

4S Society for Social Studies of Science

Fall/Winter 1981

Volume 6 Number 4

IN THIS ISSUE

4S: Progress and Prospects

Editorial on Book Reviews, Lawrence Stern	3
1982 4S Council and Committee Membership	4

4S Membership Renewal for Calendar 1982	9
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4S Presents Bernal Award to Derek J. de S. Price	11
--	----

Thought and Opinion

Impressions of the Sixth Annual Meeting of 4S	13
Arie Rip	

Seventh Annual Meeting Announced	16
----------------------------------	----

In the Literature

Recent Journal Contents	18
Recent Books/Monographs, Symposia Reports	25

Announcements

Journals for Sale	28
Recent Appointments	29
High Priority Research in Science and Technology	30
Science of Science: Journal with New Name	32
Fellowships Available	33
Positions Available	34
Deadlines for <u>Newsletter</u> Materials	
	Inside Back Cover

4S Society for Social Studies of Science

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4S: PROGRESS AND PROSPECTS

EDITORIAL

In a recent editorial, Jerry Gaston announced that in order to improve the Newsletter value to 4S members, the editorial board will encourage a variety of communications. To this end, I have been asked to oversee a new "Book Review Section" and I would like to take this opportunity to sketch out briefly its aims and format.

The major functions of the book review section will be two-fold. First, as all such sections do, it will inform us of work relevant to our main concerns that is published by colleagues in neighboring disciplines as well as in our own. Given that the affiliations of 4S member cover at least one dozen different disciplines (anthropology, biology, chemistry, economics, engineering, history, library science, philosophy, physics, political science, psychology, and sociology) the need for communication across disciplinary boundaries is particularly acute. Although each of us is aware that work of importance to us exists within neighboring disciplines, it is not always the case that this work is brought to our attention. Even less frequently do we come across the critical assessment of this work by those whose expertise lies in that specific problem area. Thus, one of the major purposes of the book review section will be to alert and inform 4S members of significant scholarship, taking care to note the major issues within the discipline each work addresses, its distinctive approach, how it may be seen as either complementary to or in conflict with other approaches, and its success in grappling with its stated problems. In addition, in all cases where it is possible, at least two independent reviews will be solicited and authors will have the opportunity to respond to their reviewers. If necessary, a brief rejoinder will also be included. In this way, I am hopeful that a meaningful dialogue, the second and perhaps more important purpose of this section, can take place, one where ideas could be further discussed, clarified, extended or deepened to the benefit not only of the discussants, but of our readers as well.

For this section to succeed, the 4S membership must take an active role. While I am hopeful that the various approaches between and within disciplines will be well represented both by the books chosen for review and the reviewers themselves, it is impossible for me alone to identify all those works that warrant review or those capable of providing fair scrutiny to such works. So I do encourage--and would greatly appreciate--whatever suggestions you might have concerning books for review (both new and "classic"), review symposia, and topics/issues for review essays. I cannot, however, guarantee the publication of unsolicited reviews. If you would like to be one of the reviewers of a particular work in your area of expertise, please inquire. Address all inquiries to: Lawrence Stern, Holy Cross College, Department of Sociology, Worcester, MA 01610.

The Lund LETTER ON TECHNOLOGY AND CULTURE is published by the Research Policy Institute, University of Lund, Magistratsvagen 55 N, S-222 44, Lund, Sweden, for the research program Technology and Culture, which is sponsored by the Swedish Committee for Future Oriented Research. Editor: Andrew Jamison. Editorial Committee: Boel Billgren, Erik Baark, and John Sigurdson. If you would like to receive the Lund Letter, write: Research Policy Institute, Magistratsvagen 55 N, S-222 44, Lund, Sweden.

1982 4S COUNCIL AND COMMITTEE MEMBERSHIP

	<u>Telephone Number</u>	<u>Term expires</u>
President: Arnold Thackray Department of History of Sociology of Science University of Pennsylvania 215 South 34th Street/D6 Philadelphia, PA 19104	Univ. 215-243-5575 Home 215-688-5455	11/83
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Council (cont'd)

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American Institute of Physics
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New York, NY 10017

Inst. 212-661-9404 11/83
Home 914-478-2074

Terms of office expire at the end of the Annual Meeting.

Former Presidents:

Robert K. Merton	Fairweather Hall 415, Columbia University, New York, NY 10027	212-280-3696
Warren O. Hagstrom	Department of Sociology, University of Wisconsin, Madison, WI 53706	608-262-6585
Dorothy Nelkin	Program on Science, Technology + Society, Cornell University, 632 Clark Hall, Ithaca, NY 14853	607-256-3810 6230
Bernard Barber	(See page 4)	

Committees:

1. Committee on Future Meetings:

Daryl Chubin (Chair)	Social Science Department, Georgia Institute of Technology, Atlanta, GA 30332	404-894-3195
Henry Bauer	Office of the Dean, Virginia Polytechnic Institute and State University, Blacksburg, VA 24061	
Ron Johnston	Department of History and Philosophy of Science, University of Wollongong, PO Box 1144, Wollongong NSW, 2500 Australia	
Linda Lubrano	(See page 4)	
Pat Woolf	97 Olden Lane Princeton, NJ 08540	609-452-4541
Steve Woolgar	Department of Sociology, McGill University, 855 Sherbrooke St., W. Montréal, H3A 317 CANADA	

Charge: To develop plans for 4S meetings in the second cycle from 1983 through 1986.

Timetable: A document, outlining future options and making specific recommendations for 1983, to be available by 1 March 1982.

1. a. Subcommittee on a European Meeting:

Steve Woolgar (Chair and liason with Committee on Future Meetings)	
Michael Mulkay	(See page 4)
Arie Rip	Department of Chemistry, State University Leiden, NETHERLANDS
John Ziman	HH Wills Physics Laboratory, Royal Fort Tyndall Ave., Bristol, ENGLAND BS8 1TL

Charge: To develop plans for a European meeting of 4S, in liason with the Committee on Future Meetings and appropriate European agencies.

Timetable: Pragmatic

2. Program Committee for the 1982 Philadelphia Meeting:

Thomas F. Gieryn (Chair)	Department of Sociology, Indiana University, Bloomington, IN 47405	812-335-2950
Susan Cozzens	National Science Foundation, 1800 G Street, Washington, D. C. 20550	202-357-7826

Program Committee for the 1982 Philadelphia Meeting: (cont'd.)

Judy McGaw Department of History and Sociology 215-243-8021
of Science, University of Pennsylvania
215 South 34th St./D6, Phila., PA 19104

Sal Restivo Sociology Department, Rensselaer Poly-
technic Institute, Troy, NY 12181

Ron Westrum 929 5th Street, Ann Arbor, Michigan 48103

Spencer Weart (See page 5)

Charge: To arrange the 4S contribution to the 27-30 October 1982 joint meeting of
4S/HSS/PSA/SHOT in such a way as to make fullest use of this inter-society,
inter-disciplinary event.

Timetable: Formula of "call for papers" to Jerry Gaston by 30 November 1981; proposals
due by March 1982; preliminary program due by 1 June 1982; final program
due by 1 September 1982.

3. Local Arrangements Committee for the 1982 Philadelphia Meeting :

Henrika Kuklick (Chair) Department of History and Sociology 215-243-4736
of Science, University of Pennsylvania
215 South 34th Street/D6, Phila. PA 19104

N. Roberts Coward 4726 Springfield Avenue
Philadelphia, PA 19143

Belver Griffith Library Science, Drexel University 215-895-2488
Philadelphia, PA 19104

Henry Small Institute for Scientific Information 215-386-0100
3501 Market Street Ext. 1307
Philadelphia, PA 19104

Charge: To make local arrangements, in cooperation with appropriate committees of
the other participating societies.

Timetable: Preliminary announcements of hotels etc. to Jerry Gaston by 1 March
1982; full details of costs/arrangements/pre-registration due by
1 June 1982.

4. Nominations Committee:

Nicholas Mullins (Chair) Department of Sociology
Indiana University, Bloomington IN 47405

Loren Graham (See page 4)

John Holmfeld (See page 4)

Arie Rip (See page 6)

Brigitte Schroeder-Gudehus Institute d'Histoire & Sociopolitique Univ. 514-343-7351
U. of Montreal, Montreal, Québec H3C 3F7, Canada
Albert Teich Office of Public Sector Programs AAAS ---202-467-4310
1776 Massachusetts Ave., N.W.
Washington, DC 20036

Charge: To nominate at least 8 eight individuals for 4 Council vacancies,
bearing in mind the need for appropriate disciplinary and geographical
representation.

Timetable: Preliminary list of candidates to be circulated by 1 March 1982;

Nominations Committee - Timetable (cont'd):

biographical information on approved slate of candidates, who have agreed to stand, to be available by 1 June 1982.

5. Prize Committee:

John Ziman (Chair)	(See page 6)	
Bernard Barber	(See page 4)	
David Edge	Science Studies Unit, University of Edinburgh, 34 Buccleugh Place Edinburgh, SCOTLAND EH8 9JT	
Walter Hirsch	(See page 4)	
Derek Price	2036 Yale Station, Yale University New Haven, CT 06520	203-436-4366
Barbara Rosenkrantz	Department of the History of Science Harvard University, Science Center 235 Cambridge, MA 02138	617-495-3741

Charge: To nominate the 1982 winner of the John Desmond Bernal Award for distinguished contributions to social studies of science.

Timetable: Preliminary list of candidates to be circulated by 1 March 1982; awardee to be agreed by 1 June 1982.

6. Publications Committee:

Arnold Thackray (Chair)	(See page 4)	
Bernard Barber	(See page 4)	
Harry Collins	School of Humanities and Social Sciences, University of Bath, Claverton Down, Bath, ENGLAND, BA2 7AY	
Melvin Kranzberg	Department of Social Sciences, Georgia Institute of Technology, Atlanta, GA 30332	404-894-3198
Nicholas Mullins	Department of Sociology, Indiana University Bloomington, IN 47401	812-335-7795
Vivian Shelanski	605 Clafin Avenue, Mamaroneck, NY 10543	

Charge: To make necessary editorial appointments and to oversee the development of the 4S Newsletter, and its evolution into a full-fledged journal.

Timetable: Pragmatic

7. AAAS Section X Liason

Rae Goodell

Charge: To produce a position paper on our options as regards Sectional affiliations and activities by 31 March 1982; to arrange such activities as appropriate.

- Notes: 1. In some cases additional members may be added to committees
2. The President is ex-officio member of all committees.

MEMBERSHIP RENEWAL FOR CALENDAR 1982

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Indiana University
Bloomington, Indiana 47405 (USA)

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4S PRESENTS BERNAL AWARD TO DEREK J. DE S. PRICE

[The following is a summary of his remarks, prepared by the author, for the 4S Newsletter, on the occasion of his accepting the first presentation of the 4S John Desmond Bernal Award for distinguished contributions to the social studies of science. Ed.]

