Weinberg Report 2000

First International Conference on Grey Literature

RAI Congress Centre
Amsterdam, The Netherlands

December 13-15, 1993

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Weinberg Report 2000

First International Conference on Grey Literature
■Reports ■Proceedings ■Dissertations ■Bibliographies ■Manuals ■Etc.

GL '93

RAI Congress Centre
Amsterdam, The Netherlands

December 13-15, 1993

Conference Proceedings

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Acknowledgements

In the year and a half of preparations leading up to the First International Conference on Grey Literature (GL'93), there was an almost inherent mission to collect and order the already existing body of knowledge in the field of grey literature and to promote research and investigation in this area.

GL'93 has certainly succeeded in that initial endeavour. On the 13-15 December 1993, more than 200 delegates and participants from 28 countries met in Amsterdam to present and discuss some 40 scientific and technical papers on the State of the Art in Grey Literature. In the pages which follow, you will find the full text of those papers presented both in the Plenary as well as in the Cluster Sessions.

It is indeed appropriate, here, to thank the Sponsors of GL'93 and the Program Committee members and their organisations for the professional support they provided throughout the planning and preparations for the conference. Special thanks go to the Netherlands Ministry of Education and Science for its grant making it possible for those participants from Developing Countries to attend GL'93.

Finally, a sincere word of acknowledgement to the authors and speakers at GL'93, who contributed their resources and expertise in the research and development of Grey Literature. It remains the primary goal of the conference organiser to see that their research results and findings receive the promotion deserved.

Hopefully, the authors and researchers will be persuaded to continue their efforts and provide an intellectual contribution to the Second International Conference on Grey Literature (GL'95) planned to be held in the United States of America in the Autumn of 1995.

Dr. Dominic J. Farace,
Chairman Program Committee

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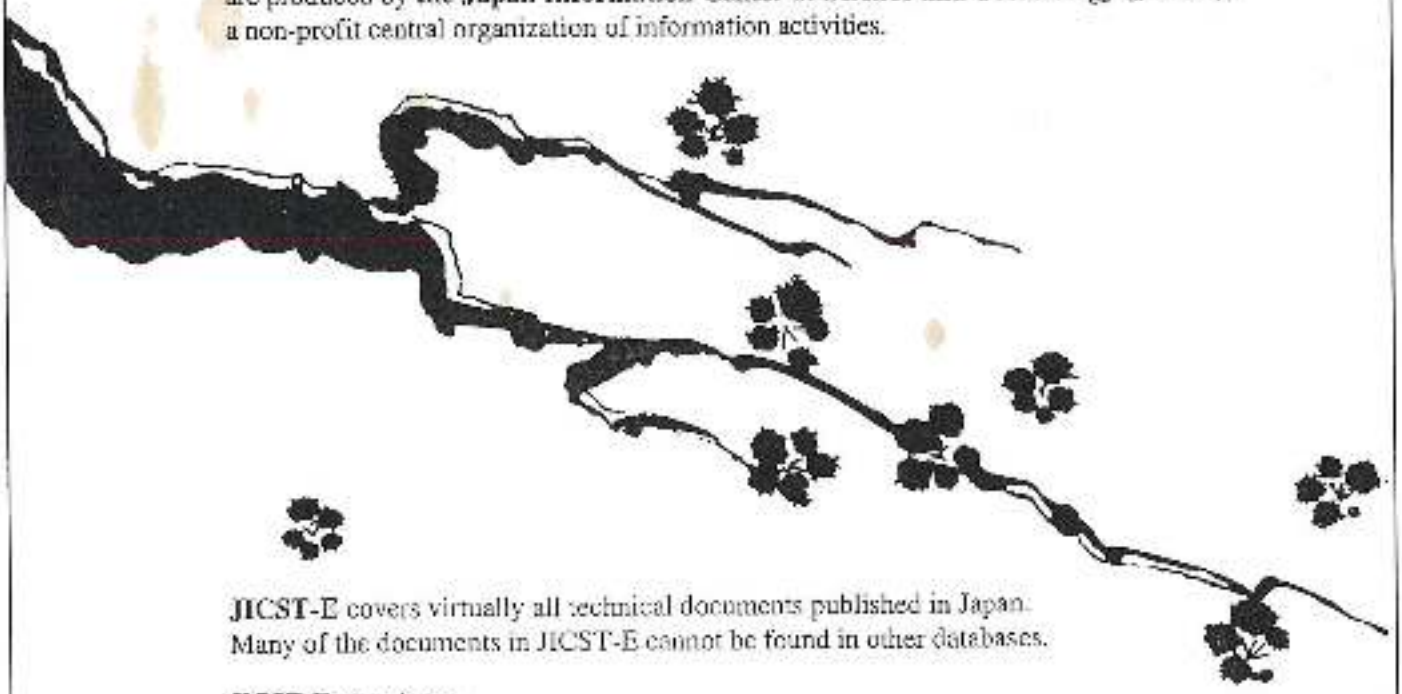

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JICST

Ladies and Gentlemen,

It is with great pleasure that I accepted the request to speak to the First International Conference on Grey Literature.

The subject of this conference -Grey Literature- is very interesting, but it is a very difficult one at the same time. It has everything to do with the way we communicate in science. And therefore it is a subject not only of importance for librarians, documentalists and other information specialists, but also for scientists. And the government usually also gets involved because information is easily related to the responsibility government bears for the infrastructure of higher education and research. It is amongst others for this reason I decided to give a financial contribution to the organisors of this conference in order to enable interested people from developing countries to attend the conference.

A second reason for me to accept the invitation is the good idea the organisors had to ask attention for the ideas of Alvin M. Weinberg. As chairman of the President's Science Advisory Committee he advised the President of the United States of America by producing the famous report "Science, Government, and Information. The Responsibilities of the Technical Community in the Transfer of Information", now thirty years ago.

Let me turn back to the first point, grey literature. The role and significance of grey literature is strongly changing the last years. The new electronic techniques are causing a fast growth of grey literature. In a way, we can say that by the growing use of electronic devices like bulletin boards, discussion lists and the like, information is growing grey.

The scientific information exchange has got a less formal character. It resembles more and more direct communication in the form of a dialogue. In other words with the easy use of SURFnet in the Dutch context or Internet in a international context the communication of scientific and technical information tends to get the character of a more or less private correspondence, much the same like in the old days when scientists exchanged letters. In this way, of course, information is a short living product, tied to the moment and content of this dialogue, and it will not or hardly be reflected in a formal document to which one can refer later on. Science faces so a real danger of reverting to the privacy of the seventeenth century.

Furthermore every scientist can now easily produce his own

publication with the help of electronic devices like desk top publishing. So we get reports and periodicals with a very limited circulation.

With these technical developments the problems of grey literature are becoming still more untransparant. Thorough thinking is necessary more than ever to answer questions like:

- what is the quality of grey literature in comparison with "white" literature?
- which part will be "whitened" and how long will that take?
- what is the use of grey literature in relation to "white" literature?

A conference gathering experts from all over the world will undoubtedly bring the answer to these questions nearer to a practical solution. I hope, some answers will be given during this conference. Other will be the result of research started as a consequence of this conference.

The role of the government in this regard as we see it here in the Netherlands is limited. The government's role is aimed at stimulation and creation of favorable conditions. The scientists and information specialists themselves must organize their own matters. Later on in my speech I will come back on this subject.

Now I would like to say something on my second theme: Alvin Weinberg, and thereby on science policy. In the title of this conference you refer to Alvin Weinberg. Alvin M. Weinberg was for many years director of Oak Ridge National Laboratory, Tennessee, United States of America. In this position he was a very active and influential thinker in the field of science policy. He had a special interest in criteria for making scientific and societal choices as well as the potential contribution of the big research institutions to science education.

He brought his ideas, which were scattered in many essays and reports, together in a book under the title "Reflections on Big Science". These reflections are still very worthwile to read. As becomes a great scientist, Weinberg reflects on really big world problems like the population expansion and the concomitant expansion of energy and information, the new social structures caused by the new technology, the effects of the organization and financing of Big Science on the nature of scientific inquiry and -this last subject will interest you here especially- the role of the scientist (which is distinct from, and as vital as the role of the documentalist) in closing the Information Gap.

The lessons Weinberg teaches us on the role of the government in handling scientific information are still of interest for us. In his "Reflection on Big Science" he says the following: " Insofar as good scientific communication is a prerequisite for healthy science, and especially, efficient science the government must be concerned about science's communication system". Further on he gives a second reason for the commitment of the government, in saying: "This has to do with the validity of science as a responsible undertaking largely supported by he public. The "refereed" literature, by means of which scientists criticise each other and maintain the standards of science is one of the most important means of maintaining science as a responsible undertaking. It should therefore be a matter of great concern to the government that supports science if traditional means of establishing and maintaining the validity of the scientific enterprise are submerged in a torrent of uncontrolled scientific information".

Weinberg was very conscious of the importance of information. He was a fervent advocate of an upgrading of the information activities. In his view, the responsiblity for information activities would be part of the research and development arm, not of some administrative arm of the research institution, as is often the case.

The ideas of Weinberg, expressed in the report "Science, Government, and Information" of 1963 and incorporated in his earlier mentioned "Reflections on Big Science" had much influence on the development of information handling in the whole world. Though more geared to the American situation the report contains several points which, in an adapted form, were important for the Netherlands.

Shortly after the publication of the report librarians and documentalists in the Netherlands became active. As a consequence of that action the government installed a Working Group for Scientific and Technical Information. The chairman of this working group was professor Böttcher. The advise of this working group led to the establishment of an organisation which must deal with the whole chain of information exchange for science, technology and trade and industry. This organization got known under the acronym NOBIN which was the direct predecessor of the Netherlands Bureau for Libraries and Information.

But even nowadays the ideas of Weinberg can be traced back in very recent developments. For just one year ago the Netherlands minister of Education and Science expressed his ideas to the Parliament, as to how the field of providing information for science and technology must be structured. Information is essential for science as well as trade and industry. The Dutch government will not withdraw from her responsibilities for a

coherent policy which is focussed on an optimal structure and functioning of the public information system. It is a concern for the government to take stimulating measures for cooperation and coordination between the different partners in the information field.

Some key words of this new policy are:
Firstly, since information is vital for the primary objectives in the field of education and science, policies for information need to be organized at the highest level in university and research institute.
Secondly, cooperation and networking are given preference to a hierarchical relation under a national umbrella organization. This cooperation and networking must not be brought in top down, but preferably be realised by the interested parties themselves. So there remains room for the dynamics of change. Weinberg would undoubtedly agree with this. He warned already for the imminent danger of 'domination by the government'. He would say: user-sensitive systems must not be swamped by elaborate government systems that are less user-sensitive. But perhaps still more important is a international argument. What is in this time of global communication, knowledge and information the rationale for organising centrally all those information functions on a national level? Other connections are perhaps more functional, but must arise from well organised local and regional centres. A national organisation can nowadays by definition only be an intermediate stage. But it is of course important to have an eye for the national interests and therefore to optimise on advantages for the own country.

Thirdly, the emphasis at this cooperation must be laid on innovation, rationalisation and efficiency. This requires a driving force. A motor stat stimulates the renewal, starts innovating projects and coordinates actions. Furthermore such an organization has to persuade autonomous institutions to cooperate by concluding comtracts. So problems can be tackled which can only be solved in cooperation. the institutions remain free to do locally what best can be done locally. There is no need for them to feel hindered or bullied. We are still thinking of the place and managerial form of this driving organization. New applications of information and communication technology can cause essential innovations in science. Many examples can be given here. You will forgive me if I mention here a few Dutch examples. I think of the I T initiatives in the library of the Catholic University Brabant in Tilburg, the Open Library Network project of PICA and the interesting Telemann-project of SURF in the Catholic University Nijmegen.This last project aims at offering datacommunication facilities for working at home for scientists and students. By emphasizing the innovative function there will arise possibilities for a stronger participation of the Netherlands in European projects.

In the meantime the boards of governors of the universities

and the research institutions as well as the Royal Library have organised a so called Platform for Innovation Scientific Information. A Steering Group has been charged with the day-to-day management. The Platform has formulated a plan of action, in which they mention some clear areas for special attention. An important first point is the problem of copy-right.

You notice that in the Dutch information world many things are ongoing. Much has already been done, still more needs to be done. I am sure that the results of this conference bring us a bit further. Stepping on the shoulders of a heavy weight thinker like Alvin M. Weinberg you can strengthen your own arguments for realizing a better information exchange and communication in science.

I wish you a fruitful conference.

Address

of Dr. P.A.J. Tindemans
Director of Research and Science Policy
Netherlands Ministry of Education and Science

on the occasion of the opening of
the First International Conference on Grey Literature

on 13 December 1993
Forum Hall, Amsterdam RAI Congress Centre

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EAGLE congratulates Dr Dominic Farace for the excellent way he organized the First International Conference on Grey Literature. This initiative will contribute to a better understanding of the nature and value of grey literature for the research community.

Grey literature - establishing a clear identity

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Abstract

Grey literature may be said to have come of age with the holding of the first international conference devoted solely to its consideration. Due recognition can now be given to the considerable achievements of those persons and organisations responsible for the establishment of collections, announcement journals and databases. Henceforth the exploitation of the medium will depend to a great extent on the successful influencing of two quite distinct groups of interested parties - the originators of grey literature documents and the end users of such material. The originators need to be made aware of a new channel of communication which ensures the proper recording of and the maximum accessibility to their output; and the end users need to be made aware of new ways of tapping into an information source hitherto regarded as a difficult area. The paper takes an independent look at the grey literature scene, especially with regard to its growing diversity, and considers likely developments as all the efforts of the past are consolidated and expanded.

1. INTRODUCTION

Grey literature has been described by an American librarian as 'a term which originated with British librarians'. Whether or not this assertion is strictly true, there can be no doubt that the concept of grey literature has now spread far beyond the British Isles, as evidenced by the present conference here in Amsterdam. It is a convenient term generally defined as 'literature which is not readily available through normal bookselling channels, and therefore difficult to identify and obtain', and its main constituents are reports, especially research and development reports; translations, particularly of scientific and technical papers; theses and dissertations; meetings papers and conference proceedings; and certain national and local government publications.

Each of these categories has its own well-established, comprehensive bibliographic guides, as for example Scientific and Technical Aerospace Reports (STAR); World Translations Index (WTI); Dissertation Abstracts International (DAI); Indexes to Scientific and Technical Proceedings (ISTP); and Catalogue of British Official Publications not Published by HMSO.

