

# F. A. S. PUBLIC INTEREST REPORT

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## CHARGED PARTICLE BEAM: ANATOMY OF A DEFENSE SCARE

One gets a glimpse of the way Washington works in the recent short-lived furor of the charged particle beam threat. A retired Air Force Intelligence officer, Major General George J. Keegan, has been assuring audiences for several months that:

"The Soviet Union, irrespective of what any scientist in this country tells you, since I have done more work on this subject than any living official in this country, is 20 years ahead of the United States in its development of a technology which they believe will soon neutralize the ballistic missile weapon as a threat to the Soviet Union." (*Aviation Week*, 3/28/77).

The press picked up these sensational charges even though the reporters themselves could see the earmarks of irresponsible exaggeration. For example, at one meeting Keegan said the Soviet Union would have the ABM defense in place by 1980. But, when asked about it by a reporter, said it would only be tested by 1980.

When the general credulity of the press had been thoroughly exploited, *Aviation Week and Space Digest* wrote a widely ballyhooed technical piece about the danger which provoked further Congressional interest.

But the Defense Intelligence Agency (DIA) pooh-poohed the threat in secret hearings before Senate Armed Services. Also, the CIA said:

"The Central Intelligence Agency does not believe the Soviet Union has achieved a breakthrough which could lead to a charged particle beam weapon capable of neutralizing ballistic missiles."

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## KEEGAN UNDERTAKES MOST ADVANCED RESEARCH

"For five years the intelligence community has said: 'No, Keegan, you're wrong. Our scientists say it is not possible.' Our scientists never really tried. Our scientists haven't done the basic research. It was left to my organization to undertake the most advanced basic research, or sponsor it, since the development of the A-bomb, to prove to these people in our community that what the Soviets have been writing about for 15 years they are in fact able to do and are doing. And I submit that the Soviets, on the basis of what I have examined, have every expectation that well before 1980, if they don't blow themselves up — and they may — will perceive that they have technically and scientifically solved the problem of the ballistic missile threat".

—Major General George J. Keegan, Jr. speech to newsmen at the American Security Council.

## ENVIRONMENTAL IMPACT OF USE OF WEAPONS RAISED BY FAS

FAS joined with a number of other environmental organizations early this year in a suit that questioned the propriety of the environmental impact statement filed by the Defense Department on the B-1 bomber. The draft impact statement had covered only the prototypes and not the fleet of bombers and had been circulated improperly.

FAS joined the suit on condition that it would seek to vindicate an important principle: should environmental impact statements consider the domestic and international environmental effects of the use of weapons in war? As noted below, in excerpts from the brief, bomber fleets add importantly to the number of megatons used in war and the total has already reached levels which may make insupportable demands on the world ecology.

The Government, which has not yet conceded that the environmental effects of military weapons in war need be touched upon in environmental impact statements argued that, in this case at least, it was "useless speculation".

Whether the speculation is "useless" in any particular case, FAS asserts that the Government is clearly required to review the domestic and international implications of the use of weapons in war and to provide the public with its assessment — whatever that may be.

To take an extreme case, strategists have often discussed the implications of a "doomsday" deterrent device in which one adversary sought the (peacetime) strategic advantages of a deterrent that would (in war) irrevocably destroy the ecology. A number of pending weapons could approximate, if not equal, such consequences.

Biological weapons which attacked either man or the food chain are an example. Radiological weapons in which nuclear weapons were made with bomb casings of a long half-life are another. Geophysical weapons have been discussed which could alter climate, or produce earthquakes. Energy beam weapons have been discussed recently which might have important effects on the ozone layer. It strikes us that the law asks the Government to review such facts. Nothing whatsoever in the law suggests

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## NEXT ISSUE SEPTEMBER

In accordance with long-standing tradition, the FAS Report does not appear in July and August. Present plans are to devote the September issue to science and society problems facing the Eskimos in their efforts to preserve the Arctic; for this purpose FAS will attend an historic Alaskan meeting in June of Eskimos from all over the world's Arctic regions.

## AVIATION WEEK NOTED FOR GIANT HELP TO SOVIET INTELLIGENCE

In submitting an Aviation Week editorial on charged particle beams into the Congressional Record, Congressman Robert K. Dornan (R., Calif.) gave as his reason for taking the editorial seriously:

"Mr. Chairman, several Soviet defectors from the U.S.S.R. intelligence community have informed our Nation that over 85 percent of Soviet intelligence gathering is accomplished by merely subscribing to an American magazine called "Aviation Week and Space Technology." H. 3943, May 3. □

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The Defense Department put out a Fact Sheet saying:

"There is no convincing evidence that Soviet development of a charged particle beam weapon is imminent."