To receive an award from one's learned society is one of the great rewards of scholarly life, and I am duly deeply sensitive to and appreciative of this occasion. I am all the more honored since this is a first award to be named for the Sage, a senior colleague who did very much to inspire me and help me in my early days, even before I was in this field. I must admit that there is also another built-in reward of the scholarly life, and that is the joy of communion with sympathetic and appreciative peers. Bernal was for me such a peer.

I was very lucky in those war years when I should have been going through college but worked instead as a laboratory assistant in physics as one of the smaller technical colleges of London, and moonlighting at anything they would let me teach for ten shillings an hour. In those days, because of the peculiar conditions of the war, there I was doing physics research and learning the ropes with hardly any peers of my own age group or teachers a bit older than me. Most of my friends were really great scientists and scholars much older than that, and amongst this magic circle of people like Sir Lawrence Bragg, Joseph Needham, Julian and Aldous Huxley, was Desmond Bernal (only the Russians called him John).

He was very special with an enormous gusto for life and for learning of all sorts. He had a devilish ingenuity in both experiment and theory, and he taught, merely by existing, that one should have a contempt for disciplinary boundaries that would deter one, say, from being a physicist and publishing a paper in a professional journal of economics or archeology.

This year marks just the 80th anniversary of Bernal's birth, the 10th of his death, and the 50th of the famous Second International Congress for the History of Science. This was the "Science at the Crossroads" meeting when a party of Soviet intellectuals descended on London and gave birth to the first stirring of social explanation in the history of science. It was a meeting that set off great waves of excitement and motivated Bernal more than any other western scholar. His book The Social Function of Science which I read soon after publication after hearing him talk about it at the Association of Scientific Workers affected me and was good stuff to get my teeth into. I was especially zapped by the appendix which so far as I know was the first publication of any considerable body of science indicators. I had met Bernal first during visits to the Cavendish Lab when I was still a physicist. I went to his lectures on the difficulties of computing crystal structures from X-ray diffraction before the electronic calculators changed that problem and the double helix made it popular. Later I worked with him a little on making neat mathematical models for the pseudo-crystalline structure of liquids.

About 1949, when I was teaching applied mathematics at Raffles College, which was to become the University of Singapore, there arrived for the unbuilt new library a complete set of the Philosophical Transactions of the Royal Society. Taking them into protective custody I carried them to our own house, and, being a compulsive soul, piled them in neat chronological piles against the bedroom wall. During that year, I worked my way through them, cover to cover, as bedside reading, from the first volume, ca. 1662, to the mid-nineteenth century. By then I realized I had taught myself a subject, history of science, which I did not know to have any institutional existence, but which clearly had much excitement.

I also had noticed that the piles of volumes made a beautiful exponential curve on the bedroom wall and I began counting papers in all directions. I got so excited with this that I contributed a paper on it to the Amsterdam Congress in History of Science in 1950 and then decided to see if some university would let me study history of science. Herbert Dingle in London was distinctly inhospitable because history of science was treated only as a soft option for teachers college, but Herbert Butterfield of Cambridge, whom I knew as the author of a splendid book (The Origins of Modern Science), would take me on because Cambridge took no account of a mere London Physics Ph.D. and would let me get another in a different field. Incidentally, both Butterfield and Rupert Hall shuddered a lot when I showed them my little paper on exponential growth and gave me to understand that was not the sort of thing that historians should do. So far as I know it went like a lead balloon, and nobody read it till I made new soup from old bones in Science Since Babylon ten years later. So, I settled down to work on the history of scientific instruments because from my lab boy experience I knew every little screw on all the instruments I had taken down, repaired and played with. Pretty soon, however, I was sidetracked, first into clocks and archeology, and then into Middle English by the lucky accident of discovering a Chaucer manuscript on medieval astronomical instruments.

As you know, I kept coming back to social theory of science and the dimensions of sociology, economics and politics of science that Bernal has inspired me into, and the quantitative work on exponential growth that had excited him. It had, by the way, also amused my old colleague at Singapore, Cyril Parkinson. We had been neighbors and played badminton regularly, and after each game he would tell me which history books to read and I would amuse him with tales of exponential growth. I got a chair at Yale out of it all, but he got such a successful lot of popular books (on Parkinson's Law) that he retired to be Lord of Several Manors in the Channel Islands.

It was Bernal who first saw the intellectual fascination of the new sort of social analysis of science and it was also his perception that lent the study a practical political importance for planning science in an age when it had grown from small to large in size, economics, and military significance. It was not so much what Bernal did but the stupifying impact of the way that he did it. I am doubly honored by this award commemorating a person for whom I had much love, and from whom I learned a little about scholarly style, good appetite and some sense of social and political responsibility.

Derek de S. Price
November, 1981

THOUGHT AND OPINION

Impressions of the Sixth Annual Meeting of 4S - Atlanta

by

Arie Rip

Gorlaues Laboratoria Der Rijksuniversiteit Te Leiden

Sub-Faculteit - Scheikunde, University of Leiden

Scientific conferences have their inner circuits. At the 4S Annual Meeting in Atlanta, Georgia, 5-7 November 1981, at least one such an inner circle was on public display. Two plenary sessions were devoted to the recent upsurge of detailed micro-studies of scientific practice and the accompanying interest in the sociology of knowledge; and protagonists like Collins, Knorr, Mulkay and Woolgar, were there to defend the approach, to comment upon philosophy of science, and at the same time showing up their mutual differences.

The first plenary session, Micro- vs. Macrosociology of Knowledge, starring Karin Knorr, Michael Mulkay, Harry Collins, Thomas Gieryn and Steve Woolgar, was very much an inner circle affair, with panel members commenting on papers they had seen, but which most of the audience had not. The second plenary session, Epistemologically Relevant Internalist Sociology of Science (or ERISS for short): A Report and Discussion on the Cazenovia Conference, referred to an inner circle affair: the Cazenovia conference, where organizer Donald Campbell had hoped to create a new marriage between sociology and philosophy of science. (See 4S Newsletter 6:3, Summer, 1981, pp. 24-25.) For this 4S session, Campbell had asked Alex Rosenberg, Thomas Gamble and Thomas Nickles to try again, with the micro-students (and Sal Restivo) as commentators. Even if some remarks referred to off-stage happenings, it was good theatre, with Donald Campbell playing the part of script-writer, stage director, star performer and sometimes father confessor.

The two plenary sessions provided all sorts of mutual comments, a lot of name-tagging (for instance, did you know that Harry Collins is a closet-Kantian?), and an opportunity to get an idea where the field may be heading to — and perhaps also where it should be going. I shall present my impressions, and support them with some unauthorized quotations from the discussions.

As Thomas Nickles said, Kuhn brought time into science studies and now the micro-students are bringing space (situation) into them. This raises debate, but part of it could be misguided: the micro-students ask questions about the sociology of (scientific) knowledge, while many of their opponents in the debate focus on science as an institution in contemporary society. Even so, there remains a lot to disagree about.

On the level of the sociology of knowledge, the debate is primarily with philosophers of science, professional as well as amateur. The new aim of de-constructing or "un-packing" scientific practices conflicts with received views of science. But scientists and philosophers of science are too easily scared by the implied relativism, says Harry Collins; they argue back only to keep up their feeling of legitimacy. But you relativists seem to be afraid of reality, countered Thomas Nickles (echoing Donald Campbell's exhortation to the micro-students to allow themselves more speculation). It seems to me that there is indeed no need to exclude reality a priori as an explanatory factor, but I agree with Harry Collins that "reality," that is, a certain view of it, is used so often to bolster up authority that the better strategy, for the time being, is to see how far we get with the relativist approach (there's the Kantian!).

Do not, however, take Harry Collins as giving the answer for all. Apart from relativism — now also called Bathism — there are other approaches: Edinburghism (not represented during the conference, but attracting some criticism, for instance for Steve Woolgar, our watchdog for sociologists' explanatory strategies — see Social Studies of Science 11:3, 1981, pp. 365-394), discourse analysis (practised by Nigel Gilbert and Michael Mulkay, see the latter's article in the 4S Newsletter 5:4, Fall, 1980, pp. 18-24), ethno-methodology (Michael Lynch and other students of Garfinkel), and studies of laboratory practice (Bruno Latour, Karin Knorr). These approaches differ in epistemological stance and in preferred empirical strategies, but agree that to study science, you have to know the details of the practice of producing scientific knowledge.

With such a common core program, the micro-students are of great interest to philosophers of science that share Donald Campbell's preference for evolutionary epistemology, and especially his idea that different social system vehicles carrying (scientific) knowledge should be compared and evaluated. (See his article in Knowledge 1:2, December, 1979, pp. 181-201.) At the Cazenovia conference, the gap between philosophers and sociologists appeared not to have been closed, but in Atlanta the mood was more congenial. The uneasiness about the normative conclusions that the philosophers wanted to draw remained, however. For my part, I wonder if it is wise to refrain from all normative conclusions and withdraw to the position of the perfect observer. The way science functions in contemporary society should not be declared out of bounds, an exclusive limitation to the observation of micro-settings deserves the label of "neo-internalism." (I seem to echo Randall Collins, in Conflict Sociology (1975, p. 11): "Microsociology by itself is doomed to be either extremely abstract, focusing on those processes that are found in all encounters, or extremely parochial, taking for universal those processes that are in fact limited to a particular social class in a particular time in history," — although I do not want to imply that micro-studies try to find universals.)

The last point is one that is often taken up in the criticisms of the micro-studies program by historians and sociologists of science: there is much more to science than just laboratory practices, "Max Weber is going to tell us more about science than Harold Garfinkel" (Thomas Gieryn). To counter these criticisms by saying that micro-studies are doing sociology of (scientific) knowledge, not sociology of science, is evading the issue. Micro-studies purport to say something worthwhile about the nature of science, and this, if accepted, will change legitimacy tactics of scientists, the status of expertise etc., Harold Garfinkel may have something to tell Max Weber.

Taking over the label of "Mertonians" for the moment to refer to the Weberian approach, an opening was offered to the Mertonians by Harry Collins: The constitutive questions of their research program on science as a social institution may be kept, but they should accept the constructivist view (everything is socially negotiated) as an indispensable heuristic. Such a neo-Mertonian program could be very fruitful, I think. Questions like Thomas Gieryn asked, "How did the science that we have now get the cognitive authority it clearly has?" could perhaps be answered then. And perhaps turn out to lead to a more thoroughgoing, because societal, not just epistemological relativism. Thomas Gieryn may become such neo-Mertonian, after the Cazenovia experience, and Sal Restivo, in his own ways, may already be one.

