SCIENCE

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Science and the National Security

In an open society the relationship between science and the military authorities is a touchy business at best. Science is rightly expected to enhance the national security, and it responds willingly. Equally, the military authorities are expected to respect the values, standards, and methods of science as an open and productive process. Yet, when the climate of national security is overtaken by hyperanxiety this qualitative balance is easily destabilized by judgmental mistakes, and that is what has now happened.

The brochure on *Soviet Military Power* that has been released with much publicity by the Department of Defense goes beyond documenting the U.S.S.R.'s formidable military assets. It addresses what may be termed collateral sources of Soviet military know-how. These sources, in the department's opinion, include high technology that has been transferred by the industrialized free world. Also helpful to the Soviet military, we are informed, are bilateral scientific exchanges initiated under *détente*. Next come "student exchanges," along with the inter-academy exchanges that predate the government-to-government agreements. Omitting nothing, the Defense Department's distress blankets scientific conferences and symposia, unclassified research reports, and the "professional and open scientific literature." The military authorities seem convinced that the infrastructure supporting the U.S. scientific and technical enterprise caters to Soviet military power and comprises a large pane in the window of vulnerability.

If all this actually reflects the view from the Pentagon, it calls for swift revision. What is sadly missing is the recognition, which surely exists in thoughtful quarters of the defense establishment, that lively but responsible communication in science is essential to the growth and development in science on which both national security and economic potential rely. "National security" is not the simplistic proposition that it is made out to be, and it is in the best interests of those directly responsible for it to realize that laying heavy hands upon scientific discourse is counterproductive and self-denying. Even the maligned exchanges with the Soviets have their uses, and no one supposes that they should or do involve sensitive information. To put it more strongly, it is only sensible to carry on these exchanges where both sides hold first-class rank, including such areas as condensed matter physics and astrophysics. It is a profoundly disturbing mistake to put out the notion that Soviet scientific capability is inferior to ours. We know better.

The operative premise of our military leaders is that the U.S. window of vulnerability must be closed with all possible speed. That premise is buttressed by a substantial national consensus. But if, beyond rebuilding strategic and tactical military assets, it extends to clamping down on legitimate scientific conferences and symposia as well as the open literature of science, the quality of science's interface with the military will go downhill swiftly and tragically. Scientists are well aware that information of genuine national security value must be protected. That is not the point. What is at issue is the balance between protection and overprotection. Difficult as that riddle may be to untangle, it must be dealt with responsibly and by no means solely from a military mind-set. One wants to believe that the Defense Science Board would have taken a different view of these matters had it been asked.

The issues raised here ought to be pondered, as well, by the Commerce and State Departments, where work goes on behind closed doors on regulations to tighten controls on the international transfer and exchange of scientific and technical information. Slamming the window may indeed stop the draft, but at the expense of fresh air and light. More than 30 years ago, Senator Brien McMahon, sponsor of the Atomic Energy Act of 1946, spoke eloquently of the need for a sane balance between two necessary but competing types of security: "by concealment" and "by achievement." Burying knowledge in silos of secrecy serves the one well, the other very badly.—WILLIAM D. CAREY

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A PREFACE TO SCIENTIFIC LITERACY

IN the April issue of the *Bulletin of Atomic Scientists* an eminent physicist, Robert R. Wilson, who was head of research at the Los Alamos Laboratory from 1944 to 1956, and now teaches physics at Columbia University, appeals for an increase in general scientific literacy. By this, he says, he means not "familiarity with professional technical journals, but rather a general non-mathematical understanding of enough of the content and method of the various sciences to match our 'literacy' in the other important aspects of life." Prof. Wilson writes as a scientist who, recalling C. P. Snow's account of the wide gap between scientific intelligence and humanist understanding, published twenty-five years ago, feels that the division has become more serious. He says:

> Several decades ago it was not of such critical importance. After all, it seemed then to be a matter of personal taste, not survival, whether sports, or politics, or literature, or physics was to occupy one's attention and interest. But science was just beginning to present the serious problems of technology it does today—problems which in some cases must be dealt with immediately if we are to live our lives even approximately as we do now.

There has been, he thinks, a little progress in closing the gap. Yet books have helped. He mentions Watson's *The Double Helix,* Freeman Dyson's *Disturbing the Universe,* and Weinberg's *The First Three Minutes,* and finds several new magazines—*Omni, Science 81,* and *Smithsonian*—adding to the useful expositions available in the *Scientific American* for many years past, but he ends by remarking that "the general level of scientific literacy is woefully inadequate for life in a scientific age."

