

Reducing the Risk of War

Avoiding Inadvertent War. Crisis Management. HILLIARD RODERICK and ULLA MAGNUSSON, Eds. Lyndon B. Johnson School of Public Affairs, University of Texas, Austin, 1983. xviii, 184 pp., illus. Paper, \$9.95. From a conference, Austin, Tex., Feb. 1983.

It is hardly by chance that "Reducing the Risk of Inadvertent War: Crisis Management" was chosen as the topic of the 1983 Tom Slick Conference, for relations between the United States and the Soviet Union have deteriorated to such a degree that the incumbent president of the United States did not have a personal encounter with a member of the Soviet Politburo for almost the entire length of his first term. The reversal of East-West detente as well as the many crisis spots that exist in today's world provides strong grounds for questioning how well prepared the superpowers, particularly the United States, are to prevent an international crisis from getting out of hand and spilling over into warfare between them.

It was almost unanimously agreed among the conference participants—academics, policy analysts, (former) government officials, and military officers—that crises could not be prevented from occurring since neither of the superpowers would be willing to forgo the option of raising the stakes in a confrontation involving the risk of losing vital assets (allies, spheres of influence, and the like). This "realistic" assessment notwithstanding, Alexander L. George takes the position, shared by others, that "we need to give more thought, and to encourage U.S. and Soviet leaders to give more thought, to how the two superpowers might improve their ability to cooperate in regulating their rivalry and competition in third areas to avoid crises" (p. 28). Going one step further, Lloyd Dumas warns that concentrating too much on crisis management might amount to searching for "the best of a lot of bad solutions"; instead, more emphasis should be given to the reversal of the arms race.

The material included in the volume is grouped into five sections. The central issue of why and how international crises may lead to inadvertent war is introduced by Hilliard Roderick, the convenor of the conference. He is joined by George, who summarizes recent research on decision-making under stress such as is generated by an international crisis as well as recent research on the requirements, modalities, and problems of crisis management. Though neither

contribution breaks new ground, the two papers give a skillful and authoritative overview of what crisis management (or crisis control) is and what purposes it can usefully serve in overall national security policy-making.

The following three sections—The Nature of Unclear Threatening Events, Improving Judgment during a Crisis, and Means to Inform and Reassure Antagonists—cover problems that need to be thought about in advance if crisis management is to be more than a spontaneous, trial-and-error response by top-level decision-makers in a superpower confrontation. Since crisis management is above all a technique of behavior control within and among two or more sets of national decision-making elites it is no wonder that the contributions assembled under the above headings emphasize the failure and improvement of communications, the role of intelligence, the need for informal or even institutionalized arrangements for the exchange of information designed to reassure one side about the other side's intentions, and the like. The value of the papers derives from their being offered by specialists who can lay claim to substantial inside knowledge about decision-making processes in national security.

The last section of the volume consists of efforts at synthesizing the insights gained from research on, and informed argument about, principles, practices, instruments, and institutions of crisis management. Drawing on the results of the Harvard Negotiation Project, William L. Ury provides a concise description of four elements that make up "a 'stabilizing approach' to crisis management": bringing about a military stalemate, initiating negotiations immediately, bringing to bear the power of legitimacy, and learning from crisis. This and the other contributions are then integrated by the editor in 12 propositions about how to improve crisis management.

Though most conference participants held generally favorable views of the need for, and the feasibility of, improved crisis management, many also took pains to point to the dilemmas, inherent contradictions, and possible failures of this approach toward strengthening (inter)national security. From the vantage point of this reviewer one aspect of the discussion about improving crisis management deserves special attention: the participation of allies in crisis management by the U.S. government. Since present-day arrangements for consultations between the U.S. government and the NATO allies during an international crisis are far from satisfactory, Gerd Schmucke

puts forward a proposal that "NATO should establish a Crisis and Defense Cabinet (call it CDC) which assembles as soon as NATO's alert system must be activated" (p. 93). Though this proposal may be flawed for practical reasons, the intensely negative reception it was accorded (see, for example, the comments by Lynn E. Davis, pp. 99–102) demonstrates the wide gulf that exists even among confirmed supporters of NATO on both sides of the Atlantic. If responsible Americans prefer not to take the trouble to build a European consensus in a superpower confrontation or crisis, what should prevent concerned Europeans from concluding that it is politically frivolous to remain almost totally dependent on U.S. decisions in matters of national survival? Thus, the issue of crisis management is likely to add to the many existing strains within NATO and to the calls for reforming it.

Avoiding Inadvertent War is a timely and thought-provoking book that avoids the pitfalls of over-dramatization. Read together with Daniel Frei and Christian Catrina's *Risks of Unintentional Nuclear War* (UNIDIR, Geneva, 1982) it enhances our awareness of both the serious dangers of nuclear war and the by no means negligible possibilities of containing these dangers by political means.

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Theory of Tides

Ocean Tides. Mathematical Models and Numerical Experiments, G. I. MARCHUK and B. A. KAGAN. D. E. Cartwright, translation editor. Pergamon, New York, 1984. xii, 292 pp., illus. \$65. Translated from the Russian edition by E. V. Blinova and L. Ya. Yusina.

This book appeared in Russian in 1977. Its aim appears to have been to draw together, for Russian researchers, both historical and modern aspects of the dynamical theory of tides. In this aim the authors have been successful. Students of the (predominantly English-language) literature on tides will thus find here much that is familiar, as is important in a self-contained discussion, although occasionally in unfamiliar notation and from an unconventional point of view.