Grey literature is unusual in that it is the format rather than the subject content which determines whether a document is to form part of the genre. Normally announcement services and databases are subject-oriented, as for example Engineering Index and Chemical Abstracts.

Two other areas do indeed treat material firstly by format and then by subject, namely patents and standards specifications. Such documents however constitute self-contained areas subject to rigorous internationally recognised bibliographical control. Patents and standards are not generally thought of as being available through the book trade, but equally, because they are so well organised, they are not considered part of the grey literature either.

At least one English language journal is devoted solely to the announcement of all categories of grey literature, namely British Reports Translations and Theses (BRTT), and input from this publication, along with entries from a number of European bibliographic

centres, is supplied to the SIGLE database, where SIGLE of course stands for System for Information on Grey Literature in Europe.

2. AWARENESS OF GREY LITERATURE

Awareness and indeed acceptance of the term grey literature is very patchy. In Europe the term has been used consistently since the late 1970s. In the United States the term seems to have been accepted with some reluctance, and references to gray literature (for so the spelling must be) are relatively sparse in American professional journals.

American librarians and documentalists certainly know what the term means, but they seem most disinclined to use it. Many indeed still argue that an older, better understood term, that is to say reports literature, should never have been displaced.

Another aspect of the awareness problem can be illustrated by reference to Molière's Le Bourgeois Gentilhomme, wherein the following exchange takes place:

M Jourdain:	What? when I say "Nicole, bring me my slippers, and give me my night-cap", is that prose?
Philosophy teacher:	Yes, sir.
M Jourdain:	Good heavens! For more than forty years I have been speaking prose without knowing it'.

Many librarians and documentalists, and of course the writers of reports and theses, and the preparers of translations, react at M Jourdain did and admit they have been using grey literature without knowing it.

3. CONSOLIDATION OF GREY LITERATURE

Much has been achieved in establishing and promoting announcement services, databases and national collections of grey literature. To take just two examples, in the case of the British Library Document Supply Centre (BLDSC), the collection includes 3.62 million reports in microform, 450,000 other reports, 440,000 US doctoral theses, 100,000 UK doctoral theses, 314,000 conference proceedings, over 539,000 translations, and 25,600 items of local authority material.

Acquisitions are announced in British Reports Translations and Theses and details, as already noted, sent on to SIGLE.

In Hanover, the Technische Informationsbibliothek has a large collection of grey literature available through the TIBQUICK service, notably 900,000 dissertations and reports from the USA, 180,000 German dissertations, 83,000 unpublished German reports, over 100,000 translations, 200,000 volumes of conference proceedings, and 190,000 papers and preprints.

Acquisitions are announced in Forschungsberichte, and again details are supplied to SIGLE.

Thus grey literature is readily available and it is well-documented - and yet an adjective often applied to it is "difficult". Difficult to identify, difficult to ask for, and difficult to get hold of. The criticism of "difficult to ask for" is particularly well justified, for whilst a request can never be as simple as 'please supply a copy of Hard Times by Charles Dickens, 1845', some of the identifiers currently in use for grey literature are not easily quoted, especially over the telephone, and even when written down, can often lead to transcription

errors. A couple of entries taken at random from BRTT will suffice to make the point:

1. 93-09-09-001 Uncalibrated stereo hand-eye coordination.
   DSC: 9106.17 (CUED/F-INFENG/TR-125).
2. 93-07-05D-066 Markets and fairs in England and Wales.
   DSC:3597.8513 (SAU-DE-DP-93-05).

Such problems are properly the concern of the organisers and announcers of grey literature material, and are already being addressed and remedied.

However, two other initiatives are called for if the work so far undertaken is to bear fruit. Firstly, organisations which produce grey literature, whether they recognise the term or not, need to be made aware of the importance of providing input to the relevant national authorities. The sorts of organisations involved are exemplified by the following list, originally identified by the Committee of Scientific and Technical Information (COSATI):

Academics	Groups
Arsenals	Hospitals
Associations	Institutes
Business Corporations	Institutions
Centres	Laboratories
Colleges	Museums
Companies	Observatories
Councils	Proving Grounds
Establishments	Schools
Firms	Societies
Foundations	Stations
Government Agencies	Universities

Equally an effort is required on the part of the grey literature handling community to persuade such organisations that what they issue in the form of unpublished documents has a natural home where the details can be recorded, without the need for formal contacts with the conventional book trade.

Secondly, users of literature in general need to be educated to recognise that no search or survey is complete unless account is taken of material available only in the form of grey literature. The major problem, as already noted, is that an enquirer tends to think in terms of his subject rather than the document format, and needs to be convinced that it is worthwhile making the necessary switch in his strategy.

4. OUTLOOK FOR GREY LITERATURE

The foundations are now in place for a well organised, self-sustaining information service for the exploitation of an extremely valuable and diverse source of information - grey literature. Professionals around the world are already tackling issues of cooperation, compatibility of systems, and methods of announcement and distribution.

Significant efforts are now needed to create a greater awareness of resources contained in grey literature, and in particular to target two distinct groups of people.

Firstly, the writers of grey literature, and the organisations which they serve and represent, need to be motivated to contribute details of their output to the appropriate

authority as a matter of routine.

Secondly, users of grey literature, whether in government, in industry and commerce, and in the academic world, need to be sure that the organisers of grey literature have produced a system of access and announcement which, above all, is user-friendly.

The result will be an expansion and enhancement of the system to the benefit of suppliers, intermediaries and users alike.

A NEW GENERATION OF GREY LITERATURE: THE IMPACT OF ADVANCED INFORMATION TECHNOLOGIES

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Abstract

A basic challenge of the Weinberg report addressed the question of information overload. The Weinberg panel was extremely concerned with the proliferation of scientific literature and the specific issue of how to sift through the reams of data to find the "gems" or wisdom, or that which is truly new and useful. In the early 1960's when the report was being written, computers were not part of the information access and retrieval infrastructure. Writing 25 years later in 1988, Dr. Weinberg recognized that the panel had not taken into adequate account the impact of the computer and the growth of the information industry. Today we have a new world of microcomputers and networked information which is fundamentally shifting the paradigm of scientific communication. We have new capabilities including electronic publishing, visualization techniques, even virtual reality. Without getting into a great debate about the definition of "grey literature", the main characteristics have traditionally been described as: rapid publication, variable formats, no public peer review, no commercial source of general availability. With networked information and multi-media technology, the new world of grey literature is emerging with an interesting set of new and revived challenges. This paper looks at the most interesting characteristics, and based on them, presents the thesis that in the 1990's we are facing a new generation of "grey literature".

1.0 INTRODUCTION

The basic challenge of the Weinberg Report[1] for which this conference has been named, addressed the question of information overload. The U. S. Presidential Science Advisory Board (Weinberg Panel) was extremely concerned with the proliferation of the scientific literature and the specific issue of how to sift through the reams of data to find the "gem" of wisdom, or that which is truly new and useful. In the early 1960s, when the Weinberg Panel did its work, computers were not a regular part of the information access and retrieval infrastructure. Writing 25 years later in 1988, Dr. Weinberg recognized that

the Panel had not taken into adequate account the impact of the computer and the growth of the on-line information industry.[2] Today we have a new world of microcomputers and networked information which is fundamentally shifting the paradigm of scientific communication. With networked information and multi-media technology, the new world of grey literature is emerging with an interesting set of new and revived challenges. In this paper, we will explore the new generation of grey literature that is resulting from the impact of modern information technology.

It should be noted at the outset that many of the observations and data for this paper have a scientific and technical information (STI) focus. It is also true that data from the United States play the key role in our observations and conclusions. However, we believe that the applicability can be extended.

A basic premise of this paper is that in order to understand the grey literature of the future, one has to understand how communications and resulting documentation are taking place. Further, it is our observation that the electronic world cannot be dealt with as a linear extension of the print world. In this regard, we observe that today's grey literature may be a result of being too much in the public domain. For example in a recent issue of Science Magazine, we have the observation that: "But this embarrassment of riches has created a problem: How can you find anything in that mass of data? Unless you know what you're looking for, you probably won't find it."[3]

2.0 DEFINITIONS

Before getting into the impact of technology on the forms of grey literature, it is worthwhile to define what is meant by the term. There are many descriptions and practical definitions that can be found in the world literature, and they mainly cover a few themes. Table 1 provides a list of definitions or descriptions of grey literature from various countries over the last ten years.[4] In general, the working definitions include the facts that the material is not published by established (sometimes meaning commercial) publishers and that it is not easily identifiable or available if identified. Posnett and Baulkwill note in a paper that grey literature can be grey from three points of view: 1) by format as with microform editions of journals or monographs, maps, audiovisual or photographs, 2) text may be processed in a special way, like repackaging or digests, or 3) documents may have traditional form and content but are distributed through non-conventional channels.[5]

One point of discussion relating to the definition which is important when looking at the impact of technology on grey forms deals with the difference between grey "literature" and grey "information". The term "grey literature" originated with documentalists and was associated with their problems of not having good bibliographic control over packages of material and/or not having systematic access to the full text. For example, a predominant grey literature form for information professionals in science and technology in the 1960s was the technical report. The main characteristics of that form of grey literature have

TABLE 1

INTERNATIONAL DEFINITIONS FROM THE LITERATURE

- Norway, 1986

"... non-commercial, limited edition publications not available through the book trade, nor registered in the national bibliography, and having poor bibliographic details."

- Japan, 1984

"... material not issued through normal commercial publishing channels and therefore difficult to access. It includes scientific and technical reports, translations, theses, conference papers, house journals, trade literature and official documents. The degree of "greyness" varies."

- United Kingdom, 1982

"Non-conventional literature is defined here as that part of the literature which would present a non-special library, as opposed to a special library, with more than average difficulty in its acquisition."

- Canada, 1989

"'Gray literature" describes any document, regardless of medium, that escapes the normal channels of publication and distribution."

- Caribbean Community, 1987

"Grey, or non-conventional literature, consisting of research documents that never get published, and also of those that will eventually be published but after prolonged delays..."

- INIS, 1993

"Nonconventional literature (grey literature) is defined as any literature which is normally not available through commercial distribution channels and which is generally difficult to locate."

- STIC, 1992

"Gray information is information unclassified at the source and not generally available in the public domain."

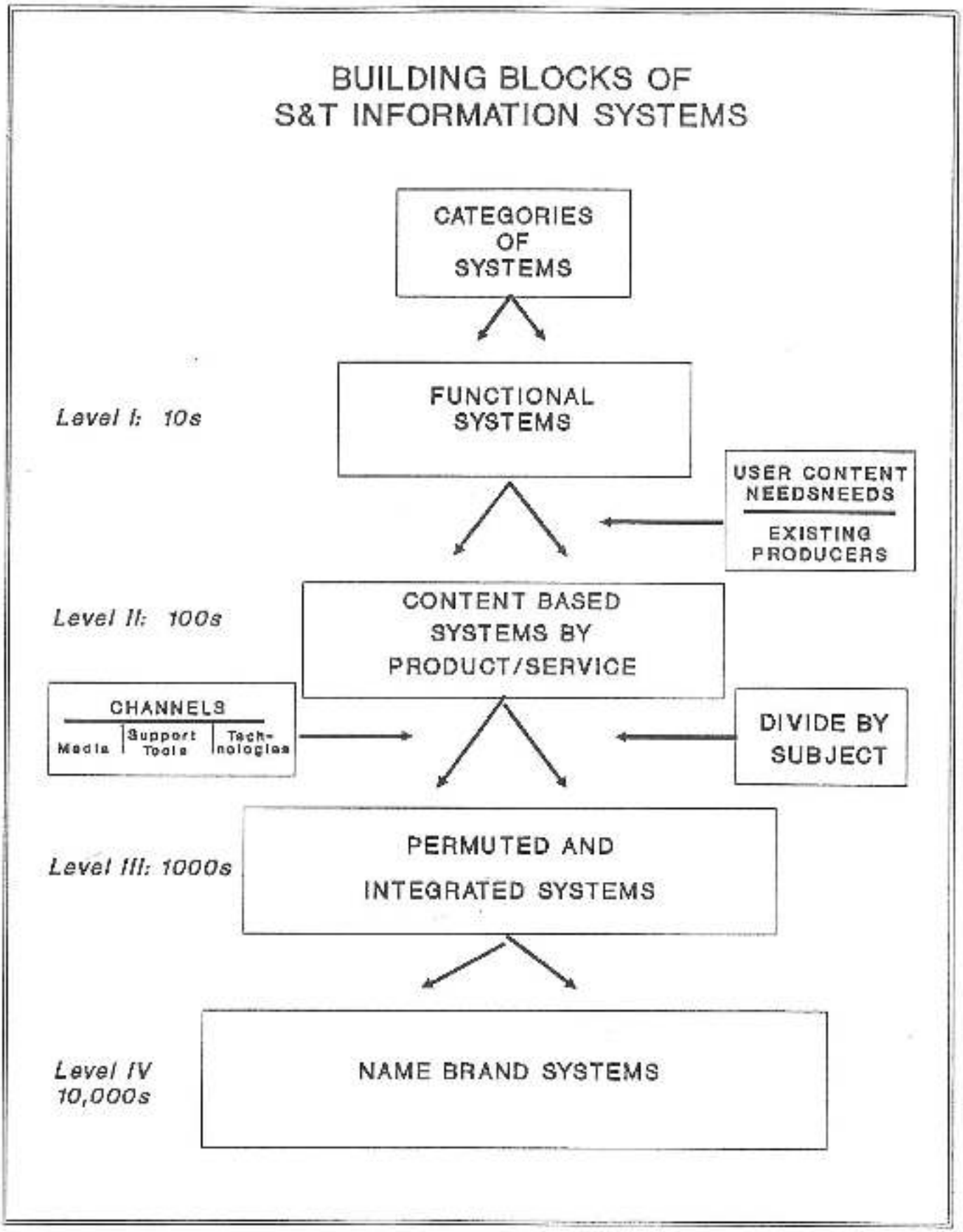
traditionally been described as: rapid publication; variable formats; no public peer review; no commercial source of general availability; usually limited distribution at the discretion of the author/sponsor; raw data often included (as opposed to journal articles which are more limited in size and tend not to include background data); used generally by the applied science and technology communities; and, generally, the responsibility of federal government agencies for bibliographic control and distribution. Today, at least in the U. S., the preponderance of government funded scientific and technical reports is well controlled and systematically available through the National Technical Information Service. In fact, in 1992 the American Technology Preeminence Act became law and made the fact of deposit a legal requirement for all agency funded work. Because this material is well controlled bibliographically through agency mission as well as NTIS databases, and is easily ordered through NTIS, it no longer is "grey literature." Again because information specialists and documentalists have been oriented toward information products, (i.e. information in packages), the term literature has been appropriate to their activities. However, other forms of information, such as numeric data which has not necessarily been packaged as "literature" also play an important part in satisfying information needs. One can say that access to numeric data has always been hazy, if not grey. In fact, in a recent NSF study[6], findings showed that scientists spend significant amounts of time using numeric databases, most of which are not dealt with through the information community. Scientists that use this material often do so with significant facility whereas finding this information from an outsider's point of view would be very difficult. In a project funded by the Library of Congress[7] to develop a topology of science and technology information systems, the findings pointed to a very broad spectrum of types of information used by people seeking STI, much of which would be considered "grey" by generally accepted definitions. Figure 1 shows the model of the types of information and systems that were identified. The model shows that there are hundreds of content based systems, only a very few of which are controlled or commercially published and generally available through standard channels. These content based systems are then differentiated by technology, media, subject, and function and are called "permuted or integrated systems". There are thousands of such types of STI available. Finally, these permuted and integrated systems are further differentiated by brand names where there are tens of thousands of systems. All of these factors make systematic access difficult.