What reason does Prof. Wilson give for the importance of "general scientific literacy"? The public, he proposes, must gain the capacity to control, limit, or guide the scientific enterprise. Non-scientists, he says, "must come to realize that they bear the responsibility for the problems, and must somehow learn to control science and the technology it spawns if they are to survive." He admits to not knowing how this can be arranged, but believes that scientifically literate people have the best chance of doing it. Hence his appeal.

In a way, this seems like a cry for help from the sorcerer's apprentice, a few minutes before the big flood, but perhaps we should take this physicist at his word. General scientific literacy would be a very good thing. Yet it is a question, however, whether absorbed reading in the magazines and books named, along with more of the same, systematically presented in the schools—"from kindergarten to college"—will accomplish what is needed. What he really wants—or ought to want, let us say—is a populace of the sort that would have risen up in arms to save Giordano Bruno from the stake, or Galileo from long years of house arrest; and, in later times, would not have permitted the government to bar J Robert Oppenheimer from public service because—forsooth—he didn't believe we should make more devastating nuclear bombs! Prof. Wilson wants the public to cast itself in the role of a Leonardo, the man who refused after a time to invent more devilish weapons for the robber barons of Italy, or to learn from and follow the example of Otto Hahn, the German scientist who discovered the secret of uranium fission in 1939 but refused throughout the war to serve the Nazis with his knowledge of nuclear physics. Then, as an example in this country, there was Norbert Wiener, who denied access to his own research to a company making guided missiles, saying that such a weapon can only be used "to kill foreign civilians indiscriminately, and that it furnishes no protection whatsoever to civilians in this country." Wiener added: "I do not expect to publish any future work of mine which may do damage in the hands of irresponsible militarists."

Since how to raise the public intellectual and moral I.Q. to this level of sensibility is by no means apparent, Prof. Wilson suggests that at least our representatives in the legislature ought to be "scientifically literate." Well, some of them are, but this does not appear to accomplish a great deal, although the Office of Technology Assessment, of recent origin, seems to be doing good work. But effective scientific literacy would mean much more than wide acquaintance with the trends of contemporary research and development. It would mean, for example, the capacity to answer, at least in part, an open letter written in the 40s by an undergraduate to the President of Yale University.

> You [this student wrote] learned that man is distinct from animals, and yet our biology courses now conceive of man as one species of animal. . . . A logical inference from every psychology lecture we have ever attended would be that man's least thought and act can be wholly explained in terms of cause and effect; that every choice is dictated by a million strings of deterministic factors leading back to the dawn of time. . . .

(Continued)

If men are but animals, why not treat them as such? An animal has no rights. The law among animals is the law of the strong. If a man is a slave of determinism, incapable of a free choice, what is the value of the ballot, trial by jury and civil liberties in general? . . .

Isn't it palpably obvious to you that at the root of the trouble lies an apparent contradiction between the implications of our studies and the ideals we are expected to revere?

Should questions of this sort be expected to have an answer from the scientifically literate? Or should we say that this is not a scientific question, but a philosophical problem, or a merely human one? Meanwhile, what *is* the responsibility of the individual scientist? The scientists themselves are by no means in agreement on this matter, as another article in the April *Bulletin* makes clear. Should scientists adopt something like the Hippocratic Oath? Or is Tom Lehrer's couplet an adequate version of the scientific consensus:

Once the rockets go up, who cares where they come down?
That's not my department, says Wernher von Braun!

We have named some scientists with quite other views, but one, a physicist, who has given much thought to the general question of scientific knowledge, is Erwin Schrödinger, a leading physicist of this century. As an educational preface to any attempt to develop scientific literacy in the non-specialist public, Schrödinger's discussion of the scope, meaning, and implications of science—or some practical equivalent of what he says—would certainly be necessary. Schrödinger has written two small books, *What Is Life?* (1946) and *Nature and the Greeks* (1954), both published by Cambridge University Press. Together they make less than two hundred pages of serious consideration of modern science and its fruits. Here we turn to *Nature and the Greeks.*

Why, in lectures intended to provide a brief exposition of "the present-day scientific world-picture," does he start with the Greeks? He explains that we have learned how to think from the Greeks—that as John Burnet said in *Early Greek Philosophy,* "it is an adequate description of science to say that it is 'thinking about the world in the Greek way'." The earliest Greek thinkers, although philosophers rather than scientists, were the first "objectivists." Schrödinger is interested in what we have taken from their pioneering efforts.

