

To: The Executive Net -- C778 Community Conference
From: Walt Roberts
10 November 1984

PROVOCATIONS -- #27
Co-evolution and Nuclear War: A Soviet View

The director of the Computer Center of the USSR Academy of Sciences, Dr. Nikita N. Moiseev recently wrote a valuable article for presentation at a seminar on nuclear war in Italy. Moiseev is a scientific colleague and friend of mine. One of his junior staff members, Dr. Vladimir Alexandrov, whose research Moiseev quotes, spent some months at our research center here in Boulder a half-dozen years ago. We got to know him well during that period, and his knowledge and work are excellent.

After Alexandrov returned home he devoted his time to mathematical models of the weather and climate. His main tool was an excellent scientific weather model developed at Oregon State University by Dr. Larry Gates and associates. The model, available in the open literature, was enhanced and run in the USSR Center's computer, which will not handle larger and more sophisticated models. However, the model is very good, and its results have been extensively tested here and abroad.

When a paper by Paul Crutzen and John Birks appeared in Sweden in June 1982, describing for the first time the possible drastic climate effects of smoke from a large nuclear war, Alexandrov and Moiseev went to work to test the hypothesis for themselves, with their own data and model runs. About this Moiseev says:

"An event took place last year whose significance has not yet been fully recognised. Independently of each other, using different computers as well as different models, researchers in the USSR Academy of Sciences' Computer Center in Moscow and in the Center for Climate Studies in the United States carried out calculations that indicated that a nuclear war on almost any substantial scale would lead to the human race's complete destruction. Today these findings are widely known and there is probably no need to turn once more to the meaning of 'nuclear darkness' and 'nuclear winter'. Only the final conclusion matters, namely that no matter where a nuclear conflict would begin on our planet and no matter who would initiate the first strike, whether or not a retaliatory strike would follow, the entire human race would share a common fate: no one can hope to survive a nuclear catastrophe."

Moiseev then goes on to list a series of propositions that should guide further research and also the political process. Among them is a clear call for international programs to evaluate the results of the research from the standpoint of politics and economics. He develops also the notion that nuclear war will, by its magnitude, violate the principles of homeostasis of humankind and nature and the ideas of "co-evolution" as developed by V. I. Vernadsky and Teilhard de Chardin in their concept of the self-adjusting "noosphere." I would add to these two the view of Lovelock and Margulis in the "Gaia Hypothesis", which holds that the total biospheric system is self-healing and self-regenerating, at least up to a point.

Moiseev concludes with a fervent hope that I share:

"In spite of the very great complexity of the ecological situation, of the depletion of the planet's resources, and

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of all the contradictions in the objectives and strivings of individuals, countries, and regional groupings, there do exist rational alternatives for a joint development of man and nature--of which he himself is a part. And modern science does possess the faculty of finding the ways that lead to that harmony without which the human race cannot have a future. I am fully convinced that as scientists join their efforts in studying the problem of Coevolution they will find ways that lead to the achievement of those ideals of harmonious relations between man and nature that are common to all the world's religions and to the world's philosophical teachings."

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