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I. The announcement on page 8, listing the three plenary sessions at the FIFTH ANNUAL MEETING, should read as follows:

Science, Technology and Human Values
  (Marcel LaFollette, Chair, with the support of the USA National Endowment for the Humanities)

Patterns in the Social Relations of Mathematics
  (Sal Restivo, Chair)

Public Presentations of Science
  (Richard Jarrell, Chair)

II. The headings on page 38 include "CALL FOR PAPERS" and "POSITION VACANCY." The appropriate heading for the announcement about Professor Gerald Hobson should read "AWARD" as it does on the top page under "IN THIS ISSUE." --- "Announcements."
MEMBERSHIP RENEWAL FOR CALENDAR 1980

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FIFTH ANNUAL MEETING

OCTOBER 17-19, 1980 JOINT MEETING OF SOCIETY FOR THE SOCIAL STUDIES OF SCIENCE; HISTORY & SOCIOLoGY OF SCIENCE, SOCIETY FOR THE HISTORY OF TECHNOLOGY AND PHILOSOPHY OF SCIENCE SOCIETY

Call for Papers and Proposals for Sessions

The local arrangements committee in Toronto, in cooperation with the program committees of the participating societies, have decided on a few super-plenary sessions which it is hoped will represent the interests of all societies, though possibly subject to minor modifications three of these are:

Science Technology and Human Values, chr. Marcel La Follette, with the support of the (US) National Endowment for the Humanities Patterns in the Social Relations of Mathematics, chr. Sal Restivo Public Presentations of Sciences chr. Richard Jarrell

The 4-S program committee is arranging for four other sessions, specifically intended for its membership but also hoping to appeal to the interests of members of the other societies. Some suggestions still in hand as a result of the Washington meeting will be reconsidered for these sessions. In addition we solicit new proposals, both for individual papers and for sessions from the 4-S membership.

Abstracts of papers and proposals for sessions, including titles of individual papers, their authors, and a rationale for their general importance, should be sent either to Patricia Woolf, Department of Sociology, Princeton University, Princeton, New Jersey 08544, or Dan Sullivan, Dean of Academic Development and Planning, Carleton College, Northfield, Minnesota 55057.
Scientific Journals: Selection Criteria for Information Services

Dr. S. Maricic, Editor
Croatica Chimica Acta
The National and University Library
41000 Zagreb, P. O. B. 550, Yugoslavia

In this era of scientific information flooding, many a scientist has made use of the publications issued by the Institute for Scientific Information (ISI) from Philadelphia, USA. "Current Contents," for instance, has become a regular means of browsing through scientific periodicals and Science Citation Index editions are widely used for personal literature retrievals. However, my intention is not that of contributing towards ISI publicity, but rather that of examining briefly a social aspect of the ISI activity. Namely, in addition to the above mentioned direct role in helping individual scientists, ISI had done an immense service to the quantification of science production studies for various disciplines, or institutes, or countries. Moreover, it appears to have opened up quite novel avenues of research into the intricate fabric of science as a whole.\(^1\)

It is this side that I deem to bring to the attention of your readers. Hopefully, a discussion of this question may eventually lead to some proper action.

The social implication of ISI publications which I have in mind is their role in promoting top quality science in small (and less developed) countries. The scientific journals in these countries should in the first place have the same task, and it could be fulfilled only through an international refereeing system. This, in turn, requires perseverance and patience on the editorial board's side while two forces counteract such attempts:

(i) The smaller the scientific community within a country the greater the influence of factors other than purely scientific merit of personal achievements. Exposed to the watchful local eye of their colleagues some scientists develop an unfortunate evasive attitude towards international standards of quality in science. This is often masked (wrongly) by national pride as if there were something like "a national science," and (rightly?)\(^2\) by pointing to prejudiced closed refereeing circles. The social behaviour of scientists leads in consequence to both a quality and subject polarization.

At one extreme there are those, I guess a smaller part of the local scientific community preponderantly in fundamental natural sciences, who take the cynical stand of utmost efficiency, i.e. of publishing only abroad. At the other end of the spectrum is the major section of varied quality, predominately in social sciences and humanities, who publish at home in journals with rarely a proper refereeing procedure.