One thing that this small volume accomplishes is the generation of a large respect for science and the spirit of scientific inquiry—an attitude appropriate in any inquiry which sets out to be critical. The Greek philosopher-scientists were determined to look at the world around them with as little "prejudice" as possible. Schrödinger adopts the conclusion of Heraclitus, that what real knowledge we possess is the consensus of the best investigators —what they find in common; and he remarks: "Generally speaking one ought not, I think, to be altogether too astonished to find occasionally very deep philosophical thought in the earliest records of human thinking about the world; to find ideas which to form or to grasp costs us nowadays some effort and labour of abstraction."

After some review of the ancient atomists, ending with Democritus, he says:

We are facing here one of the most fascinating cases in the history of ideas. The astonishing point is this. From the lives and writings of Gassendi and Descartes, who introduced atomism into modern science, we know as an actual historical fact that, in doing so, they were fully aware of taking up the theory of the ancient philosophers whose scripts they had diligently studied. Furthermore, and more importantly, all the basic features of the ancient theory have survived in the modern one up to this day, greatly enhanced and widely elaborated but unchanged, if we apply the standard of the natural philosopher, not the myopic perspective of the specialist. On the other hand we know not a scrap of the wide experimental evidence that a modern physicist adduces in support of those basic features was known either to Democritus or to Gassendi.

Was the idea of atoms just "a lucky guess which later proved to be correct?" Or is the "thought-pattern" involved in thinking about atoms "not so exclusively based on the recently discovered evidence as the modern thinkers believe, but on the cooperation of much simpler facts, known before, and on the *a priori* structure, or at least the natural inclination, of the human intellect"?

If the likelihood of the second alternative can be proved, it is of paramount importance. It need not, of course, even if it were certain, induce us to abandon the idea—in our case atomism—as a mere figment of our mind. But it will give us deeper insight into the origin and nature of our thought picture. These considerations urge us to find out, if possible, how were the ancient philosophers led to their conception of immutable atoms and the void?

There follows an account of Democritus as a distinguished geometer and of the problems which confront those who try to relate their abstract computations about matter and space with the facts of experience.

Why did Democritus adopt the atomic theory? Answering, Schrödinger says:

. . . atomism was forged as a weapon to overcome the difficulties of the mathematical continuum, of which, as we have seen, Democritus was fully aware. To him atomism was a means for bridging the gulf between the real bodies of physics and the idealized geometrical shapes of pure mathematics. But not only to Democritus. In a way atomism has performed this task all through its long history, the task of facilitating our thinking about palpable bodies. A piece of matter is resolved in our thought into an innumerably great, yet finite number of constituents. We can imagine our *counting* them, while we are unable to tell the number of points on a straight line of 1 cm. length. We can count, in our thought, the number of mutual impacts within a given time. . . .

Thus atomism has proved infinitely fruitful. Yet the more one thinks of it, the less can one help wondering to what extent it is a *true* theory. Is it really founded exclusively on the actual objective structure of "the real world around us"? Is it not in an important way conditioned by the nature of human understanding—what Kant would have called *"a priori"*? It behoves us, so I believe, to preserve an extremely open mind towards the palpable proofs of the existence of individual single particles, without detriment to our deep admiration for the genius of those experimenters who have furnished us with this wealth of knowledge. They are increasing it from day to day and are therefore helping to turn the scales with respect to the sad fact, that our theoretical understanding thereof is, I venture to say, diminishing at almost the same rate.

The intellectual and practical satisfactions of atomic theory seem fairly well known. The doctrine filled a psychological need, and this may be its primary origin.

But there were unanticipated side-effects. Schrödinger gives close attention to one:

> It has a terrible consequence, which has haunted the thinkers of many centuries and in slightly changed form still puzzles us today. The world-model consisting of atoms and empty space implements the basic postulate of *Nature being understandable,* provided that at any moment the subsequent motion of the atoms is uniquely determined by their present configuration and state of motion. Then the situation reached at any moment engenders of necessity the following one, and this the next following one, and so on forever. The whole going-on is strictly determined at the outset, and so we cannot see how it should embrace also the behaviour of living beings including ourselves, who are aware of being able to choose to a large extent the motions of our body by free decision of our mind. If then this mind or soul is itself composed of atoms moving in the same necessitous way, there seems to be no room for ethics or moral behaviour. We are compelled by the laws of physics to do at every moment just exactly the thing we do; what is the good of deliberating whether is it right or wrong? Where is room for the moral law if the natural law overpowers and entirely frustrates it?
>
> The antinomy is as unsolved today as it was twenty-three centuries ago.