Indeed, DOD said:

"No direct correlation between Soviet charged particle beam work and weapons related work has yet been established."

It noted that Soviet state of the art in this area was "approximately comparable to ours" and that "in some areas they lead and in others the U.S. leads."

The Council for a Livable World held a seminar for about 23 Senators at which Dr. Richard Garwin defused further Congressional concern. He said:

"As an anti-ballistic missile system, a charged particle beam (CPB) system would require the following capabilities:

- long-range radars to detect and track RVs,
- to discriminate against decoys outside the atmosphere,
- to generate the charged-particle beam,
- to point and track that beam,
- to propagate that beam through the atmosphere,
- to determine how far and in what direction the beam missed the target,
- to correct the aiming of the beam,
- to measure once more the miss,
- to determine whether the target has in fact been killed,
- and to attack all other objects which might be threatening RVs.

Furthermore, the system must be able to defend itself — its radars, accelerator, and the like, against nuclear attack. One great difference between an ABM using a CPB and an ABM using a nuclear armed interceptor is that the nuclear weapon has a kill radius of some kilometers while the CPB of a diameter a few centimeters must actually strike the RV in order to injure it. Thus, at a range of 100 or 1000 kilometers, the radar accuracy and beam pointing accuracy for a CPB weapon must be better than that for an ABM interceptor by a factor of a thousand or more. Furthermore, the CPB is bent substantially by the earth's magnetic field, so that one must point the beam in a direction other than that directly to the target. Finally, the earth's magnetic field is readily disturbed by nuclear explosions outside the atmosphere, so that a determined attacker can use this fact to help ensure the survival of his RVs." □

## ELECTION RESULTS FOR FAS COUNCIL

In the April elections, Jerome D. Frank was re-elected Vice Chairman for another two year term. Dr. Frank, a psychiatrist at Johns Hopkins, is well known for his work in the interface of psychology and social issues, especially those of war and peace.

Elected to four year terms on the Council were: Arthur H. Rosenfeld of the Energy and Resources Program of UC Berkeley; Nina Byers of the Physics Department of UCLA; Thomas Eisner of the Biology Department at Cornell; Joseph L. Sax, environmental lawyer from the University of Michigan Law School; Bruce Ames, biochemist at UC Berkeley and Carl Sagan of the Astronomy Department at Cornell. □

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The Federation of American Scientists is a unique, non-profit, civic organization, licensed to lobby in the public interest, and composed of 7,000 natural and social scientists and engineers who are concerned with problems of science and society. Democratically organized with an elected National Council of 26 members, FAS was first organized in 1946 as the Federation of Atomic Scientists and has functioned as a conscience of the scientific community for more than a quarter century.

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### NATIONAL COUNCIL MEMBERS (elected)

- |                                   |                                    |
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\*Nobel Laureates

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that an artificial distinction should be made between peace and war in discussing environmental impacts.\*

In the case at hand, we argue that the scientific possibility exists that the detonation of sufficient megatons in war could, in and of itself, produce major and even insupportable demands on the world ecology and make world recovery — including our own recovery — difficult or even impossible. Because this possibility exists and because bombers can carry so much additional megatonnage, the Government should have alluded to the possibility in its EIS and given a Government-wide coordinated opinion.

FAS members will recall that in 1975 a U.S. Government Agency, the Arms Control and Disarmament Agency (ACDA) contracted with the National Academy of Sciences to produce a report on precisely this problem. The National Academy of Sciences examined the world environmental problems of a 10,000 megaton war including such dangers as ozone depletion, food chains, climatic changes, plagues, and so on.

In an introduction to the ACDA summary of the implications of this study, the ACDA Director advised a press conference:

"The uncertainties that remain are of such magnitude that of themselves they must serve as a further deterrent to the use of nuclear weapons." . . .

"Moreover, it now appears that a massive attack with many large-scale nuclear detonations could cause such widespread and long-lasting environmental damage that the aggressor country might suffer serious physiological, economic, and environmental effects even without a nuclear response by the country attacked."

—Fred C. Iklé, Director, ACDA, Introduction to "Worldwide Effects of Nuclear War — Some Perspectives", October 3, 1975

Iklé observed that ozone depletion might be 30-70% in the Northern Hemisphere and 20-40% in the Southern Hemisphere. Long-term global changes in climate could not be ruled out. And so on.

