

4S Society for Social Studies of Science

Summer 1982

Volume 7 Number 2

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4S Society for Social Studies of Science

President: Arnold Thackray

Secretary-Treasurer: Lowell Hargens

Council: Rae Goodell, Loren Graham, Walter Hirsch, John Holmfeld,
Linda Lubrano, Michael Mulkay, Spencer Weart,
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Editor: Jerry Gaston

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European Correspondent: Trevor Pinch

Editorial Advisors: Bernard Barber, Joseph Ben-David, Ruth Schwartz Cowan, Diana
Crane, Michael Gibbons, Gerald Holton, Camille Limoges,
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Nathan Rosenberg, Harvey Sapolsky, Steven Shapin, Merritt
Roe Smith, John Ziman, Dorothy Zinberg, Harriet Zuckerman

Insert Page: Attached to this page is the Information and Registration
Forms for the Seventh Annual Meeting.

PLEASE DUPLICATE FORMS AS NEEDED

SEVENTH ANNUAL MEETING

University of Pennsylvania

28-31 October 1982

Tentative Program for Sessions Sponsored by 4S

SESSION TITLES, AUTHORS, AND DISCUSSANTS

"Can Sociologists and Philosophers Say Anything Useful About Scientific Discovery?"

Papers: Thomas J. Nickels; Karin Knorr-Cetina

Discussants: Larry Laudan; Augustine Brannigan

"Political Economy of the Life Sciences"

Papers: Naomi Aronson; Deborah Fitzgerald; Elizabeth Fee

Discussant: Nancy Stepan

"Prosopography and the Study of Modern Science: Problems and Prospects"

Papers: Margaret Rossiter; Steve Shapin

Discussants: Daryl E. Chubin; Spencer Weart

"Policy Making, Error Correction, and High Risk Technology"

Papers: Ted Youn; Joseph Morone; Edward Woodhouse

"Organization of Debates in Biological Research"

Papers: Elihu Gerson; Rachel Volberg; Susan Leigh Star; William Wimsatt

"Technology Indicators: Recent Developments in the Use of Patent Data"

Papers: Jennifer Bond; Richard S. Campbell; Francis Narin/Mark Carpenter

Discussants: Thomas P. Hughes; Roberta Balstad Miller

"Style and Structure of Scientific Papers"

Papers: Charles Bazerman; Susan Cozzens; Nicholas C. Mullins

"The Rhetoric of Science"

Papers: Stephen Turner; Michael Altimore; Bruno Latour; Trevor Pinch

"Money For Science"

Papers: C. Farina; Gerald Markle/Stamley Robin; J. Davidson Frame;
Joe Tatarewicz/Tom Gieryn

"Social Stratification in Science"

Papers: Jan Vlachy; John Ziman; James Ennis/Angela O'Rand;
Lowell Hargens/Diane Felmler

Discussant: Jerry Gaston

"Science and Public Controversies"

Papers: Jonathan Imber; Ronald Brickman, Deborah Mayo; Francis McCrea/
Gerald Markle

"Techniques of Science: Instrumentation and Calibration"

Papers: Francis Narin et al.; Harry Collins

"Public Images of Science"

Papers: Aant Elzinga; Joseph Haberer; Jon D. Miller

"Bibliometrics: Quantitative Analysis of Scientific Literatures"

Papers: Marc DeMey; Thomas Schott; Jane Morley; W. A. Turner et al.

"Creation and Acceptance of Scientific Innovation"

Papers: Peter Messeri; Carlos Kruytbosch/Frederick Betz; Dorothy B. Rosenberg

ROUNDTABLE: "Do Retrospective Citation Indexes Have Application in the
History and Sociology of Science?"

Sponsored by the Institute for Scientific Information
Presiders: Morton Malin and Henry Small

NOTE: Changes in this program are certain to be made. In addition,
the 4S will co-sponsor several sessions with the HSS, PSA,
and SHOT. For further information about the program, contact:

THOMAS F. GIERYN, PROGRAM CHAIR
DEPARTMENT OF SOCIOLOGY
INDIANA UNIVERSITY
BLOOMINGTON, IN. 47405

--Telephone: 812-335-2950--

CHARTER

Society for Social Studies of Science (Revised)

I. Preamble

This organization is called the Society for Social Studies of Science. Its purpose is to promote research, learning and understanding in the systematic social analysis of science. The Society is an independent organization which cooperates with other organizations having similar interests.

II. Organization

A. Membership.

Membership in the Society includes all scholars interested in the social and policy aspects of science who have paid their current dues.

B. Offices and Election.

1. The Society has the following elective officers: a president, a secretary-treasurer, and seven other council members. The term of office are: president--two years; secretary-treasurer--three years, council members--two years.
2. Four voting members of the council constitutes a quorum. Voting members of the council consist of the elected officers. Ex-officio members of the council, as specified below, are non-voting members.
3. There shall be a standing committee on annual meetings.
4. There shall be a standing committee on publications.
5. A nominating committee consisting of the president as chair and four other members of the Society designated by the president, no more than two of whom are officers, shall present to the Society at least six months before the annual meeting at least one nominee for each office to be filled.
6. Further nominations by petition signed by five members shall be presented to the president at least four months before the annual meeting.
7. Election shall be by mail ballot, the results to be announced at the annual meeting.
8. The retiring president shall serve for two years as an ex-officio council member, but shall be otherwise ineligible for election in that period.
9. Four members of the council shall be elected in odd-numbered years, three in even-numbered years.
10. All officers must be members of the Society.
11. If an elective office becomes vacant, the council shall appoint a replacement who will serve until the next annual election, at which time a person will be elected to serve out the remainder of the term.

III. Duties of Officers

A. The President.

The president of the Society or a designated member of the council shall preside at all meetings of the Society and the council. The president also is responsible for the program at the annual meeting.

B. The Secretary-Treasurer.

The secretary-treasurer shall keep the records of the Society and shall receive and have custody of funds of the Society. The accounts shall be subject each year to an audit by members chosen by the president of the Society or by a certified public accountant. At the end of each three-year term the accounts must be audited by a certified public accountant. The secretary-treasurer shall be responsible for communicating the agenda of coming council meetings to members through the newsletter and for presenting any responses or suggestions received from members at such council meetings. The secretary-treasurer shall perform such other duties as the council shall assign.

C. The Council.

The council shall set membership dues and have control and management of the funds of the Society. It shall act as a committee on time and place of meetings, and perform such other duties as the Society may delegate to it. The council may adopt any rules and regulations for the conduct of its business not inconsistent with the Charter of the Society. The council will regularly communicate its actions to the membership.

IV. Committees

The council shall recommend standing committees to the Society membership for its approval or rejection in annual meetings. Proposals for changes in the standing committee structure may also be moved by any member of the Society in annual meetings. Officers of the Society may be appointed by the president to sit as ex-officio members of any committee.

