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UNIVERSITY OF COLORADO AT BOULDER

Boulder, Colorado 80309

INSTITUTE OF BEHAVIORAL SCIENCE

April 13, 1978

Dr. Francis P. Bretherton
Director
National Center for
Atmospheric Research
1850 Table Mesa Drive
Boulder, Colorado 80303

Dear Francis:

I have read the materials on Michael Glantz. I also took the opportunity, after consultation with your office, to have lunch with Dr. Glantz and had an extended conversation with him about his own perception of his work and his plans for the future.

I am very much impressed with Dr. Glantz. He has a rare combination of two talents--a capacity for very careful scientific work, with a strong appreciation of the totality and complexity of the system with which he is dealing; in addition, he has an unusual capacity for presenting his results in ways that capture the imagination and convey information to a wide audience. This combination of skills is very rare among scientists and NCAR is extraordinarily lucky to have so unusual a person.

The work on the Sahel is of great importance. It is a total systems approach, which is absolutely necessary for the understanding of this phenomenon. It pulls no punches, yet it is not ideological. It is low key in its presentation. It identifies the essential defects of the present system, which will not please those who are ultimately responsible for it, but it does this in a way that should promote thought rather than anger. The poster which presents the results is a brilliant innovation. The work on the Peruvian coast fisheries and the "nino" is of its nature less spectacular but equally thorough and sound.

Dr. Glantz is not only a brilliant writer in his own right. He is a remarkable entrepreneur and editor. The two volumes which he edited, one on the Politics of Natural Disaster and the other on Desertification, are excellent jobs. They bring together a group of exceptionally able writers and they suggest that Dr. Glantz not only does his own work well, but he has an excellent knowledge of who is working in the field, and he is able to pull together the present state of knowledge in a remarkable way.

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I have only one criticism of the work. It is somewhat deficient in demography, which is a key element in the problem. Glantz recognizes this, but with the very limited resources at his disposal he feels he could not give this problem the attention that it deserves. In any consideration of the formation of a social system group at NCAR, however, I would rate the inclusion of the first-rate demographer as a high priority.

There is not the slightest doubt about the ability of Dr. Glantz or the extraordinarily valuable service which he is performing at NCAR--NCAR will be lucky if they can keep him.

The larger question of the role of social systems analysis at NCAR is not perhaps involved in the immediate decisions about Dr. Glantz, but it does underly these decisions. I feel myself, both from my experience on the Board of UCAR and from a study of the work of Dr. Glantz, that social systems analysis is rather a low priority at NCAR, not only because of the prevailing atmospheric systems analysis culture--which is not unreasonable--but also I think because social systems analysis is perceived, perhaps subconsciously, as something of a threat to the operations of a large and expensive undertaking devoted to a better understanding of the atmosphere as a physical system. There is, I suspect, a certain unexpressed apprehension that the careful analysis of social systems will reveal that the kind of knowledge about the atmosphere which NCAR is likely to produce is of relatively minor significance in the solution of social and human problems. More particularly, the ability to predict the future of the state of the atmosphere is information which is likely to have a relatively minor effect on social systems and on human decisions and would not contribute very much to the solution of those human problems which arise out of the failure to adapt to the overall physical and biological environments of human beings. A conclusion which I infer from Dr. Glantz's studies, although I am sure that he would agree with this, is that the ability to predict is much less important than the ability to understand the overall nature of the physical and biological environment, even if its fluctuations are regarded as entirely random and unpredictable, as indeed some of them may be. It is much more important, for instance, that the people of the Sahel come to have a strong understanding of the long-run carrying capacity of the system than it is that they should be able to predict next year's droughts or rains, and the longer-run the prediction, the less impact it is likely to have. The decision-making process is much more likely to respond to events of the present than it is to predictions of the future. There is a real possibility, therefore, that social systems analysis, if taken as seriously as it deserves to be, would force a re-examination of the epistemological patterns and structure of atmospheric sciences, away from false analogies with celestial mechanics and towards an interest in the propagation of realistic images of the significant properties of the system over time. This could well be

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threatening to the existing structure and it is not surprising that it would be resisted. On the other hand, it does seem to me that this is the creative way to go.

I would recommend, therefore, a very much expanded social systems analysis program at NCAR, with the objective of studying the impact of information from the atmospheric sciences on social systems around the world, with a much diminished emphasis on prediction and increased emphasis on understanding the nature of the system, including its unpredictability. The illusion that science means prediction I think is one of the greatest handicaps of the scientific community.

A suggestion which NCAR might like to consider is whether a program in the social systems analysis of knowledge about the atmosphere would not be better administered as a joint project between NCAR and some outside institute in the behavioral sciences, such as, for instance, the Institute of Behavioral Science at the University of Colorado, which already has an extensive tradition of programs on the borderline between natural and social sciences, and where there already is one joint program. A joint program might open up new sources of funding and might resolve the problem of the difficulties of the interaction of two scientific subcultures, and would I think strengthen both institutions.

Yours sincerely,

Kenneth E. Boulding/KH
Kenneth E. Boulding

KB/jh

cc: Gilbert White

Signed in his absence