Table 2 is a list of some of the types of STI that are actively used today. It is interesting to review them and determine whether these forms would be considered grey. At the bottom line, one can conclude that "grey" is to a large extent in the eyes of the beholder. This was, in fact, an idea that was presented at the recent U.S. meeting on grey literature which will be reported on in more detail at this conference.

3.0 CHANGING COMMUNICATIONS PATTERNS

As we stated in the beginning of the paper, in order to understand the grey literature of the future, one has to understand how communications and resulting documentation are

FIGURE 1


BUILDING BLOCKS OF
S&T INFORMATION SYSTEMS
CATEGORIES OF SYSTEMS
Level I: 10s
FUNCTIONAL SYSTEMS
USER CONTENT NEEDSNEEDS
EXISTING PRODUCERS
Level II: 100s
CONTENT BASED SYSTEMS BY PRODUCT/SERVICE
CHANNELS
Media
Support Tools
Tech-nologies
DIVIDE BY SUBJECT
Level III: 1000s
PERMUTED AND INTEGRATED SYSTEMS
Level IV 10,000s
NAME BRAND SYSTEMS

taking place. To this end, it is useful to review some trends in scientific and technical communication. The NSF study noted previously[5] found that there are changing patterns in traditional forms of technical communication. The amount of formal documentation and reading (books and journals) is decreasing on a per capita basis. Traditional print publishing is changing, if not in major difficulty, as evidenced by rapidly increasing prices and decreasing demand. There is evidence that scientists and engineers read fewer journals and spend less overall time in reading. They read less, have less time for reading, are reevaluating print buying decisions based on cost of acquisitions, and are increasingly using other routes to information that are available such as electronic media. Electronic communications are changing communication patterns in two ways. Oral and postal interpersonal communication are being replaced by electronic mail. Formal documentation may also be replaced through electronic transfer of files. Although the data for these last two points were not available at the time of the NSF study three years ago, more recent statistics on these two activities support this trend.

TABLE 2.

DEFINING THE GREY SCALE: HOW GREY ARE THE FOLLOWING?

- Technical video tapes
- Multi-media productions
- Scientific visualizations
- Satellite data
- Technical reports
- Environmental monitoring data
- Environmental Safety and Health Regulations
  - Non-U.S.
- Standards
  - Non-U.S.
- Vendor catalogs
- Policy white papers
- Patents
- Newsgroups
- LISTSERV
- FTP
- WAIS
- Electronic Bulletin Boards
- Digital Libraries

4.0 IMPACT OF TECHNOLOGY

So let us turn to the technology environment that is driving the changes in the means of scientific and technical communication. The three main drivers are the reduction of costs for hardware and the increasing power of desk top computing; the enormous advances in telecommunications and the political recognition of the importance of capitalizing on these channels for economic growth; and the enormous increase in the volume of data capture and data manipulation enabled by these two technologies. Regarding, the development of hardware, a rather lyrical, but rather revealing quote captures the essence of the change that has taken place:

> "Five years ago, right after the start of the personal computer revolution, industry experts observed that if the automobile business had developed like the computer business, a Rolls Royce would cost $2.75 and go 3 million miles on a gallon of gasoline." [9]

In just 10 years since the introduction of laptop computers, the growth in sales of these devices has gone from $16 million to $4.1 billion. In 1993 we have even gone to "palmtop" computing, also known as personal information managers (PIMs), with sales in the marketplace growing from $50 million in the first year of sales (1991) to an expected increase to $219 million in 1993 and a projected increase to $387 million in 1997.[10] Technologists are working on handwriting and voice recognition systems and when these technologies begin to be adopted in the market place, we will see even more dramatic changes to information packaging and information transfer.

If we turn to the developments in networking, we must look at the Internet as an infrastructure that is changing the way many of us communicate and access STI. In 1969 the ARPANET was the first large-scale packet switching network. In 1987 seven major supercomputer centers were connected together through NSFNet which evolved into the backbone of the Internet. By 1993, only six years later there are estimates of over 12,000 networks connected through the Internet, with 1.5 million computers linked, and over 10 million users in 100 countries. In 1987 200 million packets per month were shipped over the network. By 1992 a peak of 1 billion packets a day was hit. In 1993, 25 billion packets a month is the average traffic over the network. It has been estimated that the growth in Europe of the use of the Internet is increasing by a factor of 4 while worldwide annual growth is a factor of two.

Finally, the enabling technologies have led to an enormous growth of the sheer volume of information. The head of high performance computing at the U.S. National Oceanographic and Atmospheric Administration (NOAA) estimated that they have the equivalent of 15 libraries of Congress worth of data. Their growth rate is estimated at two Library of Congresses per year. As early as 1982, in an article in Science magazine, Ithiel de Sola Poole constructed growth trends in 17 major communications media to show quantatively the growth in information. He concluded that there has been extraordinary

rates of growth in transmission of electronic communications, but much lower rates of growth in the material that people actually can consume and absorb, representing the phenomenon of "information overload".[11]

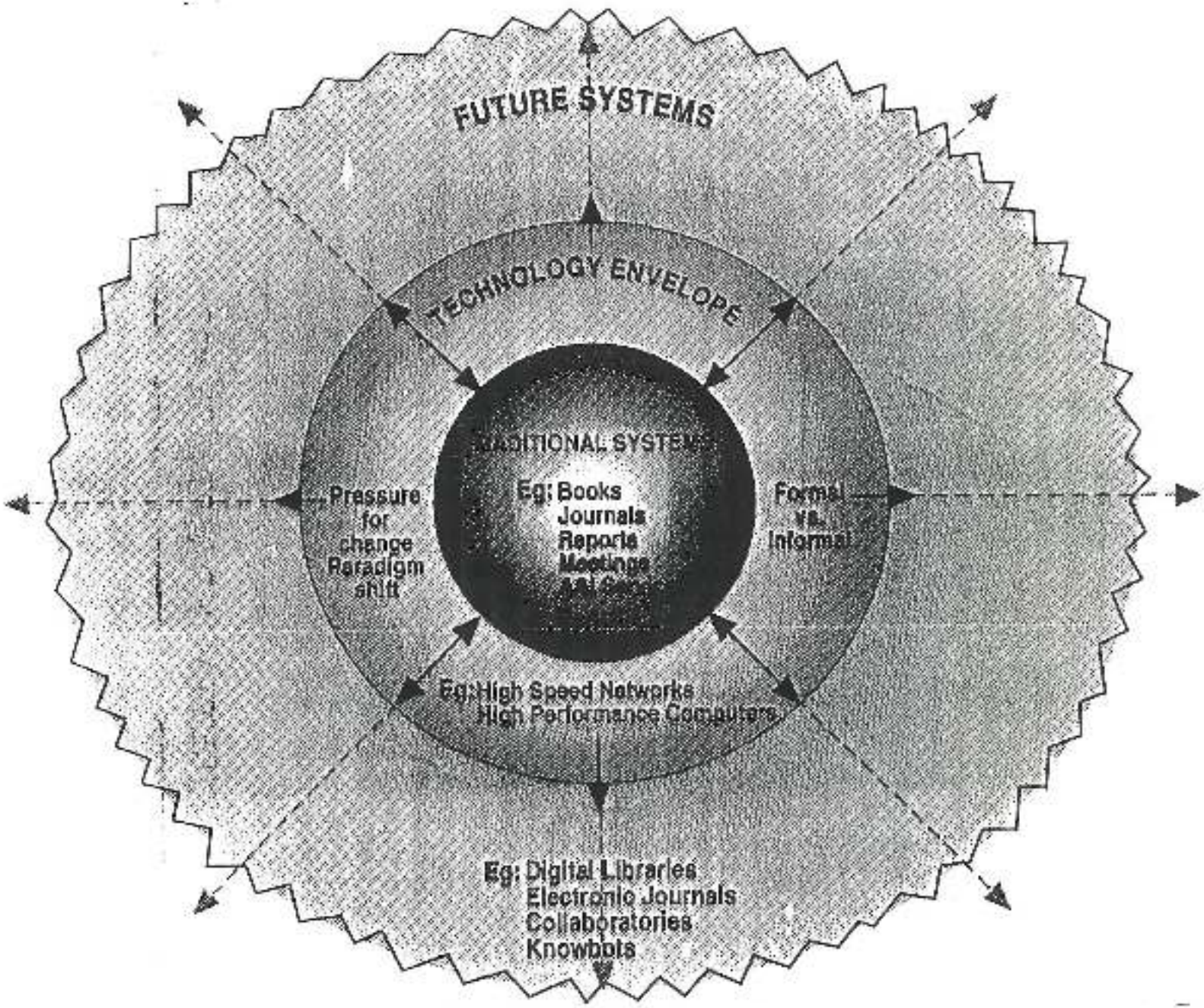
The total of these impacts was well summarized by a focus group session that was held as part of the Library of Congress study discussed previously. At this meeting it was noted that the pressure on traditional systems from the technology explosion has led to a shifting paradigm in scientific and technical communication. This idea is expressed graphically in Figure 2. The implications for the information professional is significant since he/she will now need to know software and data transfer mechanisms in addition to knowing about the structure, indexing, and content of information sources. A National Academy of Sciences Panel discussed this impact in a 1989 report called "Information Technology and the Conduct of Research: A User's View"[12]. As a result of this Panel effort, the Panel Chairman, Dr. Donald Langenberg, concluded that a new breed of information professional was needed that combined the skills of the librarian, computer scientist and technical analyst. This person would work in a new institutional model which combined the characteristics of libraries, computer centers and coffee rooms.[13]

To give an example from the information professional's point of view, in a recent paper by Huston and Kreitz[14] in one paragraph, they cover just a few of the interesting notions associated with some of these changes:

> "...'information resource' will be defined as a 'complex of databases and application software that render these databases accessible to a large community of end-users.'[15] 'Documents' do not have to exist as files; they can be 'virtual' documents generated by a server in response to a query or document name.'[16]". . .'Now, in addition to knowing the structure, indexing, and focus of a variety of print reference tools, they must also have expertise in software packages and data transfer between these packages to help their users access needed information.'[17]

5.0 NEW FORMS OF GREY LITERATURE

The relationship of these developments and the changing nature of grey literature is closely coupled. New forms of communication, if grey literature refers generally to material which is not systematically published or readily available, result in a lot more information that falls into that category. Much of this information is being packaged in evolving formats and systems. There are many conferences and task forces addressing the issues of how to manage or find material in the new networked world. Commercial publishers are actively trying to understand their future in view of these changing conditions. Non-technical issues, copyright being one of the most critical ones, are being hotly debated. As noted in a recent article by T. W. Howard, "One of the Major problems associated with electronic publishing on Internet has been the lack of a centralized distribution mechanism. Until recently, trying to find a particular file at an FTP site has been a bit like looking for a particular book in the Library of Congress without the benefit of a card catalog."[18]



Model for Developing Future Strategies in STI Management

If we look at the kinds of new forms and formats of information being created and communicated over the Internet and with high performance computers, we see such phenomenon as the development of WAIS (Wide-area Information Servers) databases and WAIS servers. In the Spring of 1992 WAIS was a new information retrieval system based on the NISO Z39.50 protocol using relevance feedback retrieval and client-server functionality. It was developed by Thinking Machines, Inc. of Boston, Massachusetts. The source code for the open protocol, information servers, and for several interfaces was made freely available over the Internet. In addition, Thinking Machines established and maintained a directory of information servers which WAIS users could search to find out about available information sources. Today the experiment has resulted in the creation of new interfaces. By February of 1993, the availability over the Internet of more than 350 servers in 12 countries serving over 15,000 users in 28 countries. In the first six months alone, about 400 users from 20 countries tried the system. They had no training other than documentation.[19] In 1992 WAIS, Inc. was formed as a commercial company to develop a commercial version. However, the freeware versions are being extensively propagated, tested and used world-wide.

In the area of electronic bulletin boards, there is also a rapid rate of growth. Fedworld, the gateway to U.S. Federal Bulletin Boards now provides access to over 120 formal and stable systems. LISTSERVs, which function like a variation of a bulletin board are spreading in every direction and are increasingly documenting activities of technical working groups. The extent of the impact of such communication and "documentation" tools can be illustrated by the extreme position of one physicist. In a recent issue of Science, a physicist was quoted as "The only thing I use journals for is looking back for papers that came out before bulletin boards existed."[20]

Digital libraries are being discussed throughout the technical community. However, digital libraries are ill defined, not under bibliographic control, and certainly grey in terms of bibliographic control and systematic access. To illustrate, in a recent Internet course given at the University of Tennessee, the students were admonished to "grab" any important material that they find because on-line sources often evaporate temporarily or permanently on the Net. Or as another example, a research librarian searching through gophers using Veronica for information on networks, found something called mil/country codes compiled by Oliver M.J. Crepin-Leblond. She telneted to the system and found descriptions of Internet connections in various countries. She also found the note from the "author" stating,

> "The situation changes from day to day. The growth in international networking is such that the information contained in this document may be out of date by the time it reaches you."

