

international relations, grounded on a broad foundation of 22 summary case studies, by 23 authors, of a wide range of U.S.–Soviet cooperative endeavors over the past 40 years. The cases are all focused on security issues, thus omitting scientific, cultural, and commercial arrangements and dealings. They cover negotiations on political settlements such as that on postwar Germany, the Austrian State Treaty, the international regime on Berlin, the Treaty on Antarctica, the neutralization of Laos, and the Helsinki Accord on security and cooperation in Europe; arms control negotiations and agreements on strategic arms limitations, nuclear testing, conventional force reductions in Europe, and confidence-building measures; and regulation of political and political-military competition by attempts to develop a regime of constraint on activities in space, to prevent naval incidents at sea, to constrain political confrontations in the Arab-Israeli conflict, and the like. The case studies, most of them written by specialists, are all competent, and while there are variations in style and level of detail, all not only encapsulate an account of what occurred but present it with an eye to the analytic purpose of the book.

Cooperation is recognized to embrace unilateral and tacit actions as well as formal negotiated bilateral or multilateral agreements, and to cover crisis avoidance and management as well as establishment of regional or global security arrangements. The analysis in several concluding chapters usefully draws upon the material in the case studies. One conclusion that may surprise some is that formal agreements are not always necessary or even useful; there has been an increase in unilateral actions intended to contribute to security (for example, through reducing the adversary's perception of a threat in one's own behavior). Cooperation is understood not as an end in itself but as a means to serve various objectives (which can include enhancement of security). The importance of the quality of leadership in Washington and Moscow comes through both in the case studies and in the editors' analysis.

The idea of addressing efforts at U.S.–Soviet security cooperation seems more routine today than it did when the project was conceived in the fall of 1985—then there had been six years and much tension since the last summit meeting; in the short span since the work was begun there have been four summits and a new rapprochement and burgeoning of cooperative activities. The editors' judgment that the overall U.S.–Soviet relationship is still highly competitive remains true; so too does their recognition that despite—and in part because of—that

rivalry, cooperative measures could still be found mutually useful.

In a lesser way, the normal publishing delay means that the book as a whole and the strategic arms control chapter in particular lag behind by not covering the INF Treaty, a breakthrough in arms control verification, two summits, Soviet withdrawal from Afghanistan, and a number of other developments. This lag does not affect most of the book's content, and it by no means vitiates its findings.

It would have been useful to have a more extended discussion of the significant fact, noted in the concluding chapter (misdescribed, to my mind, as an "epilogue"), that "least progress has been made in formally structuring and regulating the over-all Soviet-American relationship" (p. 713). What is said in this connection is sensible, but spare. Another general criticism is that no "learning curve" has been traced over the 40-odd years covered in the case studies and by the analysis (which in general tends to address the latter half of that period, and especially the 1970s and early 1980s). It would also have been useful if the editors had identified missed opportunities. For example, there was no serious effort at (and hence there is no case study on) a strategic dialogue over military doctrine—something not only proposed formally by the Warsaw Pact in 1987 but under way in a series of meetings between the defense ministers and chiefs of staff of the United States and the Soviet Union. Abortive efforts to start such a dialogue did occur in the past—at the Surprise Attack Conference in 1958 (omitted, incidentally, from the chapter on efforts to reduce the risk of accidental or inadvertent war, save for a passing reference, and not given a chapter of its own) and in SALT I. Such key questions as war termination in the event hostilities erupt has not even been raised, nor is it flagged in this study as a subject worth future attention.

I will forgo comments on the specific case studies, save to repeat that all are good and some are excellent. On only one do I have a dissenting judgment that warrants mention. The chapter on attempts to regulate military activities in space contends that the United States adopted and implemented "a strategy of contingent restraint" toward antisatellite (ASAT) weapons in the early 1960s (pp. 382–384 and 388–393) and that this led to a successful regime of reciprocal restraint during most of that decade, until the Soviet Union upset it by ASAT tests that "pose[d] a threat to the stability of the space regime that had evolved" (p. 390, and see p. 363). In fact, while the American ASAT programs in the 1960s were indeed of limited effectiveness, ASATs were deployed by the Unit-

ed States several years before the first Soviet ASAT tests that (though the Soviet system was also of limited effectiveness) upset the "stability" of an American monopoly on ASAT deployment. Moreover, the United States later obtained a confidential Soviet General Staff discussion from 1972, just as the Soviet ASAT testing program was being gotten under way, that showed clearly their concern over our existing operational systems as well as over more advanced ASAT systems under active development in the United States on which they had information—programs that were later not carried through. Rather than conducting a transient but successful "strategy of contingent restraint," the United States inadvertently triggered a familiar continuing cycle of reciprocal responses to perceived ASAT threats.