The president may appoint ad hoc committees as circumstances dictate or the council recommends. With the approval of the president, committees may be established that include non-members.

V. Activities

A. Meetings.

The annual business and other meetings of the Society shall be held at such time and place as are determined by the council. Adequate notice of such time and place shall be given to members of the Society. Special meetings of the Society may be called by action of the council. Meetings of the council shall be called by the president or at the request of a quorum of the council.

B. Publications.

The Society, acting through the council, will seek to publish appropriate literature (including a newsletter) for distribution to the membership and for sale.

C. Facilitation of the Society's Activities.

The Society, acting through the council, may receive and disperse funds in order to carry out its activities.

VI. Amendments

Proposed amendments to this Charter may be submitted at any time by any member to the council of the Society for consideration at its next meeting. Recommendations of the council shall be reported at the annual business meeting of the Society and such recommendations shall be approved, revised or rejected by majority vote at that meeting. Recommendations, if approved, shall be put to a mail ballot of the Society for ratification by a majority of those voting.

Report from European Correspondent: Committee to Defend Science Studies
in The UK. By Trevor Pinch

The severe financial cutbacks levied on higher education by the UK government has led to increasing concern that a relatively small area such as 'Science Studies' may suffer disproportionately. In response to this concern a meeting was organized by John Ziman at Imperial College on March 31, 1982. Many teachers and researchers within the science studies field attended. It was decided that the most appropriate way to defend the subject would be by the formation of a steering group representing the main interests and regions. This group will be known as the 'Science Studies Committee'. The Secretariat for the Committee will be the Council for Science and Society office in London.

Individuals at every institution where science studies is taught and researched will send information to the Committee on the current situation in their institution. The Committee has agreed to undertake a range of tasks which it hopes will protect and further the interests of the subject. Further information on the Committee's activities can be obtained from John Hillier, Council for Science and Society, 3/4 St. Andrew's Hill London EC4V 5BY.

CANDIDATE PROFILES FOR 4S COUNCIL ELECTION*

DAVID EDGE

Read Physics at Cambridge, where he gained a Ph.D. in radio-astronomy in 1959. He then spent six years at the BBC, as a radio talks producer in the BBC Science Unit, before moving to Edinburgh University in March 1966 to found the Science Studies Unit, of which he is now Director. In 1971, jointly with Roy MacLeod, he founded and still co-edits Social Studies of Science (originally Science Studies), a leading international scholarly journal in the 4S field. The Edinburgh Unit has developed programmes in the sociology of scientific knowledge, and in "socially-appropriate technology for the Third World," and he has supervised research in each. He is co-author, with Michael Mulkay, of Astronomy Transformed: The Emergence of Radio-Astronomy in Britain (Wiley, 1976), and co-editor, with Barry Barnes, of Science in Context: Readings in the Sociology of Science (Open University Press and MIT Press, 1982, forthcoming). He has been active with the UK Council for National Academic Awards (CNA), and is a founder member of the CNA STS Board and a member of the CNA History of Ideas Panel; with STS Association, of whose Executive Committee he is a member; and with the SISCO Project. In 1979, he was appointed Reader in Science Studies at Edinburgh University.

Goals for 4S

1. To maintain the highest possible scholarly standards in members' research and teaching, so that our dialogue is properly inter-disciplinary.
2. To ensure that the full international membership of 4S is actively involved in academic exchanges within the Society (this refers particularly to our non-Anglo-Saxon and Third World members).
3. To foster "academic growth-points" in 4S as and when they occur; but also . . .
4. To try to maintain constructive interchange between "sociology of knowledge" and "science policy" interests within 4S.
5. To give more attention to problems of Third World development, and their scientific and technological components.

THOMAS GIERYN

Assistant Professor in the Department of Sociology at Indiana University, Bloomington. He received his doctorate in 1979 from Columbia University, for a dissertation on career patterns of "problem choices" among contemporary American astronomers and astrophysicists. This line of research was extended in two papers: "Problem Retention and Problem Change in Science" (1978) and "Marginality and Innovation in Science" (1981). Along side these quantitative studies, Gieryn has compared science to other institutionalized belief-systems in two theoretical papers: "Durkheim's Sociology of Scientific Know-

* BALLOTS WILL BE MAILED LATER BY THE COMMITTEE.

ledge" (1982) and "The Demarcation of Science from Non-Science: Boundary-Work and the Maintenance of Cognitive Authority" (1982). Gieryn is Chair of the Program Committee for the 1982 4S Meetings in Philadelphia.

Goals for 4S

The 4S is a fragile organization. Features that make it exciting at times -- interdisciplinary, international, theoretically and methodologically diverse -- also threaten to destroy it from within. If plenary sessions at annual meetings focus on, say, the ethnography of scientific laboratories, those members working on science policy wonder if the 4S has any relevance to their interests. If annual meetings continue to be held only in North America, our European members wonder if the 4S sincerely wishes them to be active participants. The 4S must try to be all things to all members, impossible of course, but worth seeking by providing unlimited occasions for discussion and debate. Concretely: the 4S should sponsor a journal for research papers; the Newsletter should encourage critical exchanges among those with different definitions of "the social studies of science"; and the Society should hold meetings on both sides of the Atlantic.

MIKE HAMMOND

Associate Professor of sociology at the University of Toronto, Canada. He received his Ph.D. in 1977 with a thesis entitled, "The Rise of the Presapiens Theory of Human Evolution in French and British Paleontology: A Study in the Sociology of Scientific Ideas." His research interests focus on the social history of the study of human evolution, and the possibility of creating new linkages between human biology and sociological theory, especially in regard to the sociology of emotions. His publications include "The Expulsion of the Neanderthals from Human Ancestry: Marcellin Boule and the Social Context of Scientific Research," "A Framework of Plausibility for a Scientific Forgery: The Piltdown Case," "Anthropology as a Weapon of Social Combat in Late 19th Century France," "The Sociology of Emotions and the Analysis of Social Differentiation," and "Durkheim's The Division of Labor in Society as a Classic in Human Biosociology." He is currently editing a special issue in the sociology of science for the Canadian Journal of Sociology. He was the 4S representative on the Toronto local arrangements and program committee for the first joint meeting of 4S with the History of Science Society, the Philosophy of Science Association, and the Society for the History of Technology.

Goals for 4S

I feel that my most useful role on the council would be to continue to build ties between our society and the associations for the history and philosophy of science and technology. The Toronto meeting was a good beginning at demonstrating both the strengths of 4S and its many points of contact with these other groups. Also, since a major part of my research has been on the scientific communities of Europe, I would hope that I might be able to bridge somewhat the two continent division of our society.