Newsgroups is another growing form of communication. It is estimated that "depending on how you count (there are) between 2,500 and 6,000 newsgroups worldwide."[21]

It is ironic that the evolution of enabling technologies, where potentially much greater information is freely available, has resulted in a situation where more information can now be considered grey or difficult to find and not easily accessible through normal channels. The irony of the information age is not a problem of scarcity, but of overload.

Grey information or grey literature of the 1990s is a phenomenon of sifting through the masses of data to find the right information at the right time, especially when it's all out there available. The challenge of identification and cataloging of technical reports in the 1960s is now reincarnated as a challenge of navigating through LISTSERVs, bulletin boards, FTP sites, and with Knowbots, Government Information Locators (GILS), Gopher Servers, Archie, World-Wide Web, Veronica, Jughead or MOSAIC. These last few creatures are new forms of location or identification tools, a new approach to "Bibliographic control" of the new grey literature. The question of grey literature here is whether traditional definitions still hold or do we need to rethink our approach to difficult to access material in a networked world. At a minimum it is clear that we have added an interesting time dimension to the world of grey literature. This is something that always existed in databases that were updated. However, because of the Internet, the new kind of communication it enables, as well as real time publishing and distribution that is taking place today, this problem is greatly exacerbated and the volume and diversity of grey information needs is greatly increased.

6.0 THE CHALLENGE

It is clear that the reason we see this proliferation as a problem in the extreme is because we are in transition -- or in a shifting paradigm. As the NII matures we will see information sources becoming more stable and the grey problem will become more tractable. In coping with this challenge it is useful to look at lessons from the past. It is interesting to begin with the vantage point of the post World War period that culminated in the Weinberg Report. New forms of scientific communication, and especially the technical report have become sought after media of technical communication. Because change is so rapid today at a minimum we must recognize and pay attention to the world of information that technology is enabling. Perhaps the challenge and the end point of this paper can best be expressed by the internet question of the month: "In what month will the number of bytes run through the internet exceed the number of atoms in the universe?"

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AEROSPACE AND OTHER GREY LITERATURE FROM NATO

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Abstract

This paper first describes briefly the history, mission and present structure of AGARD (NATO's Advisory Group for Aerospace Research and Development), and then lists the types of publications it produces, with examples, and describes how to find out about them and obtain them. Finally, it mentions very briefly other NATO bodies that produce 'grey' literature.

1. INTRODUCTION

The aim of this paper is to describe some of the unclassified grey literature available from NATO (the North Atlantic Treaty Organisation). As most people know, the Headquarters of NATO is in Brussels, but there are many branches, agencies, research centres, schools, and military headquarters, in other countries, throughout Europe and in North America. Many of these bodies produce grey literature, but much of it is classified (in the defence sense), and a large proportion of the unclassified material is strictly limited in its availability. Moreover, most librarians and information scientists know well the problems of finding out about the existence of NATO literature and then obtaining it. It is hoped that this paper will clarify the position a little.

One of these bodies, the Advisory Group for Aerospace Research and Development (more commonly known as AGARD), does produce a large amount of freely available 'grey' literature (in many colours, in fact!), and the paper concentrates on these publications. Although AGARD is well known within the aerospace R and D field, it is less well known outside (even by information specialists or librarians). So that you may know what I am talking about, this paper first describes briefly the functions and structure of AGARD. Then it describes AGARD's publications and how to obtain them, giving examples of a few major or unusual ones. Finally, it gives a brief description of the other major NATO bodies that produce grey literature available to the general public.

2. THE ORIGIN OF AGARD.

AGARD was set up in 1952 as a result of the vision of one man. Dr Theodore von Kármán (1881 - 1963), Fig 1, the son of a philosopher, was a Hungarian by birth who had become Professor of Aeronautics at Aachen University in Germany, and had then moved to the USA during the 1930s and become a US citizen. He was a polymath, but his main interest was in aerodynamic research, and later propulsion. In 1952, he was the Chairman of the Scientific Advisory Board of the US Air Force. Watching politicians arguing, and the start of the Cold War, he had had the inspiration that nations could get

on better together at the working scientific level than at the political level. As he put it in his book, 'The Wind and Beyond' (Little, Brown and Co. (Inc.), Boston, MA, 1967):

> *After observing many international squabbles over the years, I still think my original conclusion is correct, that the differences which exist among nations are due largely to politicians who feel impelled to argue from national positions rather than from the rights or wrongs of a specific issue. It is remarkable, in contrast, how easy it is for one nationality to get along with another if you deal only with individuals at the 'working level'. The individuals interested in the product, and in the technological and scientific problems of creating it, understand one another very well; even though they do not speak the same language, they will make themselves understood through their common scientific backgrounds.*

Fig. 1 Theodore von Kármán, the Founder of AGARD

He also believed that:

> *Progress in technology is so swift that only a pool of nations can properly utilise scientific advances for mutual protection.*

He wanted to try out these theories, and when he heard of the formation of the North Atlantic Treaty Organisation (NATO) in 1950, he thought that it would be a golden opportunity to do so. In 1951 he chaired a conference of NATO Aeronautical Research Directors held in Washington DC. At this meeting, it was unanimously agreed to form an organisation to be called the Advisory Group for Aeronautical Research and Development. An inaugural meeting was held in 1952 in Paris, and was attended by 11 NATO nations. That meeting agreed to the establishment of AGARD and set up its first four Panels to cover a wide range of activities:

Fundamental research
- a Combustion Panel;

Applied research
- an Aerospace Medical Panel, and
- a Flight Test and Instrumentation Panel;

Coordination of means of research
- a Wind Tunnel and Model-Testing Panel.

These four Panels, with international membership from the NATO nations, had started work by the Fall of 1952. In December of that year, a Documentation Committee was set up to advise AGARD on information problems.

For two years, the new organisation was supported by the United States Air Force, but in 1954 the NATO nations agreed that it should become an Agency of NATO and be supported by NATO funds. The name was changed to include space in 1965.

AGARD's mission, as defined in its Charter, is given in Fig 2. Essentially, however, it can be summarised as a mission to interchange information about aerospace Research and Development between the NATO nations, so that all may benefit from advances made by any of them.

According to its Charter, the mission of AGARD is to bring together the leading personalities of the NATO nations in the fields of science and technology relating to aerospace for the following purposes:

- Recommending effective ways for the member nations to use their research and development capabilities for the common benefit of the NATO community;
- Providing scientific and technical advice and assistance to the Military Committee in the field of aerospace research and development (with particular regard to its military application);
- Continuously stimulating advances in the aerospace sciences relevant to strengthening the common defence posture;
- Improving the co-operation among member nations in aerospace research and development;
- Exchange of scientific and technical information;
- Providing assistance to member nations for the purpose of increasing their scientific and technical potential;
- Rendering scientific and technical assistance, as requested, to other NATO bodies and to member nations in connection with research and development problems in the aerospace field.

Fig. 2 The Mission of AGARD

3. THE STRUCTURE OF AGARD

AGARD is governed by a Board of National Delegates, who are leading personalities (civilian or military) in the field of aerospace research and development in the NATO nations. The Board meets twice yearly to approve the technical programme (in the Spring) and to hear reports on current work. Once they have approved the programme, it has to be passed to the NATO Military Committee and the Military Budget Committee which approve the technical and fiscal aspects, respectively.

The principal means of carrying out AGARD's mission is the Technical Panels. There is also an Aerospace Applications Studies Committee whose job is to advise the Military Committee of NATO on aerospace-related technology issues, mainly by carrying out studies on military systems technology issues associated with aerospace. The original four Panels (three of which have seen a widening of their areas of interest and a consequent change of name) have been joined by four others; and the Documentation Committee has become a Panel. Thus at present (Fall 1993) there are nine:

Aerospace Medical Panel - AMP
Avionics - AVP
Electromagnetic Wave Propagation - EPP
Flight Mechanics Panel - FMP
Fluid Dynamics Panel - FDP
Guidance and Control - GCP
Propulsion and Energetics Panel - PEP
Structures and Materials - SMP
Technical Information - TIP

However, the National Delegates Board has just decided that TIP should no longer be called a Panel. Instead it will revert to being a Committee, possibly with much the same functions that it had as the Documentation Committee in the early days of AGARD. Basically this means that it will no longer hold symposia. The Delegates have also decided that aerospace technology has changed so much since AGARD was formed that the present structure is unsatisfactory and that AVP, EPP, FMP and GCP, whose areas of interest overlap to a considerable extent, should be merged into three new Panels. The names and detailed functions of these new Panels will not be agreed until Spring 1994, so I am unable to give you any precise details of the new organisation. However, the new Panels will recognise that today's technology is more often system-driven than component-driven.

Each of the Panels has one Executive, a military or civilian specialist in the field concerned, who has been seconded by a NATO nation for two or three years. However, many enjoy living in Paris so much that they manage to extend their stay, up to ten years in one case. Each is assisted by a secretary. My own post is different from those of the other Executives, since as well as being the Executive of the Technical Information Panel, I am also responsible for AGARD's publications. In addition to the nine Executives, there are a number of other scientists or engineers, a Translator, and of course the usual financial, secretarial, clerical and other support staff. All told, AGARD has 50 staff.

4. AGARD's OPERATIONS

Each Panel holds two symposia or specialists' meetings a year (except TIP, which has always held one), each generally attended by 150-250 people. The papers submitted, and in some cases the discussions resulting and/or a Technical Evaluation Report (TER) of the meeting, are always published in a Conference Proceedings. Occasionally, meetings are classified; in most such cases, two separate publications result, a freely available one, containing the unclassified papers, and a classified supplement. In general we publish some 20 freely available conference proceedings a year. We aim to publish within four months of the meeting but, alas, authors, who are unpaid, are not always good at submitting their papers on time.

The Panels also sponsor other activities such as Lecture Series, up to 6 a year for the whole of AGARD, given by a team of about 6 experts in up to three NATO countries, Special and Short Courses, which are similar but are usually given by a smaller team and on a more specific topic, Working Groups, which usually meet four times in two years, and the exchange of experts between NATO nations, a large proportion of which is intended to provide help to Greece, Portugal and Turkey through a special Support Programme designed to benefit those nations. Finally, there are Military Committee studies, carried out at the direct request of the NATO Military Committee. The results of these are always defence classified.

5. AGARD's PUBLICATIONS

Many of these activities result in publications. As stated above, conference proceedings always result from the symposia or specialists' meetings held by the Panels. In a few instances, such a large proportion of the papers are classified that we decide not to produce an unclassified volume, but this does not happen often. Lecture Series notes are always produced to accompany the lectures, and publications called AGARD Reports arise from Panel Workshops and as an accompaniment to Special Courses. Working Groups

The numbers of copies distributed to the nations are decided by the nations themselves. The total is about 850, depending on the Panel, and a further 300 or so microfiche copies are also supplied. Most, if not all, Distribution Centres have standard lists of addresses to which they send our publications. However, they may have a few copies left over to meet individual requests in their nations, *except in the United States*, but sometimes these are available only to military or defence organisations.

7. IDENTIFYING AGARD PUBLICATIONS

There are a number of ways of identifying AGARD publications, either by number, title or subject matter.

All except possibly a few very early publications are indexed on the US National Technical Information Service's database, which is available on-line or on CD-ROM; and they are announced in Government Reports Announcements and Index (GRA & I). Similarly, they are indexed on NASA's database and announced in Scientific and Technical Aerospace Reports (STAR). The latter includes not only the complete documents, but also the constituent papers of Conference Proceedings, Lecture Series notes, etc. Not having on-line access to these databases, I do not know how easy it is to identify AGARD papers from them. I believe that you have to be ready to use AGARD, A.G.A.R.D. and even Advisory Group . . . , but perhaps someone can tell me that I am wrong. I hope so.

AGARD issues indexes every three years, and these are available from the same Distribution Centres as the publications themselves. The last was issued in 1992 and covered the period 1989-1991. These indexes are compiled by NASA from the entries in STAR and include a comprehensive listing of publications and constituent papers, classified by NASA's standard subject categories. Then follow subject, personal author, corporate source, report number and NASA accession number indexes. The report number index allows you to search by AGARD publication number, NTIS AD number and ISBN number. Incidentally, all our publications have an ISBN number starting 92-835- (and 836 - 839 are reserved for AGARD also). The last two issues of the index (publications from 1986) have also contained a Panel index. But this was not available for earlier publications.

A database of the same material is also available on CD-ROM. This disc contains full details of AGARD's publications up to the end of 1991, again including their constituent papers, a total of 17,666 items representing 3414 publications. Moreover, it also contains details of the books issued by the NATO Scientific Affairs Division, which are published by Kluwer, Plenum and Springer-Verlag, according to the subject-matter. The text of a leaflet about this disc is at Fig 5. Please note that the disc is available only from the address given in that figure, and not from AGARD. If you do buy one, however, please mention AGARD and this paper when ordering.

The 64 dollar question is whether this disc will be updated next year. I wish I could answer that, but with the increasing pressure on NATO's budget it is difficult to prophesy the future at all.

8. OBTAINING AGARD PUBLICATIONS

As mentioned above, you can sometimes obtain copies of AGARD publications from the Distribution Centres shown in Fig 4. Failing this, photocopies or microfiches can be

"Easy access to advanced knowledge and technical information on COMPACT DISK . . . . "

The new "NATO DISK"

The NATO-PCO DATABASE *and* the AGARD AEROSPACE DATABASE on CD-ROM

2 important databases of interest to scientists and engineers working in universities, research institutes and industry

We are pleased to announce that the enhanced version of the "NATO DISK", i.e. the computer-readable COMPACT DISK (CD-ROM) has just become available. It contains the first major update of the NATO PCO DATABASE with its 40.000 bibliographical records referring to non-military scientific/technical literature generated with the sponsorship of the NATO Science Committee, and - for the first time - a special version of the AGARD AEROSPACE DATABASE providing access to the aerospace literature resulting from the programmes of NATO's Advisory Group for Aerospace Research and Development.

With the easy-to-follow menu options of the retrieval software, access to data is simple and fast! The data is well-structured and the presentation is pleasant while functional. The software CD-ANSWER - (c) Copyright DATAWARE Technologies Inc. - which comes with the CD-ROM, received the prize for "The Best CD-ROM Retrieval Software of 1990". It functions in ENGLISH, FRENCH and GERMAN. *There is no need to learn a complex search language.*

The CD-ROM can be used with standard Personal Computer equipment (PC XT/AT or 100% compatible, minimum 512 KByte RAM and with MS-DOS/PC-DOS version 3.0 and above) including a CD-ROM drive.