But it is asking for misunderstanding to continue to talk about (neo-) Mertonians, and to allocate people to different slots. The dangers of neo-internalism were illustrated by criticizing micro-studies that do not step out of the separate world of the lab and the scientific conference. As Joseph Coates said at the end of the micro-macro plenary session, with characteristic vigor: The panel has trivialized the issue, it discusses 1900-science, not what is important here and now. But such harsh criticisms apply to many other studies in the sociology of science, with their bias for academic science. Not only is the ideology of pure science maintained that way; issues that should be central on the agenda of social studies of science, like the relation between science and the military (to quote Arnold Thackray) are neglected or repressed.

Looking at the program of the Atlanta meeting as a whole, it appears that between a quarter and a third of the papers address issues of contemporary concern: public participation, professionalization, developing countries, science policies, technology assessment. Those papers turn out to have little connection, however, with the main body of work in the sociology of the sciences, nor with the issues debated in the inner circle concerned with sociology of scientific knowledge. Their disciplinary background often is in sociology of the professions, of organizations, in public policy studies, political science or economics. Having these papers at a conference on social studies of science is a good sign, but too little interaction is visible at the level of research. Contemporary concerns and social studies of science seem to be two separate worlds, and that, surely, is bad for both.

THE INSTITUTE ARCHIVES AND SPECIAL COLLECTIONS department of the Massachusetts Institute of Technology Libraries has issued a Selective Repository Guide (22 pages). The Archives is the repository for the manuscript and archival records of MIT, its faculty, alumni and staff. The collections reflect the strengths of the research and educational programs of the Institute and therefore emphasize the history of contemporary science and technology, and its impact on society. The guide is available for \$2 from Institute Archives and Special Collections, Room 14N-118, Massachusetts Institute of Technology, Cambridge, MA 02139. Checks should be made payable to the Massachusetts Institute of Technology.

THE SEVENTH ANNUAL MEETING

University of Pennsylvania
Philadelphia
October 27-30, 1982

The 1982 annual meeting of the 4S will be held jointly with three other scholarly associations: the History of Science Society, Philosophy of Science Association, and Society for the History of Technology. Our experience with this inter-society gathering in Toronto (1980) left many 4S members unsatisfied. 4S sessions were poorly attended because of simultaneous sessions on closely related matters offered by the HSS, PSA or SHOT. In other cases, distinctively 4S sessions were bunched together at the same time, further contributing to small audiences.

The 1982 4S Program Committee will work closely with corresponding committees from the other societies to avoid these problems. Still, we hope that the 4S Program itself will not get "lost in the shuffle." We plan to sponsor sessions on topics unique to our special interdisciplinary venture, and to co-sponsor sessions on topics which overlap concerns of fellow Societies.

Call for Papers

The Program Committee welcomes papers from 4S Members on subjects of intellectual interest to the Society. Submitted papers will be refereed by the Program Committee (Thomas F. Gieryn--Chair; Susan Cozzens; Judy McGaw, Roberta Balstad Miller; Michael Mulkay; Sal Restivo; Spencer Weart; Ron Westrum). Accepted papers will then be gathered together into sessions with common themes. Our goal is to provide a program that represents the diversity of theoretical, methodological, and disciplinary perspectives within the 4S, while selecting papers likely to be of interest to large segments of the Society.

TIMETABLE

1 March 1982 Proposals for papers due
1 June 1982 Preliminary Program announced
1 August 1982 Final Drafts of accepted papers due
1 September 1982 Final Program Announced

SEND PROPOSALS/PAPERS TO:

Thomas F. Gieryn
Department of Sociology
Indiana University
Bloomington, IN 47405

Telephone: (812) 335-2950

Ideas for Sessions

The production of programs for scholarly meetings is frequently governed by a self-fulfilling prophècy: members use earlier programs as a guide to what topics are desired or preferred. Of course, this leads to an often unwanted continuity in the range of sessions. The 1982 Program Committee intends to create sessions on important topics in the social studies of science which have not yet found a place in our annual meetings. We have developed a short list of sessions that might be developed if a sufficient number of related papers can be assembled:

1. Science, Technology and War
2. Public Evaluation and Understanding of Science and Technology
3. Public Contributions to Scientific and Technological Decision Making
4. Critical (or Marxist) Perspectives on Science and Society
5. Life-cycle Analyses of Scientific Careers
6. Comparative Studies of Scientific Disciplines and Specialties
7. Peer Review at the National Science Foundation
8. Cutbacks in Government Funding for Research
9. Science and Alternative Knowledge-Producing Systems
(Religion, Art, Common-sense)
10. Production of Scientific Texts and Scientific Discourse
11. Science in Industry (e.g. Genetic Engineering)
12. Social class and Recruitment to Science
13. Utilization of Scientific Knowledge for Government Policy
14. The Role of Instrumentation in Historical Development of Science
15. Social Contexts for Scientific Discovery and Technological Innovation
16. Theoretical Perspectives on Stratification in Scientific Communities

This list is designed to stimulate contributions from members working on topics not previously represented in 4S programs. Of course, the actual 1982 program will include only a few of these sixteen topics, and it will surely include sessions not mentioned in this list. If you have ideas for other sessions that might be included on the Philadelphia program--or if you would like to organize a session--please contact Tom Gieryn at the address above.

LZ375

impact of science on society Abstracts in English

UNESCO

VOL. 31 NO. 1 JAN.-MAR. 1981
WEAPONS FROM SCIENCE—CIVILIZATION'S PITFALL

Weapons from Science: Civilizations Pitfall - Comment.	3
Is Military R-And-D a Necessary Evil. G.S. Sundaram	6
The Case of Brazil - Fortress or Paper Curtain. C. Briguego	17
Science, Technology, Weapons, and Duration of the Species. M. Marcucci, P. Passerini	33
Influence of Weapon Development on Scientific Research. I. Malecki	39
Significance of Military R-And-D - the Impact of the Arms Race on Society. M. Thee	49
Scientific and Technical Progress and Disarmament. V.M. Kulish	61
Social and Economic Reverberations of Military Research. F. Barnaby	73
A Record of Civilian Search for Military Innovation. R.E. Glitsch	85
Arms Control, Disarmament and Small Countries. B.V.A. Roling	97
Report from a Symposium - Using Military and Civil Satellites to Keep the Peace - Pugwash Conference on Science and World Affairs	113
Science and Armaments - Restoring the Primacy of Politics. P. Dabaster, J.F. Bureau	123
LETTER	
Towards a Methodology for Research Priorities. V.K. Gupta	133

LZ362

ISIS

Univ Penn. Dept Hist
Soc Sci

AN INTERNATIONAL REVIEW DEVOTED TO THE
HISTORY OF SCIENCE AND ITS CULTURAL INFLUENCES

VOL. 72 NO. 262 JUNE 1981
JAMES A. SECORD: *Nature's Fancy: Charles Darwin and the Breeding*

of Pigeons	163
STEVEN SHAPIN: <i>Of Gods and Kings: Natural Philosophy and Politics in the</i>	187
<i>Leibniz-Clarke Disputes</i>	216
ANDREW PICKERING: <i>The Hunting of the Quark</i>	

DOCUMENTS & TRANSLATIONS

BERNARD R. GOLDSTEIN: *The Hebrew Astronomical Tradition: New Sources* 237

NOTES & CORRESPONDENCE

PAUL ERICKSON: *The Anthropology of Charles Caldwell, M.D.* 252

NEWS OF THE PROFESSION

Éloge: ANNE THION: *Joseph Mogenet, 26 February 1913-18 February 1980* 266

RETROSPECTIVE REVIEW

Critical Problems in the History of Science, edited by MARSHALL CLAGETT: essays by MARTIN RUDWICK, WILLIAM COLEMAN, EDITH SYLLA, and LORRAINE DASTON. 268

MC188

ISIS

Univ Penn. Dept Hist
Soc Sci

AN INTERNATIONAL REVIEW DEVOTED TO THE
HISTORY OF SCIENCE AND ITS CULTURAL INFLUENCES

VOL. 72 NO. 263 SEPTEMBER 1981

THOMAS HARMON JOBE: <i>The Devil in Restoration Science: The Glanville Webster Witchcraft Debate</i>	343
PETER MARSHALL: <i>Nicole Oresme on the Nature, Reflection, and Speed of Light</i>	357
GEOFFREY SUTTON: <i>Electric Medicine and Mesmerism</i>	375
CRITIQUES & CONTENTIONS	
JEROME RAVETZ; RICHARD S. WESTFALL: <i>Marxism and the History of Science</i>	393
G. S. ROUSSEAU: <i>Medicine and Literature: The State of the Field</i>	406
DOCUMENTS & TRANSLATIONS	
GERALD L. GEISON: <i>Pasteur on Vital versus Chemical Ferments: A Previously Unpublished Paper on the Inversion of Sugar</i>	425
NOTES & CORRESPONDENCE	
L. M. PRITYKIN: <i>The Role of Concepts of Structure in the Development of the Physical Chemistry of Polymers</i>	446
XI ZEONG: <i>Chinese Studies in the History of Astronomy, 1949-1979</i>	456
NEWS OF THE PROFESSION	
Interviews as Sources for History of Modern Astrophysics	471
Employment Trends in the History of Science	477
ESSAY REVIEW	
I. BERNARD COHEN on Aepinus's Essay on the Theory of Electricity and Magnetism, WILLEM D. HACKMANN's Electricity from Glass: The History of the Frictional Electrical Machine 1600-1850, and I. L. HEILBRON's Electricity in the 17th & 18th Centuries: A Study of Early Modern Physics	480

KNOWLEDGE

Sage Publ., Calif

Creation • Diffusion • Utilization

VOL. 2 NO. 4 JUNE 1981

LY039

External Vs Internal Social Policy Researchers. M. Vandevall, C.A. Bolas	461
Knowledge Utilization - Epistemological and Political Assumptions. D.H. Kerr	483
Interdisciplinary Integration within Technology Assessments. F.A. Rossini, A.L. Porter, P. Kelly, D.E. Chubin	503
The Expansion of Soviet Science. B.A. Ruble	529
SPECIAL FEATURE:	
Knowledge Utilization as a Networking Process. R.K. Yin, M.K. Gwathney	555
BOOK REVIEWS	
Knowledge Application - the Knowledge System in Society - B. Holzer, J. Marz, J.R. Gusfield	590
Who Should Know What - Social Science, Privacy and Ethics - J.A. Barnes, J.B. Rule	597
Boundaries of Analysis - an Inquiry into the Tocks Island Dam Controversy - H. Felveson, F. Sinden, R. Secolow, S.E. Fallows	600