(ii) Well, what does all this have to do with Current Contents (CC), Science Citation Indexes (SCI) and Journal Citation Reports (JCR) published by ISI? It does have a lot because these tertiary and quaternary publications are becoming more and more a kind of magic looking-glass for the face of science. Out of some 55000\(^3\) or 30000\(^4\) "live" scientific and technical journals in the world, CC selects about 6000, a figure shrunk further by SCI and JCR to no more than about 3000 journal titles. The point I am making is that CC in the first place, but SCI too (and recently JCR), are shaping the reading and publishing habits of scientists to a considerable degree through this unavoidable evaluative selection procedure, although there is no clear statement of the policy behind it.
True enough, most of the pertinent papers of the world's scientific output are covered by the ISI publications. To put it in the information science jargon, Bradford's law was obviously observed by ISI. In other words, ISI editors have chosen the small number of those journals which publish most of the total scientific production, the so-called "inner core journals." The trouble as I see it, however, is that ISI has incorporated also journals outside the "Bradford core." I submit that there are a number of less respectable journals left out by ISI although these could score better than a series of journals which have already nested within the 3000-odd respectable ones.

We have recently conducted a study of nine Yugoslav and one Czechoslovakian journal to see if a consistent ISI selection policy could be delineated for the "outer-shell" journals. The only two Yugoslav journals from natural sciences and the one from social sciences which were included in the 1976 and 1977 issues of JCR were used as "standards" together with one Czechoslovakian mathematical journal as there was no corresponding Yugoslav journal in JCR. Two chemical, one biomedical, one mathematical and two social-sciences Yugoslav journals which were not included in the ISI publications were compared with the corresponding "standards" as to their "JCR-value."

Altogether 1278 articles published in the 1972, 1973 and 1974 year-volumes of these ten journals were scanned for citation frequency through SCI's of 1972-1977. Most of these journals published in foreign languages with English predominating and in all cases had abstracts in foreign languages. This aspect, therefore, is of no influence in the analysis from which two conclusions relevant to ISI publications have emerged.

Firstly, those journals which are not covered by ISI attain their maximum citation frequency two to three years later than those included in CC, SCI and JCR. The sample examined may not have been large enough to draw a general conclusion, but in all likelihood a journal which has found its way into the ISI family has a greater chance of bringing its content to the reader's attention more quickly.

Secondly, judged by the impact factor, there are three Yugoslav journals out of the six examined which, if put within the impact factor ranking scale of JCR would leave behind quite a number of journals from other countries. At the negative extreme of this argument, it is highly questionable why even the only Yugoslav journal from social sciences was covered by ISI.

This analysis calls, at least, for an extension of this approach to journals from several countries to gain a more complete insight before drawing final conclusions. However, it appears to me that there is already enough ground to suggest a revision of the ISI journal coverage.

It may well be that there are more of the "outer-shell" journals still deserving the ISI data base input. A greater number of these journals may be prohibitive for tackling them within one data base like that of ISI. In such a case I suggest that ISI would serve the worldwide science information task much better with regard

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*The impact factor is simply the ratio of the number of citations received by papers from a journal within a certain period of time, divided by the number of the published papers. It thus compensates for the sheer size of a given journal.
to the smaller scientific communities if the journal lists for various disciplines had a cut-off closer to the inner-core journals than presently.

At any rate it would be desirable to have an objectively determined list of journals of comparable citation status, for different disciplines and from various countries. If such a list turns out to be too large for ISI, perhaps one should consider a joint venture into building up another citation data base for the "outer-shell" journals. A selection of these journals could possibly be done only within an international scientific association (International Council of Scientific Unions, ICSU?), which would thus extend the positive influence of citation data bases upon "small" scientific communities in their striving for better quality research, especially if such a journal selection would be kept on permanent revision. At the same time this could prevent the trouble of facing the ever growing information problem of "garbage in--garbage out."

When this comment was drafted a paper by Tefko Saracevic was brought to my attention. Let me end with a quotation from this paper:6 "... in an evolutionary way the new information systems aimed at controlling the literature are changing the shape of literature itself." The question is--how, and to whose benefit?

References

1. Cawkell, A. E.: Science perceived through the Science Citation Index. Endeavour 1 (n.s.) (1977) 57-62.

Note: Eugene Garfield has replied to Dr. Maricic in an essay entitled "How do we Select Journals for Current Contents?" Current Contents (45):5-7, 5 November 1979.
Science and Religion: Is There Room for the Complementarity Principle?

V.V. Nalimov
Moscow State University

1. The complementarity principle changes our scientific vision of the world: by and by it becomes more and more polymorphous. We are ready to perceive one and the same phenomenon at different angles describing it by non-rival models. Even mathematical statistics, traditionally directed at selecting the best, and therefore only true model, is now ready to acknowledge the right for existence of a multitude of models. However, so far the entire manifold of possible models remained within one paradigm and was always expressed by the same language, that of contemporary science. Here it seems relevant to pose a question: can the complementarity principle be broadened to the extent of preparing our culture to perceive the world by a manifold of models generated by essentially different paradigms? And if this actually is so, will this lead to the fuzziness and intersection of mutually opposed paradigms?