Under these circumstances, the public has the right to know that the purchase of a second bomber force, the B-1, will substantially increase the megatonnage of a nuclear war by 10%-20% according to our calculations. A much larger increase would result if the Soviet Union felt obliged to match our new bomber force with one of its own.

Put another way, the B-1 force is likely to add between 1,000 and 2,000 more megatons to a world that is already armed with approximately 10,000 megatons on its alert strategic forces.

In a case like this one, where one agency of Government (ACDA), is funding studies to determine whether the world can stand the delivery of more megatonnage, another agency of Government should at least refer to such studies and related conclusions, in an environmental impact statement on a weapon system importantly adding to the very total of megatons at issue. It was, after all, precisely for this reason that the impact statements are

\*Indeed, in other cases, we believe the Government discussed the environmental impact of wartime operations on peacetime nuclear plants when it was charged that nuclear weapons might spread radioactivity by bombing the plants. There is no difference between discussing the wartime impact of projects built for peacetime use and the wartime impact of projects built for wartime use.

supposed to be circulated for comment to the various other Government agencies. The fact of the ACDA statement is a prima facie rebuttal of the phrase "useless speculation in the Government's response." □

## HOUSE COMMITTEE REVIEWS DNA AND PUBLIC PARTICIPATION

*On May 4, the Thornton Subcommittee of the House of Representatives' Committee on Science and Technology asked Director Stone to testify on questions of Recombinant DNA and public participation. What follows are excerpts from the testimony.*

### I. Lessons of the Recombinant DNA Experience

First, the recombinant DNA chronology confirms that there are enough public-spirited biomedical researchers in the community to assure the society that new and potentially hazardous lines of biological research will be brought to public attention. The biologists have followed in the footsteps of the nuclear physicists who founded FAS — then the Federation of Atomic Scientists — in showing concern for the social implications of their work.

Second, the recombinant DNA experience confirms the difficulty that society has in assessing the degree and nature of future hazards arising from new research. For example, in my judgment, the dangers due to "accidents" with recombinant DNA, though the most widely advertised and discussed, are in fact destined to be less important than the problem of deliberate misuse either by military establishments or by the mentally disturbed. This is analogous to shifts in emphasis on the dangers of nuclear reactors where the perils of accidents have recently given way to concern over proliferation and terrorism. It is often hard to gauge the ability of mankind to cope, and the publicity provided various dangers is not always in proportion to the dangers themselves but reflects certain media imperfections (e.g. sensationalist biases) as well as a human tendency to discuss those problems than can be and are being resolved (e.g., accidents rather than deliberate misuse).

Third, the recombinant DNA experience confirms the extreme difficulty, in the national-state system in which we live, in controlling scientific developments. Even were we to wish to do so, we cannot prevent other nations from pursuing scientific developments and technology although they are often as likely to affect our lives as those of others.

Fourth, recombinant DNA experience seems to me *unusual* in raising the specter that the research itself may have hazards to the public at large. Normally, laboratory personnel, at most, are at risk from experimentation. Society's problem is usually that of digesting the technological possibilities provided by science.

Fifth, the recombinant DNA experience does reveal and reflect the rapid pace of biological advance which can be expected to gather momentum throughout this century and the next. The spotlight of scientific advance has shifted, in the last several decades, from chemistry in the thirties, to physics in the forties, fifties, and sixties, and we now see before us the possibility of understanding life and man himself. The uses of this knowledge may eventually interact with our civilization and our everyday lives, to a greater extent than even have the advances of physics or chemistry.

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Finally, I think that the scientific community should be reassured in reflecting on the treatment it will receive at the hands of public bodies. Recombinant DNA is an extreme example of the kind of scientific results that normally come to public attention; it is simultaneously more obscure and, at the same time its perils are especially easy to exaggerate. Therefore, all things considered, I believe the public reaction has been restrained and has reflected the high regard in which scientists and science are held.

I turn now to the first question:

- 1) What actions could the Government take to encourage scientists to alert society to the potential impact of new developments in research?