In his last chapter, Schrödinger notes that, as a result of David Hume's discovery that "the relation between cause and effect is not directly observable and enunciates nothing but the regular succession," the positivists have resigned themselves to the view that science "explains" nothing, providing only "a complete and (Mach) economical description of the observed facts." Schrödinger thinks that the situation is not that impoverished, since science has contributed so much order and disclosed basic principles, but he goes on to say:

> There is, however, so I believe, a second feature, much less clearly and openly displayed, but of equally fundamental importance. It is this, that science in its attempt to describe and understand Nature simplifies this very difficult problem. The scientist subconsciously, almost inadvertently, simplifies his problem of understanding Nature by disregarding or cutting out of the picture to be constructed, himself, his own personality, the subject of cognizance.

If, he says, you look at the world as an object, "you have virtually ruled yourself out," which recalls the Heraclitean postulate that the true world is what is agreed upon by the best investigators. "For it is this 'world in common'. . . of Heraclitus that we are constructing . . . And in doing so, everyone willy-nilly takes himself—the subject of cognizance—out of the world, removes himself from it into the position of an external observer, who does not belong to the party."

This exclusion of the self from thought Schrödinger holds to be a virtual necessity in scientific thinking. We cannot, save with very great difficulty, he says, think of both subject and object at the same time.

> The following simile is not very good, but it is the best I can think of: a child is given an elaborate box of bricks of various sizes and shapes and colours. It can build from them a house, or a tower, or a church, or the Chinese wall, etc. But it cannot build two of them at the same time, because it is, at least partly, the same bricks it needs in every case.
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> This is the reason why I believe it to be true that I actually do cut out my mind when I construct the real world around me. And I am not aware of this cutting out. And then I am very astonished that the scientific picture of the real world around me is very deficient. It gives a lot of factual information, puts all our experience in a magnificently consistent order, but it is ghastly silent about all and sundry that is really near to our heart, that really matters to us. It cannot tell us a word about red and blue, bitter and sweet, physical pain and physical delight; it knows nothing of beautiful and ugly, good or bad, God and eternity. Science sometimes pretends to answer questions in these domains, but the answers are very often so silly that we are not inclined to take them seriously.

The scientists elaborate their view of nature and the world, feeling that they are doing what may be called "creative work." But as the picture nears completion—or what is believed to be completion—something quite unpleasant happens.

> . . . then comes the impasse, this very embarrassing discovery of science, that I am not needed as an author. Within the scientific world-picture all these happenings take care of themselves, they are amply accounted for by direct energetic interplay. . . . The scientific world-picture vouchsafes a very complete understanding of all that happens—it makes it just a little too understandable. It allows you to imagine the total display as that of a mechanical clockwork, which for all that science knows could go on just the same as it does, without there being consciousness, will, endeavor, pain and delight and responsibility connected with it—though they actually are. . . . we have used the greatly simplifying device of cutting our own personality out, removing it; hence it is gone, it has evaporated, it is ostensibly not needed.
>
> In particular, and most importantly, this is the reason why the scientific world-view contains of itself no ethical values, no aesthetical values, not a word about our own ultimate scope or destination, and no God, if you please. Whence came I? Whither go I? . . .
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> That is the great unfathomable question, the same for every one of us. Science has no answer to it. Yet science represents the level best we have been able to ascertain in the way of safe and incontrovertible knowledge.

Erwin Schrödinger leaves us with this dilemma. He will not hide it by reason of scientific pride. One might say that the "incontrovertible knowledge" he speaks of is what may be seen and accumulated by man as a *witness.* The witness looks at the objective world, studies it, draws conclusions, finds things out. He does things—which may turn out to be terrible—with what he has discovered.

But the witness is only half the man. Humans are also actors. They are filled with longings and intentions. They have ends to achieve, projects to pursue. They are purposive beings. Man as *actor* is man in motion. He is on a search, an odyssey. Such an individual is no impassive witness, no abstract and unrelated observer. He sees the world through the lens of his intentions. His objectivity is wholly subservient to his purpose, as even the example of Democritus may show. Literacy, then, which here signifies maturity, means examining science in terms of human purpose and judging it by the light of the best purpose we know.

The Kennan view

The current debates over the MX missile, the B-1 bomber, nuclear weaponry in Western Europe, during a suspension of arms negotiations with the Russians, add to a fatalistic feeling about a third, and terminal, world war. The tougher stance of the Reagan administration, along with its arguments that a defense build-up is a matter of the utmost urgency, produces its share of tension.

Considering all these strains on the nervous system, we have read the latest paper by George Kennan with more than casual interest. We were tempted at first to call Kennan a tranquilizer, but that would be overstating his views. He doesn't advocate that we go to sleep; what he does insist on is that we take a deep breath, shake off some of our fears, and see the Soviet Union in a more realistic light.

What Kennan sees is a Russia that is neither ready nor in a mood for that last horrible conflict.

What disturbs him is that our own national leaders are acting on a view that, somewhere along the line, became distorted.