The editors, who are also the authors of several key case chapters and above all of the analytical discussions, have managed well a challenging task in producing this valuable contribution to thinking about a key aspect of national security policy. The book is especially timely, appearing as it does at a juncture of change in both the Soviet Union and the United States as well as in their relations with one another.

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Some Other Books of Interest

Mapping Our Genes. Genome Projects: How Big, How Fast? OFFICE OF TECHNOLOGY ASSESSMENT, Congress of the United States. Johns Hopkins University Press, Baltimore, MD, 1988. xiv, 218 pp., illus. \$30.

This volume is a report prepared by the Office of Technology Assessment at the request of the House Committee on Energy and Commerce to survey matters bearing on policy with respect to the mapping of the human genome: rationales for such projects, how they should be funded and coordinated, and their international scientific and economic impact. After an opening summary (including some reasons why much of the recent controversy has been "misplaced") the volume contains chapters on techniques for mapping DNA, potential uses of the knowledge obtained, social and ethical questions they raise, federal agencies and non-governmental bodies engaged in human genetic research, the organization and administration of scientific efforts, genome projects involving other nations, and considerations of technology transfer. The book is written in an elementary style and

includes a number of textbook-style illustrations and boxed explanations of matters ranging from human evolution to the functions of interagency task forces, as well as a glossary. A paperback version is available from the Government Printing Office (stock no. 052-003011069; \$10).—K.L.

Technology and Politics. MICHAEL E. KRAFT and NORMAN J. VIG, Eds. Duke University Press, Durham, NC, 1988. xvi, 358 pp. \$59.75; paper, \$17.95.

In this volume Kraft and Vig have brought together 13 essays in an attempt to "take a broad approach to the question of governing technology in the human interest." The first group of essays is characterized by the editors as philosophical—Vig on technology, philosophy, and the state, Langdon Winner on whether artifacts have politics, and Albert Borgmann on the connections between technology and democracy. The second group deals with institutions and processes involved in the governing of technology—W. Henry Lambright and Diane Rahm on presidential management, John H. Gibbons and Holly L. Gwin on the Office of Technology Assessment, Roger G. Noll and Linda R. Cohen on government support of R&D programs, and Allan Mazur on the mass media. In the third group issues of risk assessment and management are discussed by Harvey Brooks, Kraft (who includes some data about federal efforts), and Edward J. Woodhouse. The final group deals with "cases and controversies"—Robert H. Blank on biomedical technology, Kraft on nuclear waste disposal, and Roger D. Masters and Arthur R. Kantrowitz on science adversary procedures at Dartmouth focused on the Strategic Defense Initiative. Each group of essays has an introduction by the editors, who also provide a conclusion to the collection as a whole.—K.L.

The Earth's Fragile Systems. Perspectives on Global Change. THORKIL KRISTENSEN and JOHAN PETER PALUDAN, Eds. Westview, Boulder, CO, 1988. xiv, 109 pp. \$30. International Federation of Institutes for Advanced Study Research Series, vol. 4.

This collection of papers was prepared by members of the International Federation of Institutes for Advanced Study (IFIAS), an association of 35 research institutes in industrialized and developing countries whose purpose is to work together "to address major global problems of long-term importance in environment, economy and science and technology." According to the chairman of IFIAS, Hermann Bondi, "In this, as in all

IFIAS work, the final aim is a severely practical one—to be of real help to those who have to make major decisions." The book's four chapters cover deforestation in the tropics, urbanization in developing countries, the greenhouse effect, and the transformation of arid lands into "thriving habitats." Each chapter is followed by critical comments from representatives of other IFIAS member institutes; for example, "Greening of the desert," by Amos Richmond of the Jacob Blaustein Institute for Desert Research, Israel, is discussed by E. El-Hinnawi of the National Research Centre, Egypt, who comments that Richmond draws too heavily on the Israeli experience and should "internationalize" his arguments, and by Malcolm Slesser of the Resource Use Institute, Scotland, who finds Richmond's prediction that the next century will see "a significant exodus into today's drylands" overly optimistic. Responses to comments are included. In a final commentary on the papers, Bent Elbek of the Niels Bohr Institute, Denmark, identifies and discusses two common and related themes, development and energy, concluding that "it will require political skill and good luck if we are not going to reenact the energy crisis sometime in the 1990s."

