

Power and Military Impotence

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After twenty-five years of a nuclear-military arms race, it is possible to define significant limits of military power for national security. These limits apply with special force to the nuclear superpowers. These same limits of military power also define new requirements for a disarmament process.

Underlying the long discussion of disarmament among nations has been the understanding that lowered levels of armaments produce mutual advantage: the prospect of physical destruction is reduced; and the cost of armaments can be applied to constructive uses. The arms race from 1946 to 1971 between the United States and the Soviet Union has not improved the military security of either nation, and the economic cost to these two countries has exceeded \$1,500 billion.

In 1961 I calculated that a rapid process of economic development for the unindustrialized people of the world could be executed with an annual capital outlay of about \$22 billion. Hence, the arms race outlays by the United States and the Soviet Union during the last quarter century would have financed fifty years of world economic development while still leaving one-third of the actual budgets to be used for military security purposes.

Classically, attempts to negotiate international reduction and limitation on armaments levels could proceed with the confident assumption that it was technically feasible to define armaments quantitatively and qualitatively. Owing to the evolution of military technology, these assumptions have altered. What is the unit weapon? One medium-sized military aircraft, or a naval vessel like a destroyer, takes on altered military meaning when its weapons change from conventional to nuclear explosives. A missile with conventional warhead is transformed by

replacement with a nuclear warhead, or by five separately directed nuclear warheads.

Similar conditions have affected the qualitative assessment of weapons. A battleship was once more powerful than a destroyer. But a motor torpedo boat, equipped to launch a nuclear-tipped missile, can destroy not only a single large naval vessel but—conceivably—even an entire flotilla.

What is a “strategic” weapon? Is it to be measured by the explosive power of a warhead? If five “tactical” warheads are jointly applied, do they become “strategic”? Does strategic mean the speed of delivery or the distance over which nonstop delivery can be affected? Is it reasonable to assume that great destructive force can be delivered only over great distances and at high speed? I formulate these questions not only to suggest the new problems of defining terms of military “equality” or “parity” under conditions of nuclear weapons abundance, but more importantly because these questions and the array of possible answers reflect a true transformation in military power.

Since the end of the Second World War there have been a great number of armed conflicts between the military forces of national states. It is a unique feature of this long period that in no case was a conflict permitted to operate to a military conclusion. In each instance other nations intervened, singly or through concerted action—as through the United Nations—to bring military operations to a halt well before one national power was able to overwhelm the other side militarily and use that fact to dictate political terms. The large number of lives lost in the procession of smaller wars from 1946 to 1971 rules out the possibility that a new concern for human life was the operating factor. Rather, this new development was a result of the well-founded and pervasive fear of the consequences from extension and escalation of what began, in each case, as limited national conflict. Extension means involving other countries.

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Escalation means greater intensity of violence. The feared end result of military extension and escalation has been confrontation between superpowers leading to nuclear war. It is widely appreciated that this outcome cannot be excluded, since the generals of each side are instructed to win, and each major nuclear state wields nuclear weapons in abundance.

In 1971 the London Institute for Strategic Studies estimated that the U.S. possessed 6,000 nuclear warheads fitted to delivery vehicles that could reach the USSR and that 2,000 Soviet warheads could strike at the continental United States.

In the United States there are 150 populated places with more than 100,000 persons each. In the USSR there are about 175 such places. It is relevant to compare the number of deliverable warheads with the number of sizable population-industrial centers of each society.

By this form of reckoning, the United States could conceivably overkill the population-industrial centers of the USSR thirty-four times, and the Soviets could destroy the United States's counterpart thirteen times over. The military, scientific and human absurdity of the overkill development is revealed in the following question: Who is ahead, the Soviet Union or the United States, with respect to nuclear military power? If the U.S. and the USSR were to exchange their strategic forces, would it make any military difference?

An overwhelming advantage has been given to the offensive in military operations, for nuclear warheads can be delivered in diverse sizes and by varied delivery systems. Against the number, diversity and destructive power contained in nuclear warheads, the defense function is made essentially unfeasible. Varied allowances for weapons reliability do not alter the condition.