KARIN KNORR

Associate Professor of Sociology currently visiting at the Center for the Study of Science in Society, Virginia Tech and State University, and Privatdozent at the University of Bielefeld, Germany. She is author of one of the first ethnographic studies of scientific work, The Manufacture of Knowledge: An Essay on the Constructivist and Contextual Nature of Science (Oxford, 1981), which she undertook as a Ford Fellow at the University of California, Berkeley. Karin Knorr co-edited volume 4 of the Sociology of the Sciences Yearbook on the Social Process of Scientific Investigation, and is currently preparing, together with Michael Mulkay, a book which brings together emergent and controversial "Analytical Perspectives on Social Studies of Science" (to appear with Sage in 1983).

Goals for 4S

Karin Knorr strongly supports the idea of the foundation of a 4S journal which reflects the interdisciplinary character of recent issues in science studies (in particular, the overlapping concerns of sociologists, historians and philosophers of science) as well as the international character of the community of relevant researchers and of the audience of science studies. She considers it a major goal of the Society to provide a forum for discussions which involve a common concern as seen from the perspective of different background assumptions, and to promote empirical and theoretical renewal in science studies on the basis of such discussions.

THOMAS NICKLES

Received bachelor's degrees in mathematics and in philosophy from the University of Illinois, Urbana, in 1965, and completed the Ph.D. in Princeton's Program in History and Philosophy of Science in 1969. I taught for several years at Illinois and also as a visiting professor at the University of Chicago before coming to Nevada. My early interest in scientific explanation and inter-theoretic reduction led to a paper on the reduction of problems to problems already solved and thence into the nature of problems and of problem solving generally. My early, rather formalistic work gave way to an historical, case-studies approach, and, more recently, my work has begun to reflect sociological influences. The historical work I am most interested in is the early quantum theory. My current interests are in developing more detailed accounts of problem recognition, problem formulation and solution, and heuristic appraisal in science. I have published about 20 articles in professional journals and have edited two volumes in Reidel's Boston Studies series: Scientific Discovery, Logic, and Rationality and Scientific Discovery: Case Studies (both 1980). I am program chairman of the Philosophy of Science Association and will be co-editor of the two volumes which result, PSA 1982.

Goals for 4S

My main goal for 4S is the obvious one of furthering the development of sociology of science as a professional discipline, including the transition from Newsletter status to full-fledged journal. My special interests here are in the development of an "internal" sociology of science, one that engages scientific inquiry in detail, and in greater cooperation among sociologists and philosophers in achieving a sociologically informed view of science.

J. M. ZIMAN, F.R.S.

Professor of Physics at the University of Bristol. He was born in 1925, and was brought up in New Zealand, where he took his first university degree. He then studied at Oxford, where he completed a D.Phil. in theoretical physics in 1952. In 1954 he became a Lecturer at the Cavendish Laboratory, Cambridge, and later a Fellow of King's College. In 1964 he was appointed to a chair at Bristol where from 1976 to 1981 he was the Director of the HH Wills Physics Laboratory. His researches in the theory of the electrical and magnetic properties of solid and liquid metals have been published in a number of scientific papers and books, and earned his election to the Royal Society in 1967. In recent years, all his interests and activities have been concerned with various aspects of the social relations of science - philosophically and sociologically through his books, Public Knowledge (1968) and Reliable Knowledge (1978), educationally through The Force of Knowledge (1976), and Teaching and Learning about Science and Society (1980), "politically" as Chairman of the (British) Council for Science and Society and an active worker for scholarly freedom and human rights, journalistically, by articles, book reviews and radio broadcasts. He is at present engaged in field research on specialisation and change in scientific careers, as well as theoretical studies of the modern R and D system, on which he has published a number of papers. He has travelled widely, and has extensive scholarly contacts in Europe, North America and many Third World countries.

Goals for 4S

4S policy should be eclectic and integrative. The present worldwide political and economic climate threatens to fragment the scientific, scholarly and educational efforts of its members and constituent disciplines. 4S should be striving against this climate, to transform a multi-disciplinary multi-national association into a transdisciplinary international community. In practice, therefore, I support initiatives to draw in members with diverse special interests such as STS education, science education, research management, technological innovation, social "modernisation," military R&D, etc., which are relevant to science studies. I would also encourage deliberate efforts to close the gap between "academic" and "action-oriented" studies - for example, by discouraging undue specialization and differentiation in meetings programs. I naturally favor closer links within 4S between the North American and European 3S communities, but would also try to establish new links with smaller groups elsewhere, as in India, China, and many Latin American countries.

BOOK REVIEWS

Thomas F. Gieryn. Science and Social Structure: A Festschrift for Robert K. Merton. New York: Transactions of the New York Academy of Sciences, Series II Volume 39, 1980. 173 pp.

Festschriften are some of my favorite reading. While they often include straightforward research reports, their very nature leads to a relaxation of the norms of impersonality normally governing scientific prose and, sometimes, to a relaxation of norms of detachment as well. Thus the papers in them are often playful, witty, and passionate. The volume under review is a good example of the genre. Tom Gieryn has obtained a dozen papers by authors who are either not sociologists or not in the United States.

No doubt most scholars in the social studies of science are familiar with (but perhaps have not studied) Merton's work in this field. Although this is not the time (nor does space permit) for a complete analysis of the impact Merton has had, suffice it to say that his theoretical approach and the empirical analyses it has generated over the past 2 ½ decades have been referred to by critics and advocates alike as "Standard American" sociology of science. This is not to say, of course, that those working in this tradition do so in precisely the same manner or that they are reluctant to modify, extend or select out only those aspects of his work as they see fit. Nor has this work gone unchallenged. Whatever the case, the papers presented in this volume were inspired by Merton's contributions.

Four of the papers deal with two of Merton's key concepts, multiple independent discoveries and priority. George Stigler writes about multiples in economics and suggests that we define them "as those which appear at a given stage in the evolution of science," and he notes that they will usually have been anticipated but unrecognized at an earlier stage. Steven Stigler gives us "Stigler's Law of Eponymy: No scientific discovery is named after its original discoverer." He illustrates the law with the Gaussian distribution and advances some more general propositions about reward systems in science. Paul Samuelson asks whether R. R. Fisher plagiarized A. J. Lotka in his work on the reproductive value of age-groups; I couldn't follow the mathematics, but the text is witty. And André Cournand discusses Claude Bernard's discovery of heart catheterization and why Bernard never claimed priority for it; Cournand suggests it was a matter of character (and reinforces my desire to read more about Bernard), but there may be elements of social structures leading researchers in some positions not to claim priority for some kinds of discoveries.

Michael Mulkay takes a new look of an ethnomethodological sort at the norms of science, arguing that codes are open-ended, flexible, and continually reinterpreted; he illustrates his discussion with early communications about pulsars.