✓ ✓ ✓

There are few if any persons in this country with better credentials than George Frost Kennan as a student of the Russian character, aims and problems. A career diplomat, he was first assigned to Moscow in the 1930s. He also served in several capitals in Eastern Europe, and became our ambassador to Moscow in 1952. In the years since, he has studied Russia virtually full-time for a series of scholarly books on the Soviets, winning two Pulitzer Prizes in the process. Out of this background, his view of the Kremlin leaders emerges in a reflective article in the New Yorker magazine:

"I see a group of troubled men — elderly men, for the most part — whose choices and possibilities are severely constrained. I see these men as prisoners of many circumstances: Prisoners of their own past and their country's past; prisoners of the antiquated ideology to which their extreme sense of orthodoxy binds them; prisoners of the rigid system of power that has given them their authority . . . I see here men deeply preoccupied, as were their Czarist Russian predecessors, with questions of prestige — preoccupied more, in many instances, with the appearances than with the realities.

"I do not see them as men anxious to expand their power by the direct use of their armed forces, although they could be easily frightened into taking actions that would seem to have this aim."

It has become the conventional view of American leaders in recent years that the Soviets are building up to extend their influence, roughshod, through the Third World. Kennan points out that, indeed, most great powers nurse similar ambitions, but his look at the record in the postwar period assures him that the Kremlin's leaders simply haven't been very good at it. He cites their failures in Yugoslavia, China and Egypt, and adds:

"They are having trouble enough with the responsibilities they have already undertaken in Eastern Europe. They have no reason to wish to increase their burdens."

✓ ✓ ✓

Because the Soviet Union is a closed society, effectively isolated, we don't frequently get a true picture of how it is operating internally as a way of life for its subjects. Too much is left to the imagination, which usually leaves us concentrating so hard on Soviet relations with us that we overlook their relations with the 265 million people inside their own borders. Kennan gives us some perspective there:

"I believe . . . that internal developments in the Soviet Union present a heavy claim on the attention and the priorities of the Soviet leaders. They are deeply committed to the completion of their existing programs for the economic and social development of the Soviet people, and I am sure that they are very seriously concerned over the numerous problems that have recently been impeding that completion: the perennial agricultural failures; the many signs of public apathy, demoralization, drunkenness, and labor absenteeism; the imbalance in population growth between the Russian center and the non-Russian periphery; the increasing shortage of labor, and the widespread economic corruption and indiscipline."

If we read Kennan accurately, we find no disposition to dismiss the Soviet Union as only an imagined threat. But what we do see is people who are no less vulnerable than anyone else. This ought to increase our confidence in arms negotiations.

NEW YORK TIMES, November 1, 1981

Our Reds, and Theirs

By I. F. Stone

WASHINGTON — Devotees of yoga recommend standing on one's head a few minutes every day. They say it provides a refreshing new view of the world. One way to defuse the holy-war spirit welling up around us is to stand on our heads and take an upside-down view of the so-called East-West struggle.

If we look freshly, we can see that there are now not one but two Communist blocs. One is led by Moscow, the other by Washington.

There are now five Communist countries that look to us for protection: China, Poland, Pol Pot's Cambodia, Somalia, and Yugoslavia. Moscow governs more than twice as many Communist states. But we, thanks to China, of course, have more than twice as many of the world's Communists under our wing.

The United States has more than a billion Communists climbing onto its payroll. Moscow has less than half a billion. So, well over two-thirds of the world's Communists are now in our camp.

The edges of these two blocs tend to be unstable. The latest switches were in the Horn of Africa. There, the Ethiopian and the Somalian Marxist-Leninists are engaged in a game of musical chairs. The Ethiopians have switched their fealty to Moscow and the Somalians to Washington, but both remain "peoples' republics."

In the Far East, where Vietnam used to be Communist China's buffer against United States power, China is now the United States' biggest buffer against the Soviet Union, and Vietnam is the Soviet Union's buffer against China, but none of them has changed ideologically. It's hard to make holy war with any real passion when Communism and capitalism are both so flexible and faithless in switching their bedfellows.

Our Communist bloc is what investment counselors call a diversified portfolio. The five Communist regimes in our bloc range from the world's most admirable, in Poland, to the world's most bloodthirsty, the followers of Cambodia's Pol Pot — the Idi Amin of world Communism. They survive only along the Thai border but they sit ensconced as Kampuchea, with our full diplomatic support, in the United Nations.

Joining the United States' Communist bloc is not like joining the Roman Catholic Church. No conversion is required. Yugoslavia, the first rebel against the Soviet bloc, has been under America's wing for three decades. It is still a one-party Communist dictatorship.

