

CPW Keyfitz

HARVARD UNIVERSITY  
CENTER FOR POPULATION STUDIES

Area Code 617 495-2021

9 Bow Street  
Cambridge, Massachusetts 02138

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Professor Matthew Meselson,  
Bio-labs 411,  
Harvard.

Dear Matt,

Your article on chemical warfare in the current Scientific American is just what is needed-- authoritative technically and relevant politically. I hope that it will have the influence it deserves.

I have been preoccupied with the increasing devotion of scientists to ~~xxxx~~ <sup>chemical</sup> and other means of destruction. The acceleration of armaments in the US now is surely going to shift further the balance between peaceful and military uses of science. The attached proposed editorial for the Bulletin of the Atomic Scientists or some other review attempts to describe the problem and suggest a solution.

All good wishes,

Sincerely,

*Nathan*  
Nathan Keyfitz

Draft  
Nathan Keyfitz  
March 16, 1980

### SCIENCE FOR REAL DEFENSE

American arms have been useless for rescuing our embassy personnel in Teheran; they did not slow the Russian advance into Afghanistan, and have helped the Afghan resistance fighters little if at all. Our response to these events is to add more of the same--expand the nuclear arsenal, develop the MX missile, build more advanced planes and submarines. Above all we show our determination by increasing the arms budget by at least 3 percent in real terms in one year.

This last action, by which we will spend 15 percent more next year than this, may or may not be effective if the Russians stay where they are. But the sense of rivalry is no less strong in the Kremlin than in the White House, so our increasing the arms budget will cause the Russians to spend more on their <sup>side</sup> and thus change the balance very little. They and we will send more arms to our allies around the world, and by our example we will stimulate other countries to buy or make more arms. World arms procurement has been moving up at nearly two percent per year in real terms during a decade, to a total by 1977 of nearly \$434 billion. The effect of our 1981 budget will be to accelerate worldwide armament. Perhaps the strain of keeping up with us will arouse the Russian populace, but it would take more than this to shake the iron hold of the regime.

An alternative conclusion from the impotence of our arms over the last few months is that instead of more of the

same we ought to be trying something different. With the present arms configuration, even if we add 3 percent each year and the Russians add nothing, we would not be able to stop the Russians short of the Persian Gulf or prevent them from realizing the dream of the czars--to cut off Europe from Asia.

Meanwhile our scientific manpower is more and more associated with destruction. The larger scientific effort going into arms will further increase public apprehension that science predominantly serves sinister ends. The image of science in the public mind is bound to become less and less benevolent. Science fiction may locate those destructive machines in distant galaxies, but the preoccupation to which they correspond is right here on earth.

How can we escape the futility of this process by which the Russian arms expenditures are the reason for ours, and ours stimulate theirs? Even regarding the matter from the narrowest military perspective, certain alternative directions of technology would put us ahead. One example will suffice. Our dependence on Middle East energy sources tempts the Russians to encircle and capture them. Once they have the oil they will control our allies in Europe and Asia--we see some anticipation of that in the increasingly neutral attitudes of Europeans and the Japanese.

We seem unable to stop the Russians with tanks, and to try with nuclear weapons might well be equivalent to common suicide. Yet there is a way to stop them, and that is by making the Middle East oil no special prize. If we put into the production of energy from tar sands, alcohol, solar energy and other sources

→ missing pas?