These characteristics of nuclear weapons affect the potential relationship between large and small military powers. As the knowledge for making nuclear weapons is elaborated and alternative technologies become available at lowered costs, it is not inconceivable that smaller nations should undertake the manufacture of their own nuclear weapons. However "small" such weapons and their numbers, the nature of nuclear weapons and the possibility of delivering them by alternative means open up the nightmarish possibilities of military-political confrontations in which major powers find themselves threatened by small nations wielding nuclear "equalizers." What science or body of human wisdom could be drawn upon to advise a government on how much value to place on any of its cities?

For the nuclear superpowers the consequences of using conventional forces are not separable from nuclear forces. For each state trains and operates armed forces to apply successive intensities of force as required to prevail militarily. Recourse to nuclear

weapons, accordingly, cannot be altogether ruled out.

Modern guerrilla warfare involves a major military-technical innovation of an organizational sort and not primarily of particular weapons. Nevertheless, this organizational innovation is significant, for it has set limits to military power and hence to the meaning of various military-technological developments.

The essence of guerrilla warfare involves military operations under the following conditions: (a) a group of men sufficiently committed to a common purpose to risk their lives for the end in view; (b) support from the surrounding population for the guerrilla fighting group; (c) ability of the guerrillas to take on appearances similar to those of the surrounding population.

When these three conditions are fulfilled, it has been unfeasible to overcome the group of men so operating. During the last decades major armed forces have been repeatedly frustrated by guerrilla-type operations that fulfill the three conditions noted above. This was starkly revealed in the frustration of the German army during the Second World War against the Yugoslav guerrillas, and was further demonstrated by the frustration of American armed forces in Vietnam.

There is no question that in every department of weapons technology American armed forces in Vietnam, and those supported by them, enjoyed overwhelming superiority. The guerrilla opponent in Vietnam demonstrated military staying power despite the fact that he possessed no heavy weapons, no navy, no air force and nothing like the technically elaborate and industrial infrastructure that supported American and allied armed forces. During the last decade American armed forces have not stinted on research and development for counter guerrilla operations. The array of new weapons development to facilitate the counter guerrilla operations in Vietnam is impressively elaborate. The range extends from new lightweight weapons, new types of footgear and protective clothing, devices to "smell" a possible opponent concealed in a jungle and antipersonnel bombs of diverse sorts and highly destructive effect. The inability of the most elaborately equipped armed forces in the world, backed by the world's largest military technology research and development network, to overcome the guerrilla forces of a small, poor country defines a major limit in military technology.