Knowledge and Society. N. Stehr, V. Meja	7
Classification and the Sociology of Knowledge - a New Look at Durkheim and Mauss.	20
D. Bloor	52
Knowing and Using - Implications for the Sociology of Knowledge. M. Mulvey	52
Strategy of a Sociology of Knowledge. G. Dux	73
Sorting out the Fruits of Cognition - the Genesis of Science. N. Luhmann	102
The Peculiarity of the Philosophy of History from the Point of View of the Sociology of Knowledge.	140
A. Heller	140
Sociology of Knowledge of the Natural Sciences - Conditions and Limits of its Possibility.	153
G. Freudenthal	153
Conventional Character of Knowledge and Cognition. B.S. Barnes	163
The Threefold Legitimation - a Model for a Sociology of Knowledge. G. Namer	191
Sociocultural Evolution - an Epistemological Model for the Analysis of Human History.	206
B. Balduz	206
The Fabrication of Knowledge - Attempt at a Socially Relativized Concept of Knowledge.	226
K.D. Knorr	226
Motivation and Knowledge. F.W. Sittel	246
Culture and Power - the Modern Cultivation of Knowledge. J.E. Corradi	268
Intellectual Radicality and Social Power. W. Weiss	298
Sociology of Knowledge as Self-Criticism. W. Stark	303
Saint-Simon as a Sociologist of Knowledge and Science. R.M. Empe	317
Thoughts on Cognition and Labor by Scheler, Max. K.H. Wolff	335
Scheler, Max - an Alternative in the Sociology of Knowledge. J. Strübar	343
The Sociology of Knowledge of Mannheim and the Sociological Knowledge of C.W. Mills.	360
I.L. Horowitz	360
Goldman, Lucien as an Interpreter of Mannheim, Karl. J. Gabel	384
Causality, Descriptiveness, and Individuality or How the Essence and Theses Ascribed to Quantum	393
Mechanics were Laid Down by Cultural Values. P. Forman	407
Structures of Knowledge - Things, Money, Persons. R. Cumming	429
The Problem of Ideology in the Sociology of Art - a Case Study on Manchester in the 19th Century.	445
J. Wolff	445
Knowledge of Science and of the Life World as Exemplified in Making Obstetrics Scientific.	464
G. Bohme	464
Sociology of Formal Logic. W. Baldamus	464

The Perishing Heritage of the 1960s in West German Higher Education.	1
Hippocrates and the Biomedical Scientist - the Problems of Controlling the Dangers of Science.	29
A.E. Refl	29
The Early Institutional Establishment of Social Science Research - the Local Community Research Committee at the University of Chicago, 1923-36.	51
M. Bulmer	51
Utopian and Pragmatic Rationalism - the Political Context of Scientific Advice.	111
Y. Ezrahi	111
REPORTS AND DOCUMENTS	
The Zipsel Affair at the Free-University of Berlin - Antisemitism, Publicity and the Disruption of Universities.	132
BOOK REVIEWS	
Education and Society in Modern Europe - F.K. Rieger.	164
Castler, Ernst - the Dilemmas of a Liberal Intellectual in Germany, 1914-1933 - D.B. Updegraff.	171
G.J. Gilla	171
Social Orientation of Scientific Progress. - G. Bohme	179

Universities and the Academic Gold Standard in Nigeria.	201
Fundamental Research in a Small Country - Mathematics in Denmark 1928-1977.	243
Scientific Research in the Canadian North - 3 Recent Attempts at Regulation.	284
Science as Technology - Aspects of a Potent Myth.	293
J.W. Grove	293
REPORTS AND DOCUMENTS	
Historical Scholarship and Philosophical Thought.	313
Recent Reforms in Swedish Higher Education.	324
M.N. Pedersen, H.O. Hunter	324
Power and Science in France - French - P. Papou.	352
A Guide to the Culture of Science, Technology, and Medicine - P.T. Durbin.	354
Homo Faber - Technology and Culture in India, China and the West from 1900 to the Present	360
Day - C.A. Alvares.	360

131 Harold Garfinkel	The Work of a Discovering Science Constructed with Materials from the Optically Discovered Pulsar
Michael Lynch	
Eric Livingston	
159 Gerald Holton	The Work of a Discovering Science Constructed with Materials from the Optically Discovered Pulsar- Comments on Professor Harold Garfinkel's Papers
163 Michael Mulvey	Action and Belief or Scientific Dis-course? A possible way of ending intellectual vassalage in social studies of science.
173 Larry Laudan	The Pseudo-Science of Science?
199 David Bloor	The Strengths of the Strong Programme
215 H. M. Collins	What is TRASP? The Radical Programme as a Methodological Imperative
225 Nico Stehr	The Magic Triangle: In Defense of a General Sociology of Knowledge
231 Stephen P. Turner	Interpretive Charity, Durkheim, and the 'Strong Programme' in the Sociology of Science
245 Kenneth L. Morrison	Some Properties of 'Telling-Order Designs' in Didactic Inquiry
263 Augustine Brannigan	The Phenomenon of Multiple Discoveries and the Re-Publication of Mendel's Work in 1900
Richard A. Wanner	
James M. White	

Elsevier Scientific
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Amsterdam

JOURNAL OF
**RESEARCH COMMUNICATION
STUDIES**

LH010

Articles and Abstracts in English

VOL. 2 NO. 4 MARCH 1981

Growth, dispersion and obsolescence of the literature: a case study in thermoluminescent dosimetry G.G. de Queiroz (Rio de Janeiro, Brazil) and F.W. Lancaster (Urbana, IL, U.S.A.)	203
The role of publication in the dissemination of applied research at Australian universities C.J. Maguire and R. Kench (Kensington, N.S.W., Australia)	219
Increasing the legibility of journals with a newspaper format D. Wendt (Kiel, Federal Republic of Germany) and W. Plass (Hildesheim, Federal Republic of Germany)	237
Multiple authorship of series and non-series papers in an agricultural journal C. Balog (Wellington, New Zealand)	255
The information content of titles of papers in an agricultural journal C. Balog (Wellington, New Zealand)	263
Designing journal contents pages: preferences for horizontal and vertical layouts J. Hartley and C.A. Guile (Keele, Great Britain)	271
Preparing a conference poster A. Lang and B. Anderson (Canberra City, A.C.T., Australia)	289

MH673

JOURNAL OF
**RESEARCH COMMUNICATION
STUDIES**

Elsevier Scientific
Publ. Co.
Amsterdam

Articles and Abstracts in English

VOL. 3 NO. 1-2 SEPTEMBER 1981

Special Issue

SCIENTIFIC INFORMATION TRANSFER: PEOPLE, METHODS AND MEANS, 1 Proceedings of the Second International Conference of Scientific Editors, Amsterdam, 13-17 October 1980, part 1 The Second International Conference of Scientific Editors O. ter Haar and A.A. Manten (Amsterdam, The Netherlands)	3
--	---

Lectures

Scientific information transfer: people, methods and means A.A. Th. M. van Trier (The Hague, The Netherlands)	15
The sociology of learned literature R. Escarpit (Bordeaux, France)	23
The social science editor as a gatekeeper Q.J. Hunters (Wageningen, The Netherlands)	37
Communication in the arts and humanities A.L. Schuller (Oxford, Great Britain)	47
Copyright for learned journals J.D. St. Aubyn (Stevenage, Great Britain)	65
Copyright in daily editorial practice P. Nijhoff Asser (Amsterdam, The Netherlands)	75
The effect of the U.S. copyright legislation on authors, editors, publishers, and librarians H.W. Koch (New York, NY, U.S.A.)	87
Criteria of journal quality P.J. Anderson and R.K. Goldstein (New York, NY, U.S.A.)	99
Training the scientific author B.J. Walby (East Melbourne, Vic., Australia)	111
Training of editors of scholarly publications A.A. Manten (Amsterdam, The Netherlands)	121
Selective dissemination of information at the research frontier - the editor's role M. Kaye (Rehovot, Israel)	133
The development of a synopsis/microform journal in chemistry A.D. McNaught (London, Great Britain)	145
Editors' roles in on-line journals P. Lefrere (Milton Keynes, Great Britain)	157
The economics of scientific journal publishing D.H.M. Bowen (Washington, DC, U.S.A.)	169
Economics of the physics periodical S. Chomet and E. Nejman (London, Great Britain)	185
The problem of primary publication in a second language E. Pungor (Budapest, Hungary)	201

Edited versions of poster presentations

The author's editor in the setting of a university or research centre S. Eastwood (San Francisco, CA, U.S.A.)	211
Advice on crash editing B. Jarman (Monterey, CA, U.S.A.)	217
User attitudes to scientific editing: just change the "was's" and "were's" H.W. Glen (Randburg, South Africa)	221
Planning, editing and publishing workshops and symposia (Abstract) J. Watson (Ottawa, Ont., Canada)	229
Computer-assisted editorial management P. Papali (Bologna, Italy)	231
Managing the editorial system in the computerized age A. Currie (Toronto, Ont., Canada)	241
International bulletins: a service for the scientists in industry (Abstract) T. Powell (Oxford, Great Britain)	243
Publishing by the European Space Agency N. Longdon (Noordwijk, The Netherlands)	245
Acta Chemica Scandinavica. An example of Scandinavian co-operation K. Samuelsson (Stockholm, Sweden)	247
Program into print: literature emanating from the Douglas-fir Tussock Moth Program, 1974-1978 M.H. Brookes (Corvallis, OR, U.S.A.)	253

LUI 34

research policy

Abstracts in English

VOL. 10 NO. 2 APRIL 1981
Commercial innovations from university faculty
E.B. Roberts and D.H. Peters

North Holland

- Towards an understanding of technical change in semi-industrialized countries
S. Teitel 127
- Production of microbial protein: A study of the development and introduction of a new technology
P.K. Marstrand 148
- Transfer of indigenous technology — some Indian cases
J.V. Rajan, N.D. Seth, S.K. Subramanian, A.K. Chakrabarti and A.H. Rubenstein 172

L2763

research policy

Abstracts in English

- VOL. 10 NO. 3 JULY 1981
- The impact of the Science Research Council's policy of selectivity and concentration on average levels of research support: 1965-1974
C. Farina and M. Gibbons 202
- Technology and economic growth: The case of Japan
M.J. Peck and A. Goto 222
- Scientists as consultants to industry in a developing country: An analysis of their roles and economic effectiveness
D. Avriel 244
- Non-price factors in the export competitiveness of agricultural engineering products
R. Rothwell 260