2. The divergence between science and religion seems to have started as long ago as the epoch of Galileo. Both systems aimed at the utmost mutual separation which was, perhaps, the consequence of the inherent European cultural urge for a dichotomous vision of the world. This had found its symbolic expression in the myth of original sin, which lay at the source of our epoch. There was a time when science and religion seemed to be mutually orthogonal.

3. However from time to time there were attempts to glance at the world in its inseparable integrity. Of interest in this respect are two books which are fairly close in content and foundation. The latter contains the notion of "nousphere" central for both books, which brings together scientific and religious concepts. One of the books is written by Teilhard de Chardin (1965), a paleoanthropologist and a Jesuit monk, the other by Vernadsky (1977), an outstanding geochemist who occupied a fairly high position in the Soviet scientific hierarchy. It is noteworthy that both books could be published only posthumously. However, such protuberance-like flashes, though they aroused interest, did not affect the contemporary culture in a serious way.

4. Recently papers have appeared which trace the parallels between the ideas of modern science and Oriental religious concepts. We would like to mention the book by Capra (1975), though it was criticized by Restivo (1978) who emphasized the traps lying in wait for studies of this kind. In our paper (Nalimov, & Barinova, 1974), which unfortunately was published only in a shortened version, we have attempted to trace the ideas of cybernetics back to Ancient Indian philosophy. We have proceeded from the idea that a priori we ascribe to the notion of cybernetics meanings quite different from those ascribed to it in Ancient India. But, ascribing to words the broad meaning of our culture, we constantly reduce it as compared with the meaning of the ancient texts.¹ This is what makes hermeneutics simultaneously so difficult and attractive. However, reading philosophical works of the XIXth century, we come across the same difficulty: the prior meaning of philosophical terms has changed considerably since that time. Moreover, in science we also face the difficulty of understanding texts. Lysenko was still a Darwinist, though an absurd one, and it was senseless to argue with him since he proceeded from different prior meanings of words. Be it as it may, the possibility of discovering

¹We considered in detail the mechanism of perceiving verbal semantics in our book (Nalimov, 1979). We proceeded from the assumption that semantic fuzziness can be probabilistic.
contemporary ideas in ancient texts is fascinating. It may as well be an illusion, but comprehension of any contemporary text is no less an illusion.

But no matter how fascinating the parallels between modern science and ancient religions are, they are not enough to bring together the two visions of the world.

5. The true contiguity of the two forms of world perception will become possible only after each of them feels the acute need for a new approach to the evaluation of reality. This is to say that both paradigms must be extended and softened so as to make possible the emergence of a new, unified paradigm. Only by this way will our culture be able to absorb both forms as complementary. Comple mentarity is possible only under the cover of one paradigm. But so far this question has not been discussed in the literature. Why?

6. Today both sides seem to feel the insufficiency of their paradigms.

7. Western science has come to feel that the paradigm fostered by it has closed the possibility of studying man. And the problem of man has unexpectedly come to the fore in our culture.

Quite recently, when cybernetics was just budding, the majority of scientists believed the problem of control to be linked, on the one hand, with the progress of computers, and, on the other hand, with the development of applied mathematics. Now it is clear that the solution of the problem is hampered by our ignorance of man.

It is becoming evident that salvation from the ecological crisis, can only be achieved by creating a new culture (Nalimov, 1979a), but, again, this problem is connected with the knowledge of man, and we still cannot estimate his hidden desires and faculties.

8. We shall proceed from the assumption that the human spectrum of consciousness is broader than we can imagine. Each culture is a filter which lets out to the surface of life only a narrow part of the spectrum. The rest of the filter affects people of this culture in a hidden and incomplete manner.

Assume that there exists personal time with the rate \( v_c = ds/dt \), where \( s \) is a scale of actions. Change in the metric of the scale, its extension or narrowing, naturally changes the rate of the personal, psychological time. Each culture has its own metric for the scale \( s \) and, therefore, its own psychological time opening up a part of the spectrum of our consciousness. Modern culture on the one hand compresses the scale \( s \) and, consequently, narrows down the filter regulating to what extent the consciousness is open. This might account for the peculiar narrow-mindedness and degeneration of our culture. On the other hand, some extreme manifestations of our culture related to the progress of technology tend to broaden the scale. In what way does staying in an atomic submarine differ from severe religious Hermetism? The only difference seems to lie in the Weltanschauung preparedness for this state.

This problem is thoroughly considered in my paper "Time: A Dialogue with the Metaobserver" to be published in the Proceedings of the International Society for the Study of Time edited by J.T. Fraser.
This example brings forth the psychological aspects of the ecological problem: consciousness is changed under the influence of changes in the medium. We feel these aspects will soon draw attention of researchers.