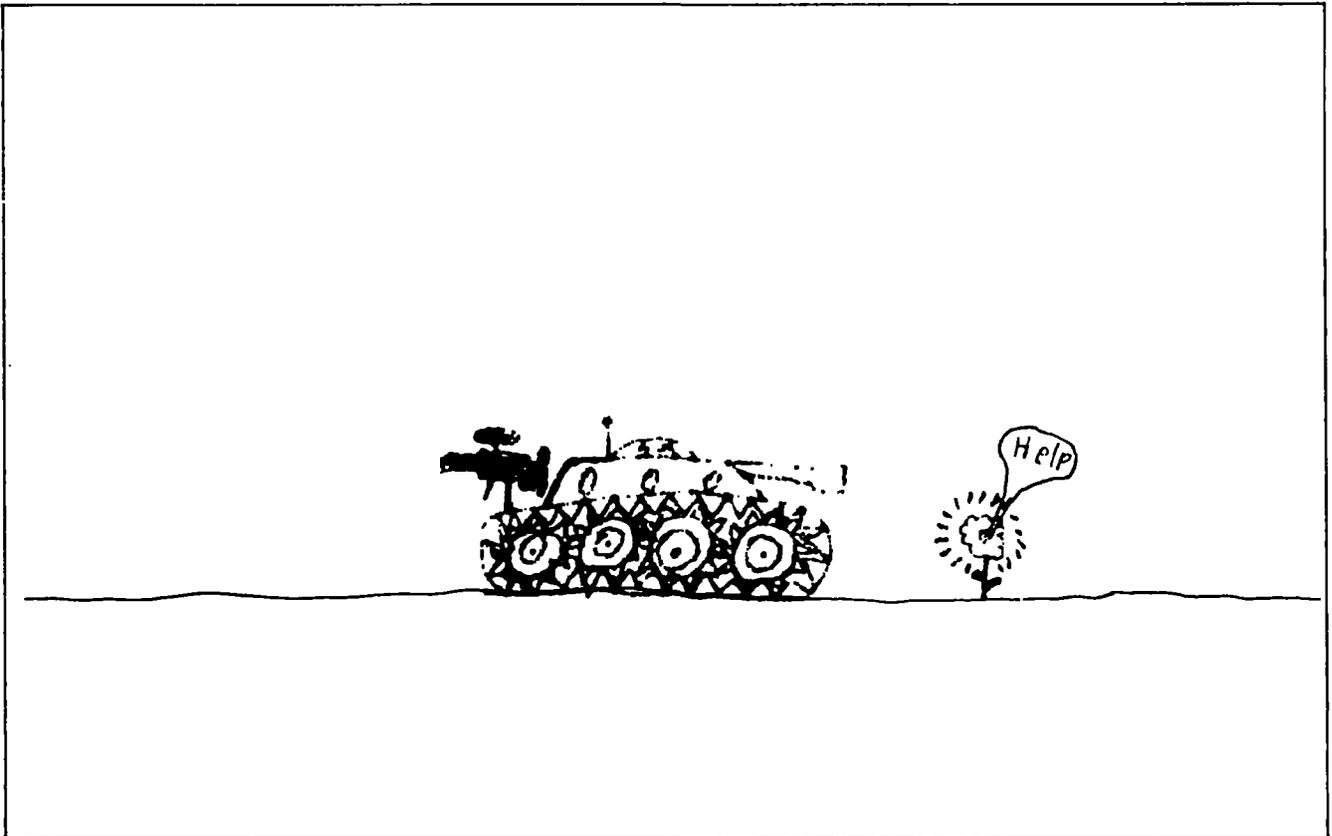
This is not to say that guerrilla operations cannot be overcome. They can, if one or more of the three conditions listed above are altered. Take, for example, the second requirement for successful operation: If the surrounding population is destroyed, then there is no "sea" in which the guerrillas can "swim." The United States has the capability for destroying the population in areas

under guerrilla control. But such methods, until now, are politically unacceptable. Also, the destruction of a population goes counter to at least one traditional requirement of military operations: that the winner take control, not only of territory, but of the population therein.

The governments of the superpowers have each underwritten massive efforts to achieve superior military power. The advice they have followed in this respect has been based on assumptions that deserve review. It has been assumed, *first*, that military su-

tary-technical form, this has meant an improved rifle, improved bullets, an improved airplane, an improved tire, an improved bandage, an improved uniform, an improved guidance system, an improved missile fuel—each being pursued on the assumption that from the sum of such unit technical improvements there will emerge, necessarily, an improvement in a military system as a whole.

A military officer's view of unit improvements desirable during the 1970's was given by Brig. Gen. Kenneth Hunt, Retired, in his paper "The Require-



Drawing by Nicholas Kuskin, age 9 (1970)

premacv is both defnablv and achievable. In the case of nuclear warfare this is clearly not the case. Neither is there any prospect, based on knowledge of nature or its application to technology, for supposing that this may be the case in some predictable future. Once nuclear weaponry is understood as not being usable for military superiority, then it is also difficult to suppose that conventional warfare, in the presence of nuclear options, can be turned to account for this purpose. For if conventional weapons and forces are interlinked with nuclear weapons and forces, and the same men command the two and are indoctrinated to prevail, then it is plausible to expect that these men will move—given the need—from conventional to nuclear forces.