The NATO-PCO DATABASE

The NATO-PCO DATABASE -(c) Copyright WTV GmbH, Germany - is a reference database. It covers more than 20 years of non-military scientific/technical meetings and publications in the NATO ASI SERIES, sponsored by the NATO Science Committee. The NATO ASI SERIES - which is the official vehicle for publication of the results of NATO Advanced Study Institutes, NATO Advanced Research Workshops and other high-level scientific/technical meetings - is published by KLUWER ACADEMIC PUBLISHERS (The Netherlands), PLENUM PUBLISHING Corporation (USA) and SPRINGER-VERLAG (Germany).

The NATO-PCO DATABASE contains full references (with keywords and/or abstracts) to more than 40.000 contributions from international scientists of high repute.

The database covers a broad spectrum of scientific disciplines: *LIFE SCIENCES, ECOLOGY, MEDICINE, CHEMISTRY, GEOSCIENCES, ASTRONOMY, MATHEMATICAL AND PHYSICAL SCIENCES, BEHAVIOURAL SCIENCES, MATERIALS SCIENCES, ENGINEERING, SYSTEMS and COMPUTER SCIENCES.*

The AGARD AEROSPACE DATABASE

This bibliographic database generated by PCO in co-operation with NASA (USA) and AGARD (France) provides information on thousands of AGARD-sponsored publications - conference proceedings, AGARDographs (major works of long-lasting interest), lecture series, reports and advisory reports - published from about 1960 to 1991. As is the case for the NATO-PCO DATABASE, the AGARD AEROSPACE DATABASE includes details not only of the complete publications but also of the papers contained in them (up to 40 or more in a conference proceedings).

AGARD (The Advisory Group for Aerospace Research and Development) is an agency of NATO based in Paris. Its mission is essentially to interchange information about R&D in aerospace within and between the NATO nations. AGARD's areas of activity cover: *AEROSPACE MEDICINE, AVIONICS, FLIGHT MECHANICS, ELECTROMAGNETIC WAVE PROPAGATION, FLUID DYNAMICS, GUIDANCE AND CONTROL, PROPULSION AND ENERGETICS, STRUCTURES AND MATERIALS, and TECHNICAL INFORMATION.*

The price for the CD-ROM containing both databases is DM 1.140 -- or USD 780.00 (excluding tax). Updates are planned to appear on a yearly basis.

The "NATO DISK" is available from:

NATO ASI SERIES Publication Coordination Office (PCO),
(Information Office of WTV GmbH, Germany)
Eleerlyclaan 2, B-3090 Overijse / BELGIUM

Tel. +32-2-687.66.36 Fax. +32-2-687.98.82

Fig. 5 The NATO Disc

bought from three Sales Agencies, in the United States, Britain, and France - see Fig 6. Photocopies and microfiches, of course, reproduce coloured illustrations only in black and white. This is not a major problem, because we use colour rarely, but it has occasionally been included as an aid to understanding such illustrations as fluid flow or temperature diagrams, graphs with many curves, photographs of corrosion, etc. We have even produced colour microfiches for one publication which had a large number of fluid flow diagrams.

NASA Center for
Aerospace Information (CASI)
800 Elkridge Landing Road
Linthicum Heights, MD 21090-2934
United States

The British Library
Document Supply Centre
Boston Spa, Wetherby
West Yorkshire LS23 7BQ
United Kingdom

ESA/Information Retrieval Service
European Space Agency
10, rue Mario Nikis
75015 Paris
France

Fig. 6 AGARD's Sales Agencies

If you are a member of a NATO nation, and wish to receive a copy of all future AGARD publications, or possibly just those relating to one or more specific Panels, you should write to your Distribution Centre and ask them to put you on their distribution list. I can not guarantee that they will do so, however, because each country is autonomous in this regard, so it is up to you to make a convincing case.

If you are not a member of a NATO nation, or if your Distribution Centre is unable or unwilling to supply a copy of all publications, we may be able to help. We have recently concluded our first deal for the supply of a complete year's publications, so this is a very new area for us and I can not give you any further details at present. If you are interested, please write to me at AGARD HQ, or send a fax - but no 'phone calls, please!

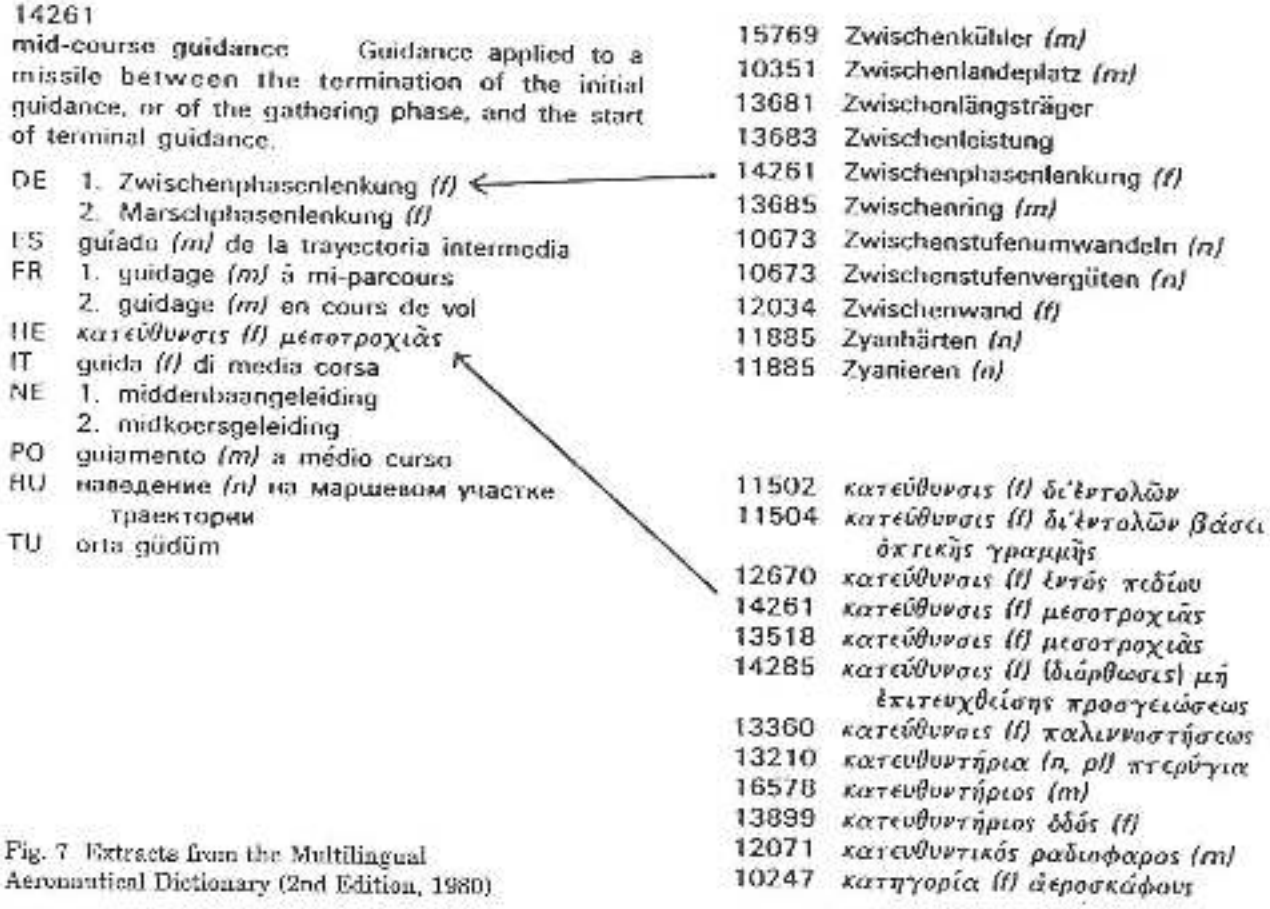
AGARD has also recently taken the decision to make available for sale from AGARD HQ limited numbers of copies. However, we do not have spares of all, particularly older publications, so we may not be able to satisfy all your requests. We accept payment in US dollars, pound Sterling or French francs.

9. EXAMPLES OF AGARD PUBLICATIONS

I should now like to give you a few examples, selected almost at random from the wealth of available material, of notable publications that have been produced by AGARD, both in the past and recently.

The Multilingual Aeronautical Dictionary is perhaps the best-known. Two editions have been produced, in 1960 and 1980. Regrettably, both these are out of print now, but we would willingly let any reputable publisher re-print one of them, or produce a computer-readable version, provided there was no cost to AGARD. Any offers? Fig 7 shows one main entry in the second edition, with cross-references to it in Greek and German (all enlarged). This edition has definitions in English, and translations of the terms in Dutch, French, German, Greek, Italian, Portuguese, Russian, Spanish and Turkish.

Flight Test Instrumentation and Flight Test Techniques are two series of publications sponsored by the Flight Mechanics Panel. They have the numbers AG 160, vols 1 -19 and AG 300, vols 1 - 10, respectively. These are renowned throughout the aerospace world, and further volumes of the second series are in preparation. Figs 8a and 8b give a complete list of the titles of these series, as at the end of 1993.



14261
mid-course guidance Guidance applied to a missile between the termination of the initial guidance, or of the gathering phase, and the start of terminal guidance.

DE 1. Zwischenphasenlenkung *(f)*
2. Marschphasenlenkung *(f)*
ES guiado *(m)* de la trayectoria intermedia
FR 1. guidage *(m)* à mi-parcours
2. guidage *(m)* en cours de vol
HE *κατεύθυνσις (f) μεσοτροχιᾶς*
IT guida *(f)* di media corsa
NE 1. middenbaangeleiding
2. midkoersgeleiding
PO guiamento *(m)* a médio curso
RU наведение *(n)* на маршевом участке траектории
TU orta güdüm

15769 Zwischenkühler *(m)*
10351 Zwischenlandeplatz *(m)*
13681 Zwischenlängsträger
13683 Zwischenleistung
14261 Zwischenphasenlenkung *(f)*
13685 Zwischenring *(m)*
10073 Zwischenstufenumwandeln *(n)*
10673 Zwischenstufenvergüten *(n)*
12034 Zwischenwand *(f)*
11885 Zyanhärten *(n)*
11885 Zyanieren *(n)*

11502 *κατεύθυνσις (f) δι'ἐντολῶν*
11504 *κατεύθυνσις (f) δι'ἐντολῶν βάσει ὀπτικῆς γραμμῆς*
12670 *κατεύθυνσις (f) ἐντὸς πεδίου*
14261 *κατεύθυνσις (f) μεσοτροχιᾶς*
13518 *κατεύθυνσις (f) μεσοτροχιᾶς*
14285 *κατεύθυνσις (f) (διάρθωσις) μὴ ἐπιτευχθείσης προσγειώσεως*
13360 *κατεύθυνσις (f) παλινναστήσεως*
13210 *κατευθυντήρια (n, pl) πτερύγια*
16578 *κατευθυντήριος (m)*
13899 *κατευθυντήριος ὁδός (f)*
12071 *κατευθυντικός ραδιοφάρος (m)*
10247 *κατηγορία (f) ἀεροσκάφους*

Fig. 7 Extracts from the Multilingual Aeronautical Dictionary (2nd Edition, 1980)

The Manual on Aeroelasticity in Axial-Flow Turbomachines (AG-298) is a two volume manual published in 1987 and 1988. The volumes relate respectively to Unsteady Turbomachinery Aerodynamics, and Structural Dynamics and Elasticity and have a high reputation.

Design and Testing of High-Performance Parachutes (AG-319) is a major review, and was written by two very eminent researchers in this field. It also has some very beautiful colour photographs.

Aircraft Fire Safety (CP-467) is an example of one of our conference proceedings on an important and topical subject. It has 40 papers in sessions on: a review of fire-related aircraft accidents, fire safety standards and research programmes, aircraft internal fires, aircraft external fires, fire safety of military weapon systems, fire hardening, passenger behaviour, and passenger protective equipment.

The Manual on the Evaluation of Information Centers and Services (AG-310) is one publication that should be of great interest to the participants at this conference. This manual arose out of an AGARD Lecture Series, "Evalnating the Effectiveness of Information Centres and Services", (LS-160, published September 1988) and was written by José-Marie Griffiths of the University of Tennessee and Donald King of King Research Inc, two well-known practitioners in the art of evaluating libraries and information services. Part of its appeal lies in the fact that it is relatively slim (118 pages of text) and is therefore quick to read. Despite this, it is full of good advice on the subject; and there

Volume Number	*Title*	*Publication Date*
1.	Basic Principles of Flight Test Instrumentation Engineering by A.Pool and D.Bosman (under revision)	1974
2.	In-Flight Temperature Measurements by F.Trenkle and M.Reinhardt	1973
3.	The Measurement of Fuel Flow by J.T.Franco	1972
4.	The Measurement of Engine Rotation Speed by M.Vedrunes	1973
5.	Magnetic Recording of Flight Test Data by G.F.Bennett	1974
6.	Open and Closed Loop Accelerometers by I.Mclaren	1974
7.	Strain Gauge Measurements on Aircraft by E.Kottkamp, H.Wilhelm and D.Kohl	1976
8.	Linear and Angular Position Measurement of Aircraft Components by J.C. van der Linden and H.A.Mensink	1977
9.	Aeroelastic Flight Test Techniques and Instrumentation by J.W.G. van Nunen and G.Piazzoli	1979
10.	Helicopter Flight Test Instrumentation by K.R.Ferrell	1980
11.	Pressure and Flow Measurement by W.Wuest	1980
12.	Aircraft Flight Test Data Processing — A Review of the State of the Art by I.J.Smith and N.O.Matthews	1980
13.	Practical Aspects of Instrumentation System Installation by R.W.Borek	1981
14.	The Analysis of Random Data by D.A.Williams	1981
15.	Gyroscopic Instruments and their Application to Flight Testing by B.Stieler and H.Winter	1982
16.	Trajectory Measurements for Take-off and Landing Test and Other Short-Range Applications by P.de Benque d'Agut, H.Riebeek and A.Pool	1985
17.	Analogue Signal Conditioning for Flight Test Instrumentation by D.W.Veatch and R.K.Bogue	1986
18.	Microprocessor Applications in Airborne Flight Test Instrumentation by M.J.Prickett	1987
19.	Digital Signal Conditioning for Flight Test by G.A.Bever	1991

Fig. 8a The Flight Test Instrumentation Series (AG-160, vols 1 -)

Number	*Title*	*Publication Date*
AG237	Guide to In-Flight Thrust Measurement of Turbojets and Fan Engines by the MIDAP Study Group (UK)	1979

The remaining volumes are published as a sequence of Volume Numbers of AGARDograph 300.