Five of the papers deal with topics more or less in the sociology of knowledge. Yehuda Elkana distinguishes epistemic reasoning, which the rational reconstructionist deals with, from "cunning reason," and he challenges the distinction between the context of justification and the context of discovery. Ralf Dahrendorf deals with theory and practice and some distinctive characteristics of the role of the intellectual, and Shmuel Eisenstadt discusses the autonomy of sociology. Adolf Grunbaum describes how psychoanalysts explain the behavior of those who consider their theories invalid. Yaron Ezrahi takes a new look at science and the democratic social order, suggesting that recent controversies about science and public policy, and recent philosophies that challenge the rationality and objectivity of scientists, facilitate attacks on science in democratic politics.

Irving Janis applies Merton's concept of sociological ambivalence to the role of professionals in his review of his own research and that of others on patient noncompliance with doctors' orders.

In sum, we have here a set of witty and provocative essays, with ideas and references that many social scientists of science will find useful. But will they be widely cited? Perhaps not. The very relaxation of norms of impersonality and detachment that make *Festschriften* fun reading may lead to their being cited infrequently. This is suggested by Eugene Garfield's analysis of citations to the work of Merton in the social sciences and other sciences. Among other things, Garfield shows that On the Shoulders of Giants was cited fewer than five times in the Social Science Citation Index between 1969 and 1977 and only seven times in the Science Citation Index in that period, when there must have been some 3,000 citations to Merton's work in total. OTSOG includes some important ideas, but evidently its style was not serious enough for members of our intellectual community.

Another reason why *Festschriften* are likely to receive relatively few citations is that they tend to be published in small editions. Your book review editor informs me that this volume is out of print (and that I have his personal copy). If enough readers write the New York Academy of Sciences, 2 East 63rd Street, New York, New York, 10021, we may get a deserved reprinting.

Warren O. Hagstrom

Tracy Kidder, The Soul of a New Machine. Boston: Atlantic Monthly Books, 1981. \$13.95.

Tracy Kidder's account of the building of the Eclipse MV/8000 (the Eagle) is the big romantic book come to computer technology. The Double Helix (Watson, 1968) was the romantic book for small scale biological research. The Introduction establishes Tom West, a computer engineer and manager as a hero, with some modern embellishments. West refused to recognize defeat in the corporate wars for technology superiority, and then wheeled and dealt through several failures or stopped projects to be able to build a new machine. This expedition into deepest technology has all of the elements of a mythical hero story; powerful enemies, the North Carolina group, who are unfairly favored by the management gods. A senior vice president, Cormen (playing Godmother), looks out for West, and even engages in a little personal magic, repairing a board by shaking it. Cormen backs the right hero. West almost single handedly, with only a secretary and a faithful friend, the type Ronald Reagan played in an earlier day, put together a team, and then a computer. The background of the computer business and the building of a machine are introduced in an intelligent and complete way. The engineering types are introduced, the fast and the slow but steady, the complex and the simple. And the story gets told.

This is a very impressive book. It is engaging, informative, true and the good guys win. You absorb a great deal about computers along the way. You come to care about the characters and finally to realize that this project, like many successful projects, becomes a Camelot, which is gone and will never come again in that form.

The book highlights many of the differences between science and engineering. The engineers are closer to management, to the organization and less concerned with truth. Things need to be done, and done correctly, but not necessarily elegantly. The idea is to get it out the door. Yet, the self seeking that provided a vital current through The Double Helix is here as well. You not only want to get the machine out the door, you want your name on it.

In the end, the successful team breaks up and the various characters drift off. West goes to Japan to build computers, clearly shorn of his hair and reduced to another man, the fate of some heroes. He has won his battle but he will not be able to sign-up for the next one. In this modern version he becomes another senior manager in his suit. It is his last hunt, the last dragon slain; hero reduced to memo pusher by his own success and Fate.

Kidder has done a remarkable job of writing. He even makes some interesting points on the organization of technological change. His use of images is very striking. Many of them are the engineers', others are his. Kidder uses West's language very well and by using it elsewhere in the book creates a feeling of participation. This would be an excellent introduction to technology, particularly to those who don't know much about it.

The Soul of a New Machine engages your interest as a story and as a description of the challenges, triumphs and technical problems of the building of a computer expert. There is little attempt to provide full technical details of the computer, although a good elementary description of computer architecture and operation is given as an adjunct to the story. The lectures about computer technology are not either showing off, or hidden. We are told enough to tell the story. In fact, the story is almost mythic in its simplicity.

It should be compared to Frederick P. Brooks The Mythical Man-Month: Essays in Software Engineering (1975) in which the chairman of the computer science department at North Carolina muses about his earlier incarnation as the director of the OS/360 project for IBM. The book has many clever and interesting elements. Brooks makes his points about software engineering in a way that most engineers would appreciate, but it is basically a scholarly product, a set of essays, rather than the mythic construction that Kidder puts together.

Extending this comparison, Olby's book The Path to the Double Helix (1973) is not Watson's either, no matter how much more accurate it may be. It misses the mythical, the romantic, and hence a significant part of science. Neither Olby's classicism, nor Watson's romanticism need be taken as the final view, but our view is richer for both of them.

Kidder's book should be read and enjoyed to understand the storyline behind technology, and then classical accuracy can be imposed. This is not as good a journalist observation as June Goodfield's Imagined World (1980), but it is very fine.

The book should be excellent for conversation, for teaching engineering students and as just good fun. The serious analysis of a project, in which more attention is spent on analysis probably some years in the future, although I hope not more than the ten years that separate The Double Helix from The Imagined World.

References

1. Brooks, Frederick P. 1975. The Mythical Man-Month: Essays on Software Engineering. Reading, Mass.: Addison-Wesley Publishing Company.
2. Goodfield, June. 1980. An Imagined World. New York: Atheneum Press.
3. Olby, Richard. 1974. The Path To The Double Helix. New York: Macmillan.
4. Watson, James. 1968. The Double Helix. New York: Atheneum Press.

Nicholas C. Mullins
Department of Sociology
Indiana University, BH 774
Bloomington, IN

- . Allan Mazur. The Dynamics of Technical Controversy. Washington, D.C.: Communications Press, 1981, 147 pp. \$5.95 paperback.

With few exceptions the scholarly examination of scientific and technical controversies has been confined to case studies of individual disputes. Whatever the limitations of The Dynamics of Technical Controversy, Mazur has taken a large stride in moving the study of these controversies toward more fruitful comparative analysis. Mazur, of course, had previously published comparative work on disputes between experts and on movements opposed to several technologies. This research is incorporated into the present book where one-third of the chapters are adapted from earlier articles.

Technical controversies are functional, in Mazur's view, in that they serve as an informal method of technology assessment. When adversaries confront one another, the risks and benefits of a technology are set forth. If one side does not overwhelm the other too rapidly, society may benefit from the identification of potential hazards.

The book contains a particularly fine discussion of the rhetorical devices that are used in technical disputes. By pairing the statements of combatants over nuclear power with those who disagree about fluoridation, parallels in rhetoric are set forth. Partisans in technical conflicts frequently make sweeping denials of their opponent's claims while issuing statements which obscure the problem and are difficult to disprove. In fact, opponents frequently talk past one another rather than directly confronting opposing arguments.