Second: Perhaps the key technical assumption underlying confidence in the achievement of military advantage is the idea of "suboptimization." Suboptimization is the strategy for improving a system as a whole through improvement of the parts. In mili-

ments of Military Technology in the 1970's." In 1967 Hunt wrote:

The soldier is interested in infra-red or laser sighting devices to enable him to see and aim at night or in a fog; light-weight radar or sensory aids to detect enemy approach; weapon-locating radars to pinpoint enemy guns or mortars by calculating the path taken by the shells they fire; the location of enemy concentrations and particularly nuclear artillery, with sufficient accuracy and speed to enable them to be hit before they move or fire; the engagement of high-speed attacking aircraft, preferably before they release their weapons. The sailor must find the enemy submarine, surface ship or aircraft, which is no doubt moving, and engage these fleeting targets before they engage him. The airman has his target to strike, fixed, moving, predetermined or opportunity; the enemy interceptor, bomber or missile to engage; the enemy defences to counter.

The conventional strategy of military-technological development is checkmated by the two limits of military power discussed above: nuclear overkill and guerrilla warfare. "Improvement" in overkill is non-operational and hence militarily, humanly and scientifically meaningless. Ever greater firepower for destroying an opponent under conditions of guerrilla warfare is meaningless insofar as the opponent cannot be identified.

In weapons development, technological improvement has typically taken the form of attempts at superiority in destructive power, accuracy, speed, range and reliability. Consider General Hunt's shopping list of technological improvements in terms of these factors. Each of these developments might very well produce some particular military gain under conditions of Second World War military operations. Once nuclear weapons are introduced in quantity, the military worth of these gains is vitiated.

This military-technical shopping list has its counterpart in the agendas of particular technical problems being tackled by the military research and development institutions of the United States and the Soviet Union. Taken together, the interest in these developments rests on the assumption that military operations in some foreseeable future will be like the knightly jousts of medieval warriors: wars that are fought between opposing armed forces such that the relative technological superiority of one might make some significant difference. Under present conditions that prospect is unrealistic. In the era of nuclear overkill, knightly jousting between elite military forces is replaced by the prospect of nuclear confrontation, in terms of which (as in the Cuban Missile Crisis of October, 1962) particular technical "advantages" are overwhelmed by the prospective destructiveness of the nuclear weapons to be used.

Consider the meaning of suboptimization with respect to classes of military technology that have been given considerable attention. Suppose one armed force, having been given elaborate equipment and training in the use of tactical nuclear weapons, is able to score a major advantage in the field. Of what use or meaning is that advantage if the population-industrial centers of the society have been destroyed in the course of escalated military operations? What science can be called upon to judge that such levels of violence would not be attained?

A *third* assumption that is characteristically made with respect to military power is that the size of money expenditure can make the difference. Here it is worth recalling the possibility that small countries may, in the near future, acquire nuclear weapons at relatively low cost.

In sum, military technology can deliver great destructive power for operating a threat system. But

military technology cannot now or in a foreseeable future deliver a physical shield, that is, defense, in nuclear war. Neither can present or foreseeable military technology insure victory against determined guerrilla opponents.

An important feature of the arms race has been the development of major military-industrial and military-technical institutions in the major countries of the world. The longtime operation of such institutions and their large cadres of educated men give institutional weight to the ideologies of the arms race. Many able men have had their prime career experience working in these institutions.

Insofar as military technologists, however able individually, participate in what is scientifically absurd—like the multiplication of overkill, or the improvement of targeting accuracy by hundreds of yards in warheads with miles of destructive effect—then their technical work is in the tradition of science-fiction rather than science, regardless of its technical intricacy or elegance in detail.

Our countries have been asking military technologists to produce something which, on the evidence, can no longer be delivered: a workable shield against nuclear destruction from without and military superiority in both nuclear and conventional warfare. Despite the known technological limits in these spheres, military specialists recommend the expenditure of large public funds for their activities, each of which is presumed to contribute to a plausible military defense or to superiority of armed forces.

When research organizations reach limits of the potential contribution to given technology, as most military research institutions have, why do they continue to exist? The answer to such a question must be sought in the realm of social laws of perpetuation of organizations: the social inertia that stems from the well-esteemed operation of a large organization that has high status, large budgets, a technically qualified staff and a network of interrelations with important institutions in society. Military research establishments build on these factors through the promise of military-technological "improvement" always in prospect. Indeed, improvement in detail can generally be delivered even though the larger purposes of military advantage that must presumably be served by military technology get lost from view.

