such diverse matters as intelligence, child rearing, delinquency, sex, public opinion, and the management of organizations have been greatly modified by the results of filtering scientific fact and theory through numerous layers of popularizing translation . . ."

What social scientists and their justifiers, as here, do not fully appreciate is that they are committing a fault that they often accuse their natural science counterparts of committing, that is, introducing uncontrolled applications of scientific knowledge into the social system. Perhaps this reflects the ultimate basic power and respect drives of men: for good or evil, they wish to be known as the causers of change, the more massive the better.

But a strict self-restraint and self-governance, as well as a respect for logic and the limited meaning of science, should impel all scientists to recognize that an uncontrolled or careless application of a pure proposition of science is regrettable, in every logical sense like the leakage of radioactivity from a nuclear power installation.

The mere fact of its application does not justify a scientific discovery. Nor can one count upon some mysterious gentle hand assuring benign applications. The above quotation and hundreds like it can be amended to say: "Social science discoveries about human relations are multiplying and can be multiplied further. Applications of social science, like natural science, are moving ahead willy-nilly and changing our society and we had better recognize and shape them." Only then can it be an acceptable statement.

[ABS Editorial Dec. 1962]

REFERENCES and NOTES

1 The impressions recorded in this paper are based on the preliminary findings of a series of observations and interviews conducted as part of a research project on the development and structure of various professional roles in Israel financed by a Ford Foundation Grant. The research has not yet been completed, and will be fully reported later.

2 fCf. UNESCO, *Basic Facts and Figures*, 1959, pp. 15-23 Table 3, showing that 7.3% of the male population of the U.S. as compared with 6.1% in Israel have higher education. No other country has more than 4%. Among women the percentages are 5.2% and 2.8%, but Israel is still second highest, at least among the countries enumerated in that table.

3 Cf. about this Edward A. Shils, "*Metropolis and Province in the Intellectual Community*" in V. M. Dandekar and N. V. Sovani, *Changing India*, Bombay, 1961, pp. 275-294. I have advisedly used "periphery" rather than "province," since the cases I am referring to are different from those treated by Shils.

4 Cf. E. Cagliardi *et al., Die Universituet Zuerich* 1833-1933 *und ihre Vorlaeufer*, Zurich, 1938.

5 In principle, of course, small countries could attach themselves to several centers, provided that there are more than one. In fact, however, this will be somewhat difficult, since this would necessitate mastery of two or more foreign languages. They can, however, re-orient themselves from one center to the other.

6 For a masterful exposition of the hopeless entanglements of science with politics, religion and personal relationships in one small country, see Renee C. Fox, "Journal Intime Belge–Intiem Belgisch Dagboek" *Columbia University Forum*, V, (Winter 1962) pp. 11-18; and "Medical Scientists in a Château" *Science* 136:3515 (11.5.62) 476-483.

7 For a more detailed discussion of these conditions cf. Joseph Ben-David, "Scientific Productivity and Academic Organization in Nineteenth Century Medicine" *American Sociological Review*, XXV (1960) 828-43; and Joseph Ben-David and Awraham Zloczower, "Universities and Academic Systems in Modern Societies." *European Journal of Sociology*, III (1962) 45-84.