North Holland

LM358

Science, Technology, & Human Values

NO. 35 SPRING 1981

- Native Americans and Nuclear Power.
D. Nelkin 21
- The Science of Science in China - Report by a Sociologist of Science. P. Weingart 14
- The Science of Science in China - Report by a Specialist in Science Policy.
A. Elzinga 18
- COMMENTARY
Commentary - some Perspectives in Contemporary Sociology of Science. S. Ravetto 22
- MEETING REPORT
Multivariate Perceptions - Reflections on the 147th Annual Meeting of the American Association-For-The-Advancement-Of-Science, January 1981. M.C. LaFollette 31
- BOOK REVIEWS
Health Care in the United States - Equitable for Whom - L.A. Aday, R. Andersen, G.V. Fleming 60
- A Search for Environmental Ethics - an Initial Bibliography - M. Anglmyer, C. Lemaistre, E.R. Seagraves 60
- Proceedings of the 1980 Biennial Meeting of the Philosophy of Science Association, Vol 1 - P.D. Asquith, R.N. Giere 61
- Ethics Teaching in Higher Education - D. Callahan, S. Bok 61
- Ethical Problems in Engineering, 2nd Edition, Vol 1, Readings and Vol 2, Cases - A. Flores, R.J. Baum 61
- The Public Use of Television - Who Watches and why (People and Communication, Vol 9) - R.E. Frank, M.G. Greenberg 61
- Vonneumann, John and Weiner, Norbert - from Mathematics to the Technologies of Life and Death - S.J. Heims 62
- Ethics in an Age of Pervasive Technology - M. Kranzberg 62
- Aid as Obstacle - 20 Questions About Our Foreign Aid and the Hungry - F.M. Lappe, J. Collins, D. Kinley 63
- Science and the Humanities - Bridging the Gap - W. Leptowski 63
- The Belief in a Just World - a Fundamental Delusion - M.J. Lerner 63
- The Scientific Publication System in Social Science - D. Lindsey 64
- Linking R and D with Schools, Products and Process - some Preliminary Findings from the R and D Utilization Program and Their Implications for Federal Dissemination Policies - K.S. Louis 64
- How to Grow Science - an Insider Sizes Up the Uses and Misuses of Modern Science - M.J. Moravcsik 64
- Improving Policy Analysis (SAGE Focus Editions, Vol 16) - S.S. Nagel 65
- Alcoholism, Alcohol Abuse, and Related Problems - Opportunities for Research - Report of a Study - Natl-Acad-Sci-Inst-Med-Div-Hlth-Promot-Dia-Prevent 65
- An Assessment of the Bay Area Rapid Transit (BART) Impact Program - Natl-Res-Council-Bay-Area-Rapid-Transit-Syst-Impact-Program-Advisory-Comm-Assembly-Engn-(NRC) 66
- Science, Engineering, and Humanities Doctorates in the United States - 1979 Profile - NRC-Commise-Human-Res 66
- Occupational Mobility of Scientists and Engineers - Natl-Sci-Fdn 66
- Technical Change and Economic Policy - Science and Technology in the New Economic and Social Context - Org-Ec-Cooperat-Dev 66
- Technology on Trial - Public Participation in Decision-Making Related to Science and Technology - Org-Ec-Cooperat-Dev 67
- ACS-Soviet Cooperation - Reduce or Maintain - H. Reisman, V. Haensel 67
- On Responsibility in Planning and Decision-Making - S. Schwarz 67
- Societal Risk Assessment - How Safe is Safe Enough - R.C. Schwing, W.A. Albers 68
- Science and Technology - Annual Report To Congress 68
- Science Policy USA-USSR, Vol 1, Science Policy in the United States - N.C. Robertson 68
- Science Policy USA-USSR, Vol 2, Science Policy in the Soviet Union - P.M. Cooks 68
- Innovation and United States Research - S.W. Smith, C.F. Larson 69
- Monographs on Appropriate Industrial Technology, no 1 - Conceptual and Policy Framework for Appropriate Industrial Technology - UN-Dev-Org 69
- United States Defense Policy in the 1980s - Datus, Vol. 1 Fall 1980, And Vol. 2 Winter 1981 69
- Mass Communication Review Yearbook, Vol 1 - G.C. Wilhoit, H. Debock 69
- Women in the Labor Market - The OECD Observer 70
- The Public Debate on Growth - Preparing for Resolution - D. Yankelevitch, B. Lefkowitz 70

MIT Press

Power, Social Structure, and Advice in American Science - the United-States National Advisory System, 1960-1972 <i>N.C. Mullins</i>	4	Science and Ethical Responsibility - S.A. Lakoff. Sociology and the Twilight of Man - Homocentrism and Discourse in Sociological Theory - C.C. Lemert.....	52
Fortune Favors the Prepared Mind - a Movement Against Nuclear War <i>B.M. Casper, L.M. Krauss</i>	20	Atomic Energy - a New Start - D.E. Lillenthal. Appropriate Technology and Social Values - a Critical Appraisal - F.A. Long, A. Oleson.....	53
The Discussion of Values in Science and Mathematics Education Workshops <i>M. Thomas</i>	27	The Science Fiction of Wells, H.G. - F. McConnell.....	53
BOOK REVIEWS		Television Evening News Covers Nuclear Energy - a 10-Year Perspective - Media-Inst. Genetics and the Law-II - A. Milunsky, G.J. Annas.....	53
The Abyss of Time - Changing Conceptions of the Earth's Antiquity after the 16th Century - G.C. Albritton.....	45	Women and the Social Costs of Economic Development - 2 Colorado Case Studies - E. Moen, E. Boulding, J. Lillydahl, R. Palm.....	54
AAAS Professional Ethics Projects - Professional Ethics Activities in the Scientific and Engineering Societies - Amer-Asoc-Adv-Sci-Comm-Sci-Freedom-Responsibility.....	45	Teaching Values in College - R.L. Morrill.....	54
Who Should Know What - Social Science, Privacy and Ethics - J.A. Barnes.....	46	The Three-Mile-Island Nuclear Accident - Lessons and Implications - T.H. Moss, D.L. Sills.....	55
Rights and Responsibilities in Modern Medicine - M.D. Basson.....	46	Review of Tax Processing System Planning for the Internal-Revenue-Service - Natl-Res-Council-Assembly-Of-Engrs.....	55
Apocalypse - Nuclear Catastrophe in World Politics - L.R. Beres.....	46	Computers, Communications, and Public Policy - National-Research-Council-National-Academy-Of-Sci.....	55
Natural History Manuscript Resources in the British Isles - G.D.R. Bridson, V.C. Phillips, A.P. Harvey.....	47	Scientists, Engineers, and Technicians in Private Industry, 1978-80 - Natl-Sci-Fdn.....	56
Social Research and Royal Commissions - M. Bulmer.....	47	A Study of the Potential of Science Programming on Pay Television - Natl-Sci-Fdn.....	56
Powerline - the 1st Battle of Americas Energy War - B.M. Casper, P.D. Wellstone.....	47	Formal Analysis, Policy Formulation, and End-Stage Renal Disease - Off-Of-Technol-Assessment.....	56
Women and Technological Change in Developing Countries - R. Dauber, M.L. Cain.....	48	Impacts of Applied Genetics - Micro-Organisms, Plants, and Animals - Off-Of-Technol-Assessment.....	57
The Technological Imagination - Theories and Fictions - T. Delauretis, A. Huyssen, K. Woodward.....	48	North-South Technology Transfer - the Adjustments Ahead - Org-Econ-Cooperat-Dev.....	57
Windows on the World - the Information Process in a Changing Society, 1900-1920 - R.W. Desmond.....	49	Nuclear Safety Research in the OECD Area - the Response to the Three-Mile-Island Accident - Org-Econ-Cooperat-Dev.....	57
The Organization of Science and Technology in France, 1808-1914 - R. Fox, G. Weisz.....	49	Mathematics and Humor - J.A. Paulos.....	57
It Seems I Am a Jew - a Samizdat Essay on Soviet Mathematics - G. Freiman.....	49	Biopolitics and International Values - Investigating Liberal Norms - R. Petman.....	58
Reflections on Science and the Media - J. Goodfield.....	50	Philosophy and Public Policy - Rockefeller-Fdn.....	58
Philosophy and Public Policy - S. Hook.....	50	Philosophers in Medical Centers - W. Ruddick.....	59
Many Voices, One World - Communication and Society, Today and Tomorrow - Int-Commis-Study-Commun-Problems.....	51	The Primordial Bond - Exploring Connections between Man and Nature Through the Humanities and Sciences - S.H. Schneider, I. Morton.....	59
Experiment, Theory, and Practice - Articles and Addresses - P.L. Kapitza.....	51		
Policymaking in a Nuclear Program - the Case of the West German Fast Breeder Reactor - O. Keck.....	51		
Image and Mind - S.M. Kosslyn.....	52		

SPECIAL ISSUE ON PUBLIC COMMUNICATION OF SCIENCE AND TECHNOLOGY		REPORTS AND REVIEWS	
Knowing How to Know. A.W. Bronscomb.....	5	Excerpts from Field Research in China Communes - Views of a Guest, S.B. Butler.....	52
The Public Understanding of Science Effort - a Critique. L.E. Trachtman.....	10	Delhi 1980 - Report on the Global-Seminars-On-Science-And-Technology. D.S. Zinberg.....	56
Opinion Poll Measurement of American Confidence in Science - Commentary. A. Mazur.....	16	An Imagined World - a Story of Scientific Discovery - J. Goodfield. V.B. Sklaranski.....	59
The Fear and Distrust of Science in Historical Perspective - Commentary. I.B. Cohen.....	20		
Mass Media News Coverage of Scientific and Technological Controversy - Edited Excerpts from a Symposium. H.J. Lewis, R. Cooke, W. Colglaster, A. Mazur, A. McGowan.....	25	Science on Film, Radio, and Television in the Peoples-Republic-Of-China. J.W. Kirach.....	31

SCIENTOMETRICS

Elsevier Scientific
Publ. Co., Amsterdam

LL910

VOL. 3 NO. 2 MARCH 1981

- Cognitive Consensus in Recent Mainstream American Sociology - an Empirical Analysis. *M. Oromanor* 73
- Output Measures of Cooperative Research - the Case of the Pulp and Paper Research Institute of Canada. *G. Bardon* 85
- A Note on the Geographical Concentration of Scientific Personnel in the USA. *E.J. Melechi* 107
- American University Students Beliefs About Success in Science - a Case Study. *I.H. Frieze* 115
- Scientometric Estimation of Present-Day Study on Phosphides. *J.M. Knoble, I.I. Mitroff* 115
- Some Methodological Problems in Ranking Scientists by Citation Analysis. *S.V. Chernogorenko, G. Foly, B. Hajtman, J.I. Nagy, I. Ruff* 127 135

SCIENTOMETRICS

Elsevier Scientific
Publ. Co., Amsterdam

LT591

VOL. 3 NO. 3 MAY 1981

- Counts of United-States and Soviet Science and Technology Journals. *J.D. Frame* 159
- The Impact of Basic Research in the Social Sciences - the Case of Education. *D.R. Prokym* 159
- A Rank-Frequency Model for Scientific Productivity. *C.F. Turner* 177
- Citation and Co-Citation Indicators of a Phased Impact of the BCS Theory in the Physics of Superconductivity. *S.B. Kizler* 177
- Citation Analysis Significance of Scientific Journals. *J.J. Hubert* 191
- Information Theory and Scientific Communication. *E. Nadel* 203
- BOOK REVIEW *V.I. Yanovsky* 223 *W.M. Shaw* 235
- The Scientific Journal - A.J. Meadows. *B.C. Griffith* 251