Culture may change by the changes of psychological time through the changes of the scale of actions. Esoteric religious systems used to master such techniques.

9. If modern science is willing to cope with the problem of man, it will have to revise at least the following three basic paradigmatic requirements.

A. The requirement of reproducibility. In studies of man it is not so much the recurrence of his states and behavior that is important, as their rare and unique manifestations which reveal the hidden part of the spectrum of consciousness.

B. The requirement of dividing the subject and the object of research. It is impossible to take a detached view of the parts of the spectrum of consciousness concealed from direct observation. They must be entered, experienced consciously, and discovered within oneself. The brilliant descriptions of pupillage by Carlos Castaneda (1968, 1972 & 1974) may serve as an illustration no matter whether these books are actual sketches of an anthropologist or merely a literary device.

C. The requirement to acknowledge as ontological reality only what can be perceived by means of technical devices. The requirement may be opposed by stating that man, too, is a special receptor who is able, under specific conditions and after special training, to discover a reality concealed from physical instruments.

The last requirement is especially hard to fulfill. The essence of science is aimed at the mastery of the world (Nalimov, 1977) and it agrees to accept as scientific only what can be made by human hands and mind; man cannot be regarded as a scientific device since he is created by the genitals.

10. It seems impossible to discover a single demarcation line between science and religion. The conception of falsification by Karl Popper (1963 & 1965) has not provided such a division either.

Undoubtedly, however, one such division includes the attitude towards questions. Any question contains a hidden assertion making the answer possible. Science has been developing as answers to questions, which in a compact form formulated the entire knowledge accumulated up to that moment. Any scientific theory is primarily a question posed to nature. A theory disappears when it stops being a question calling forth answers. The early forms of mastering nature, e.g. alchemy, knew no questions. Western religion, at least in its traditional form, did not know them either. As to Eastern religions, they permitted questions to some extent (certainly, not to the extent science does), and this may explain the interest in them in the contemporary West.

Religion of today, at least to our mind, has faced the necessity to acknowledge the right to question: many-sided modern questions whose assertive component contains all the novel knowledge of the world. This is the only way for religion to acquire the dynamism it needs.

11. It is now also necessary for religion to acknowledge the right of
experimentation. Strictly speaking, religion has never been alien to experimentation. Its experiments were personal experience, meditation, or prayer. But what we now must keep in mind is a directed experiment carried out as the answer to a question.

12. Contemporary religion and science have a point of contiguity. It is the search for a new culture as the answer to the question posed by the ecological crisis. We believe the answer cannot be found without acknowledging a different ontological reality for us to enter.

1Our paper (Nalimov a.o., 1979) is an example of a scientific experiment bordering religious experience.

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ANNOUNCEMENT OF RECENT BOOKS

These announcements are made for the immediate interest of our readers. We hope to publish reviews at the earliest possible time.

Citation Indexing—Its Theory and Application in Science, Technology, and Humanities

Eugene Garfield
Institute for Scientific Information

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THE IMPACT OF THE NUCLEAR CONTROVERSY ON DECISION-MAKING STRUCTURES

G. Küppers, H. Nowotny, eds.

Bielefeld 1979

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Limits of Scientific Inquiry

Edited by GERALD HOLTON and ROBERT S. MORISON

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Recent and Forthcoming Publications

Scientometrics
Vol. 2, No. 1, 1980

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A.I. Yablonsky (USSR): On Fundamental Regularities of the Distribution of Scientific Productivity

J.E. Cohen (USA): Publication Rate as a Function of Laboratory Size in a Biomedical Research Institution

M.P. Carpenter, F. Narin (USA): The Subject Composition of the World's Scientific Journals

S.D. Haitun (USSR): Scientometric Investigations in the USSR (Review)

News

(Abstracts to above papers)

"On Fundamental Regularities of the Distribution of Scientific Productivity"
A.I. Yablonsky, Institute for Systems Studies, 29 Ryleyev Street, Moscow, 119034 (USSR)

The paper presents a methodological and mathematical study of the main regularities related to the distribution of scientific productivity. An analysis of these regularities is given from the point of view of two approaches, the frequency and the rank one, to the problem of scientific productivity. The connection between these approaches is studied and a number of mathematical formulas that are both of theoretical significance for the understanding of information data bases formation mechanisms and a practical one, in particular, for the estimate of Bradford's law parameters, are deduced. The relation between the scientific productivity distributions under consideration and stable non-Gaussian distributions is analyzed. The formation of the corresponding regularities of scientific productivity is regarded as a consequence of the probability process being combined with the deterministic one.