Mazur feels that the resolution of technical controversies would be in the public interest and sees the science court as a promising solution to the problem posed by incommensurate rhetorics. The science court, of course, requires that factual disputes be separated from value conflicts. Mazur believes that such a separation is possible and recounts his attempt to make such a distinction in a conflict over the construction of high-energy powerlines. Criticisms of the science court approach are, however, well known (e.g., Nelkin, 1977) and it is unnecessary to repeat them here. I am much less sanguine than Mazur about the feasibility of dislodging value from fact in most science-related controversies.

Activists in these disputes are drawn from a small and rather unrepresentative segment of society. Most are upper status, middle-aged or older, and community activists. Mazur suggests that the partisans may normally be viewed as forming an "establishment" and a "challenge" position. The establishment posture is associated with government, industry, and the professions. In Mazur's view this coalition generally supports technologies. In contrast, the challenge side is composed of environmental, consumer, and ad hoc groups and typically opposes technologies. I am uncomfortable with the assumption that technical controversies should be viewed as falling into establishment and challenge camps. This is really

an empirical question -- not a given. Some controversies fit this pattern but in others there is no single establishment position. For example in the automobile airbag dispute, one governmental agency (the National Highway Traffic Safety Administration) and many insurance companies advocated the technology while the auto industry opposed it (Reppy, 1979). Also in the conflict over saccharin, a government agency (the Food and Drug Administration) opposed the use of the additive while the food and soft drink industry favored it (Petersen and Markle, 1981). As I have indicated elsewhere (Markle and Petersen, 1981), I would much prefer more neutral terms when discussing the opposing sides of controversies. Some terms as "innovators" vs. "preservationists" or "challengers" vs. "loyalists" permit the analysis of controversies without introducing the value-laden and often inaccurate notion of a unified "establishment."

A central focus of the book is the process of growth of technical controversies and their eventual outcome. Mazur identifies three major steps in the growth of protest. Initially a warning is brought to the attention of the public. Such warnings may be issued by individual critics, watchdog groups, agencies involved in risk assessment, whistleblowers, or by tragic events. The second step is reached if a small number of protesters emerge in response to the public warning. These individuals or groups serve as adversaries to the promoters of the technology in question. In many cases, however, public warnings attract little attention and no opponents emerge. Finally, some protests grow to become mass movements. Typical features of successful national movements include a coalition of local protest groups and an active presence in Washington.

In attempting to explain patterns of growth and decline of technical controversies, Mazur concentrates on the movements opposing nuclear power plants, fluoridation, and the ABM. By plotting the yearly number of articles on each of the technologies in the Readers' Guide, he is able to relate media coverage to public support for these movements as indicated by opinion poll data. Mazur concludes that fluctuations in opposition to technologies are linked to larger national issues. For example, he suggests that the nuclear power controversy might be viewed as a surfer riding the nuclear fallout wave, the environmental wave, and the energy crisis wave. Mazur acknowledges that the Readers' Guide is a "grossly inadequate" index of mass media coverage. It is unclear, however, why he failed to incorporate newspaper coverage and at least network television news into his measure of media coverage.

I feel that Mazur fails to go far enough in this discussion in another way as well. Certainly there are many missed opportunities to relate the dynamics of technical controversies to the general literature on the natural history of social movements, the resource mobilization literature, and work on the outcome of social movement organizations (e.g., Gamson, 1975). This could have greatly enriched a discussion of how different tactics and resources relate to the growth or decline of technical protests.

In this book Mazur is quite critical of the view that ordinary citizens are capable of understanding the technical issues that are tied to policy decisions. Since he advocates the isolation of scientific questions from value-laden policy questions, he rejects current calls for "extraordinary public participation." Instead, he argues that normal political means be used to make science and technology policy. Few areas, however, have been less receptive to public participation than the formulation of technical policy. The public is normally excluded from such decision making by political leaders and technical experts who take every opportunity to define decisions as technical questions. In this context, to oppose "extraordinary" measure such as citizen committees, public service science centers, and citizen-scientists boards is to favor a continuation of the current elite domination of technical policy making. I assume, however, that citizens remain free to continue to bear the risks posed by these decisions.

Overall, The Dynamics of Technical Controversy is a good introduction to the literature of science-related public controversies. It is enriched by well selected examples and many excellent graphic presentations of data. If it succeeds in directing the attention of students of technical disputes toward comparative research, it will be a major contribution. I only wish that Mazur had not been so restrained in drawing on relevant data and theoretical literature. The book is rich with missed opportunities.

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James C. Petersen
Department of Sociology
Western Michigan University

Michael Mulkay. Science and the Sociology of Knowledge. London: George Allen and Unwin. \$3.50

This book covers the terrain of much recent work (particularly British) in the sociology of scientific knowledge. It is a most welcome book because there is no parallel text which summarizes this work, places it in the context of the wider sociology of knowledge, and more importantly, shows the connection between different approaches to the sociology of scientific knowledge and philosophical views of science. It is this last theme around which the book is organized and it is also the theme which throws greatest light upon the development of (or rather lack of development of) this area of inquiry. It is the still prevalent naive and outdated philosophical picture of science which has often proved to be the most potent barrier to the development of a fully fledged sociology of scientific knowledge. The book is important for showing that the "Sociological Exclusion Zone" (SEZ) which surrounds the core of scientific knowledge can be and has been penetrated.

The book consists of four interlinked chapters. In the first chapter the view of scientific knowledge implicit (and in some cases explicit) in the work of such diverse sociologists as Durkheim, Marx, Mannheim, Stark and Merton is examined. It is argued that, with varying degrees of emphasis, all these authors have tended to assume the 'standard view' of scientific knowledge. The most important characteristic of this view is that the natural world is regarded as real and objective. Mulkay summarizes it as follows:

The validity of the factual foundation of scientific knowledge can be guaranteed with a high degree of confidence because science has evolved stringent criteria by means of which empirical knowledge-claims are evaluated and their accurate representation of empirical phenomena is ensured (p. 20).

Clearly such a view severely restricts the areas which sociologists can legitimately investigate. If one believes that scientific knowledge is ultimately determined by the natural world then this leaves science outside of the purview of traditional sociology of knowledge concerns. In short, science is a SEZ. It is no surprise, given the standard view of science, that the predominant sociology of science has concerned itself largely with studying the norms and social institutions which are peculiar to science and which enable scientists to produce such apparently well verified and accurate knowledge of reality.

