Disarmament, Arms Control, and Strategic Analysis

Can strategic analysis reveal methods for controlling threats to peace and for preventing nuclear war?

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How can the world avoid the ultimate catastrophe of nuclear war? There is a simple and suggestive answer: get rid of nuclear weapons. But this is easier said than done. The East and West have debated nuclear disarmament since the end of World War II, but so far these debates have produced no tangible result. Disarmament remains in the realm of talk. And in the field of practical policy, there is instead, a nuclear armament race. It is a frustrating situation.

There are several approaches toward resolving this frustration. The radical disarmers, for example, argue that the main reason for lack of progress is the West's insistence on ironclad guarantees that the other side will fulfill its obligations. If the West acted from trust rather than distrust, they argue, disarmament could be achieved. Another approach is that of the Western diplomatic practitioners who want to isolate points of detail on which formal agreement can be achieved, regardless of the fundamental differences that separate the two sides in other respects. Their underlying idea is that the problem will be gradually brought under control by the slow accumulation of technical arrangements. Finally, a third group, the strategic analysts, look at arms control and disarmament, not as a self-contained objective, but as just one aspect of the broader problem of international equilibrium and national security. In their view, the problem is how to keep the international system in balance; arms control may contribute to this, but so may deterrent weapons.

The three books reviewed here deal with the problem of disarmament and arms control from these various points of view. Bernhard G. Bechhoefer's **Postwar Negotiations for Arms Control** (Brookings Institution, Washington, D.C., 1961. 641 pp. $8.75) reflects the approach of the American practical negotiator. **Arms Control, Disarmament, and National Security** (Braziller, New York, 1961. 475 pp. $6), edited by Donald G. Brennan, is a collection of essays in which all three schools of thought are represented, but the main emphasis is on strategic analysis. Brennan's volume is an outgrowth of the arms control study and discussions carried out under the sponsorship of the American Academy of Arts and Sciences and first published as a special issue of its journal, *Daedalus* (Fall 1960). A shorter book, **Strategy and Arms Control** (Twentieth Century Fund, New York, 1961, 148 pp. $2.50), by Thomas C. Shelling and Morton H. Halperin, also treats the problem from the strategic analyst's point of view. Both Schelling and Halperin also contributed papers to the Brennan volume.

The Piecemeal Approach

Bechhoefer's volume gives a clear, comprehensive, richly documented, critical account of the arms control and disarmament debates and negotiations between the East and West from the early postwar years up to the spring of 1961. The author participated in making and implementing the disarmament and arms control policies of the United States during most of this period. Thus, he can draw upon his own experience, in addition to the vast documentary material that he handles with great mastery.

To the Westerner, negotiating with the Russians is a notoriously dismal experience, and the disarmament talks were no exception; as the author shows, they produced an inordinate amount of exasperation. In fact, Bechhoefer tends to blame both sides for the communication breakdowns with which the history of disarmament negotiations is replete. On the Russian side, there was trickery, bad faith, and a tendency to indulge in propaganda under the guise of negotiation. The West, on the other hand, tended to neglect the cardinal principle that negotiations can be fruitful only if the proposals made by one side are not manifestly unacceptable to the other. Yet, summing up the entire cycle of negotiations, Bechhoefer finds a positive balance. The West has learned, by now, how to make proposals to which the Russians can agree; the latter, in turn, have shown some willingness to negotiate in a businesslike fashion rather than to indulge in propaganda. Thus, at long last, the disarmament talks are on the right track. Instead of talking past each other, we now talk about what we can and shall do together, one step at a time. By concentrating upon feasible and negotiable measures (for example, test suspension), disarmament talks have become operationally meaningful.

It is understandable that the practical negotiator welcomes this change in the style of negotiation as an escape from the hell of futility; at least, he can expect to achieve something tangible, however modest. But the question is, how far can this concentration upon feasible agreements and noncontroversial measures take us along the road towards a comprehensive arms control agreement? As long as controversial items are excluded on principle, armaments will remain unregulated in all major respects. The practical negotiator must accept this. But does this lack of regulation not create an ever mounting danger of conflict? If it does, the piecemeal approach adopted by the practical negotiator is clearly inadequate to save the world. But if it doesn't, it is hard to see what essential contribution the feasible minor agreements can make toward reducing the danger of conflict. As Bechhoefer shows, the Western side made considerable efforts to define significant threats to peace but that could

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be treated in isolation; this is how the problem of surprise attack came to be a focal issue. It is, however, unrealistic to assume that safety from such attack can be achieved by technical arrangements.