"Publication Rate as a Function of Laboratory Size in a Biomedical Research Institution"
J.E. Cohen, The Rockefeller University, 1230 York Avenue, New York, New York 10021 (USA)

At the Rockefeller University in 1977-78, the number of all publications of a research group in a year was approximately proportional to the number of individuals in that group during the year. The number of primary research publications of a group in a year was also approximately proportional to the number of individuals in that group during the year.

The observed frequency distribution of laboratory size was statistically indistinguishable from a 0-truncated negative binomial distribution, which is the equilibrium frequency distribution of size predicted by stochastic models for the dynamics of freely-forming primate social groups.
"The Subject Composition of the World's Scientific Journals"
M.P. Carpenter and F. Narin, Computer Horizons, Inc., 1050 Kings
Highway North, Cherry Hill, New Jersey 08034 (USA)

A country by subject count of the serial periodical collection at the British
Library Lending Division (BLLD) in 1973 is reported and compared to previous
counts. Approximately 25,000 periodicals have titles indicating that they are
scientific journals in nine fields of the physical and biological sciences,
engineering, and mathematics. The overall subject distribution of the journals
appears to be remarkably stable when compared to a similar count by Hulme 60
years ago, although the number of journals appears to have doubled in the last
60 years. A major shift was found in the national origin of the journals, when
compared with Hulme's counts, with a notable rise in the number and percent of
U.S. journals, and a sharp decline in the percentage of French and German journals.

"Scientometric Investigations in the USSR (Review)"
S.D. Haitun, Institute of the History of Science and Technology of the
Academy of Sciences of the USSR, Staropansky per., 1/5, Moscow (USSR)

The following is a review of scientometric investigations in the USSR. Sciento-
metrics has been taken in the strict sense of the term, defined as a science of
science approach responsible for measuring reproducible science. The state of
scientometric research in the Soviet Union is compared to that of other countries.

**Scientometrics**
Vol. 2, No. 2, 1980

**Contents**

K.D. Knorr, R. Mittermeir (USA): Publication Productivity and Professional
Position: Cross-National Evidence on the Role of Organizations

V.A. Pokrovsky (USSR): Some Problems of Measuring the Impact of R&D Upon the
Efficiency of Social Production

J.D. Frame (USA): Measuring Scientific Activity in Lesser Developed Countries

J.C. Sheldon (Australia): A Cybernetic Theory of Physical Science Professions:
The Causes of Periodic Normal and Revolutionary Science Between 1000
and 1870AD

**News**

(Abstracts to above papers)

"Publication Productivity and Professional Position: Cross-National Evidence on
the Role of Organizations"
K.D. Knorr, Department of Sociology, University of Pennsylvania (USA)
R. Mittermeir, Department of Computer Sciences, University of Texas,
Austin (USA)

Studies of stratification in science have increasingly accepted the idea that science
is a highly stratified and elitist system with skewed distributions of productivity
and rewards. Attempts to explain the higher productivity of higher status scientists by pointing to their greater ease of publication as far as acceptance of their work by journals and publishers is concerned were not supported by the data in some recent studies. If status in general does not confer greater ease of publication the present paper argues that position within a research organization does confer greater ease of author—or coauthorship—and this is the major explanatory variable accounting for productivity differences within research laboratories as far as quantity of articles (and books) is concerned. Upward moves in a laboratory's formal or informal position hierarchy are associated with a change of a scientist's research involvement from goal executing to goal setting functions as well as with an increasing access to scientific manpower and project money. Goal setting tasks provide for a significant reduction of time-expenditures in research necessary to assure that the scientist is identified with the research results; consequently, they allow for an involvement in more research tasks than originally. Equivalently, resources in scientific manpower and project money act as a multiplying element as far as quantity of output is concerned. When group productivity is considered, individual publication productivity and especially supervisory productivity retain a major significance. Additionally, size of the research unit seemingly plays a key role: in the present data set, size tends to be negatively related to per capita group productivity, with most pronounced relationships occurring in academic natural science units.

"Measuring Scientific Activity in Lesser Developed Countries"
J.D. Frame, Computer Horizons, Inc., Washington Office, 7101 Wisconsin Avenue, Washington, D.C. 20014 (USA)

(No abstract)

"Some Problems of Measuring the Impact of R&D Upon the Efficiency of Social Production"
V.A. Pokrovsky, State Committee for Science and Technology, Moscow (USSR)

A critical analysis of works by Soviet authors, devoted to the problem of assessing the contribution of science to the efficiency of social production, is carried out. The computational results of two different versions of production function and a factor analysis technique are also presented, based on the same statistical data of the 8th and the 9th Five-Year-Plan periods. The numerical value of economic efficiency of investment in R&D, which was determined by relating the benefits from R&D to the associated expenditures, has been found to be 2.1-11 times higher than the profitability of plant investment. The classification and analysis of the major factors, contributing to the growth of public production efficiency, using a multiple correlation technique, show, that a 1% increase in R&D expenditures is associated with a 0.43% rise in labor productivity which also confirms the higher productivity of R&D investments.