In the second chapter Mulkay deals with the recent developments in the philosophy of science which have posed challenges to the standard view. Such issues as the uniformity of nature, the theory ladenness of observations and theory choice are all discussed. As well as the familiar philosophical arguments of Popper, Lakatos, Kuhn and Feyerabend, Mulkay draws upon the

lesser known but equally pertinent works of Hanson, Ravetz and Hesse. It is refreshing to read an account which steps outside the well-worn Popper-Kuhn debate. Although I have some quibbles with Mulkay's treatment and, in particular, his insufficient emphasis on the problem of induction and the Duhem-Quine problem (both of which have played a significant part in the thinking of the new sociologists of scientific knowledge), in general he makes a very difficult body of philosophical argumentation comprehensible to a sociological audience. Philosophers, as is their wont, will be unhappy with the lack of rigour of some of the argument. Different philosophical positions and variants of logical empiricism are often unceremoniously classed together within the standard view. However, for the purposes of drawing attention to some of the problems of the conventional views and indicating that an alternative is possible, Mulkay's treatment is perfectly satisfactory. The alternative view of the nature of scientific knowledge which is to be found in this literature is described as follows:

....contrary to the standard view, it seems that scientific knowledge is not suitable in meaning, not independent of social context and not certified by the application of generally agreed procedures of verification (p. 59).

The sociological implications of this new view of scientific knowledge are developed in the third chapter entitled 'Cultural Interpretation in Science'. It is in the latter part of this chapter that some of the new findings of the sociology of scientific knowledge are presented. The argument is in two parts. Drawing upon more traditional empirical work within the sociology of science which relates to the normative structure of science, Mulkay points out that this work has not in all cases confirmed that the Mertonian norms of CUDOS are the only ones which are institutionalized. For instance, Mitroff's study of moon scientists is cited as evidence that a set of counter norms are equally important. Since Mulkay's argument is that norms such as 'Universalism' go hand in glove with the standard philosophical view of scientific knowledge, empirical studies which suggest that these norms are not the only ones operative lend support to the view that the standard view itself might be inadequate. Mulkay offers his own interpretation of the norms whereby they are seen as vocabularies of justification employed by scientists in attempts to negotiate scientific meanings. In other words it is upon the interpretation of the norms by actors in particular circumstances which studies should focus. One suspects that the evidence upon which Mulkay draws here will not be convincing to the Mertonians because such evidence depends on case studies (such as Mitroff's) and is not necessarily fatal to the statistical aggregation techniques used in the 'norm industry'.

The stronger empirical case for casting doubt upon the standard view rests with the detailed case studies carried out within the new sociology of scientific knowledge. Such studies, which deal directly with the content of science, have often taken as their focus scientists' attempts to evaluate new knowledge claims. Works such as Collins' studies of lasers and gravity waves, Collins' and Pinch's study of parapsychology, Wynne's study of Barkla's J phenomenon, and Frankel's study of French optics are all drawn upon. These studies have shown amongst other things that science has a large tacit dimension which cannot be assessed by formal criteria (as is necessary in the standard view) and more importantly, that know-

ledge, techniques and the very criteria used to evaluate knowledge claims can be interpreted in different ways by different scientists. It is the interpretative flexibility of knowledge claims and the social negotiation of scientific knowledge which are revealed in these case studies. Mulkay argues that these case studies indicate that a fully fledged sociology of scientific knowledge is now possible. Such a sociology of scientific knowledge need not be vulgarly deterministic. Indeed the picture that is being built up is one in which knowledge is seen as being actively negotiated by social actors who bring to bear cultural resources and other social resources upon the processes of interpretation and negotiation. The conclusions reached by scientists need not be 'definitive accounts of the social world' and the natural world may be 'presented differently to different scientists in different social settings'. This is a long way away from the standard view in which the sociology of knowledge is barred from the SEZ by an objectively real and independent natural world.

In the final chapter Mulkay goes on to show the relevance of the new view of science to conceptions of the relationship between science and the wider society. In particular, given the interpretive flexibility at the heart of scientific knowledge it is possible that there could be direct external influences on the content of scientific knowledge. Mulkay shows just such a possibility by reference to Robert Young's study of the influence of the wider society on Darwin's views of evolution. Once the standard view of science is rejected, it is also possible to throw new light upon the use put to scientific knowledge by scientists engaged in public debates. Taking the work of Nelkin and Mazur, Mulkay argues that it is quite possible that scientists' activities and judgments in such debates as nuclear power are not based upon disinterested contemplation of Nature but by prior social commitments. This extension of the new view of science into the domain of applied science and the public/political sphere promises to be one of the most exciting fields in the sociology of science.

Mulkay's book is very clearly written, with many concise summaries of the argument and can be unreservedly recommended to readers as an account of the new sociology of scientific knowledge. It will prove to be a particularly useful book for teaching purposes. It would be churlish to fill this review with a detailed examination of Mulkay's claims for the book. It is surely not so much a new contribution to knowledge as a useful summary of existing ideas. Since he is writing against a background where for years the whole endeavour has seemed to be impossible perhaps this ambiguity is justified.

I do have one or two reservations concerning the subject matter Mulkay chooses to cover. I found it disappointing that there was not another chapter which dealt with the types of sociological explanation the new sociology of science offered. The influence of the ethnomethodological, phenomenological and Wittgensteinian tradition on the new sociology of science is surely important enough to deserve attention in its own right. I also found the omission of any discussion of David Bloor's 'Strong Programme' (which in a way makes similar analytical claims to those of Mulkay) perverse. Also, there are many fine historical studies which make similar points to those sociological studies mentioned in chapter three (for instance studies by Shain,

Rudwick and MacKenzie). Although space limitations may have precluded any detailed reference to such studies, it is perhaps worth making the point that it is amongst historians of science that the new sociology of scientific knowledge finds its strongest resonance. However, these are small points and, taken as a whole, Science and the Sociology of Knowledge is just the sort of book that is needed in order to draw the attention of wider audiences to the quite fundamental change of orientation which has occurred in the sociology of scientific knowledge. Also, at \$3.50 it has got to be a bargain....

Trevor Pinch
School of Humanities
and Social Sciences
University of Bath, England

BOOK REVIEWS EXPECTED FOR LATER ISSUES

A. Brannigan, The Social Basis of Scientific Discovery; D. F. Bratchell, The Impact of Darwinism and A. Kelly, The Descent of Darwin; J. Goodfield, Reflections on Science and the Media; K. Knorr, et al., eds., The Social Process of Scientific Investigation (Sociology of Science Yearbook, 1981); D. A. MacKenzie, Statistics in Britain, 1865-1930: The Social Construction of Scientific Knowledge; R. McCormach, Night Thoughts of a Classical Physicist; S. Mauskopf and M. McVaugh, The Elusive Science: Parapsychology and Psychology; E. Mendlesohn and Y. Elkana, eds., Sciences and Cultures (Sociology of Science Yearbook, 1982); Morrell and Thackray, Gentlemen of Science; and D. Nelkin and M. Pollack, The Atom Beseiged: Anti-nuclear Movements in France and Germany.