No nation, however large and wealthy, can escape the negative economic effects caused by sustained military spending on a large scale. Economists, as a group, have tended to neglect the functional difference between productive and parasitic aspects of economic growth. Productive growth refers to goods and services that are money-valued and form a part of the level of living, or can be used for further production. Parasitic economic output refers to goods and services that are, primarily, neither part

of the level of living nor useful for further production. Military output is overwhelmingly of the latter sort. Thus, in the United States, from 1946 to 1971, more than \$1,200 billion was expended in the budgets of the Department of Defense. (This quantity of resources exceeds the money value of all the residential and commercial buildings on the surface of the United States.) The comparable data for the USSR are not available to me.

The value of productive economic growth foregone is the true indicator of the social cost of large and sustained military expenditures. Thus, 8-10 per cent of Gross National Product annually devoted to military purposes in the United States has seemed to be a small part of the national product. This portion, however, includes a preponderance of the research and development, scientific and engineering manpower of the country. The effect of their concentration on military and related work is the relative technical depletion of many civilian industries and activities. This effect is operative apart from variation in economic systems.

In the United States a series of important industries have become technically and economically incompetent to serve even the domestic market, let alone compete successfully in the world market. The effect of inadequate productive investment is widespread. In New York City, for example, central power supply, the telephone system and rail services have become unreliable. Since these services are the underpinnings of an industrial system, the inefficiencies in these activities have ramified effects throughout the economy and society.

In the Soviet Union there is evidence, too, of constraint on economic development that is surely traceable to the long-term priority given to military-industry and military-technology. For example, I read in dispatches from Moscow that citizens of that city are mobilized to help bring in the yearly harvest of truck produce around the Soviet capital and that the mechanization and organization of agriculture have not proceeded to the point where newspapers need not exhort Moscovites with headlines proclaiming "Decisive Days," "Every Hour Counts" and "The Capital Awaits Its Potatoes."

In an official summary of the "Draft Directives of the 24th CPSU Congress for the New Five-Year Plan" I find that "It is planned to raise labor productivity in industry by 36-40 per cent over the five-year period, securing thereby 87-90 per cent of the total increment in output." This is, of course, a centrally important economic matter for the Soviet Union. From the standpoint of industrial productivity, attaining this goal depends on intensive mechanization of existing plants and construction of new, highly productive, industrial facilities. This achievement is unlikely without a substantial transfer of Soviet technical talent from military and space activities to productive economic work.

I find it significant that despite considerable differences in political-economic conditions, there are problems of economic depletion or limited economic growth in the United States and the Soviet Union that involve a common factor: long concentration of technical talent and capital on parasitic economic growth. That is the automatic penalty of giving priority to the arms race. Substantially improved economic conditions are the automatic reward for reversing the arms race.

The development of nuclear overkill systems among the superpowers has led to qualitative and quantitative constraints on defining military "parity" or "equality." If such categories are not definable, then it is difficult to see how they can be used as a basis for a negotiated, parallel reversal of the arms race. At the same time, it is incontestable that the further development of the arms race is militarily irrational, leads to heightened military insecurity and unacceptable economic penalties. Under these conditions a new approach to a disarmament process is required. I propose the following as a workable set of actions for disarmament under present conditions.

A. *Limited agreements.* This includes agreement among the superpowers and others for a complete test ban on nuclear warheads and delivery vehicles, agreement on no ABM systems and agreements to terminate chemical and biological weapons.

B. *Disengagement and demilitarization agreements.* These include agreements for demilitarized zones, as in Europe or the Middle East, and arrangements for disengagement of aerial and naval forces of the superpowers (agreed rules of navigation, minimum distances, etc.).

Agreements of the two sorts noted above do not touch centrally on the main course of the arms race. They are important, however, both in the substance that they deal with and for the political confidence that such agreements generate within and among nations.

C. *Unilateral reduction of overkill and extra-defense forces.* By reduction of overkill forces I mean reduction to a level defined as follows: In the United States there are 150 cities with populations of 100,000 and over. A nuclear force for the USSR is one that is capable of delivering 150 warheads to these places. Leaders of the United States who would not be constrained from nuclear military initiatives by the prospect of destruction of these 150 cities would be too insane to be constrained by anything.