—D.F.W.

Books Received

Animal Physiology. Mechanisms and Adaptations. Roger Eckert, David Randall, and George Augustine. 3rd ed. Freeman, New York, 1988. xiv, 683 pp., illus. \$39.95.

The Antigens. Vol. 7. Michael Sela, Ed. Academic Press, San Diego, CA, 1987. xvi, 341 pp., illus. \$95.

The Art of Scientific Writing. From Student Reports to Professional Publications in Chemistry and Related Fields. Hans F. Ebel, Claus Bliefert, and William E. Russey. VCH, New York, 1987. xx, 493 pp. \$59.95; paper, \$24.95.

Astrophotography. S. Marx, Ed. Springer-Verlag, New York, 1988. x, 241 pp., illus. \$45. From a workshop, Jena, G.D.R., April 1987.

The Atlantic Continental Margin. U.S. Robert E. Sheridan and John A. Grow, Eds. Geological Society of America, Boulder, CO, 1988. x, 610 pp., illus., + charts in slipcase. \$49.50. The Geology of North America, vol. I-2.

The Biophysics of Organ Cryopreservation. David E. Pegg and Armand M. Karow, Jr., Eds. Plenum, New York, 1987. x, 485 pp., illus. \$95. NATP Advanced Science Institutes Series A, vol. 147. From an institute, Atlanta, GA, April 1987.

Bioseparations. Downstream Processing for Biotechnology. Paul A. Belter, E. L. Cussler, and Wei-Shou Hu. Wiley-Interscience, New York, 1988. xvi, 368 pp., illus. \$39.95.

Biotechnology in Invertebrate Pathology and Cell Culture. Karl Maramoroschi, Ed. Academic Press, San Diego, CA, 1987. xx, 511 pp., illus. \$95.

Designing Foods. Animal Product Options in the Marketplace. National Research Council. National Academy Press, Washington, DC, 1988. xvi, 367 pp., illus. \$39.95; paper, \$29.95.

Diagenesis of Sedimentary Sequences. J. D. Marshall, Ed. Published for the Geological Society by Blackwell Scientific, Palo Alto, CA, 1988. vii, 360 pp., illus., + plates. \$135. Geological Society Special Publication no. 36. Based on a meeting, Liverpool, U.K., Sept.–Oct. 1986.

Electrical and Electronic Properties of Polymers. A State-of-the-Art Compendium. Jacqueline I. Kroschwitz, Ed. Wiley-Interscience, New York, 1988. xxvi, 330 pp., illus. \$45. Encyclopedia Reprint Series.

The Electronic Era of Publishing. An Overview of Concepts, Technologies and Methods. Oldrich Standera. Elsevier, New York, 1987. xiv, 407 pp., illus. \$39.95.

Elements of Inorganic Chemistry. G. J. Ferraudi. Wiley-Interscience, New York, 1988. xiv, 248 pp., illus. \$37.50.

Flanagan's Version. A Spectator's Guide to Science on the Eve of the 21st Century. Dennis Flanagan. Knopf, New York, 1988. x, 272 pp. \$18.95.

Linear Least Squares Computations. R. W. Farebrother. Dekker, New York, 1988. xiv, 293 pp. \$45. Statistics, vol. 91.

Low-Level Radioactive Waste Regulation. Science, Politics and Fear. Michael E. Burns, Ed. Lewis, Chelsea, MI, 1988. xxii, 311 pp. \$39.

Luminescence Centers of Rare Earth Ions in Crystal Phosphors. M. D. Galanin, Ed. Nova Science, Commack, NY, 1988. vi, 161 pp., illus. \$71. Proceedings of the Lebedev Physics Institute of the Academy of Sciences of the U.S.S.R., vol. 175. Translated from the Russian edition (Moscow, 1986) by Michael L. Allen.