Thus, the practical negotiator is caught in a dilemma between sacrificing either operational meaningfulness or contact with the essential problems of peace and war. Bechhoefer's analysis reflects this dilemma without resolving it. He bases his favorable assessment of the entire cycle of talks upon the amount of agreement actually achieved: "Both the Soviet Union and the West have recognized that an uncontrolled arms race increases the likelihood of a disastrous nuclear war"; moreover, there is agreement on the necessity of continuing talks and of proceeding by stages, taking up only items on which agreement is possible (pages 567 to 570). The trouble is that we cannot take the first point of agreement (growing likelihood of conflict in the absence of regulation) very seriously, if we base our practical policy upon the second (the piecemeal approach). In the course of his analysis, Bechhoefer stresses "the supreme importance of Western deterrent strength in preventing the outbreak of war" (page 577), without considering to what extent this view deflates the consensus concerning the growing danger of war inherent in an unregulated arms race.

Strategic Analysis

I do not suggest that relying on deterrence is incompatible with recognizing the need for arms control. My point is only that we cannot combine the two approaches without admitting that there are stabilizing mechanisms which operate in an unregulated world. These mechanisms are subject to malfunction and breakdown; it is therefore necessary to explore how they should and could be made more reliable. This requires strategic analysis, the investigation of the necessary and sufficient conditions for achieving a certain desired state of the world (in this case, continued peace). The idea of arms control has an important role to play in this sort of strategic analyses, but not with feasibility of formal agreement as the decisive criterion. The question is, rather, what specific deficiencies of the unregulated process call for what specific measures of limitation and control, whether formal or informal, bilateral or unilateral.

This is how the strategic analysts represented in *Arms Control, Disarmament, and National Security* look at the problem. In his introduction, Donald G. Brennan, the editor, puts the matter in a comprehensive framework, embracing deterrence and arms limitation as two interrelated aspects of national security. To evaluate limitation schemes properly, one must ascertain how they affect the stabilizing effects of other arms policies. In his paper, Thomas C. Schelling elaborates this point of view in brilliant detail. This is also the main theme in *Strategy and Arms Control* by Schelling and Halperin. Here the authors examine the likely, real consequences of a wide array of arms control measures, and they show how easily the actual effects of control can deviate from the intended ones.

According to Schelling, avoiding conflict is not simply a matter of increasing or reducing armaments; the question is rather whether the existing armaments, large or small, facilitate a continued standoff or create an explosive situation by putting a premium on striking first. One can, and should, cooperate with the opponent in developing weapon systems capable of doing the former. This cooperation, however, need not take the form of explicit limitation agreements; one can move unilaterally in the direction of a "stable" system and expect the adversary, perceiving this, to do likewise, given the mutuality of interest in stability. Even if armed conflict does break out, mutual accommodation remains a vital problem. Schelling holds that even general war between Soviet Russia and the United States need not involve an indiscriminate nuclear holocaust: mutual interest may lead to limitation. (A similar conclusion is presented by Edward Teller in his paper on the feasibility of arms control and the principle of openness [Brennan, page 133].)

Formal agreements on arms limitation play a subordinate role in Schelling's analysis; at present, he says, nobody takes them very seriously, but he adds that an acute war crisis might bring about "a sudden and drastic change in the attitudes of both sides towards arms control" (Brennan, page 183). Disarmament negotiations under pressure might offer a way out. By contrast, Herman Kahn holds that, in any case, limitation agreements are required, in view of the explosive trend inherent in present arms developments. A fateful cause of instability is the rapid rate of technological progress itself, which interferes with "adjustment to international tension" and creates "doctrinal lags" that make for miscalculation and accidental war. Another such factor is the spread of nuclear weapons to many nations. Kahn calls for formal limitation agreements, arrived at with full realization of the complex technological, military, and political problems involved, as the best way to make the new weapons environment more manageable.

The Brennan volume contains several other important pieces of strategic analysis, for example, those by Robert R. Bowie, Henry A. Kissinger, and Jerome B. Wiesner. Space forbids discussing these, but the above samples may suffice to illustrate the specific strength of the strategic analysts' approach: their sense of the interrelatedness of the manifold factors on which the maintenance of peace depends. The analysts avoid the failing to which the practitioners sometimes succumb, that of reasoning from unexamined premises. But this exposes them to the opposite danger of remaining inconclusive. Strategic analysis does more to awaken a sense of the enormous difficulty and complexity of the problems of peace and war than to offer commonly accepted, reliable solutions to them. Also, the rarefied atmosphere of strategic analysis generates great difficulties of communication. These are most drastic in Kahn's case; he is inclined to make his points in terms of hypothetical casualty statistics and of truly horrendous thought models such as "Doomsday Machines" (Brennan, page 102). Many people refuse to follow chains of reasoning expressed in this language; since, in their view, nuclear war represents the ultimate of inhumanity, thinking about it as a hypothetical reality is inhuman, even if this is for the purpose of finding out how best to avoid it.