In the USSR there are 175 cities of population 100,000 or more. A strategic force level for the United States is one that is capable of directing nuclear warheads to those cities. Soviet leaders who would not be constrained from nuclear military

initiatives by the prospect of destruction of these cities would be too insane to be constrained by anything.

The statistics for cities given above in the United States and the Soviet Union define, reciprocally, the size of nuclear forces in each case. The merit of this reasoning for defining a nuclear force is not altered by qualifications concerning weapons reliability, etc.

Once it is appreciated that military advantage in a nuclear arms race can no longer be defined and that "parity" at multiples of overkill cannot be defined, it becomes clear that the initiative toward sharp reduction of nuclear overkill forces is deservedly undertaken by the unilateral actions of each government and society. In each case the action is taken to improve the military and the economic security of the society in question.

Similar reasoning applies to the reduction of extra-defense conventional forces. Once it is appreciated that such forces, alone or with nuclear adjuncts, cannot provide a true shield for any society, then their residual function is that of plausibly guarding the boundaries of superpower states and contiguous allied territories. This assumes agreement to the proposition that the use of their own conventional military forces as instruments of political power extension by the superpowers involves them in the unacceptable risk of nuclear confrontation.

D. Negotiated disarmament and peacekeeping. As armed forces of the superpowers come down to the nuclear force levels and limited conventional forces as defined above, the technical and political conditions for negotiating disarmament and peacekeeping institutions will be transformed. On the technical side the number of nuclear weapons and delivery systems will have defined meaning, thereby rendering their further reduction negotiable. Politically, the visible effort to put aside attempts to overwhelm the other nation militarily will create the necessary atmosphere for further reduction of both nuclear and conventional armed forces, and for the implementation of agreed peacekeeping arrangements.

It is worth stressing here that one of the important areas of unattended problems concerns the design and operation of international peacekeeping arrangements and the formulation of a workable strategy for phasing these into operation.

The experience of the last decade has made me cautious about understating the political weight of military institutions and military-supporting ideology. I judge, however, that the

self-imposed economic and other penalties of the arms race have become vividly evident in both the United States and the USSR and that thoughtful men in both societies are prepared to reassess the conventional wisdom that has led our countries to seek security in the arms race. There is no alternative, in my view, to trying, deliberately, to overcome the myth that tells us that a military advantage is still obtainable if one tries hard enough. Thoughtful men in each society have the obligation to address the primitive fears and suspicions that have grown up over the last decades. It is necessary to show that, on the one hand, there is no way to succeed with the arms race—for "success" means failure. On the other hand, it is necessary to persuade that the security of a society could be substantially improved by policies that reverse the arms race and apply vast resources to productive tasks.

The process of "demystifying" the arms race might be assisted by continued demonstration of the "antagonistic cooperation" that has developed during the last decade. Military policy-makers of the U.S. and USSR have each reacted to actions by the other, making them into justifications for further steps in the arms race on their part.

I can say with some confidence that in the United States one of the problems Americans face is overcoming the fears that many feel if we are not outdoing the Russians weapon-by-weapon and technology-by-technology. At a recent informal discussion that included a number of military men, I presented some of my ideas. Finally, one Air Force man rose to his feet and cried out: "We've gotten so accustomed to just reacting to the Russians that we have allowed ourselves to become too reactive. Why, if the Russians announced they were going to hell, in no time the Bureau of Mines would come up with a program . . ."—at which point the entire discussion dissolved in laughter. Most likely the same story is appropriate the other way around. If the Americans announced they were going to hell, in no time the Soviet equivalent of the Bureau of Mines would also "come up with a program."

I judge that the main order of new action for reducing the military confrontation system between the United States and the USSR is the unilateral reduction of military establishments by each government down to the level of sufficiency for effecting nuclear constraint and guarding the country.

In the coming period the mark of courage of national leaders in the United States and the Soviet Union will be the readiness to tell the people the truth about the limits of military power and to recommend and implement the reversal of the arms race.