An introductory chapter summarizes the tide-generating forces and presents the basic hydrodynamical problem posed by attempting to calculate the global

distribution of ocean tides. Then follow two chapters on the mathematics of the problem and of its numerical approximation and solution. These chapters are more complete than customary treatments. For example, the question of whether the initial value problem with friction has a unique solution is investigated formally as a logically necessary preliminary to solving the problem by time stepping. A potentially important, although not yet fully realized, dividend of the more formal approach is that it provides the beginnings of a systematic theory of perturbations of the tidal problem, with the intent of understanding how inaccuracies in formulating a numerical model of ocean tides from real maps of ocean basins and bottom relief influence the accuracy of the subsequent calculations.

The following chapter, on tides in the world ocean, summarizes both historical and modern information on the global distribution of the M2 tide. Of particular interest is the discussion of numerical experiments by Kagan and his colleagues in which both the shape of the coasts and the bottom relief are altered. The form of the M2 tide appears to depend more on the shape of the oceans than on their bottom relief, but it is possible that the large degree of smoothing of the relief necessary in global tidal calculations has already greatly lessened the influence of relief on the calculations. Artificially isolating the major basins from one another by putting numerical barriers from South America, Africa, and Australia to Antarctica produces remarkably little change in the global pattern of tides.

Chapters on dissipation in a turbulent boundary layer, with details of a model due to Kagan and his associates, and on tidal internal waves complete the discussion.

On the whole, this book presents an accurate and self-contained account of tidal studies up to the date of original publication; it is the first account in English that adequately represents Russian work on ocean tides. A sequel by the same authors was published by Gidrometeorizdat, Leningrad, in 1983. The present English translation is thus somewhat behind the most recent developments, both in the U.S.S.R. and abroad, although acknowledgement of this fact is made in an appendix and an updated bibliography.

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Peoples and Resources in the Tropics

Adaptive Responses of Native Amazonians.
 RAYMOND B. HAMES and WILLIAM T. VICKERS, Eds. Academic Press, New York, 1983, xvi, 518 pp., illus. \$49. Studies in Anthropology.

This book addresses the subject of an old debate in anthropology over the role (or roles) played by the Amazonian environment in the social-settlement systems of tropical South American groups. Earlier studies (in the 1950's and '60's) brought into question the agricultural potential of the forest; more recent studies center on the availability of game and other wild resources. In either case, anthropologists have dutifully aligned themselves into two camps.

Members of the wing that emphasizes environmental limitations argue that Amazonian soils are infertile, that game animals are sparse, that some kinds of rivers are poor in fish, or all of these. To cope with these constraints, Amazonian peoples live in relatively small settlements and may move residence often, maintain low densities, practice female infanticide, conserve resources through taboos, create buffer zones by constant warfare, or strengthen extra-village political alliances (and, presumably, also succumb to missionaries, accept food aid, adopt cash crops, and so on). The other, more optimistic camp views resources as somewhat more abundant and varied. Generally they agree that, under "normal" conditions (that is, where the people have not been reduced by disease, pushed into extremely unproductive lands, or enclosed in reservations), Amazonians are efficient producers and skillful predators.

The volume under review clearly falls into the optimistic camp. To secure reliable data on subsistence practices, the authors spent countless hours trekking with the "natives" for game, measuring their gardens, counting the fish they caught, weighing the crops they harvested, collecting soil samples, adding up proteins and calories, and subtracting time and energy expenditures. As a result, their essays are full of tables, graphs, and lists of species. Some of their viewpoints and conclusions would appear self-evident were it not that other researchers have advanced contrary opinions.

The book begins with a useful introduction by the editors. They discuss regional environmental differences, giving an overview of previous studies and intellectual positions and explaining new

approaches and methodologies. The 14 essays that form the body of the volume are organized (somewhat artificially) under four headings. Within the group headed Cultivation, Johnson's essay on the Machiguenga (Urubamba's tributary dwellers of the Peruvian montaña) is particularly competent. Johnson painstakingly demonstrates that the Machiguenga are careful and skillful cultivators. He suggests that they maximize autonomy through overproduction rather than through reliance on extra-community patterns of reciprocity. For example, in 1972-73 an average household produced 13 million kilocalories of food energy but consumed less than 5 million. (Carneiro, on the other hand, in his essay on the Kuikuru, considers surpluses to be not overproduction but a necessary cushion against unexpected losses.) The importance of Johnson's essay resides in his recognition that there may be more ways than one for individuals to respond effectively to ecological constraints. This is also the main point of Hill and Moran's essay on the adaptive strategies of the Wakuénai people occupying an impoverished segment of the upper Rio Negro, in the Venezuelan Amazon.

To this reviewer, the most interesting data are to be found in the section on hunting and fishing. One of the issues the authors address concerns protein levels and the efficacy of traditional hunting technologies. According to Hill and Hawkes, the Aché of eastern Paraguay are efficient and get fairly good average meat yields (0.53 kilogram per man-hour with bow, 1.60 kilograms per man-hour with shotgun). But they work hard and employ a simple technology so that at the end they extract fewer calories from wild resources than they would were they to grow cultivated crops. The last point raises the question of why the Aché continue to hunt and gather. To this the authors respond that it is probably to escape their bellicose Guarani Indian neighbors, who are cultivators. Simplistic as this explanation may appear to be, it probably accounts for why many hunter-gatherers move around frequently.

In a comparison between shotguns, blowguns, and spears among the Waorani of eastern Ecuador, Yost and Kelley conclude that the shotgun is 1.22 times more efficient than the blowgun and spear combined (and 1.5 times more than the blowgun alone). This would strike one as not terribly surprising were it not for E. Ross's remark that "shotguns