We are more tolerant in our Communist bloc than we are in our Free World bloc. If Poland were in Latin America, we would be nudging it toward a military dictatorship and a trade-union crackdown as in Argentina and Chile. We would be pleading the need to enforce "austerity" on a country that had been living beyond its means thanks to somewhere between 24 and 27 billions in hard-currency loans.

Except for the Soviet Union, no other Soviet country has been allowed to pile up a comparable debt to capitalism. As for Solidarity's right to strike against the Government, how United States air controllers must wish they were in Poland! There, Ronald Reagan would be on the picket line with them.

China, the biggest Communist country in our lap, remains as hostile to freedom of expression as were Mao's China and Stalin's Russia. The only difference is that its harder to find *samizdat* literature in China.

United States treatment of the Communists in Moscow's bloc is equally resistant to logical analysis. We have harsh trade embargos against Cuba and Vietnam while we give substantial trade and credit advantages to the Union of Soviet Socialist Republics.

On the other hand, we grant most-favored-nation treatment to Rumania and Hungary, along with Poland and China. Just why Rumania and Hungary are thus honored is not clear. Rumania internally is the most Stalinist Muscovite satellite while Hungary is the most "liberal."

The biggest anomaly is in our relations with our No. 1 enemy. The rationale for the stepped-up arms race is that it will starve out the Soviet regime. Its people, so Ronald Reagan said the other day, are already "eating sawdust." Mr. Reagan forgot to mention that the sawdust was liberally enriched with American wheat and corn.

Perhaps this has a hidden logic. Perhaps we keep the enemy alive because if the Soviet Union ever dropped dead of hunger, there would also be starvation here, though of another kind, in our military-industrial complex. General Dynamics would fall clear out of the bottom of the stock-market tables. What would the Pentagon do without Moscow?

Our little fable, like Aesop's, has its moral. If we can get along so readily with so many varieties and million of Communists, do we have to fight — and spend ourselves — to death in a crazy arms race with the rest of them?

I.F. Stone has been writing from Washington since 1940.

THE WALL STREET JOURNAL, MONDAY, OCTOBER 5, 1981

Japan Should Remain a Non-Nuclear Nation

Asia

by Kazuji Nagasu

Tokyo

Former Ambassador Edwin Reischauer startled Japan in May by revealing that Japanese government officials were aware that U.S. ships have carried nuclear weapons into Japanese ports for over 20 years. Suspicion about the presence of atomic weapons was at its peak when the aircraft carrier Midway returned to its home port of Yokosuka on June 5. Yokosuka is an important link in U.S. strategy against the Soviet Union, and reportedly is a high-priority target for Russian nuclear missiles.

Yokosuka is in Kanagawa prefecture, which has more U.S. military bases than any other prefecture in Japan except Okinawa. As governor of Kanagawa, I am responsible for the safety of its seven million citizens. And as chairman of an association of governors from the 14 prefectures with U.S. military facilities, I have urged the national government to maintain Japan's three non-nuclear principles—not to produce, possess or allow the introduction of nuclear weapons.

This non-nuclear policy should be strictly enforced. Some people argue that passage through our territorial waters or port calls by vessels with atomic weapons should be permitted. But they seem to ignore the basic facts of modern weaponry. Access to a port makes nuclear-weapons ships as strategically important as land-based missiles, in some cases more so. If the ban against nuclear weapons on Japanse soil is weakened this way, soon there will only be two non-nuclear principles and before long there will be none.

The Suzuki administration's reaffirmation of the non-nuclear principles was welcome. But I want the government to go beyond verbal assurances, to plan concrete enforcement measures that will guarantee compliance and allay the fears of Kanagawa citizens.

The residential-industrial belt from Yokosuka to Yokohama and Kawasaki is all in Kanagawa. My prefecture, plus Tokyo and adjoining Chiba and Saitama prefectures, constitutes the southern Kanto region with a population of about 30 million. Japan's major political, economic, scientific and communications facilities are concentrated here. A nuclear attack on this area would instantly knock out Japan. The whole country would cease to function. It is the height of stupidity to invite an atomic attack on this region. In fact, Japan is geopolitically incapable of withstanding a nuclear attack anywhere.

I am particularly upset by simplistic people who say we only have two alternatives: the non-nuclear policy or friendly ties with the United States. Some insist the non-nuclear principles must be scrapped in order to keep the Japan-U.S. Security Treaty and the nuclear umbrella. Others insist that the ban on atomic weapons should come first and that Japan must abrogate the security treaty and disavow the U.S. nuclear deterrent.