While a minority of socially concerned scientists is, in principle, enough to provide society with an early-warning network, in practice, it would be wise to enhance that capability. Specific action to encourage scientists to alert society to impending problems falls into various categories:

- a) Ask more often
- b) Listen better
- c) Make it financially feasible
- d) Commend the right and condemn the wrong

#### ASK MORE OFTEN:

Congress could ask the scientific community to alert it to the potential impact of new developments in a number of ways. Any one of a number of institutions could be requested, by contract, to provide brief summaries of possible implications of ongoing research. Such contracts could be let to the major professional societies (American Physical Society, American Mathematical Society, American Chemical Society, Federation of American Societies for Experimental Biology, etc.). Alternately, the American Association for the Advancement of Science (AAAS) or the Office of Technology Assessment (OTA) could be involved. The National Academy of Sciences (NAS) is another possibility but its studies take so long to be completed that it might be less useful for the purpose in question of sounding an early alarm.\*

\*It might be well if Congress could persuade the National Academy of Sciences to pay scientists who work on its reports instead of relying upon volunteers; the cost could be easily incorporated into the Government contracts that finance most of NAS work. This might speed up the NAS studies and eliminate certain biases that result from the narrow selection implicit in looking for volunteers. On April 26, 1977, the Academy revealed that President Carter had expressed by letter his own similar concern that the Academy could be more helpful "... if, in addition to its long-range studies, it is prepared to accept and respond in a more timely manner to questions which demand early decision." In turn, the President of the Academy conveyed in a speech to the NAS membership his own uncertainty whether this would be possible.

In return for Congressional expressions of readiness to defray, in contracts, these wholly reasonable costs, Congress might try to nudge NAS into accepting the open meeting requirements of the Federal Advisory Committee Act with which, at the present, our Appellate Courts have held it need not comply. (Although carried on the pre-war government organization manual rolls as a part of the Legislative Branch, NAS has somehow made its way today to the ranks of the "quasi-official" organizations and was adjudged insufficiently governmental for this act to apply).

I hasten to add that FAS has not discussed these possibilities with the NAS leadership because no useful purpose would have been served by doing so. But we do encourage the Committee to take these matters up with NAS itself if it considers them constructive.

With or without contracted studies to review, the Committee could hold hearings every two or three years on this subject so as to induce scientists to step forward by providing a suitable platform for their pronouncements.

#### LISTEN BETTER:

The formulation of the initial question assumes that, if only a scientist would speak out, society would immediately respond; nothing could be more misleading. Normally, *some* scientist is both willing and able to describe any given future potential hazard. But without encouragement, if then, he may not be willing to shout about it, to lobby concerning it, in short, to make a career of calling public attention to it. People in authority have to be willing to pursue the issue.

In doing so, they must pay less attention to status. For the most part, prestige is never having been wrong or been thought wrong (as in having been right "too soon"). Such reputability is too often earned and maintained by excessive caution. As a result, the first warnings of danger ahead virtually never come from self-consciously "prestigious" institutions as the National Academy of Sciences but usually from less official groups of selected individuals. Thus, where early warning is desired, the more established the group, the less useful it may be. Also, in scientific affairs especially, where truth rather than a consensus is desired, committees should be taken less seriously than gifted, knowledgeable, and perceptive individuals. In short, societal government organs must be prepared to entertain and examine — if not decide — the merits of various expressions of concern, without waiting for them to be validated by the more ponderous mechanisms of bureaucratized institutions.

But no matter how ready society is to hear, some amplification of the voice of individual scientists is necessary. How can this be done?

#### Science for Citizens Program

The great democratic innovation of the 1970's has been the proliferation, and institutionalization of the public interest group. These organizations are formed around some perception or predisposition about where the public interest might be found (e.g., that the environment should be protected, the arms race controlled, or the laws enforced). Their use of the word "public interest" simply asserts that they have no more financial vested interest in the outcome of their issues than that of the citizens at large.

These organizations function in a delicate ecological balance with the public. They can only survive in such proportion as the public's assessment of the importance of their issues and the correctness of their stands. For example, because more citizens are concerned with environmental issues than nuclear war, far more groups exist to pursue these objectives. Using direct mail solicitation for membership and support, these groups must renew their constituency each year, and maintain the confidence of their supporters continually. This keeps them democratically responsive. At the same time they make public participation possible for any citizen, on virtually any issue, by his or her joining, writing, supporting and/or assisting, a suitable public interest group. This is a dramatic and irreversible new phenomenon of which the Congress should take careful note.

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The new tax laws have wisely recognized that these groups play a role so useful that they should be permitted to engage in legislative activities up to 20% of their time even if organized as tax-deductible groups. And they have always been allowed to litigate.

In my experience, these groups are manned by persons who are surprisingly knowledgeable about their fields and highly dedicated, considering the low rate of pay normally available. Their record on a large number of issues is one of persistence, and vindication.