Volume Number	*Title*	*Publication Date*
1.	Calibration of Air-Data Systems and Flow Direction Sensors by J.A.Lawford and K.R.Nippress	1983
2.	Identification of Dynamic Systems by R.E.Maine and K.W.Iliff	1985
3.	Identification of Dynamic Systems -- Applications to Aircraft Part 1: The Output Error Approach by R.E.Maine and K.W.Iliff	1986
4.	Determination of Antenna Patterns and Radar Reflection Characteristics of Aircraft by H.Bothe and D.McDonald	1986
5.	Store Separation Flight Testing by R.J.Arnold and C.S.Epstein	1986
6.	Developmental Airdrop Testing Techniques and Devices by H.J.Hunter	1987
7.	Air-to-Air Radar Flight Testing by R.E.Scott	1988
8.	Flight Testing under Extreme Environmental Conditions by C.L.Henrickson	1988
9.	Aircraft Exterior Noise Measurement and Analysis Techniques by H.Heller	1991
10.	Weapon Delivery Analysis and Ballistic Flight Testing by R.J.Arnold and J.B.Knight	1992
11.	The Testing of Fixed Wing Tanker & Receiver Aircraft to Establish their Air-to-Air Refuelling Capabilities by J.Bradley and K.Emerson	1992

At the time of publication of the present volume the following volumes were in preparation:

Identification of Dynamic Systems. Applications to Aircraft.
Part 2: Nonlinear Model Analysis and Manoeuvre Design
by J.A.Mulder and J.H.Breeman

Flight Testing of Terrain Following Systems
by C.Dallimore and M.K.Foster

Reliability and Maintainability
by J.Howell

Testing of Flight Critical Control Systems on Helicopters
by J.D.L.Gregory

Introduction to Flight Test Engineering
Edited by F.Stoliker

Space System Testing
by A.Wisdom

Flight Testing of Radio Navigation Systems
by H.Bothe and H.J.Hotop

Fig. 8b The Flight Test Techniques Series (AG-237 and AG-300, vols 1 -)

are very few such books around. Whilst copies may be available from Distribution Centres or the Sales Agencies, AGARD has made a special arrangement with the American Institute of Aeronautics and Astronautics (AIAA), and they have copies for sale (for $25, I believe) from:

AIAA Technical Information Service
555 West 57th Street, Suite 1200
New York, NY 10019, USA
fax: 1 (212) 582 4861

The Engineering Data Compendium, published in 1988, is a more unusual publication. It was prepared by the Human Engineering Division of the US Wright-Patterson Air Force Base and was sponsored jointly by AGARD, NASA, and 8 US defense research laboratories or institutes. It contains over 2500 pages of detailed engineering information in three large volumes, organised in handy pull-out sections, to help designers appreciate the implications in human terms of their design decisions. It is accompanied by a 140-page user's guide.

This publication is not available from AGARD, although copies in a rather less convenient form may be available from the Sales Agencies. It is still possible to buy originals (all 2500 pages, plus a users' guide) for $295 from:

Crew System Ergonomics Information Analysis Center
(CSERIAC)
Human Engineering Division
Wright-Patterson Air Force Base
OH 45433-6573, USA
fax: 1 (513) 255 7596

CASHE (Computer Aided Systems Human Engineering) is a new venture following from this, and also sponsored partly by AGARD. This will be a CD-ROM with an interactive, data-driven, prototyping system, allowing access to and simulation of the information contained in the Compendium and in MIL-STD-1472D, with hyperlinks between these two reference documents. It will have two main tools. The *Perception and Performance Prototyper* will provide experiential understanding of human perception and performance phenomena, for instance the effect of noise on the understanding of a message, or the effect of different colour combinations on symbol recognition. The second tool will be a *Data Viewer* for manipulating quantitative relations contained in the information base. The aim of the Data Viewer is also to promote recognition and understanding, but through an intellectual channel instead of an experiential one. Fig 9 shows diagrammatically how these aspects will inter-relate. This CD-ROM is expected to be available with a user manual about the middle of next year (1994), at a cost below $300. Further information can be obtained from the address in the previous paragraph.

10. OTHER NATO AGENCIES

I have already mentioned the Scientific Afairs Division of NATO, which produces books that are published by commercial publishers. However, at least three other NATO agencies produce grey literature.

The SHAPE Technical Centre (STC), located in The Hague, provides scientific and technical advice to NATO's Supreme Allied Commander Europe. It produces a number

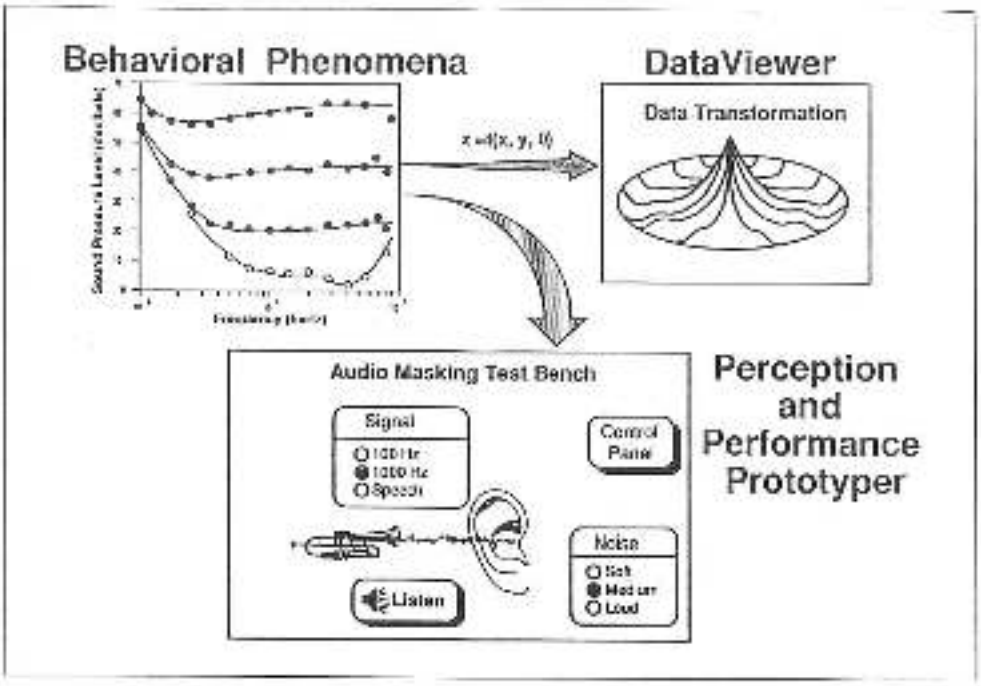


Fig. 9 CASHE (Computer Aided Systems Human Engineering)

of Technical Reports (TR) and Technical Memoranda (TM). Many of these are classified but some are NATO UNCLASSIFIED, which means that they may be available to non-government organisations and private individuals in the NATO nations, provided they have a "need-to-know" - yes, even for unclassified documents. Further information may be obtained from the Head of the Services Group, SHAPE Technical Centre, PO Box 174, 2501 CD, The Hague, The Netherlands.

SACLANT Undersea Research Centre (Saclantcen) is a research centre located in La Spezia, northern Italy, which serves SACLANT (NATO's Supreme Allied Commander, Atlantic). It too produces a number of technical reports, in three series, Saclantcen Reports (SR), Saclantcen Memoranda (SM) and Conference Proceedings (CP). As with STC, many of these are classified, but some are NATO UNCLASSIFIED, and occasionally permission may be given for a non-governmental organisation in a NATO country, with an appropriate "need-to-know", to receive a copy of one of the latter. Further information may be obtained from the Head, Scientific and Technical Information Department, SACLANT Undersea Research Centre, Viale San Bartolomeo 400, I-19138 La Spezia, Italy.

The Defence Research Group (DRG) is one of a number of groups reporting to NATO's Conference of National Armaments Directors (CNAD). It has a panel structure similar to AGARD's, but with the main work being performed by subsidiary bodies called Research Study Groups (RSGs). DRG produces a number of technical publications, as follows: Technical Reports (TR) - final reports from RSGs and other subsidiary bodies; Technical Notices (TN) - primarily supporting documents, such as copies of national reports, viewgraph presentations, etc; and Technical Proceedings (TP) - proceedings of conferences held by the DRG and its subordinate bodies. Again, many of these are classified, but some are NATO UNCLASSIFIED, and may be available to non-government organisations with an appropriate "need-to-know". Further information can be obtained from the Head of the Defence Research Section, NATO HQ, B-1110 Brussels, Belgium.

(6) Journals and research reports published by universities:
Basic studies which are mostly selected by easier referee systems are included.

(7) Technical reports published by private companies:
Results of R&D in the laboratories of private companies are not commercially available.

(8) Conference papers and pre-prints:
They are distributed only to those who attend the conference.

(9) Dissertation:
In many cases, there is no distribution system for these documents, and are mostly filed at universities.

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1. What is "Grey literature" ?

"Grey literature" is a term born in Europe, and is also referred to as "non-conventional literature", "difficult-to-obtain literature" and "hard-to-get literature".

This term has used in Japan since 1980's, and is particularly well known in the scientific and technical communities.

"Grey literature" attracted world wide attention when U.S. strongly asked Japan to facilitate distribution of such literature overseas during the negotiation of the "Agreement between the Government of Japan and the Government of the United States of America on Cooperation in Research and Development in Science and Technology" in 1988.

2. Definition of grey literature

Grey literature is defined as follows:

(1) Documents are not confidential

(2) Documents are not available through ordinary distribution channels

Its features are as follows:

(1) Published for a specific audience
(2) Distribution is restricted to a specific audience
(3) A very small circulation area
(4) Not for sale
(5) Bibliographic elements are incomplete

In many cases, grey literature contains valuable information such as recent high technology, big-project, policy and the trends in science and technology, which is not available from journal articles and papers.

3. Many kinds of documents in grey literature in Japan

There are a variety of documents in grey literature, as explained below. It is not always difficult to obtain these documents. In some cases, it is easy for public institutions to get them.

(1) Reports, proposal papers and reports of contracted research by diversified sets of councils and committees of administrative organ, excluding white papers and industrial statistics which are made public:

These are grouped into two:

1) reports containing results examined by councils and committees within organizations
2) papers submitted by the contracted think tanks

These documents have comprehensive and macro-scopic information, such as long-term prospects, policies and important measures.

(2) Research reports, technical reports and annual reports published by research institutions and laboratories of administrative organs:

These documents focus on fundamental research, research with a long-term prospect and regional research.

(3) Bulletins, research reports and annual reports published by foundations, incorporated associations and societies:

Specific topics for their members are contained as well as the reports of their activities. They are not distributed to non-members.

(4) Research reports submitted by think tanks:

Results of the contracted research and independent research are compiled. Macro-scopic study and analysis in sociology, economics, industry and enterprises are included. Very few of these documents are circulated.

(5) Bulletins, journals and annual reports published by hospitals:

Research results in the clinical field are included.

(6) Bulletins, research reports and annual reports published by universities and colleges:

Results in the documents are mainly of basic and fundamental studies. In many cases, they are selected under easier referee systems than papers from academic society. The subsequent documents vary a great deal in quality.

(7) Technical reports and annual reports published by private companies:

Though the purpose of these reports is to make their own R&D results public, they are not available through ordinary channels.

Technical reports of private companies in Japan are much different from the ones in the U. S., which come from PB (Publication Board), AD (Accession Document), NASA (National Aeronautics and Space Administration) and DOE (Department of Energy).

The real technical reports, while similar to the aforementioned documents, are very few. Only JAERI (Japan Atomic Energy Research Institute) Report and NAL-TR (National Aeronautic Laboratory) are popular.

(8) Conference proceedings and pre-prints published by academic societies:

These are handed only to participants and members of the society.

(9) Dissertations:

These cover doctoral theses and master's theses. Professors and students have easy access to them.

UMI (Universal Microfilm International) in the U.S. and BL (British Library) in the UK are making efforts to put them on ordinal distribution channels.

(10) Translations:

These are not fully or partially translated journal, but individual papers translated by private companies or translators. In many cases they are privately stored.

In some cases, the following are included in "grey literature" as well.

(11) Pamphlets and catalogues published and distributed by private companies:

(12) Industrial standards and specifications;

However, it is unreasonable to include them in grey literature, because the primary purpose of these documents is to make them public.

4. How to access grey literature

Japan has some organizations which collect grey literature and provide information on accessing such documents through online and secondary materials.

(1) The Japan Information Center of Science and Technology (JICST)

(a) Database

-- Japan National Bibliography

This comprehensively covers and catalogues both monographs and serials produced in Japan. Computerized data are also available through Japan-MARC(M), and offered by CD-ROM as J-BISC.

-- National Diet Library Catalogue of Japanese Serials

This is the periodical catalogue of journals, university bulletins, newspapers, newsletters, yearbooks, annual reports and so on. The data is also available through Japan-MARC(S).

-- Japanese Periodicals Index

It is a quarterly index to articles appearing in major Japanese journals and has two separate parts: Humanities and Social Sciences; and Science and Technology.

(4) Institute for Dissemination and Research of Government Data (IDRGD)

This institution collects white papers, minutes, publicity documents, committee documents, experimental reports which are not for sale.

The institute publishes "Monthly Government Abstracts" and "Biyearly Summary of Government Document" as tools for locating these documents.

(5) NIRA (National Institute for Research Advancement)

NIRA, one of the major think tanks in Japan and a kind of foundation which subsidizes research of think tanks, collect approximately 3,000 titles and abstracts of research submitted by 200 think tanks in Japan, and publish "Annual Report of Think Tanks".

This is a valuable report for researchers, because it is difficult to access these results and findings. However, there are two problems in the report, as follows:

1) Not all the results are covered
2) Many of the collected documents are confidential

(5) Nomura Research Institute (NRI)

NRI, one of the biggest private think tanks and a system integrator in Japan, publishes the monthly journal "Nomura Search", which lists approximately 400 research results of think tanks by fields.

This journal covers research results of the social sciences as well as science and technology. It contains 400 titles in this field, some of which also have abstracts.