Both arguments are emotional and shortsighted. To survive in this dangerous era, Japan must maintain both its non-nuclear policy *and* good relations with the United States. No matter how difficult, this is really our only choice.

The Japan-U.S. security arrangements ought to be non-nuclear. Japan should eschew atomic weapons not because it lacks the know-how to make them but because it voluntarily signed the nuclear non-proliferation treaty. That gives Japan the right, on the basis of its own imperatives and policies, to criticize the deterrent strategies and weapons deployment of the superpowers acting in pursuit of their global objectives.

The non-nuclear principles and the security treaty are compatible. Preserving both is a vital national interest, a bipartisan political objective and the desire of the vast majority of Japanese citizens. Even in some Western European countries, there are proposals to maintain security within the NATO framework but without nuclear weapons.

I feel very strongly that we must take bold initiatives for nuclear disarmament. I reject the idea that Japanese suffer from a "nuclear allergy." It implies that we are not qualified to speak out on the issue. Sensitivity about nuclear armaments is a sign of national health; indifference is a symptom of pathology.

Our non-nuclear stand is a commendable national policy based on our experience and a scientific understanding of the dangers of nuclear holocaust. Japan's message to mankind is, "Don't make, possess or allow atomic weapons on your soil." Any military strategy for the defense of this country must be subordinated to this political priority.

Prof. Reischauer's sensational disclosure forced the Japanese people to face up to some grim realities. We must not be isolationist and simply hope that Japan can stand aloof from military entanglements. Nor can we blindly entrust our security to Washington's nuclear strategy. Our courage and judgment as a nation are being put to the test.

Mr. Nagasu is the governor of Kanagawa prefecture, which covers much of Japan's densely populated industrial belt. The article is reprinted from the Japanese newspaper Asahi Shimbun and was translated by The Asia Foundation's Translation Service Center.

NEW YORK TIMES, November 8, 1981.

Holes in Reaganomics

By Lester C. Thurow

CAMBRIDGE, Mass. — Reaganomics is based upon the assumption that society is nothing but a statistical aggregation of private economic actors. From the Reagan perspective, whatever the level of government and whatever the program (with the exception of defense), the public sector should shrink. A completely private economy with minimal government would be a better society, from this point of view.

But societies do not work unless there is a feeling of mutual obligation and willingness to sacrifice for the common good. Sole reliance on self-interest works in some areas of human activity but not all. Regardless of how many weapons are purchased, national defense cannot be achieved unless people are willing to make sacrifices for the welfare of others. Regardless of how privately wealthy we are, a good life cannot be had in the midst of social disintegration.

What Reaganomics forgets is that government plays an important role in creating feelings of mutual obligation and respect. Those feelings don't just exist on their own. They have to be carefully cultivated. They can easily be exterminated by what seem to be relatively trival problems.

Anyone coming back from Europe or Japan is struck by the filthiness of American cities. Public filthiness lowers our standard of living but, more importantly, it affronts our self-respect. Only vermin deliberately live in filth. Yet clean streets and parks depend upon a sequence of public and private interactions that gradually improve or deteriorate over a period of time.

If private citizens litter and vandalize with abandon, no amount of public street cleaning can succeed. The *espirit de corps* of sanitation workers plunges in the face of insurmountable filth, and the quality of the service declines. With poor public cleaning, private littering accelerates. Conversely, if public cleaning deteriorates, citizens feel that their individual self-restraint and cooperation does no good — the streets and parks are going to be dirty whatever they do. With less self-restraint and cooperation, littering grows. A vicious cycle begins with our cities getting dirtier and dirtier.

But if no one gives a damn about a clean environment, the feeling quickly grows and spreads to other more important areas of life. People start to be rude to each other when they meet face-to-face on the street. From there it is a simple step to even more hostile actions.

Municipal services — clean streets, an efficient transportation system, good schools, effective police and fire protection — are important in their own right: They make life easier to live. But they play an even more important role in binding us together and reminding us that we depend upon each other for survival. They are the means by which each of us learns that we belong to a society in which our actions and the actions of others are important.

As municipal services decline in quality, citizens feel that they have no stake in the society. The public services that directly affect one's life are not going to improve, so voting does not matter. With fewer people voting, government becomes less representative and fewer people feel that it is *their* government. The world comes to be seen not as a place where we work out our quarrels peacefully and with consideration for others in the democratic process but as a place where we solve our quarrels by clubbing each other and where the only difference between the rich and the poor is whether the clubbing is legal or illegal.

Government services can, and often should be, cut back selectively. But indiscriminate across-the-board cutbacks in local services, such as most municipal areas are now experiencing under Reagan budget cuts and a deteriorating economy, are a different matter. They result in a society where the public signals indicate that the individual belongs to a society in which everything is getting worse.