"A Cybernetic Theory of Physical Science Professions: The Causes of Periodic Normal and Revolutionary Science Between 1000 and 1870AD"
J.C. Sheldon, Department of Physical and Inorganic Chemistry, University of Adelaide, Adelaide, G.P.O. Box 498 (South Australia, 5001)

The changing levels of activities in a physical science profession are modelled as a network of relations between different career stages. This cybernetic theory
predicts that the dominance of elites undergoes 300 year cycles of sharp alternations whereas the challenge of embryonic elites fluctuates in 100 year cycles. These results seem confirmed by a survey of chemical histories: the birthrate of outstanding chemists oscillates in 300 year cycles and of lesser chemists in 100 year cycles, both with the wave profile specified by the model. These fluctuations seem to correspond to Kuhn's periods of revolutionary and normal science.
REPORTS OF MEETINGS
Trevor Pinch

SOCIAL PROCESSES OF SCIENTIFIC INVESTIGATION, Bielefeld, 17th-19th June, 1979

This conference was organised by the Yearbook of the Sociology of the Sciences in association with PAREX. Most of the papers presented had been precirculated, thus giving ample time for discussion sessions. The papers were:

R. Krohn, "Science as the Pursuit of Cultural Change: a Step Beyond the old Dichotomies"

M. de Mey, "Perception, Conception and the Interaction between Theory and Data in Science"

J. Barmark and G. Wallen, "An Interdisciplinary Approach to Interdisciplinary Research"

T. Pinch, "Theoreticians and the Production of Experimental Anomaly: the Case of Solar-Neutrino Physics"

C. Salomon-Bayet, "Histoire et Sociologie des Sciences: Entre la Commemoration et la Description"


A. Pickering, "Cognitive Interests and Consensus: Model Choice in High Energy Physics"

K. Knorr, "The Research Process: Method Reconsidered"

G. Travis, "Constructing Creativity: the Memory Transfer Phenomenon"

S. Woolgar, "Logic and Sequence in a Scientific Text"

G. K"ppers, "Cognitive and Institutional Factors in the Research Process--a Case Study in the Field of Theoretical Plasma Physics"

B. Latour, "Sociology of a Peptide"

N. Gilbert, "Science and Laboratory Practice"

The discussants were drawn from members of the Editorial Board of the Yearbook.

The conference was conceived as a forum for sociologists working on the nuts and bolts of scientific activity to present and discuss their findings. Although when the conference was set-up it was intended that participants should be guided by a nexus of problems and theoretical issues set-out in an introductory paper by Roger Krohn, in practice no single unified perspective emerged. This was not surprising and simply reflects the diversity of theoretical approaches and aims now current in the sociology of science. The difference between this meeting and previous ones is that at last a rich pool of empirical material is starting to emerge on which the theoretical debates can focus. Indeed the hallmark of the meeting was the detailed working through of several case studies of scientific investigation.

The papers presented are to be revised in the light of the discussion at the conference and eventually published as Volume 5 of the Yearbook under the editorship
of K. Knorr, R. Krohn and R. Whitley. A similar conference is planned to be held in Montreal in order that N. Americans may contribute. The format of a conference preceding a revised published collection is an excellent idea and it is my understanding that the Yearbook intends to follow this procedure for Volume 6. The feedback between discussants and presenters at Bielefeld would have proved even more fruitful if a greater proportion of the discussants had themselves been engaged in the kinds of empirical studies presented. Perhaps in the future, discussants could be chosen from a wider pool which included more of the presenters.


Papers presented were:

Harry Collins, "Son of the Seven Sexes: The Social Destruction of Gravitational Radiation"

Bill Harvey, "Plausibility: A Useful Concept in the Sociology of Science"

Trevor Pinch, "The Social Component of Solar-Neutrino Predictions"

Andy Pickering, "Networks, Arguments and Interests"

This meeting served to expose the weakness of the "special case argument" against the sociology of scientific knowledge. It is claimed that areas where the sociology of knowledge proves fruitful are simply "special cases" and that it has nothing to say about the bulk of science and in particular "hard" sciences such as physics. Few would surely question the pedigree of the science discussed in these papers. Gravitational radiation, quantum mechanics, solar neutrinos and high energy physics are all fields in which Nobel prizes are won and lost.