As FAS saw these groups expand and grow, we wondered if we could provide scientific expertise for them. We, and no doubt others, have experimented with card files of willing experts and so on. In our experience, however, scientists must work with, and within, these groups to be useful to them. It is not as if the groups needed to know some isolated fact, or the result of some esoteric single calculation. Science must infuse their program, and their perceptions of possibilities and risks. For this they need scientists working with their groups for months at a time. And if they had these scientists, I believe their programs would be still more mature and responsible, and still better thought out.

I recognize that the Subcommittee is concerned that the Science for Citizens program might assist public interest groups engaged in legislative action or legal actions. It wonders whether public funds should be used to support activities that can be controversial.

But the decision to subsidize such activities has already been taken. In the first place, the business community is permitted to use the equivalent of public monies for its legislative and legal actions when it deducts those expenses from its taxable income, thereby shifting the tax-burden for activities that are not only controversial but designed to provide profit to private individuals.

Second, as of last year, the tax-deductible groups have, as noted, been permitted to engage in legislative action thereby using tax-deductible monies for legislative work. The financial implications of this decision are equivalent to authorizing funds from the Treasury, and the Government has no control whatsoever on the projects undertaken as it does in the case of Science for Citizens. Indeed, the National Science Foundation is invariably sensitive — terribly sensitive — to the concern of Congress and indeed, to every individual rank and file Congressman. No matter how well funded is the program, NSF is patently not about to fund researchers who are all interested in the same subject, or who share the same point of view, or who will ally themselves with the same or similar groups or who will all work on matters of legislative interest. You can depend on NSF to be cautious and you can watch the program in action.

Third, the groups are going to engage in legislative and legal action *whether or not* Congress assists them to gain scientific expertise. The only question is: Will their positions be more or less responsible — better or less well grounded in what the scientific community knows or suspects?

Finally, the Science for Citizens program does not give funds to the public interest groups but to the scientists who work with the groups involved, so that the govern-

ment subsidizes socially concerned scientists, rather than action organizations, in order to make it possible for these scientists to get their message across.

Obviously, the Science for Citizens program is intended to do many much less controversial activities — which I support, *a fortiori*. And it assists scientists whose message goes far beyond the implications of future research — the issue before us now — but reaches those who want to discuss the implications of all varieties of science and society issues. So much the better, I feel.

The point I want to emphasize is simply this. The Science for Citizen program is not a rip-off by public interest groups but an opportunity for the society to ensure that a powerful and valuable new segment of our democratic process, the public interest group, fulfills its functions in a scientifically responsible fashion, and that scientists who want to speak up, as you want them to, have a vehicle with which to do so.

#### MAKE IT FINANCIALLY FEASIBLE:

Another way for Congress to encourage scientific thought on the implications of science is to require the grant-making federal agencies, e.g., the National Institutes of Health (NIH), to spend a certain percentage of its overall grant funds (e.g., 1%) on grants discussing the societal implications of the work being funded with the other 99%. This would, I am confident, produce immediately a cottage industry of investigations into the implications of scientific advance.

I consider this to be perhaps the best approach. But there may be other ways. And offers of funds to the more traditional scientific societies might, in some cases, rejuvenate their consciences.\* The scientific journals are suffering from the same problems facing other journals (high postage, printing and paper rates). Unfortunately, because the organizations are both tax-exempt and tax-deductible, no tax advantage can be offered them; instead, subsidies would be required. But grants from government agencies financing research might flow in their direction as proposed above.

#### COMMEND THE RIGHT AND CONDEMN THE WRONG:

Scientists (and scientific organizations) who do try to fulfill their public responsibilities should, from time to time, be commended in whatever way the Congress and Executive Branch see fit. Participating in the public debate is an abrasive process for the individual scientist and, for most scientific organizations, a divisive process. Some praise would help keep them at it. For this reason, F.A.S. gives annual public service awards to scientists for science and society activities. The Forum of the American Physics Society has begun to do the same. If Congress and the Executive Branch would offer some kind of recognition, this would presumably help. And there is nothing wrong with calling in representatives of the scientific societies and asking them why they are not doing more in this area. Prod them. We do. □

\*To get some idea of how reluctant these organizations are to work in public policy areas, one should examine *Science Magazine*, April 1, 1977, in which it is revealed that the scientific societies have thus far ignored Congressional encouragement to educational and charitable organizations to opt for the right to spend up to 20% of their time on legislative activity.