5. Problems of smooth distribution of grey literature

These problems should be overcome in cooperation with an administrative organ and information institution (information collector and information provider).

(1) Promoting distribution by administrative organ

Grey literature has been taken up as one of the important topics in discussions of the Japanese and U.S. Governments.

Administrative organs should recognize the importance of promoting the distribution of grey literature as policy. They should consequently promote vigorously the distribution of their respective grey literature.

(2) Increase distribution and establish access points

Institutions are required to make continuous efforts to increase distribution of the documents they produce.

Documents should systematically controlled and access points established.

(3) Assignment of bibliographic elements

Improving and assigning bibliographic elements are necessary for cataloguing and computerizing grey literature.

In order to facilitate this process, SIST (Standard for Information of Science and Technology) must become more visible and popular.

Considerations on the organizational approach and treatment of grey literature in Italy

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Abstract

A general view of the organizational approach and treatment of grey literature (GL) in Italy is given on the basis of literature data (from 1987 to 1992) and personal experience. The study points out the generally widespread interest for GL; the existence of different types of producers and different ways of treating this material. From this general outlook, the necessity emerges to reach a common standard for the treatment and management of this precious material, that is a cooperative effort at the national level to coordinate all the existing initiatives, among which special attention is given to the creation of an *ad hoc* database for grey literature within the Italian national library service (SBN), which will contribute to the growth of the Italian input to SIGLE.

1. Introduction

The literature that appeared in Italy in these last years on the theoretical and practical aspects of the "grey" documentation is mainly represented in two volumes [1-2], containing papers of various authors who describe their experience on the matter and offer their considerations and suggestions to improve the access to information and availability of the grey documents. These papers give an idea of the different realities existing today as regards the producers and their products. On the basis of this literature, an analysis was carried on to gather data and information in order to understand the size of the problem and to reflect on the organizational approaches and treatment of this material.

The Italian documentary output which results from the survey points out the generally widespread interest for GL, that is more concerned with communication of ideas or results than with immediate profits. Most of the production, therefore, is found in the scientific and technological fields, but, as it will be shown, the central and local government bodies, municipal enterprises, socio-economical bodies, cultural institutes and even libraries of small towns produce a lot of valuable documents, which deserve a wider audience.

2. Administration

Much of the documentary output of the Italian central or local government authorities, government agencies and public administration, belongs to the typology of GL. Though some bodies, particularly those operating in the fields where information is necessary for

decision making, have organized their output and input, recording the items in details, the identification and localization at national level of such a valuable and useful material remain a huge problem.

The grey products of the Italian Parliament (Chamber of deputies and Senate) have increased in these last times because the request for documentation by parliamentarians, special interest groups and citizens has increased. The various services and the libraries of the two branches of Parliament prepare dossiers, reports, bibliographical notes, etc., bound to the topics and acts to be discussed in committees and assemblies, and pamphlets, leaflets, periodicals and other literature providing information and advice to the general public [3].

The Chamber of deputies and Senate have the legal deposit (Law No. 432 of 1910) of all the publications issued by government agencies.

The library of the Chamber of deputies has taken the initiative to create a database for GL which is produced by or enters the Chamber. The database should represent a local library in the system DOBIS/LIBIS used for all the library materials. The entries are treated according to the same cataloguing rules and indexing terms, based on a thesaurus created for parliamentary documents [4].

The Observatory on the Public Administration, created in 1990 by the Italian National Research Council (Consiglio Nazionale delle Ricerche - CNR) and the Italian Central Institute of Statistics (Istituto Centrale di Statistica - ISTAT) in the framework of the finalized project on the management of public administration, is a structure which aims at collecting all the information sources produced by the central government agencies (government departments, public companies, national public boards, etc.) concerning their own organizational patterns. For this purpose the Observatory has established a documentation service and a study centre with the objective of providing researchers, scholars and students with information and documents necessary to their studies. Grey literature of administrative nature, mostly of archival character, has a great share of the input, having the official publications the first place. The main tool used to locate and retrieve grey literature in this field is represented by a network of collaborators inside the government departments and public bodies, giving rise to direct contacts and information feedback with the producers of these documents [5].

This structure may be considered an interesting experiment of collaboration between researchers and librarians/documentalists.

The library of the State Audit Office, which is specialized in administrative-juridical and economical-financial matters, collects all the materials issued by the public administrations on the basis of the criteria of utility-congruence. The experience of this structure, which treats the grey materials in the same way as the conventional ones, makes evident that the informal studies carried out in the government departments are much more numerous than people may think, they are often known a long time after their elaboration, being consulted with great interest despite the time passing. This interest grows up proportionally with the years [6].

Everywhere in the world, GL is growing up with the increase of the administrations' tasks and with the multiplicity of the places where administrative activities are carried out. Until 1970 in Italy the Regions as political and administrative bodies did not exist and in the last forty years the number of ministries has increased by one third, and new administrations (from the "independent" to the "mission-oriented" ones) were developed.

or circumstances exhausting the information in a certain period of time: they are preserved for 1-3 years; "scientific content" as the working or seminar papers of the most important foreign universities: they enter a permanent archive.

The results of the economics researches carried out by the Bank are spread through a series of publications of GL devoted to arguments of discussion, statistical and economical data, often also in English versions [11].

An important role in collecting and processing local information is performed by the System of the Italian Chambers of commerce (95 chambers, 19 regional unions and Unioncamere - the national union), which is one of the major producer of surveys on territorial economics.

The Cerved, the informatics society of the Italian Chambers of commerce, treats, from the half of '70, all the data coming from each chamber, having created a number of on line data banks in real time.

Publications of GL issued by the chambers refer essentially to three fields of activity: administration, promotion and economic research. A project, presented by the Unioncamere for a database to be consulted through the Cerved network, aims at solving the problem of the access to the documents produced and held in the libraries of the Chambers of commerce [12].

4. Education

Many reports and unpublished documents deal with educational management, current developments and policy matters, having some of them a local value, while others represent valuable studies from cooperative programmes and projects.

Though a great deal of information on education is published directly by national and local government bodies, two different sized libraries in Italy are collecting the grey material in the field at national level and are trying to inform about it by means of printed bibliographies and on line databases, and to make it available.

The Florence Library of Pedagogical Documentation (Biblioteca di Documentazione Pedagogica - BDP) is the Italian national agency of the European Documentation and Information System for Education (EUDISED), which is produced by the Council of Europe. In the framework of this system, BDP collects, evaluates and makes available the documents produced on the territory, which are treated according to the EUDISED standards. Also the ERIC database may be interrogated on line at BDP.

A national network was created by BDP in collaboration with the Italian regional institutes of educational research and training (Istituti Regionali di Ricerca, Sperimentazione e Aggiornamenti Educativi - IRRSAE), which informs on what is produced in Italy (open and grey literature) since 1985.

The selection, analysis and treatment of the documents are made by the partners of the network (universities and institutes working in the educational field). The bibliographic descriptions of the records are made according to the Italian rules for cataloguing library

material and the ISO standards, and the indexing language used is based on the Italian version of the EUDISED multilingual thesaurus. The Videotel Service permits the access to the on line archives which are managed by BDP [13-14].

An initiative, carried out by the Library "Gianni Rodari", supported by the Tuscany Region and the Municipality of Campi Bisenzio (Florence) where the library is located, takes a particular meaning in this survey [15]. It clearly proves that the production of grey literature now covers every branch of knowledge.

The Library produces a quarterly periodical of bibliographic information (*Li.B.e.R*) on all the books for children and school children, distributed in Italy, and is an observatory on this editorial production and on the relative phenomena. One of these is a strong presence of GL materials produced mainly by institutions and devoted to the educational operators. From 1990 the periodical contains a section, called "Materia grigia" (Grey substance), which informs teachers, librarians, parents and the same school children about the documents produced by the Italian institutions of the field. The library collects all the documents and created a "Grigia data base" (CDS/ISIS software).

The collection contains at present some hundreds of documents produced by the local government bodies and public libraries (45%), by the Provinces and library systems (22%), by private institutions (11%), by schools and school libraries (7%) and museums (6%).

The rules for description are based on ISBD(M) and AACR2 (third level); the choice and form of the main and secondary entries follow the Italian cataloguing rules. Each item is classified according to the Dewey decimal classification and indexed on the basis of a list of descriptors (at present in a testing stage), and synthesized in an abstract (about 75 words).

5. Humanities

The presence of GL in the Italian cultural institutes is relevant as it is shown in a sample survey [16].

The cultural institutes are foundations, corporations and private institutes (about 200 bodies) to which a law (No. 123 of 1980) acknowledges their importance at national level as producers and keepers of culture. Their purposes aim at the diffusion of information and the development and improvement of scientific research within the specialty for which they were created. Their disciplinary sphere is, in general, limited to human sciences, being the social and political ones the most represented.

The documents produced by these institutes are the main sources which permit, in addition to printed materials, to rebuild the history of the Italian culture. They do not become old and do not lose their value after a certain number of months or years, but their information value increases with the passing of time.

These documents are differently managed according to the context, subject and source, as sometimes they belong to the library and sometimes to the archives of the institute so that identical typologies of materials are treated in different ways.

The collections of GL are not differentiated in the libraries and their storage follows the peculiarities of each library.

d) *The necessity for a national database*. Given this situation, on the basis of the York Seminar and the international program of Universal Availability of Publications, it was decided to create a national database integrated in the Italian National Library Service, known as SBN, and at the same time to support the growth of the Italian input to SIGLE contributing to the development of the Italian national reference centre.

A brief outlook of the main initiatives leading to the creation of this base is required to better understand it [21].

In 1988 a special grant was given by the Italian Minister of University and Scientific Research to support and improve the research infrastructures. The importance of easy access and availability of all the grey documents produced in Italy was pointed out and a special project for GL was approved. The Central Institute for the Union Catalogue of the Italian Libraries (Istituto Centrale per il Catalogo Unico delle Biblioteche Italiane e per le Informazioni Bibliografiche - ICCU), which is responsible for SBN, has the primary responsibility for the creation and development of the database.

The base will be initially tested with the production of the Italian National Health Institute (one of the partners of the above grant) and then the necessary procedures will be set so that other producers of GL may collaborate to the input of the base.

This action does not affect the agreement that Italy signed with EAGLE (European Association for Grey Literature Exploitation) for the input of SIGLE, but certainly will improve the Italian participation to the European system.

In fact, the Italian database for GL is in accordance with the SIGLE format, also if some additions, particulary for the literary indicators and for the presence of abstracts, have been introduced for our own purposes. Each producer enters its own bibliographic records for which is responsible, and libraries, documentation centres, etc., which are connected with SBN and have these documents, may indicate their availability regarding interlibrary loans or reproductions.

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The initiatives of a library association for the promotion of grey literature

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Abstract

The main initiatives taken in Italy by the Italian Library Association (AIB) for the development and promotion of grey literature (GL) are presented, i. e.: survey of the main Italian producers of GL, standardization activities, collaboration to the support of SIGLE, creation of information tools for GL, evaluation of the use of GL through citation analysis; training activities, etc. The projects are described in detail and the results of the researches carried on are given.

1. The background

The Seminar of York (1978), as everybody knows, is one of the most representative events for the promotion of grey literature (GL) in Europe [1]. The recommendations which were drawn as a product of the seminar represent the first initiatives taken at the community level to promote this kind of literature. Among other things, they required that each country participating at the meeting should take the appropriate steps within the national borders so as to permit the development of further collective actions at international level.

The first stage of the promotion plan required that the different approaches to the production and management of GL should be pointed out in order to develop a common strategy. These actions would then lead to the creation of the SIGLE database and EAGLE, as well known to all the participants to this Conference.

The Italian National Research Council (Consiglio Nazionale delle Ricerche - CNR), through its Central Library, was then considered to be the most appropriate body to act as the reference authority for Italy. In effect, the first sample survey of the Italian producers (based on 425 questionnaires mainly directed to the research institutes of CNR itself, some scientific institutes of the University of Rome and other governmental and private research institutes) was carried on in 1979 by the Institute for studies on research and scientific documentation (Istituto di Studi sulla Ricerca e Documentazione Scientifica - ISRDS) of CNR [2]. The results of the survey gave a general idea of the confusion existing among the producers themselves, which generated greatest difficulties among those responsible for the processing, treatment and availability of GL.

But, parallel to the commitment of CNR as the Italian national authority for the development of SIGLE, we wish to point out in this paper the relevant role played by the Italian Library Association (AIB) for the promotion of GL in the country.

Before introducing the many initiatives of this association, it is important to reflect on the fact that the different impact of York recommendations in Europe depended upon the different local situations. If it was so positive in Italy, it was mainly because a particular

sensitivity to the problem of GL had already been developed in the country, mainly in the scientific research sector. In the scientific community, in fact, the importance of this primary communication channel was felt much more than in other sectors due to the necessity of researchers in the different fields to immediately communicate their research results to colleagues and experts of the same sectors, mainly through informal media. In effect, some attempts to improve the circulation of GL, above all technical reports, could already be evidenced in the scientific world also before the Seminar of York.

Here follows a brief outlook of the main initiatives taken by AIB which represent a good example of cooperation between professional and governmental organizations for the realization of a common goal: to improve the access and availability of grey literature.

2. The role of the Italian Library Association

In general, the importance of GL was deeply felt by the Italian librarians and documentalists gathered in the national professional associations and since the beginning of the eighties on many occasions (meetings, national conferences, etc.) they had opportunities to express a deep concern about the disomogeneous management (if any!) of documents such as technical reports, theses, communications presented or to be presented to conferences, etc. in the Italian libraries and documentation centres. Of course, the value of the information contained in most of the material concerned was never disregarded, but librarians were often unable to treat these documents properly mainly for the lack of adequate regulations, funds, personnel, space, and time.

A study group for the analysis of all relevant issues concerning grey literature was formally established within the Italian Library Association in 1985 with the following objectives:

- survey the main Italian producers;
- survey the Italian libraries and documentation centres collecting technical report series, both Italian and not;
- improve the formal presentation of GL through the application of national and international standards;
- support the promotion of SIGLE;
- facilitate to the Italian librarians, documentalists and producers the comprehension of important foreign documents relating to this kind of material (articles, cataloguing rules, standards, etc.), by translating them into Italian;
- evaluate the use of GL through the analysis of citations appearing in journal articles;
- disseminate information on GL through courses, seminars, conferences, journal articles, newsletters, and other publications.