SCIENTOMETRICS

Elsevier Scientific
Publ. Co., Amsterdam

MC469

VOL. 3 NO. 4 JULY 1981

- A Model for the Growth of Mathematical Specialties. *M. Kochen, A. Blasas* 265
- Research Productivity, University Revenue, and Scholarly Impact (Citations) of 169 British, Canadian and United-States Universities (1977). *J.P. Rushton, S. Meitzer* 275
- Dutch Research Groups - Output and Collaboration. *A. Vanheerlingen* 305
- The Size of Science in the Old Nigerian Universities - a Preliminary Analysis. *I. Adamson* 317
- The Aging of a Science and its Exploitation of Innovation - Lessons from X-Ray and Radio Astronomy. *T.F. Gieryn* 325
- BOOK REVIEW
- The Cancer Mission - Social Contexts of Biomedical Research - K.E. Studer, D.E. Chubb. *J.T. Bruer* 335

SCIENTOMETRICS

Elsevier Scientific
Publ. Co., Amsterdam

ME217

VOL. 3 NO. 5 SEPTEMBER 1981

- The Earth and Planetary Sciences in Science during the 20th Century. *D.H. Hall* 349
- The Distribution of Citations from Nation to Nation on a Field by Field Basis - a Computer Calculation of the Parameters. *C.E. Burke, D.D.S. Price* 363
- Some Scientometric Measures of Publishing Performance for 85 Hungarian Research Institutes. *A. Schubert, T. Braun* 379
- A Note on the Utility of International Publication Data. *T. Hastings* 389
- Changes in the Time Distribution of Biochemical Article References from 1962 to 1977. *J. Marton* 397
- BOOK REVIEW
- Essays of an Information Scientist, Vol 3, 1977-1978 - E. Garfield. *H. Inhaber* 401

Social Studies of Science

LK036

Sage Publ., London

Articles in English

VOL. 11 NO. 1 FEBRUARY 1981

- KNOWLEDGE AND CONTROVERSY: STUDIES OF MODERN NATURAL SCIENCE, EDITED BY H.M. COLLINS
- 3 Stages in the Empirical Programme of Relativism - Introduction. *H.M. Collins*
- PAPERS
- 11 Replicating Replication - Aspects of the Social Construction of Learning in Planarian Worms. *G.D.L. Travis*
- 33 Sen of 7 Series - the Social Destruction of a Physical Phenomenon. *H.M. Collins*
- 63 Constraints on Controversy - the Case of the Magnetic Monopole. *A. Pickering*
- 95 Plausibility and the Evaluation of Knowledge - a Case-Study of Experimental Quantum Mechanics. *B. Harvey*
- 131 The Sun-Set - the Presentation of Certainty in Scientific Life. *T.J. Pinch*

Social Studies of Science

LT595

Sage Publ., London

Articles in English

VOL. 11 NO. 2 MAY 1981

- THEME ISSUE: SOVIET SCIENCE
- PAPERS
- 159 Soviet Science.
- 159 Entering the Nuclear Arms Race - the Soviet Decision to Build the Atomic Bomb, 1939-45. *D. Holloway*
- 199 A 2nd Party in Our Midst - the History of the Soviet-Scientific Forecasting-Association. *G.L. Rocca*
- RESPONSES AND REPLIES
- 249 Table-Turning, Parapsychology and Fraud. *C.L. Hardin*
- 255 Table-Turning, Parapsychology and Fraud - Reply. *T. Pinch*
- ESSAY REVIEW
- 259 The Politics of Soviet Science and Technology. *D. Holloway*

Social Studies of Science

MC458

Sage Publ., London

Articles in English

VOL. 11 NO. 3 AUGUST 1981

- 275 Amateurs and Astrophysics - a Neglected Aspect in the Development of a Scientific Specialty. *J. Lankford*
- 305 Organization and Control - Professionals and Amateurs in American Astronomy, 1899-1918. *M. Rothenberg*
- 327 Reconstructing Restoration Science - Styles of Leadership and Social Composition of the Early Royal Society. *L. Mulligan, G. Mulligan*
- 365 Interests and Explanation in the Social Study of Science. *S. Woolgar*
- RESPONSES AND REPLIES
- 395 Another Fragmentation of Sedimentology. *E.L. Mills*
- 398 On Benthic Ecology, Sociological Determinism, and Other Matters. *J. Law*

LV271 **Technology In Society** Pergamon, N.Y.
VOL. 3 NO. 1-2 1981

SPECIAL ISSUE: TAXATION, TECHNOLOGY AND THE US ECONOMY
GUEST EDITORS: R. LANDAU AND N.B. HANNAY

Ralph Landau	1	Taxation, Technology and the US Economy: Introduction and Overview
N. Bruce Hannay	21	Taxation, Research and Development
Lloyd Benisen	35	Taxation, Innovation and Economic Growth
Michael J. Boskin	45	The Proper Medicine for Stagflation
Roger E. Brinner	63	Tax Policy Toward Research and Development
George N. Carlson	87	Tax Policies for Encouraging Innovation: A Survey
Joseph J. Cordes	99	Critical Mass and Innovation
Robert F. Dee	107	Venture Capital, Technology and Taxes
Reid W. Dennis	113	Removing the False Assumptions from Policymaking
J. Peter Grace	123	Toward a US Tax Policy for Innovative Labor
Alvin J. Harman	141	Applying Tax Policy to Generate and Implement Technology
Gary Clyde Huffbauer	151	Taxation and Technical Change
Dale W. Jorgenson	173	A Tax to Internalize Risks
Burton H. Klein	205	Tax Policies and Economic Expansion in the US
L.R. Klein	213	Taxes - Their Impact on Technological Innovation Decision-Making
Ralph Landau	241	Tax Policy and Industrial Innovation in the United States
Boyd J. McKelvain	257	A Tax Policy Strategy for Innovation
Arthur M. Bueche	273	Capital Recovery and Economic Growth in the 1980s
Kenneth McLennan	281	Advancing Technological Innovation Through Tax Policy
Charles E. Walker		
Thomas A. Vanderslice		
Edwin V.W. Zschau		

MH826 **Technology In Society** Pergamon, N.Y.
VOL. 3 NO. 3 1981

Laurence A. Schneider	291	Science, Technology and China's Four Modernizations
Konrad M. Kresley	303	Diffusion of High Technology Medical Care and Cost Control - A Public Policy Dilemma
Richard C. Jordan	323	Research and Development Priorities for Energy Conservation in Buildings and Community Systems
Richard Bardett	337	Of Trains and Torts: A Study of the Interaction Between Technology and Tort Law During the Late 19th and Early 20th Centuries
Steven A. Touchton	349	An Examination of the Regulation of Automobile Emissions

RECENT BOOKS/MONOGRAPHS, SYMPOSIA REPORTS

PAPERS IN SCIENCE AND PUBLIC POLICY I

ANNALS OF THE NEW YORK ACADEMY OF SCIENCES, VOL. 368
EDITED BY B.L. ROSENBERG

SOCIOBIOLOGY - ARE VALUES AND ETHICS DETERMINED BY THE GENE	J.C. King	1
VALUING THE PATIENTS' VIEWS - A PROBLEM FOR PUBLIC POLICY	S.J. Arder	17
THE DEVELOPMENT AND SPREAD OF ANTIBIOTIC-RESISTANT BACTERIA AS A CONSEQUENCE OF FEEDING ANTIBIOTICS TO LIVESTOCK	R.P. Nisbet	23
TOWARD THE DEVELOPMENT OF A SYSTEM TO OPTIMIZE PRESCRIPTION DRUG THERAPY	J.S. Kennedy	61
NUCLEAR WASTE		
FORMULATING NUCLEAR WASTE MANAGEMENT POLICY - THE SCIENTIFIC COMMUNITY AND GOVERNMENT MUST PLAN FOR THE LONG TERM	J.F. Shaw	67
RADIOACTIVE WASTE DISPOSAL - BURIAL UNDER LAND OR SEA	R. Slevin	81
MILITARY SYSTEMS		
CONVERSION FROM MILITARY TO CIVILIAN ECONOMY	S. McInnes	93
NATIONAL SECURITY POLICY AND HUMAN ABILITY IN MILITARY SYSTEMS	L.J. Dumais	103
INFORMED CONSENT IN PSYCHIATRY: ETHICS WITHOUT VALIDITY?		
INFORMED CONSENT IN PSYCHIATRY - ETHICS WITHOUT VALIDITY - INTRODUCTION	F. Jureit	117
MENTAL PATIENTS, TREATMENT, AND THE RIGHT TO REFUSE AS ONE		119
THE PSYCHIATRIST PERSPECTIVE - 3 IMAGES OF THE PATIENT	D. Lebow	123
A BEHAVIORAL ANALYSIS OF THE PSYCHIATRIC PATIENT RIGHT TO REFUSE TREATMENT	K. Solinger	129
ROGERS VS. OKIN - THE PUBLIC REACTION	S. Guttmacher, H. Lehmann, S. Selzer	133
RIGHT TO REFUSE WHAT - IMAGES, AMBIGUITIES AND POSSIBILITIES IN ROGERS VS. OKIN	K. Hopper	137
NATIONAL HEALTH CARE POLICY: WHAT ARE THE CHOICES?		
NATIONAL HEALTH CARE POLICY: WHERE ARE THE CHOICES COMING FROM	R.L. Jahn	141
THE COMMUNITY HEALTH CENTER EXPERIENCE AND THE NATIONAL HEALTH SERVICE MOVEMENT IN THE UNITED STATES	H.E. Brown	147
ECONOMIC CONSTRAINTS ON HEALTH CARE	F. Goldman	153
NEW DRUG DEVELOPMENT IN THE CHANGING HEALTH CARE ENVIRONMENT		
NEW DRUG DEVELOPMENT IN THE CHANGING HEALTH CARE ENVIRONMENT - AN INTRODUCTION	E.L. Dobrin	167
THE IMPACT OF THE CHANGING HEALTH CARE ENVIRONMENT ON DRUG INNOVATION AND MARKETING	A.D. Plummer	171
THE EFFECT OF THE DRUG REGULATION REFORM ACT OF 1976 ON CLINICAL RESEARCH, DRUG AVAILABILITY, AND THE PUBLIC HEALTH	R.J. Temple	175
PATIENTS' NEEDS IN DRUG DEVELOPMENT AND REGULATION	W.M. Wardell	187
NEW DRUG DEVELOPMENT IN THE CHANGING HEALTH CARE ENVIRONMENT - A PANEL DISCUSSION	J.E. Ullmann	203
PEER REVIEW		
NONSCIENTIST PARTICIPATION IN THE PEER REVIEW PROCESS - IS IT DESIRABLE QUESTIONABLE IS IT IMPLEMENTABLE QUESTIONABLE WHO ARE THE NONSCIENTISTS WHO SHOULD BECOME INVOLVED QUESTIONABLE A PANEL DISCUSSION	T. Brown, E.A. Mazur, S.L. Schwartz, P. Soler, M. Zucker	213

FACES OF SCIENCE

BY V.V. NALIMOV
ISI Press (Philadelphia), 1981, 297 Pages.