## PART II

### SOVIET CAPABILITIES AND INTENTIONS

*On March 16, the Senate Foreign Relations Committee invited FAS Director Stone to sit at a panel to discuss Soviet intentions and capabilities. What follows is an excerpt of the second part of Stone's testimony.*

#### Nature of Available Superiority

To what significance could Soviet strategic capabilities aspire? In the present era, strategic superiority might take the following forms:

- a) *cosmetic superiority* in which one side is credited with superiority in weapon characteristics without regard to the military significance of those characteristics, e.g., numbers of missiles without regard to the missile characteristics that might make those numbers of significant military relevance.
- b) *war-fighting superiority* in which one side is seen to have advantages in the *conduct* of a nuclear war, eg., in the capacity to destroy military targets of the other side, or to reduce the vulnerability of its population, or to threaten limited attacks credibly and so on.
- c) *war-winning capability* in which one side can so decimate (and protect against) the strategic weapons of the other side as to make nuclear war an acceptable undertaking in circumstances less than totally desperate.

I doubt whether either side can achieve a war-winning capability. I certainly agree with former Secretary of Defense Schlesinger who advised the Defense Appropriations Subcommittee in January, 1974, that neither side would achieve a "high confidence disarming first-strike" for the "next several decades." (pg. 347, Volume I). To blunt the effectiveness of the existing, and highly robust strategic forces, with moderate or high probability, one side would have to achieve an (unexpected) scientific lead of greater proportions than seems plausible in the light of the fact that the weapons procurement process in the two superpowers arises from a common international scientific base. In short, the Russians are not Martians drawing upon advanced scientific principles totally beyond our ken; and to the extent that one side draws ahead, its very progress in weaponry alerts the other to the direction in which relevant scientific progress can be achieved and this works to close the gap.

It is true, however, that both sides might plausibly come to have elements of cosmetic or war-fighting strategy superiority. But neither side can achieve and maintain these advantages without the acquiescence of the other.

#### Superiority Must Be Conceded

Thus, we can achieve a high degree of hard-target kill capability but, if the Soviet Union wishes to do so, it can catch up in time. The Soviet Union can make extensive civil defense preparations but, if we wish to do so, we can neutralize these preparations by weaponry development. Where the race is a dynamic one, with both sides moving ahead, typically the superiority eventually becomes lost in a parity of saturation: viz. both sides come to have so much megatonnage or so much hard-target kill capability, that the differences dwindle in significance until they are no longer contested.

In the light of this situation, one side's stable lead may increasingly be no more than the other side's decision that the lead is irrelevant. And this, I believe, accounts for some of the intense concern, and no little animosity, in

American debates over possible Soviet strategic superiority. For those who want to maintain strict equality in some weapon characteristic or ability, the enemy, increasingly, is "within" — in the problem of persuading one's fellows that the effort is worth the trouble to close the gap. American hawks unconsciously fear that a strategic miscalculation might arise in which a weapons characteristic formerly thought to be of only marginal significance suddenly achieves a greater role in a subtly changed context. For example, some wonder whether war scenarios previously thought hopelessly risky and Strangelovian might suddenly become plausible in a strategic balance deemed more stable than theretofore. Suddenly those weapons characteristics most useful in carrying out the associated attacks (e.g., hard-target kill capability) would be in demand.

#### Tortoise and Hare

The weapons contest between ourselves and the Russians increasingly has many analogies to the race between the hare and the tortoise. By determined and great efforts, and with the acquiescence or lapse of attention by the hare, the tortoise can achieve certain kinds of leads. But should it draw attention to its leads by drawing too far ahead, by boasting about them, or by threatening to exploit them, the hare would, in short order, close the gap and reachieve whatever lead it wished.

Sputnik was one example; from a standing start, America erased any possibility of a missile gap and opened up a lead of approximately five years. The space race was another example; starting from behind, America identified a dramatic goal — reaching the moon — and left the Russians so far behind and so demoralized that they have all but given up the goal.

Thus our economy, our technology, and the fact that we are far from going "all out" in the race provides us with "restoring mechanisms," with insurance and with a measure of deterrence against miscalculations of acquiescence.

I believe the Russian *political* leadership is well aware of our latent strengths and our capacity to take alarm. And because the *military* leadership is not permitted free rein in making highly visible political-military threats, I do not think we will see much Soviet boasting of its possession of cosmetic or war-fighting advantages (unless done as a deliberate provocation by Soviet elements desiring a return to Cold War). It is significant and ironic that recent speeches by Soviet spokesmen have denounced Western statements that the Soviet Union has achieved strategic advantages!