McGraw-Hill Encyclopedia of Electronics and Computers. Sybil P. Parker, Ed. 2nd ed. McGraw-Hill, New York, 1988. xvi, 1047 pp., illus. \$75. Reprinted from *McGraw-Hill Encyclopedia of Science and Technology*, 1987.

McGraw-Hill Encyclopedia of the Geological Sciences. Sybil P. Parker, Ed. 2nd ed. McGraw-Hill, New York, 1988. xiv, 722 pp., illus. \$85. Reprinted from *McGraw-Hill Encyclopedia of Science and Technology*, 1987.

Memory in Historical Perspective. The Literature Before Ebbinghaus. Douglas J. Herrmann and Roger Chaffin, Eds. Springer-Verlag, New York, 1988. xiv, 254 pp. Paper, \$2. Recent Research in Psychology.

Messages from Home. The Mother-Child Home Program and the Prevention of School Disadvantage. Phyllis Levenstein. Ohio State University Press, Columbus, OH, 1988. xii, 247 pp. \$22.50.

Multivariate Exploratory Data Analysis. A Perspective on Exploratory Factor Analysis. Allen Yates. State University of New York Press, Albany, 1988. xviii, 354 pp., illus. \$59.50; paper, \$19.95.

Nature in Its Greatest Extent. Western Science in the Pacific. Roy MacLeod and Philip F. Rehbock, Eds. University of Hawaii Press, Honolulu, HI, 1988. xiv, 288 pp., illus. \$43. From a symposium, Berkeley, CA, 1985.

Neural Control of Rhythmic Movements in Vertebrates. Avis H. Cohen, Serge Rossignol, and Sten Grillner, Eds. Wiley-Interscience, New York, 1988. xii, 500 pp., illus. \$75. Wiley Series in Neurobiology.

Peptidergic Mechanisms in the Cerebral Circulation. L. Edvinsson and J. McCulloch, Eds. VCH, New York, and Horwood, Chichester, U.K., 1987. 240 pp., illus. \$115.95. Ellis Horwood Series in Biomedicine.

Persephone's Quest. Entheogens and the Origins of Religion. R. Gordon Wasson *et al.* Yale University Press, New Haven, CT, 1988. 257 pp., illus. \$32.50. Reprint, 1986 edition.

Persistent Spectral Hole-Burning. Science and Applications. W. E. Moerner, Ed. Springer-Verlag, New York, 1988. xiv, 315 pp., illus. \$52.70. Topics in Current Physics, vol. 44.

Perspectives in Psychopharmacology. A collection of Papers in Honor of Earl Usdin. Jack D. Barchas and William E. Bunney, Jr., Eds. Liss, New York, 1988. xxxviii, 681 pp., illus. \$120. Neurology and Neurobiology, vol. 40. From a symposium, Irvine, CA, 1984.

Perspectives in Shock Research. Robert F. Bond, H. Richard Adams, and Irshad H. Chaudry, Eds. Liss, New York, 1988. xxii, 452 pp., illus. \$90. Progress in Clinical and Biological Research, vol. 264. From a conference, Montreal, Quebec, June 1987.

Pharmacokinetics. Mathematical and Statistical Approaches to Metabolism and Distribution of Chemicals and Drugs. A. Pecile and A. Rescigno, Eds. Plenum, New York, 1988. x, 348 pp., illus. \$65. NATO Advanced Science Institutes Series A, vol. 145. From an institute, Erice, Italy, June 1987.

Phase Transitions and Critical Phenomena. Vol. 12. C. Domb and J. L. Lebowitz, Eds. Academic Press, San Diego, CA, 1988. xviii, 498 pp., illus. \$50.

The Psychology of Human Thought. Robert J. Sternberg and Edward E. Smith, Eds. Cambridge University Press, New York, 1988. xii, 480 pp., illus. \$54.50; paper, \$19.95.

Sensors and Controls in the Analysis of Distributed Systems. A. El Jai and A. J. Pritchard. Horwood, Chichester, U.K., and Wiley, New York, 1988. 125 pp., illus. \$64.95. Mathematics and its Applications.