No one likes to be associated with institutions that are getting worse on every front. Who can take pride in New York or Boston if the city we see, the public sector, is falling apart? But if we do not feel attached to our cities, it is but a short jump to not feeling attached to our society.

Socially it is important that in some aspect our society is visibly seen to be getting better. Signs of social disintegration — sloppy workmanship, falling educational standards, anger, rudeness, crime — are all around us. We have only to look.

The cycle of increasingly hostile actions ending in crime and social disintegration has to be replaced with a positive cycle. Local public services aren't, in the end, a local problem. They are the place where a positive cycle can begin. The Reagan Administration has to provide some leadership when it comes to local services, or it won't have a national society to lead into battle.

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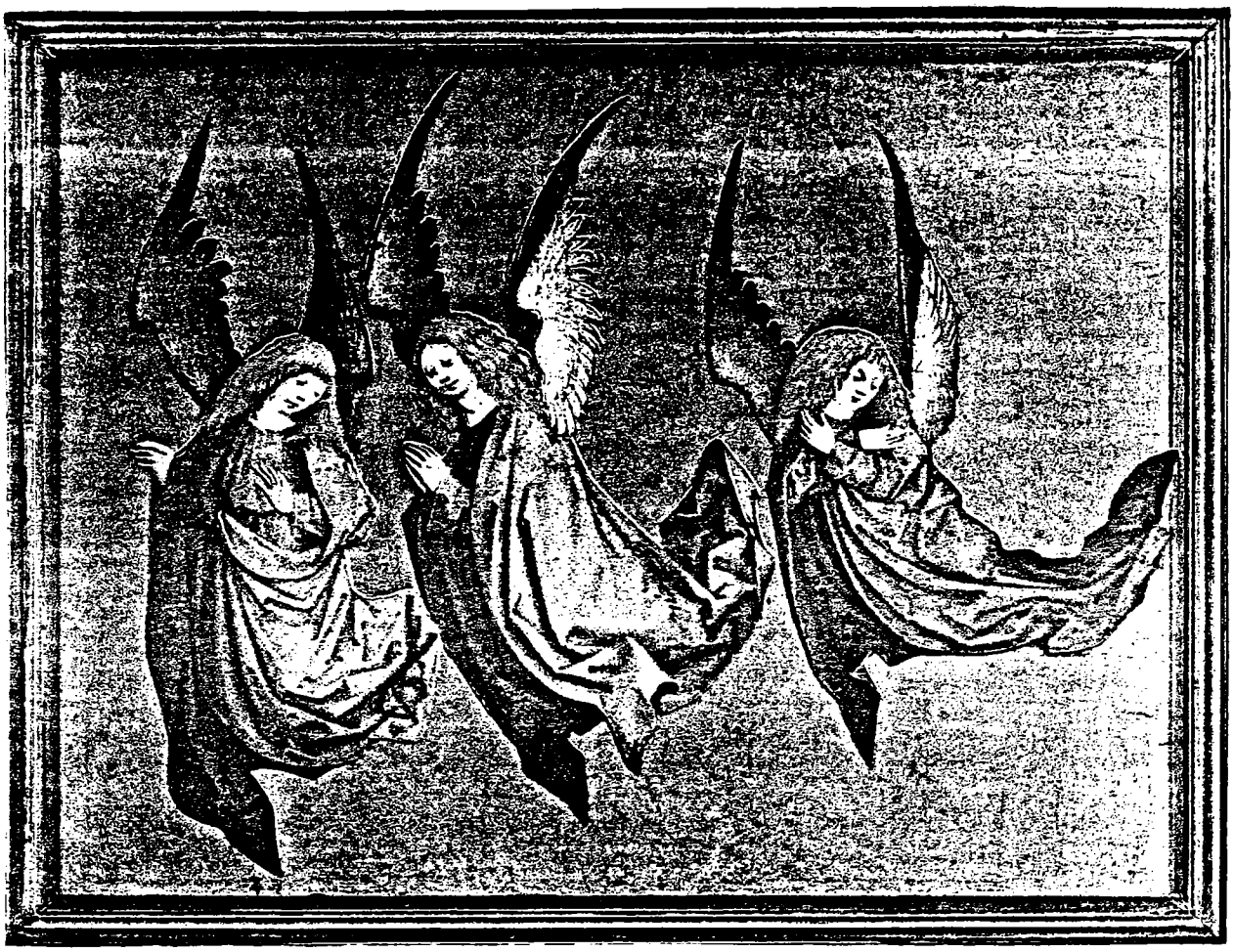

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