#### Soviet "Intentions" or, Better, "Tendencies"

Having said this, however, I believe we can expect the Soviet tortoise to continually, if quietly, test the limits of American acquiescence in various possible advantages. After all, Soviet policies in strategic arms procurement are shaped: by historic xenophobia; by a post-revolutionary "siege" psychology; by feelings of technical inferiority; by ideological injunctions to anticipate war with capitalism; by great internal secrecy; by war-fighting habits that cultivate over-preparation; by memories of survival in past "hopeless" circumstances; and by a military-industrial-political complex (with its own perquisites) that dwarfs our own complex in its cohesion. Each of these factors would lead one to expect great momentum in the strategic procurement and war-readiness policies of the Soviet Union. □

## LEGISLATIVE FUTURES: MEDICAL CARE AND HEALTH POLICY

Perhaps this exercise should be subtitled: "The President and the Congress". Since the two preeminent powers in the American political process have not yet established a stable working relationship, providing long-range predictions (read: guesses) in regard to health and medical care legislation may turn out to be one of the more hazardous Capital occupations. Not to mention the third power, the judiciary, flexing its muscles and preparing to assert equal authority in determination of federal actions in the health field.

Because the Democrats control both Houses of Congress and are installed in the White House, it is commonly assumed that whatever problems there might be would stem not from conceptual conflicts, but from ordering of priorities. However, it seems the situation is complicated by more than the electoral realities of national politics — that the Congress responds to an individual constituency and the President must answer to the whole people.

In earlier administrations, Democratic or Republican, the President, in proposing legislation (or failing to propose) controlled the sources of information in government. Congress was usually forced to react, gaining its information from what Cabinet agencies might be willing to supply and from Committee hearings, in the event Congress, in legislating, followed the Presidential lead. During the lean Republican years, Nixon's passive negativism changed that. Congress was forced to take leadership and establish its own information sources and capability to analyse and evaluate the data.

In consequence, one of the more notable, if least remarked, events of the past ten years has been the growth of Congressional staffs, in diversity, academic qualification and expertise. In the health field, for example, Senator Hill, as Chairman of the prestigious Subcommittee on Health had one professional staff member. Today the Subcommittee boasts five staff member, three of whom are physicians. The newly accrued staff may not be as sophisticated about politics as the older staffers were, but they are feisty and competitive about their expertise in health administration, health manpower and health financing.

And there is in addition, the newly created Congressional Budget Office, which beside presiding over budget ceilings — an important policy decision point in itself — publishes carefully constructed and objective program analyses.

Congress no longer sees itself reacting to Presidential initiatives, having challenged the President in the recent past, frequently and successfully. The Presidency, Republican or Democratic, is seen as an adversary political force. In itself, this situation is not bad. An independent approach by the Congress to solutions to the complex policy issues in the health field will be useful. But the competition among Congressional Subcommittees for leadership in health matters has been exacerbated by the proliferation of staff. The politics of federal priorities is being fought out along competing committee lines as well as on issues.

Orderly priorities will suffer also the suffocating effects of severe budgetary constraints. The President needs to put a stop to the runaway inflation in the health field before he can feel comfortable with recommending a na-

tional program of health or medical care. Next year's increase in the federal Medicare/Medicaid budget is estimated at \$6 billion — more than the total health budget of HEW other than M/M! If it happens there will certainly be no added funds for improving health services or even added budgetary allocations in other fields. Conversely, any savings in this area may allow added funds for change and/or improvement of health services.

So "cost containment" is a White House priority. It is for the Congress too. No one is too sanguine about the Cost Containment Bill introduced by the Administration a couple of weeks ago (April 25). It has too many loopholes for one thing and the incentives built in, so dear to economists' hearts, have a capability of driving costs equally high or higher in the selected areas.

National health insurance will not be on this year's agenda or, maybe not even next year's. In its place will be some "historic", "powerful" or "first" piece of legislation aimed at the general area, probably a plan for coverage against the possibility of bankruptcy from the soaring medical care costs, usually described as "catastrophic insurance". The best of the plans heretofore suggested would be useful to very few people, but their attraction is in the sense of security promoted by such a law. The same sort of small effort masked in bold language can be seen in the Child Health Assessment Bill submitted simultaneously with the Cost Containment Bill. It aims to cover a few more children than the lagging Early Periodic Screening, Diagnosis and Treatment legislation on the books since 1969. It too, "urges", "stimulates", "strengthens" State efforts. But with little money and no change in approach.