Recent Publications

LITERATURE ON THE HISTORY OF PHYSICS IN THE 20TH CENTURY. Berkely Papers in History of Science, Volume 5. Compiled by J. L. Heilbron and Bruce R. Wheaton. 500 pp. Arranged by subject with a complete author index.

Historians, sociologists, and philosophers will be occupied for some time in explaining the growth of physics in our century and the consequent transformations of our science and society. To help them is a vast literature composed by physicists and by historians. BPHS, volume 5, brings together this literature: reminiscences, commemorative and celebratory essays, substantial obituary notices, catalogs of manuscript collections, evaluations of the lives and work of about 725 physicists; and histories of various branches, applications, and concepts of modern physics. In all, 7000 items are cataloged under major divisions: general characteristics of 20th-century physics; biography; institutions; mechanics; electricity and magnetism; relativity; radiation; atomic physics; nuclear physics; particles and beams; quantum physics; solid state; geo-, astro-, and biophysics; physical chemistry; techniques and apparatus; physics and society; philosophy of physics.

Literature on the history of physics is particularly useful for its international and comparative approach. It includes extensive listings of Soviet publications, arranged by subject along-side Western literature; the harvest of systematic examination of 47 journals in several languages; and appropriate material drawn from previous bibliographic surveys international in scope.

Price: \$20.00 plus \$1.50 postage and handling. Please make checks payable to Regents of the University of California (California residents add appropriate sales tax).

Send orders to: Office for History of Science and Technology, 470 Stephens Hall, University of California, Berkeley, CA., 94720.

SCIENCE, TECHNOLOGY, AND THE ISSUES OF THE EIGHTIES: POLICY OUTLOOK. Edited by ALBERT H. TEICH and RAY THORNTON, for the American Association for the Advancement of Science.

Recognizing that science and technology have become increasingly relevant to important public policy issues, Congress has mandated the periodic preparation of a "Five Year Outlook for Science and Technology" to help U.S. policymakers anticipate and deal with these issues more effectively. This book, the result of a study conducted by the American Association for the Advancement of Science for the second such "Outlook," identifies and explores domestic and international policy concerns in which science and technology are critical factors. The authors' interdisciplinary, nontechnical approach provides policymakers, students, and others interested in science, technology, and public affairs with a timely overview of nine areas that are likely to be among the world's most pressing concerns during the next several years.

CONTENTS: Foreword-R. THORNTON AND A. H. TEICH. Observations: Racing the Time Constants-WILLIAM D. CAREY. PART I. APPLYING SCIENCE AND TECHNOLOGY TO PUBLIC PURPOSES. A Synthesis-RICHARD A. RETTIG. The Institutional Climate for Innovation in Industry: The Role of Management Attitudes and Practices-WILLIAM J. ABERNATHY AND RICHARD S. ROSENBLOOM. Decision Making with Modern Information and Communications Technology: Opportunities and Constraints-DONALD J. HILLMAN. Relations of Science, Government, and Industry: The Case of Recombinant DNA-CHARLES WEINER. Choosing Our Pleasures and Our Poisons: Risk Assessment for the 1980s-WILLIAM W. LOWRANCE. PART II. SCIENCE, TECHNOLOGY, AND INTERNATIONAL SECURITY. A Synthesis-EUGENE B. SKOLNIKOFF. U. S. Policy Toward Scientific and Technological Development in the Developing Countries: The Case for Mutual Benefit-CHARLES WEISS, JR. U.S. Agriculture in the Context of the World Food Situation-SYLVAN H. WITTWER. Trends and Prospects in World Population-MICHAEL S. TEITELBAUM. International Security Implications of Materials and Energy Resource Depletion-WILLIAM A. VOGELY. Science and National Defense: A Speculative Essay and Discussion-KENNETH E. BOULDING.

ca. 315 pages w/appendixes, biblio, index; June 1982; \$25 and \$12.

Zetetic scholar

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Announcements

"ACADEMICS, INDUSTRIALISTS AND LEADING PROFESSIONAL SOCIETY LINKED IN NOVEL ENTERPRISE."

The cultural significance of chemistry as a human, creative enterprise was celebrated on 29 April 1982 at the opening of the Center for History of Chemistry, a joint endeavor of the American Chemical Society and the University of Pennsylvania.

"Science and technology become ever more pervasive in modern life, yet many people -- from the literary intellectual to the ordinary citizen -- are ignorant of the culture of science, in other words, of science and technology as a body of human achievements, dreams and intellectual and entrepreneurial ideas," said Arnold Thackray, professor of the history and sociology of science and one of the leaders in the move to create the new center.

Thackray, who convened the first meeting of the policy council at the center on April 29, said the mission of the center is to make historical resources known and available and to encourage research scholarship and popular writing in the field of chemistry and chemical technology.

The center is a joint endeavor of the University of Pennsylvania and the 123,000-member American Chemical Society, a congressionally chartered, non-profit organization that provides information to the congress and the public on matters of science and chemistry. It will be located on the University's Philadelphia campus.

Among early members to the advisory board for the center are three Nobel laureates: Penn alumnus Dr. Christian Anfinsen of the National Institutes of Health, Purdue's Dr. Herbert C. Brown and Berkeley's Dr. Glenn T. Seaborg.

National corporate leaders on the board include -- Chairman and CEO Edward G. Jefferson of E.I. du Pont de Nemours and Company, Inc., John C. Haas of Rohn and Haas, Chairman and CEO John W. Eckman of the Rorer Group Inc., Chairman and CEO James G. Affleck of the American Cyanamid Co., and Alexander F. Giacco, Chairman and CEO of Hercules Incorporated.

The center hopes to generate biographies of major chemists, chemical engineers and industrialists, studies of individual firms and whole industries, and accounts of the interplay of invention, innovation and development in chemistry. However, the immediate aim is to locate, catalogue, preserve, publicize and make available historical records that illuminate the progress of chemistry, chemical engineering and the chemical industry. The center staff will include a director, an assistant director and archival and research assistants who will:

1. Locate the whereabouts of manuscripts and records of individuals, societies, trade associations and companies.
2. Sort and catalogue papers and prepare inventories.
3. Encourage the deposit of these papers in appropriate regional archives.
4. Develop a central computerized catalog of manuscripts and appropriate finding aids and reference tools.

New Research Resource: Center for the History of Chemistry.

The books, papers and equipment of many scholars and scientists, from the early alchemists to modern researchers, will be indexed at the Center for History of Chemistry jointly sponsored by the American Chemical Society and the University of Pennsylvania.

Located in the University's Edgar Fahs Smith Memorial Collection at Van Pelt Library -- widely known as the leading resource in the history of chemistry -- it will provide a main clearing house for the history and science of chemistry, according to Dr. William J. Bailey. Bailey is past president and immediate past chairman of the board of the American Chemical Society. "The center will become increasingly important in providing information and understanding about the history and development of the chemistry enterprise in the U.S. and the world," he said. "The American Chemical Society is proud to join with the University of Pennsylvania in this unique endeavor."