The Radical Disarmers

According to the radical disarmers, the first requirement for avoiding nuclear war is to look at nuclear weapons solely as agents of world destruction, dismissing the idea that their existence could contribute to the preservation of peace. This is the stand taken by Erich Fromm in the Brennan volume. He rejects the idea of nuclear deterrence, not merely because it is unlikely to work

in the long run, but, above all, because its consequences would be disastrous even if it did forestall nuclear war. Were we "to live for any length of time under the constant threat of destruction," we would lose all capacity to live in freedom and eventually turn into totalitarian "barbarians." The only way out consists of taking active steps toward disarmament, expecting reciprocation by the Russians but not making it a preliminary condition. This policy is risky, but its risks are less than those of nuclear arming. Moreover, the risk should not be overestimated; the present leaders of Soviet Russia are both too rational and too conservative (nay, reactionary) to be interested in military conquest for the sake of promoting world revolution.

This argument of Fromm's is logically consistent, but its underlying assumptions are open to question. If the deterrent "works," its psychological effect will be less and less that of a constant, vividly felt fear of destruction. Also, a sharp imbalance of strength between the East and West would enable Soviet Russia to undermine all free institutions without abandoning "rationality" and without aiming at military conquest. Any unilateral disarmament would open up tremendous possibilities of blackmail against which the idealism so eloquently evoked by Fromm would provide no protection. Balance therefore must be recognized as an indispensable requirement of a tolerable world order, and the task of coming to terms with the new weapons environment cannot be evaded.

Energy Transformation

The Fire of Life. An introduction to animal energetics. Max Kleiber. Wiley, New York, 1961. xxii + 454 pp. Illus.

This book is a delight: it is charmingly written by a world-recognized leader in bioenergetics, and it is witty, wise, and informative. Kleiber decided, after 10 years of writing, to take his title to indicate that the volume is "essentially limited to the classical rather than the newer aspects of metabolism and nutrition." He follows the educationally preferable procedure of leading gradually from the concrete to the abstract.

The purpose of the book is to describe fundamental concepts in bioenergetics, such as heat and chemical energy, and then to show the basic relationships between environmental factors and living organisms. Thus to introduce a discussion of the physiological effect of food, consideration is first given to what happens to an animal who goes without food. A survey of survival time in relation to starvation gives a chance to discuss basic concepts of statistics and their applications in bioenergetics. The composition of living bodies is discussed with extension to loss of body weight and loss of body substance. An excellent description is given of the evolution of methods for the measurement of respiratory exchange. There is then the problem of what a starving animal gains by burning up its own body. There is a review of principles of animal heat loss and animal temperature regulation. A chapter on basal metabolism explores the relationship of body size and metabolic rate, and there is modest reference to that relationship between body size and efficiency of food utilization often referred to as "Kleiber's principle."

Kleiber treats the prevention of starvation from the aspect of food as fuel. Clarification is offered of confusing opinion regarding losses of food energy, with detail on the calorigenic effect of food. Finally, there is an excellent appraisal of the necessities in food requirements for our increasing human population. Kleiber concludes that starvation today results more from economic conditions than from shortage of energy, and that "considerations of elbow room rather than scarcity of food should limit the growth of human populations."

Kleiber is generous in his acknowledgements of aid from his teachers and his colleagues. He is comprehensive in his references to significant contributions from scientists. He is lucid in the analysis of complex principles. And he is stimulating in the philosophical questions which he raises.

A series of appendices give much factual information and also offer a number of practice problems. The bibliography is excellent, and the volume is well indexed. Altogether, this is a skillfully and brilliantly organized discussion which may long serve as the definitive exposition of classical bioenergetics.

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Extinct Reptiles

Dinosaurs. Their discovery and their world. Edwin H. Colbert. Dutton, New York, 1961. 314 pp. Illus. $7.50.

This informative book is primarily intended for the average person who is curious about dinosaurs, but it also contains considerable detail on some genera of the different groups. Thus the book can be read and understood by the readers for whom it is primarily intended, and it will also be useful to paleontologists, especially for teaching.

Each group of dinosaurs is discussed, and one of the oldest or most primitive as well as one of the most advanced forms is described. The most important characters and usually the adaptive significance of these features are elucidated. Colbert directs attention to many interesting genera not previously mentioned in semipopular accounts.

Basic principles and techniques in paleontology, with which paleontologists are concerned, are included to give the reader a better background. These include geologic time, the discovery, collecting, classification, and preparation of specimens, and research. There are also interesting passages on the life and characteristics of dinosaurs—food habits, brains, brawn, temperatures, eggs, embryos, juveniles, tracks, environments, distribution, and extinction. It is stated there is no satisfactory explanation for their extinction but that evolution is in part dependent on extinction.

An important omission is the lack of citations in the text and in the bibliography to original descriptions and to the most recent or best technical revisions of the genera and families. This would have been most helpful to the thousands of youngsters and teachers who are making a serious effort to inform themselves by using original sources.

From time to time throughout the book, Colbert's years of contact with the literature and, more particularly, with unpublished documents and field notes, enable him to reveal incidents about fossil discoveries and the persons involved in them. This adds much local color and brings the reader into realistic contact with the historical context of the subject, although the versions of some of these anecdotes differ somewhat from those handed down to us. In these passages Colbert's choice of words and his sentences are usually colloquial.