Faces of Sciences, Foreword, R.G. Colodny	vii
Structure of Science: Logic of Accepting Hypotheses	1
Manifestation of Intellectual Rebellion: A Bayesian Approach to the Problem	35
Mathematics as a Language of Science: Using Mathematics to Describe the External World	43
Why Do We Use Probabilistic Concepts to Describe the World?	85
The Distribution Function of Probabilities as a Way to Determine Fuzzy Sets: Sketches for a Metatheory (A Dialogue with Zadeh)	125
On Some Parallels Between the Bohr Complementarity Principle and the Metaphoric Structure of Ordinary Language	139
Science and the Biosphere: An Attempt at a Comparative Study of the Two Systems	145
The Problem of Complexity in Describing the World Scientifically: A Formal Analysis of Difficulties in Constructing Theoretical Biology	167
The Penetration of the Humanities into Other Fields of Knowledge: Reflection on the Ways in Which Science Develops	199
Is a Scientific Approach to the Eschatological Problem Possible? A Logical Analysis of the Problem of Global Ecology	215
Geographic Distribution of Scientific Information	237
On the Stock Exchange of Science: Changing Demand for Intellectuals	261
Instead of a Conclusion—Faces of Science	271

POLITICS, SCIENCE, AND CANCER: THE LAETRILE PHENOMENON

AAAS SELECTED SYMPOSIA SERIES, VOL. 46
Symposium on the Laetrile Phenomenon Held at the 1979 American Assoc. for the Advancement of Science Annual Meeting, Houston, TX, January 3-8, 1979. Sponsor: Amer. Assoc. Advancement Sci.
EDITED BY G.E. MARKLE, J.C. PETERSEN
Westview Press (Boulder), 1980, 190 Pages.

THE LAETRILE PHENOMENON - AN OVERVIEW	J.C. Petersen, G.E. Markle	1
LAETRILE IN HISTORICAL PERSPECTIVE	J.H. Young	11
LAETRILE AT SLOAN-KETTERING - A CASE STUDY	R.D. Smith	61
THE POLITICAL IMPLICATIONS OF LAETRILE - WHO GETS WHAT, WHEN AND HOW	R.F. Rice	73
THE LAETRILE PHENOMENON - LEGAL PERSPECTIVE	G.P. Monacco	99
WHEN LIBERTY MEETS AUTHORITY - ETHICAL ASPECTS OF THE LAETRILE CONTROVERSY	A.L. Caplan	183
SOCIAL CONTEXT OF THE LAETRILE PHENOMENON - G.E. Markle, J.C. Petersen		161
DISCUSSION - BIAS IN ANALYSIS OF THE LAETRILE CONTROVERSY	A. Moravcsik	175
DISCUSSION - SCIENCE AND TECHNOLOGY IN THE PITS	D. Nelkin	181

Gentlemen of Science

Early Years of the British Association for the Advancement of Science

By JACK MORRELL and ARNOLD THACKRAY

1981 celebrates the 150th anniversary of the founding of the British Association for the Advancement of Science, a group that in its early years assumed a central role in early Victorian culture, with members from the royalty, nobility, physicians, military, and industry. The more scientifically zealous vice-presidents were Charles Darwin, John Dalton, Michael Faraday, William Whewell and David Brewster.

These "Gentlemen of Science" who formed the core of the Association are the subject of this work. To study the Association is to enquire into early Victorian intellectual and social life and in so doing to display not only how the content but the very idea of science was established as an element in history.

The authors discuss how friendship, intellectual curiosity, career, and social situation enabled the Association to powerfully affect Victorian culture and become the most enduring of Victorian legacies.

Jack Morrell is a Lecturer in the History of Science at the University of Bradford. Arnold Thackray is Professor of History and Sociology of Science at the University of Pennsylvania.

1981 604 pp.; 24 halftones, 11 figs.

OXFORD UNIVERSITY PRESS

The KNOWLEDGE CYCLE

edited by ROBERT F. RICH, *Princeton University*

Historically, scholars have focused on knowledge creation ... or knowledge diffusion ... or knowledge utilization. Hence these three subfields of knowledge have, in many ways, developed independently of each other. THE KNOWLEDGE CYCLE examines these fields and their interrelationships, presenting a new look at the whole system of producing and using knowledge. Six state-of-the-art essays offer an understanding of how these subfields have developed, provide an overview of the roots and traditions of theoretical and empirical studies of knowledge development, and affirm (and encourage) the linkages between knowledge creation, diffusion, and utilization.

These essays are revised from articles published in the journal *Knowledge* in 1979-1980. Lengthy bibliographies on each subfield and on the linkages further increase the value of this book to academics, students, and all professionals who participate in the knowledge cycle.

TABLE OF CONTENTS: Editor's Introduction ROBERT F. RICH // Part I. Knowledge Creation // 1. Knowledge in Society ROBERT F. RICH / 2. Knowledge Creation: An Overview STEPHEN D. NELSON / Knowledge Creation-Selected Bibliography // Part II. Knowledge Diffusion/Dissemination // 3. Three Coins on Diffusion Research IRWIN FELLER / 4. If Dissemination is the Solution, What is the Problem? JACK KNOTT and AARON WILDAVSKY / Knowledge Diffusion/Dissemination-Selected Bibliography // Part III. Knowledge Utilization // 5. Knowledge Utilization: Current Issues JUDITH K. LARSEN / Knowledge Utilization-Selected Bibliography // Part IV. Linkages // 6. Linkages Between Knowledge Creation, Diffusion, and Utilization CAROLE GANZ / Linkages-Selected Bibliography / Index

SCIENCE AND THE MEDIA, by June Goodfield, published by the American Association for the Advancement of Science, April 1981. In this book, a science writer inquires into the failure of scientists and journalists to report scientific research accurately to the public. She examines the importance of this issue and posits the need for the two professions to recognize some specific obligations to the public: To tell the truth, to interpret accurately the consequences, and to do all this in a way that the public can understand.

The author examines four recent, highly publicized science stories--Rorvik's "clone," thalidomide, lab standards for recombinant DNA research, and the case of the painted lab mice. She finds that members of both professions have failed the public. Scientists are sometimes uncommunicative or may purposely exaggerate research findings. Reporters are selective and, of course, tend to write about alarming "news" or amazing "discoveries" as opposed to reporting in depth. And publishers may blur the distinction between fact and fiction for profit's sake.

The author shows that these failures spring in part from the differing constraints under which the two professions operate: Scientists are often reluctant to talk about their research openly because they fear the complexities will be ignored or oversimplified. Journalists tend to seek out that which is easily told and easily understood. But she also shows that both professions must come to some agreement about their mutual obligations to the public which supports them both. This book is a strong plea for such an understanding.

INSIDE THIS SPECIAL ISSUE ON NEW DIRECTIONS

IN THE SOCIOLOGY OF SCIENCE:

Introduction by guest editor Sal Restivo

Karin Knorr on The Ethnography of Laboratory Life: Empirical Results and Theoretical Challenges

Steve Woolgar on Science and Ethnomethodology

Susan E. Cozzens on Taking the Measure of Science: A Review of Citation Theories

Daryl E. Chubin on Constructing and Reconstructing Scientific Reality

Randall Collins on The Comparative Sociology of Philosophy: Oriental Materials

Sal Restivo on Sohn-Rethel's Intellectual and Manual Labour

INTRODUCTION: New Directions in the Sociology of Science.

Sal Restivo
Guest editor

For more information about this INTERNATIONAL SOCIETY FOR THE SOCIOLOGY OF KNOWLEDGE issue, write:

Volker Meja
Editor, ISSK Newsletter
Department of Sociology
Memorial University of Newfoundland
St. John's, Newfoundland
A1C 5S7

Journals for Sale. Professor Alex Michalos writes that the following journals are available: BRITISH JOURNAL FOR PHILOSOPHY OF SCIENCE (1963-1975); AMERICAN POLITICAL SCIENCE REVIEW (1970-1974); CRIME AND DELINQUENCY (1962); MANAGEMENT SCIENCE (1972-1973); JOURNAL OF PHILOSOPHY LOGIC (1972-1974); AMERICAN PHILOSOPHICAL QUARTERLY (1972-1975); PHILOSOPHY AND PUBLIC AFFAIRS (1973-1975); PHILOSOPHICAL REVIEW (1962-1973); MIND (1965, 1967-1970, 1972-1974); SYNTHESIS (1970); PUBLIC CHOICE (1968); POLICY SCIENCES (1970-1980); PHILOSOPHY OF SCIENCE (1962-1980); THEORY AND DECISION (1970-1980).

For further information, write him at Social Indicators Research Programme, University of Guelph, Guelph, Ontario, Canada.

Recent Appointments

THE CHARLES BABBAGE INSTITUTE ANNOUNCES THAT A PERMANENT DIRECTOR HAS BEEN SELECTED. Dr. Arthur L. Norberg has accepted the position as Director of the Charles Babbage Institute. Norberg was the unanimous first choice of a search committee composed of members of the Charles Babbage Foundation Board of Trustees, and of faculty members of the University of Minnesota.

Norberg brings with him an outstanding background in the administration of projects in the history of science and technology. Prior to joining CBI, he was Program Manager for the National Science Foundation's program in Ethics and Values in Science and Technology. During the preceding year he was an analyst at NSF studying science and technology policy.

From 1973 to 1979, Norberg was Research Historian in the Bancroft Library at the University of California, Berkeley, heading their history of science and technology project. As part of his duties he conducted original research, including oral histories, into the development of the electronics industry, with an emphasis on the high-technology community in the San Francisco Bay area. The project considered both technical and business developments. While at the Bancroft Library, he pursued a vigorous acquisitions program for rare books and archival materials, and saw that the collection was brought to the attention of the research community. Through his efforts, the Berkeley program is recognized as a leader in the country. Norberg has also taught courses in the history of science, physics and astronomy, and worked as a research scientist in industry.

Norberg received his Ph.D. in the history of science from the University of Wisconsin in 1974. His M.S. and B.S. degrees are in physics and mathematics. He has been active in many professional societies including the History of Science Society and the Society for the History of Technology.