All the papers were rich in empirical content and reflected the working knowledge of the technical details of the science acquired by the presenters. Indeed an unsuspecting observer at the meeting who happened to walk in when John Ziman was expounding some technical point of physics, might be forgiven for thinking a physics seminar was taking place—such are the close links between the science and the sociology evident in these case studies.

There was general agreement that the appropriate epistemological stance for this kind of work is the explanation of scientific developments without giving any explanatory power to the Natural World. Differences in emphasis did, however, emerge. Perhaps this was most notable in the approaches of Pickering and Collins.

Pickering offered a model which attempted to account for developments in HEP in terms of cognitive interests. Collins, on the other hand, was more concerned to demonstrate how a relativist epistemology could be fruitfully applied to areas in which there is substantial scientific consensus.

The Study Group meeting was arranged to coincide with the end of the conference "Practical Reasoning and Discourse Processes" held at St. Hugh's College, Oxford, the preceding week. This was a good idea in principle, but unfortunately most of the participants at the Discourse conference were too exhausted to stay on for the Study Group. Notable exceptions were Harold Garfinkle and Michael Lynch who both gave informal and informative talks about their conception of an ethnomethodology of science.
The feeling shared by many participants at the meeting was that it had provided an excellent forum for sociologists of science to sit down together and talk about the detailed problems of the emerging empirical studies.

FORTHCOMING MEETING

NEW PERSPECTIVES IN THE HISTORY AND SOCIOLOGY OF SCIENTIFIC KNOWLEDGE. Jointly organised by the British Society for the History of Science and the BSA Sociology of Science Study Group. To be held at the University of Bath, 27-29 March 1980. For further information contact H.M. Collins, School of Humanities and Social Sciences, University of Bath, Claverton Down, Bath, BA2 7AY (The conference is now over subscribed.).

The program for this meeting is as follows:

27 March 1980
THE BODY

"The Concept of Inhibition: History and Interpretation in Neurophysiology"
Roger Smith

"Changing Images of the Body in Eighteenth Century Britain"
Maureen McNeil

"Bureaucracy, Liberalism and the Body in Post-Revolutionary France: Pt. 1 Bichat's Physiology and the Paris School of Medicine"
John Pickstone

Discussants: R. Willis
            Roy Porter

28 March 1980
NATURALISM AND MATERIALISM

"Natural Laws and Divine Judgement: Some Reflections on Scottish Natural Theology"
Paul Baxter

"Darwinism and Social Darwinism: Can the Scientific and the Ideological be Disentangled?"
Ted Benton

"Somatic Theories of Mind and Social Interests in Britain, 1850-80"
Stephen Jacyna

"Matter and Spirit as 'Natural Symbols' in Eighteenth Century British Natural Philosophy"
Christine Wilde

"The Triumph of the Will: The Newton Leibniz Disputes and Political Ideology"
Steven Shapin

Discussants: David Miller
            Ed Yoxen

CLASSIFICATION (A)

"Some Conventional Aspects of Biological Taxonomies"
John Dean

"On Classifying a Continuum: Reflections on the Historical Construction of the Relative Time-Scale in Geology"
Martin Budwick
"The Social Maintenance of Two Divergent Classifications: A Case Study From the History of Ecology"
Malcolm Nicolson
Discussants: Mary Hesse
William Outhwaite

CLASSIFICATION (B)

"Taxonomy and Practice: Medical Classification in the Eighteenth Century"
Christopher Lawrence and M. Neve

"Herschel in Bedlam: Natural Classification and Social Coherence in Stellar Astronomy"
Simon Schaffer

"A Durkheimian Analysis of Scientific Knowledge: J.A. Udden's Particle Size Analysis"
John Law
Discussants: Peter Wright
Barry Barnes

SOCIAL CONSTRUCTION OF MODERN SCIENCE (A)

"Social Accounting in Research Papers"
Nigel Gilbert

"Replicating Replication? The Case of Memory Transfer"
David Travis

"The Sun Set: Certainties and Uncertainties in Scientists' Responses to the Solar-Neutrino Problem"
Trevor Pinch
Discussants: Bruno Latour
Alex Dolby

29 March 1980 SOCIAL CONSTRUCTION OF MODERN SCIENCE (B)

"Son of Seven Sexes: The Social Destruction of Gravitational Radiation"
Harry Collins

"The Hunting of the Quark: The Experimental Method in Science"
Andrew Pickering

"Why Does the World Seem Non-Negotiable? An Attempt to Reconcile Two Views of the Production of Scientific Knowledge"
William Harvey
Discussants: Bill Brock
Rom Harre