In all of these, cost containment, child health, catastrophic health insurance when it surfaces, the steps taken are cautious and conservative, which seems to be the hallmark of this Administration. No initiatives toward reform of the medical care system, without which neither protection against bankruptcy nor cost containment can succeed, nor will child health become a national program. Apparently the Administration is unwilling to tangle with the doctors where the heaviest responsibility lies for incurring charges that spur the inflation: admission of patients to hospital, the procedures ordered there and medications prescribed, use of and demand for the purchase of increasingly expensive technological diagnostic and treatment devices. Economic formulae and hortatory incantations cannot work so long as the entrepreneurial medical care system is in operation.

Yet this Administration has come to power with specific commitments to health action on record. The White House is filled with young people, new to the scene, who sound ready to design new policies and new programs to implement those policies. They may have a lot to learn about Washington politics and the intricacies of working with the "Hill" and the "third house", the lobbyists. But in a little while they may be bolder and in the name of fiscal conservatism alone, move to challenge the bastions of medical privilege.

For the rest of the program, little strong action can be predicted. The drive against fraud in federal medical care programs will be pursued vigorously, with what success is questionable, since accountability is also a system function. Besides, so many other matters are at

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the top of the legislative list that not enough time will be available to look after much more. Energy, welfare reform, the ailing economy, jobs will certainly engage center stage interest. Health manpower is no longer a priority concern, since there is talk of too many doctors in 5 years time. Geographic redistribution of resources seems to be slowly taking effect under the stimulus of the shift of medical students into family practice specialties and scholarship diversion of graduates into the National Health Service Corps for assignment to underdoctored areas.

Congress legislated in many crucial areas over the past few years and it is important, as they see it, to await some evidence of success or failure of attempts to influence the medical care system: health systems agencies for community health planning; physician assistants; required federal service in return for scholarship support; ending the foreign medical graduate immigration into the country. In other words, while there is continuing evidence of trouble in the medical care system, Congress seems to be content to deal with it piecemeal, if at all.

Congress may want to add money to the HMO legislation, but the White House may resist this. The "Health Maintenance Organizations", broadly interpreted group practice with prepayment, stimulated by some planning and start-up funds have grown in 5 years to about 125 approved plans. Still, less than 10% of the population has this or similar coverage. The premium cost is prohibitive for middle income families and the plans flourish only in high income areas. Further expansion of such plans must wait upon national health insurance.

The White House will probably be slower in initiating legislation itself until the Department of HEW is more soundly grounded. It will take a while before the wreckage of the Nixon years, the disorganization and demoralization, can be rebuilt into an effective working force. While White House and Congressional priorities are not all that different, for reasons discussed, emphases will vary and legislation will be meager. It will be a bad year for those who feel strong steps should be taken; and a disappointing year for those who feel strong steps should be taken; and a disappointing year for those who expect whatever steps are taken to be effective. □

—GEORGE A. SILVER, MD, May, 1977

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## FAS RAISING ISSUE OF MINUTEMAN III COUNTERFORCE

FAS has been actively urging the body politic to give more attention to the counterforce implications of upgrading Minuteman III warheads (of which there are 1650) to the point where they have high kill probabilities against Soviet land-based silos (of which there are about 1500). (See *FAS Reports* of April and May.)

On May 10, the *New York Times* reported that Paul C. Warnke, disarmament negotiator, had described the Minuteman improvements as a potentially destabilizing factor which could be viewed by the Soviet Union as an attempt to acquire a first-strike capability.

In the Senate, opponents of these improvements faced the problem that funds approved for the next fiscal year would have to be spent unless mandated processes for deferral or rescission were followed. What to do if the SALT talks seemed to require delay?

On May 16, two relevant amendments on this subject met on the Senate floor. One by Senator McGovern would have precluded the *obligation* of funds for "final installation" of the counterforce improvements until the President certified that the installation was "essential to the national interest and consonant with United States goals and negotiating prospects" at SALT.

Senator Hubert Humphrey offered an amendment which simply expressed the readiness of the Congress to receive deferral and rescission requests to "facilitate either negotiation or agreement" at SALT. In effect "negotiation" was a code word for "up" and "agreement" for "down". (In fact, with deferrals and rescissions, one can only go "down"; Senator Sam Nunn, D-Georgia, who is one of the most alert of the Senate on these matters noticed this and raised it on the floor but was ignored.) Humphrey's amendment was accepted by Senator Stennis, and Senator McGovern withdrew his. Senator Humphrey's floor statement discussed the same counterforce improvements as had Senator McGovern.

On May 20, the *New York Times* had an editorial saying that the new warhead and new guidance would permit a Minuteman III missile "to destroy 20 to 30 Soviet silos, rather than six, as now". □

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