The University Program in Science, Technology, and Society at Michigan Technological University has recently appointed Gary Downey as Assistant Professor and Larry Lankton as Associate Professor. Downey holds an undergraduate degree in mechanical engineering from Lehigh University and wrote his dissertation in the Department of Anthropology at the University of Chicago. He recently completed a post-doctoral fellowship at the National Academy of Sciences, where he focused on the social and economic aspects of radioactive waste management. Lankton holds an undergraduate degree from De Pauw University and the Ph.D. from the American Studies Department at the University of Pennsylvania. He has served as associate curator of power and shop machinery at the Henry Ford Museum and as Acting Director of the Historic American Engineering Record and was this past year a Post-doctoral Fellow at the Smithsonian Institution. The University Program in STS is Michigan Tech's principal agency for teaching and research in the areas of science and technology and their social, political, and economic relationships. Projects include symposia such as the recent, "Power, Transport, and Public Policy in Modern America," which is to be published by SAGE Publications, and a new journal, Energy and Society, to be edited by George H. Daniels and Mark H. Rose and published on a quarterly basis by SAGE. In the near future, a graduate program in science and technology policy studies is contemplated, and several additional faculty appointments are anticipated. Daniels and Rose are co-directors of the University Program in STS, and John H. Winslow is the head. For additional information, contact: John H. Winslow, University Program in STS, Michigan Technological University, Houghton, MI 49931, 906-487-2113, 2114.

HIGH PRIORITY RESEARCH AREAS DESIGNATED BY THE JOINT COMMITTEE ON ARCHIVES
OF SCIENCE AND TECHNOLOGY

The expertise of sociologists of science -- working alone or in conjunction with historians of science and technology, archivists, records managers, scientists and engineers -- is needed to examine the varied and often complex problems facing the documentation of postwar science and technology. With the support of the National Historical Publications and Records Commission, the Joint Committee on Archives of Science and Technology is conducting a broad study of the problems associated with the appraisal and preservation of the essential record of postwar science and technology. Additional research, beyond the possibility of a committee of volunteers, is needed in three general areas: 1) the generation of scientific and technical records; 2) the use of scientific and technical records; and 3) the appraisal of data generated in the course of scientific and technical research.

The following list of research areas proposed by the Joint Committee has been reviewed by the National Science Foundation (History and Philosophy of Science Program, the Ethical Values In Science and Technology Program (EVIST) and the Division of Information Science and Technology), the National Endowment for the Humanities (Division for Research Programs), and the National Archives and Records Service (National Historical Publications and Records Commission). Available funds are more limited than in recent years. Nevertheless, these agencies agree that there is an urgent need for the development and support of research in these areas.

1) The Generation of Scientific and Technical Records

Research is needed that will increase our understanding of the extent and nature of scientific and technical documentation. In particular, it is important to learn how the differences among various disciplines and institutional settings are reflected in the creation of records, and how knowledge of these differences can be applied to problems of appraisal and records management. More specifically, attention should be given to:

a) Documentary characteristics of specific disciplines -- are there certain kinds of records that tend to emerge in greater proportions in some disciplines than in others, and, if so, what generalizations can be made about various disciplines in this regard?

b) Documentary characteristics of institutional settings -- can a meaningful correlation be drawn between the types of records that are created by scientific or technical activity and the institution housing that activity?

c) Documentary characteristics of research organization -- does team research produce different kinds of records than individual work? Do different kinds of group organization or authority generate different kinds of records, and how significant are these differences for documenting the activity?

d) Documentary characteristics of research objectives -- how does records generation vary in relation to the nature of the goals of scientific and technical activity? Can generalizations be made about records produced in the course of pure research, applied research, or product development (to mention only the crudest categories of objectives)?

These issues will require the development of research strategies that make

effective use of measures, descriptive terms, and classifications familiar to records managers and archivists. Carefully devised sampling procedures will be important elements in most research projects, and the development of such procedures will be an important product of this research.

2) The Use of Scientific and Technical Records

To improve the techniques for identification, appraisal, and servicing of scientific and technical records, research is needed on the use of these records. Such research should distinguish use and users by type of records and by the categories applied in the generation studies described above. Users to be considered include individuals generating the records, other members of the scientific and technological communities, journalists, sociologists, and historians. Attention should be directed to such questions as:

- a) How do users learn of records?
- b) How do users articulate their records needs?
- c) What use is actually made of records?
- d) How is this use related to different types of users, types of repositories, and final research or administrative products?
- e) How does the use of scientific and technical records change over their lifetime?
- f) How do users of scientific and technical records differ from those using other kinds of records?

This research can be fruitfully pursued both by those with the responsibility for servicing records (archivists and records managers) and by the community of users. The development and adaptation of such techniques as user surveys and citation studies may be a useful product of research on these questions.

3) Problems Posed by Special Kinds of Scientific and Technical Records

Scientific and technical records often include certain kinds of material that are not usually encountered in other kinds of records and hence pose unfamiliar problems in archival handling. The most important of these special categories is that of collections of data, which can present particular problems of appraisal and description. Questions that need to be addressed include:

- a) How do data records differ (in quantity, type and importance) according to discipline, institutional setting, etc.?
- b) What functions do such records serve, at their creation and subsequently?
- c) What are the most useful methods for describing data records?
- d) What special considerations are involved in the storage and manipulation of large quantities of data (particularly in machine-readable form)?
- e) What effective sampling procedures exist or can be constructed for data records?

* * * * *

Sociologists of science who are interested in developing a research project covering one or more aspects of this list are invited to request further information from the undersigned members of the Joint Committee on Archives of Science and Technology.

Robert Friedel
IEEE Center for History of
Electrical Engineering
345 E. 47th Street, New York, NY 10017

Joan N. Warnow
AIP Center for History of Physics
335 E. 45th Street, New York, NY 10017

Science of Science

- An International Journal of Studies on Scientific Reasoning and Scientific Enterprise

Editors:

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Science of Science is a continuation of the annual, *Problems of the Science of Science* which, in turn, complemented the Polish quarterly *Zagadnienia Naukoznawstwa*.

Science of Science publishes full-length papers and brief communications on all areas of the science of science. In a broad sense, this embraces both the natural and social sciences in two ways. Firstly, as a systematic fund of human knowledge in terms of statements, propositions, hypotheses and, secondly, as a research and development activity.

Scientists from the Socialist countries contribute to the pages of *Science of Science* whose topics include: theory and methodology of research and design; science, technology and society; sociology of sciences; creativity in science; organisation of scientific activity; science policy studies; effectiveness of scientific enterprise; communication in science; international cooperation in science. Scientists from non-Socialist countries who attend conferences in the Socialist countries occasionally contribute to the journal. With such a wide scope, *Science of Science* will appeal to research workers in all fields and, in particular, science and technology policy-makers.

A Selection of Representative Articles

Jan Kaczmarek: An Outline of the Science Policy in the Polish People's Republic. S. R. Mikulinsky: Science Policy in the Socialist Countries. Jean-Jacques Salomon: The Swing of the Scientific Pendulum - A Crisis of Progress. G. D. Szakasits: Some Problems of the Process of Science Becoming a Direct Productive Force in Hungary. Georg Domin: Character and Tendencies of Government Research Policy in Present-day Capitalism and Its Special Manifestation in the F.R.G. Ignacy Malecki: The Role of Scientific-Technical Revolution in Development. Maria Nowakowska: Quasi-Competition of Topics within a Discipline.

FELLOWSHIPS AVAILABLE

STS RESEARCH FELLOWSHIPS

The MIT Program in Science, Technology, and Society, with the support of the Exxon Education Foundation, invites applications for several one-year research fellowships on the relationships of science, technology, and society.

Selection criteria include:

- a) a record of outstanding performance in a particular field of science, engineering, social science, or the humanities;
- b) evidence of a commitment to research involving the interaction of science, medicine, or engineering with society;
- c) a proposal of study and research for the fellowship year related to the Program's areas of research and teaching, which include:

Social and Historical Studies of Science and Technology

Technological Change and the Political Economy of Industrial Societies

Cultural Dimensions (e.g., ideological, aesthetic, ethical) of Science and Technology

Policy Studies involving Science and Technology

Application should be made in a letter of about five double-spaced typed pages and a curriculum vitae. Additional material will be requested if necessary. PhD degree or equivalent desirable. PhD's at all levels of professional career and foreign nationals are eligible. Partial or full stipend available, normally not exceeding \$25,000. Stipend based on current salary. Senior candidates are encouraged to supplement stipends with other funds. Appointments will commence in September 1982. Address application to:

Shawn Finnegan, Secretary
Exxon Fellowship Committee
STS Program, Room 20D-219
Massachusetts Institute of Technology
Cambridge, MA 02139

Deadline for receipt of applications: January 15, 1982.

MIT is an Equal Opportunity/Affirmative Action Employer.

The Charles Babbage Institute for the History of Information Processing is accepting applications for a Graduate Fellowship to be awarded for the 1982-1983 academic year to a graduate student whose dissertation will be on some aspect of the history of computers and information processing. The stipend will be \$5,000.00 plus an amount up to \$2,500.00 for tuition and fees. Priority will be given to students who have completed all course work and have completed all requirements for the doctoral degree except the research and writing of the dissertation. However, even incoming graduate students will be considered. The Fellowship may be extended for a period of one to three years if the Selection Committee concludes such support is appropriate.

Appropriate thesis topics might be concerned with the aspects of the development of the information processing industry and its infrastructure; with specific technological developments in the information sciences, including both hardware and software, especially if they also deal with the economic and organizational milieu of the developments; or with the economic, legal or social history of computing. There are no restrictions on the location of the academic institution which will be the venue for the Fellowship.

Applications should be sent to Professor Arthur L. Norberg, Director, The Charles Babbage Institute, University of Minnesota, 104 Walter Library, 117 Pleasant Street S.E., Minneapolis, Minnesota 55455, U.S.A. by February 15, 1982. Applications should include biographical data and a research plan or design. Applicant should arrange for three letters of reference, certified transcripts of college credits and GRE scores (or their equivalents abroad) to be sent directly to Professor Norberg.

Positions Available

VIRGINIA POLYTECHNIC INSTITUTE AND STATE UNIVERSITY, CENTER FOR THE STUDY OF SCIENCE IN SOCIETY.

Technology Studies. Visiting Assistant or Associate Professor in Center for the Study of Science in Society, to conduct research in technology studies and assist in program development. The Center, now in its third year, supports research on science and technology in their social and cultural contexts and will offer a full program of graduate studies. To complement its current strength in philosophy, sociology and history of science, the Center will appoint one or possibly two scholars having backgrounds in political science, policy studies, economics, administrative and management studies, or related fields. Candidates must present evidence of serious theoretical study of technology and its institutional contexts and must have their final degree in hand by September, 1982. While these are continuing positions, initial appointments will be for one year with possibility of renewal. Salary competitive. Screening of applications, which must include brief description of current research and complete dossier, will begin 15 December 1981 and applications will be accepted until the available positions have been filled. Send applications to Arthur Donovan, Director, Center for the Study of Science in Society, Virginia Polytechnic Institute and State University, Blacksburg, VA 24061.

DEADLINES FOR NEWSLETTER MATERIALS

Vol. 7:1--Spring 1 March 1982

Vol. 7:2--Summer 1 June 1982

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

Vol. 7:4--Winter 1 Dec. 1982



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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