MATHEMATICS

"Did Hamilton's Metaphysics Influence his Algebra?"
David Bloor

"Understanding or Experience: Euclidean and Non-Euclidean Geometries"
Christopher Knee
"Wittgenstein's 1939 Lectures and the Value of Rhetoric"
Vittoria de Vecchi

"Charles Babbage, John Herschel and Analytics: 'Professionalism' and Mathematics in Early Nineteenth Century England"
Philip Enros

Discussants: To Be Decided
CALL FOR PAPERS

TEMPLE UNIVERSITY PRESS is sponsoring a new series, TECHNOLOGY AND URBAN GROWTH. Manuscripts addressing all phases of the historic urban and technological scenes are invited. The editors are Blaine Brownell, The University of Alabama-Birmingham; Mark Foster, The University of Colorado-Denver; Zane Miller, The University of Cincinnati; Mark Rose, The Franklin Institute; and Howard Sunka, Office of Policy Development and Research, U.S. HUD. Manuscripts should be sent to Kenneth Arnold, Editor, Temple University Press, Temple University, Philadelphia, PA 19122.

POSITION VACANCY


GERALD HOLTON, Mallinckrodt Professor of Physics and Professor of the History of Science at Harvard University received the Oersted Medal at the January 1980 annual joint meeting of the American Physical Society and American Association of Physics Teachers.
LEARNING RESOURCES IN INTERNATIONAL STUDIES

SCIENCE AND SOCIETY IN A GLOBAL CONTEXT

WORLD CONFLICT AND COOPERATION IN SCIENCE AND TECHNOLOGY

INTERNATIONAL SCIENCE AND TECHNOLOGY POLICY

DISARMAMENT, ENVIRONMENT, HEALTH AND BIOMEDICAL SCIENCES

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Science and Technology for Development: International Conflict and Cooperation. A Bibliography of Studies and Documents Related to UNCSTED:

Preliminary Version (January 1977) and No. 1 (April 1977) - revised and reissued February 1978 $ 6.00

No. 2 (April 1978) $ 5.00

No. 3 Subject Index to Nos. 1 and 2 (June 1978) $ 6.00

No. 4 (September 1978) $ 8.00

No. 5 (April 1979) National and Regional Papers for UNCSTED $10.00

No. 6 (October 1979) $10.00

Combined price of all six publications (including handling and postage) $30.00

Over 550 pages, 2364 entries, with extensive subject index.

Special Offer for Entire Series: Those ordering Nos. 1-6 at this time will receive the 7th and final volume in the series automatically and without additional charge.


To Be Published: No. 7 (which will complete the series), Spring, 1980. No. 7 will cover the official documentation issued at the Conference, the final report of the Conference, including the Vienna Programme of Action, and post-mortem accounts of Vienna and assessments of UNCSTED within the context of setting the stage for the Third Development Decade of the 1980s.
THE UNSCTED INFORMATION PACKET

The UNSCTED Information Packet provides an authoritative picture of what went on in Vienna as well as an assessment of the accomplishments and shortcomings of the Conference. The Packet includes 10 issues of Retort, the Conference daily newspaper, which were issued during the Conference itself. Also included is the special post-mortem issue prepared by the same team of experienced science journalists from North and South who covered all the important aspects of the official Conference and the NGO Forum.

In addition, the Information Packet includes the official Vienna Programme of Action adopted by UNSCTED.

The entire Packet is available for $18.00, including handling and postage.


INTERNATIONAL NETWORK FOR SOCIAL NETWORK ANALYSIS

International Network for Social Network Analysis was founded in 1977 to link together network analysts and disseminate current information. It now has over 400 members from all continents and all social science disciplines, mathematics, philosophy, statistics and theology.

INSNA publishes three issues of a Bulletin, CONNECTIONS, annually. (It is somewhat like 4S.) Recent issues have each been over 60pp. long. It contains brief research reports and position papers; research round-ups; abstracts and summaries of papers (unpublished and published), new books and dissertations; computer programs; meetings information; grant announcements and news items. A Directory of all members appears in the current issue (Volume 2, Number 3), giving addresses, telephone numbers and research interests.

INSNA has also served as the framework for a number of conferences—in Toronto, Uppsala and Bremen. Members may also subscribe to the new journal SOCIAL NETWORKS at a special price of $20. Dues for INSNA itself are $8, which includes a subscription to CONNECTIONS. For subscription and editorial information, please contact:

Barry Wellman
INSNA Coordinator
Structural Analysis Programme
Department of Sociology
University of Toronto
Toronto Canada M5S 1A1
The 4S Newsletter is published four times each year at the Department of Sociology, Southern Illinois University, Carbondale, Illinois 62901, 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 47401.

Editorial Assistant: Beverly Morber