Modern teaching and research in chemistry at the University of Pennsylvania is largely a legacy of Edgar Fahs Smith, who was a major figure in chemistry and education. Educated at the Pennsylvania College of Gettysburg and at the University of Göttingen, where he received his Ph.D. in 1876, he settled at the University of Pennsylvania in 1888. He became chairman of the Department of Chemistry in 1892 and was the University's provost from 1911 to 1920. Smith was also the only person to serve three times as president of the American Chemical Society. The ACS Divisions of History of Chemistry and of Chemical Education were founded largely through his efforts.

Edgar Fahs Smith was a lover of history and an avid collector of rare books, manuscripts and memorabilia dealing with alchemy and early chemistry. In 1931 his widow presented his collection to the University of Pennsylvania with a modest endowment, forming the basis for the existing collection. Today the Smith Collection includes 15,000 volumes of primary source material, thousands of portrait prints of noted chemists and an extensive collection of secondary literature bearing on the history of chemistry, along with an unrivaled set of reference works.

A newer resource at the University of Pennsylvania is the Department of History and Sociology of Science, established in its present form in 1969. The department emphasizes the study of science, technology, and medicine in an integrated framework. Its programs focus on the post-Enlightenment period and on American developments, which offer rich and relatively unexplored opportunities for research. Both teaching and research emphasize policy aspects of science, technology and medicine. Within the department are leaders in several fields that enhance the new center.

In the study of American technology there is Dr. Thomas P. Hughes, president of the Society for History of Technology, 1979-81. In American medicine, Dr. Charles E. Rosenberg is the Welch Medalist of the American Association for the History of Medicine, 1969, and Dr. Rosemary Stevens is a member of the Institute of Medicine, National Academy of Sciences. With these and others, the department has a unique concentration of faculty skilled in the

history of chemistry: Dr. Robert E. Kohler has major interests in modern biochemistry, for example, while Professor Nathan Sivin is the leading authority on Chinese alchemy. Dr. Arnold Thackray has published widely on European and American chemistry, and is curator of the Edgar Fahs Smith Memorial Collection as well as president of the Society for Social Studies of Science. He also edits Isis, the official journal of the History of Science Society, which is published at the University of Pennsylvania.

Position

MICHIGAN TECHNOLOGICAL UNIVERSITY. The Department of Social Sciences seeks to fill a full-time tenure-track position for an Assistant Professor beginning September 1, 1982. Candidates must possess a Ph.D. in Sociology. College-level teaching experience, and an ability to conduct research in social sciences consonant with a technological university are required. The Department is developing an emphasis in the interrelationship between science, technology and society, and seeks a candidate whose skills enhance its development. Send vita, three letters of recommendation, and publication reprints by July 19, 1982 to John H. Winslow, Head, Department of Social Sciences, Michigan Technological University, Houghton, Michigan 49931.

New Journal

Politics and The Life Sciences. Reflecting the deepening interest of political scientists in both the methods and the findings of research in the life sciences, the Association for Politics and The Life Sciences (APLS) was founded in 1980 to advance interest and encourage scholarship in biopolitics. In July of this year, the Association will begin publishing its news journal, Politics and The Life Sciences, devoted to developments in biosocial science.

Politics and The Life Sciences will focus on the following: (1) policy-related works on medical technologies, human ecology, health and environment, aging, food and population policy, and reproductive technologies; (2) articles on the influence of biological factors on political behavior; (3) papers on the relationship of ethology and sociobiology to the concerns of traditional political science and ethics; and (4) works on the relationship of biopolitics to other perspectives in political science and other social sciences.

Membership in the Association, subscription to the journal, and other mailings about the activities of the Association are included in the annual fee of \$10 for regular membership and \$5 for students. Sustaining memberships are \$25. Checks should be made out to the Association. Address all correspondence to Association for Politics and the Life Sciences, Northern Illinois University, DeKalb, Illinois 60115.

CALL FOR BOOK MANUSCRIPTS. Purdue University's publication series in Science, Technology and Human Values, Science and Society, is interested in reviewing manuscripts for publication. The series, initiated five years ago, already contains five volumes:

Muted Consent: A Casebook in Modern Medical Ethics by: Wojcik, 1978;

Hermes Bound: The Policy and Technology of Telecommunications by: McGillem and McLauchlan, 1978;

Distant Hunger: Agriculture, Food, and Human Values by: Nicholson and Nicholson, 1979;

Divided Loyalties: Whistle-Blowing at BART by: Anderson, Perrucci, Schendel, and Trachtman, 1980;

Brain Death: Ethical Considerations by: Walton, 1980.

We anticipate being able to publish one to two book-length manuscripts annually. The emphasis is on works which explore the social, political, economic and ethical implications of contemporary science and technology. Authors should send all manuscripts to: Leon E. Trachtman, General Editor, at the School of Humanities, Social Science and Education, Purdue University, West Lafayette, Indiana 47907.

AAAS ANNOUNCES DEADLINE. A reminder that the deadline for symposium proposals for the 1983 AAAS annual meeting is August 1, 1982. The meeting will be held in Detroit, May 26-31, 1983. Proposal forms and further information may be obtained from the Meetings Office, AAAS, 1101 Vermont Ave., N.W., Washington, D.C. 2005.

And, anyone wishing to organize or participate in a symposium for the Detroit meetings of the AAAS, May 26-31, 1983, in Section L, History and Philosophy of Science, should contact the Secretary, David L. Hull, Department of Philosophy, University of Wisconsin-Milwaukee, Milwaukee, WI 53201.

AUTHORS' ASSISTANCE NEEDED FOR SUCCESS AT BOOK EXHIBIT AT 4S, HSS, PSA, AND SHOT MEETINGS IN PHILADELPHIA. The arrangements for a book exhibit are under-way, but the Exhibit Chair, William Montgomery, needs the help of authors. He writes: ". . . we have planned a book exhibit. A letter has been sent out to 95 major publishers, inviting participation. However, past experience indicates that the most effective advertising for such exhibits comes from the authors of the books themselves." The best way to help is for authors to contact their publishers and urge them to participate. Ask the publishers to contact: Professor William Montgomery; ISIS; University of Pennsylvania; 215 South 34th Street/D6; Philadelphia, Pennsylvania 19104.

DEADLINES FOR NEWSLETTER MATERIALS

Vol. 7:3--Fall 1 Sept. 1982

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The 4S Newsletter is published four times each year, beginning with V.6:3 at the Department of Sociology, Texas A&M University, College Station, Texas 77843 and sent to all members of the Society for Social Studies of Science. Membership is on a calendar year basis. Membership dues (\$15 for professionals, \$5 for students) and institutional subscriptions (\$25) should be sent to: The Secretary/Treasurer, 4S, Department of Sociology, Indiana University, Bloomington, Indiana 47405.

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Texas A&M University
College Station, Texas 77843

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