These objectives, which initially started with a limited task force, were developed in the following years and also people and resources involved further increased in time thus permitting to achieve a number of satisfactory results. Let us consider them in particular.

3. The surveys

The survey of the Italian producers of GL was the first project carried on in this field by AIB. It was developed in different stages and periods with the intent to make a map of the main Italian organizations producing GL and the main series they produced.

The ambitious program of the survey initially (1987) intended also to point out the main libraries and documentation centres collecting technical report series, but after an attempt made by the National Central Library of Florence and by the Italian State Audit Office, given the complexity of the goal, this part of the project was put aside in view of more immediate realizations.

The increasing number of people involved in the survey, who spontaneously offered to work for the association projects, showed the great professional interest existing in Italy for this kind of material which, in many sectors, was also supported and developed by the increasing users' demands for GL documents.

After a sample testing of a first questionnnaire prepared for all scientific research sectors, the surveys were carried on separately in the different sectors where the necessary collaborations were found to guarantee their realizations.

In the biomedical-health sector, an agreement was established with the Istituto Superiore di Sanità - ISS (the technical scientific body of the Italian national health service); among the others, a survey was carried on to evaluate the production of the Italian hospitals with tasks of scientific research (Istituti di ricovero e cura a carattere scientifico).

Other collaborations were found with CNR itself for the production of its research institutes, with ENEA (the Italian national body for energy and environment) for the energy sector, with INEA (the Italian institute of agricoltural economy) for its own production, with the Fondazione Ugo Bordoni in the field of post, telegraph and telecommunication, etc.

The results achieved during the above surveys were informally published in the newsletter of the AIB group [3].

4. Standardization activities

In consideration of the necessity to improve the formal presentation of the documents of GL, which is the first step towards a bibliographic control of GL itself, the Association has promoted the application of the existing national and international standards. In particular, the standard ISO 5966/82 "Presentation of scientific and technical reports" was translated into Italian and was accepted by the Italian standardization body (UNI) [4]. Its use and diffusion was then highly recommended and promoted by the members of the AIB group on every possible occasion (personal contacts with people/bodies concerned in the production of technical reports, seminars, workshops, training courses, etc.).

Furthermore, an AIB *ad hoc* group also participated in the works for the creation of a new ISO standard for grey literature: the "ISRN", the International Standard technical Report Number. Such alphanumeric code should permit to identify the single bibliographic

unit (technical report), as ISBN does it for books and ISSN for serial publications; in the future ISRN should even replace the latter two codes. When the ISO standard is published, the AIB group will translate it into Italian possibly to arrive at a national standard.

Last but not least, another important translation that is in progress on behalf of UNI is that concerning theses (ISO 7144 - Presentation of theses and similar works); it will surely contribute to get a certain level of standardization in the presentation of these important documents.

5. AIB collaboration to the support of SIGLE

AIB, as a professional association which promotes the organization and development of libraries and library services, has recognized the value of SIGLE since the Italian adhesion to the system (formally in 1985). It has promoted it through different channels: courses, seminars, professional literature, etc. In particular, an important document issued by the Association itself is worth mentioning: the Italian translation of *SIGLE Manual* Part 1: *SIGLE cataloguing rules* and Part 4: *Guidelines for the standardization of corporate entries* [5]. This work, carried on after a formal translation agreement with EAGLE, was specifically intended to support the Italian national authority in the diffusion of this database. The approach to SIGLE, in fact, is much easier with an istrument in the users' language. The knowledge of English, of course, remains a pre-requisite for the librarians collaborating to the input of the SIGLE database since the worksheet and subject categories are in English, but the approach is much improved with a working tool in Italian. A possible translation of the other parts of the SIGLE manual was not deemed appropriate since Part 2: *SIGLE subject categories* required a large effort in terms of time and commitment, and Part 3: *Magnetic tape rules* was to be used only by the central authority.

6. AIB information tools for grey literature

The spread of information is one of the basic activities of any association in any field, thus permitting to up-date its members for the sake of the entire community. The Italian Library Association has produced a number of relevant tools as a product of its research activities. First among them, a monographic volume of the Association bulletin entirely devoted to grey literature [6]. This volume contains a basic introduction to GL, a discussion on theoretical and methodological aspects, some initiatives of the European community, international information systems and different experiences of management of GL in Italy as to 1987. The picture has acquired different tones in the years as shown by the proceedings of the following two important meetings. First, the Workshop of the national AIB Commission for Information and Documentation [7] and second, only in time but not in importance, the First national conference on grey literature [8], organized by ISS in collaboration with AIB. This latter conference was supported by ISS which was directly involved in the creation of an *ad hoc* national database for GL and by AIB as promoter of so many initiatives for the

development of GL in Italy. The discussion on the different themes proposed in each session (new projects; SIGLE; experiences in research sectors; initiatives of governmental bodies; initiatives of the national libraries; theses) proves the widespread interest for this material in every field together with the necessity of cooperation at national and international levels for the realization of the on-going initiatives.

For the diffusion of the activities on the AIB study group on GL, an *ad hoc* newsletter (*I.G Informazioni*) was created to spread detailed information on the projects and containing also a selected bibliography. Furthermore, also the Association newsletter (*AIB Notizie*) that is addressed to all members, and not only to *ad hoc* study groups, cointains more general information on the activities in progress.

7. On-going projects

After this brief outlook of the activities carried on up to now by the Association, the initial open question still remains on what is included in this once bizarre, but now widely accepted, collective term. Given the difficulty to get to a clear definition of grey literature that should not just be limited to the "negative" statement of what it does not include (what is not distributed through regular bookselling channels), a new study should start to reach a "positive" definition of this material.

Another interesting project proposed by the Association in 1990 and supported by grants of CNR, refers to the evaluation of the use of grey literature [9]. The evaluation method is based on the analysis of citations appearing in core periodicals in specific sectors. The method was tested for a limited number of periodicals in the field of health sciences [10]. The study was further developed [11] and then applied in the field of library and information sciences. Some results are given in this conference.

Among the future programs, also standardization activities are included, such as for example the already mentioned translation works which will be carried on in the nearest future.

8. Conclusions

The experience of the Italian Library Association for the promotion of GL confirms the importance of the involvement of any professional association for the realization of relevant projects at national and international levels.

The role of the associations, in fact, is not only limited to update and train their members according to the most recent developments in their fields thus providing an appropriate forum for discussion and further improvement, but also to extend their actions to guide basic choices in the information policy of the country. This may be realized by the creation of relevants tools which have the functions of capturing the different interests of the leading parties and of sensibilising both the technical and political bodies operating in the sector.

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Grey literature in information science: production, circulation and use

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Abstract

The hypothesis of the work was to evaluate the use of grey literature in information sciences on the basis of citation analysis. After a selection of a number of relevant journals in this field, the citations contained in scientific articles were analysed to evaluate the types of GL references (technical reports, proceedings, standards, theses, etc.), the languages used, the main producers (countries and international organizations), and the years of GL references. The results of the analysis are given with comments and reflections on the main producers and circulation channels.

1. Introduction

Grey literature (GL) belongs to the primary sources of information, and it has a very important role in the information transfer process in any field. This study is based on the consideration that one of the parameters which permits to assess the value of a document is given by the users' reference to that document in literature.

The main objective of the research is to evaluate the actual use of grey literature in the field of documentation, information science and librarianship, as defined by SIGLE category ϕ5B [1]. This goal is realized through the analysis of citations appearing in the journal literature of the field which permits also to identify the originating countries and international organizations producing GL and its circulation channels.

2. Methodology

The method of analysis was already tested by the authors in a previous sample survey carried on in health sciences [2] and later discussed with colleagues during conferences [3-4] and informal meetings.

In synthesis, the stages of the research can be summarized in the following steps:

1) selection of primary journals to be analysed;

2) definition of the types of publications (research articles, review articles, editorials, technical notes, etc.) to be considered within the selected journals; (only strictly scientific works were taken into account; interviews, letters to the editor, presentations not containing scientific reflections were excluded);

3) definition of the types of grey literature within the above types of publications: reports, papers presented at conferences, proceedings not commercially distributed, theses, standards, publications by professional organizations (that may be considered as half-conventional documents), etc.;

4) analysis of GL citations according to dates of publication, language, originating countries or international organizations.

Without going deep into the details of the methodology which is widely explained in the above mentioned works, we wish to point out some considerations which guided the selection of the journals.

The first criterion was to consider both journals devoted to all aspects of librarianship and information science and journals regarding only one particular aspect of the field.

The second criterion leading to the above selection was the authors' knowledge of the language in which the periodicals are written and therefore only journals basically written in Italian, English, French and Spanish were included.

The geographical origin of the journals was also considered in the selection. Three journals edited by international organizations were included because such journals contain contributions from all countries, thus permitting to have a wider geographical coverage.

All this considered, the following journals (where the editors are also indicated) were selected to carry on the study:

Bollettino d'Informazioni AIB	Associazione Italiana Biblioteche - AIB (Italy)
Bulletin of the Medical Library Association	Medical Library Association - MLA (USA)
Documentaliste	Association Française des Documentalistes et des Bibliothécaires Spécialisés - ADBS (France)
IFLA Journal	International Federation of Library Associations and Institutions - IFLA (Netherlands)
L'Indicizzazione	Centro di informazione e Documentazione Automatizzata in Trieste - CIDAT (Italy)
Information Technologies and Libraries	Library and Information Technology Association - A Division of ALA (USA)
Inspel	IFLA Division of Special Libraries (Germany)
Interlending and Document Supply	British Library Document Supply Centre - BLDSC (UK)
International Classification	International Society for Knowledge Organization - ISKO (Germany)
Program	The Association for Information Management - ASLIB (UK)

Once operated the selection of journals, and once defined the years in which to perform the study (1990-1991), each single issue was separately analysed to see how many articles it contained, and how many articles had references. This proved that, considering all journals together (containing 537 articles as a whole), the percentage of all the articles with references was 76.9% (413), while those without references were 23.0% (124).

Within the articles containing references (413), those with GL references accounted for 77.0% (318), while those containing only references to open literature were 23.0% (95).

Table 1 shows the more detailed data resulting from the general analysis of the above selected periodicals.

The following step was the study of the references of the above articles to see how many of them were related to GL documents. Citation counting always presents methodological problems. Many articles cite the same sources more than once, and it was decided to count all the citations. The result was that 77.9% (4,852) of the entire amount of references considered (6,229) were related to documents of open literature, 22.1% (1,377) were of GL. (Fig. 1).

Table 1. - *General data of the journals considered 1990-1991*

Titles	No. of articles	Articles with references	Articles with GL references	No. of references	GL references
Boll Inf AIB	25	20	17	677	115
Bull Med Libr Assoc	103	100	69	1518	240
Documentaliste	68	45	38	547	128
IFLA J	75	49	42	655	268
Indicizzazione	23	18	16	236	54
Inf Technol Libr	62	43	31	552	102
Inspel	49	25	22	252	93
Interlend and Doc Supply	40	34	30	866	195
Int Classif	37	34	26	532	113
Program	55	45	27	394	69
Total	**537**	**413**	**318**	**6,229**	**1,377**

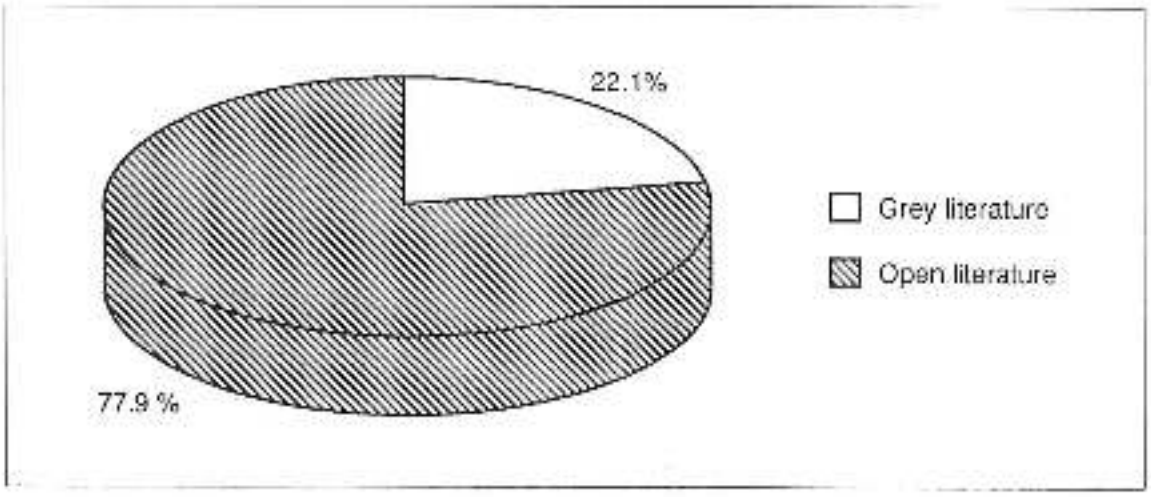

Fig. 1. - Grey literature references (1,377) and references to open literature (4,852) over the total number of references (6,229)

3. Results and discussion

The analysis was then performed on the GL citations to divide them according to the type, and this proved, as expected, that reports prevail over the other types of GL (56.6%), followed by proceedings (32.3%, including also personal communications), standards (3.5%), theses (1.7%) (Fig.2). The item "other" types (5.9%) includes some translations, official documents, articles in house journals, and all the other documents which are comprised under the term grey literature according to the definition given in the *SIGLE Manual* [5].

The results of the study are synthetically given in Fig. 2, while Table 2 shows the more detailed data from each journal.

As data show, reports and proceedings always prevail over the other types of GL and their number greatly exceeds the other types in the journals dealing with more technical aspects of the field and/or with particular branches of librarianship (*Bull Med Libr Assoc*). They are followed by standards and theses which account for a very limited percentage over the total.

Some reflections should be made on the category of standards which are included in GL, but are not indeed so "grey" in so much as they are distributed by the standard organizations once they are published.

We wish also to point out that theses proved to be more cited by authors from countries having well organized bibliographic control for this material.

Fig. 3 and 4 show data on languages and originating countries as taken from the references. English (76.0%) prevails over the other languages, as expected, although a detailed study on the authors' native language should be carried on to get to a more realistic view. Also the originating country, as reported in Fig. 4, refers to the citation and not to the author. A new research should be carried on to compare data referring to the author and to the citations. By the moment we can state that, according to the criteria followed in this

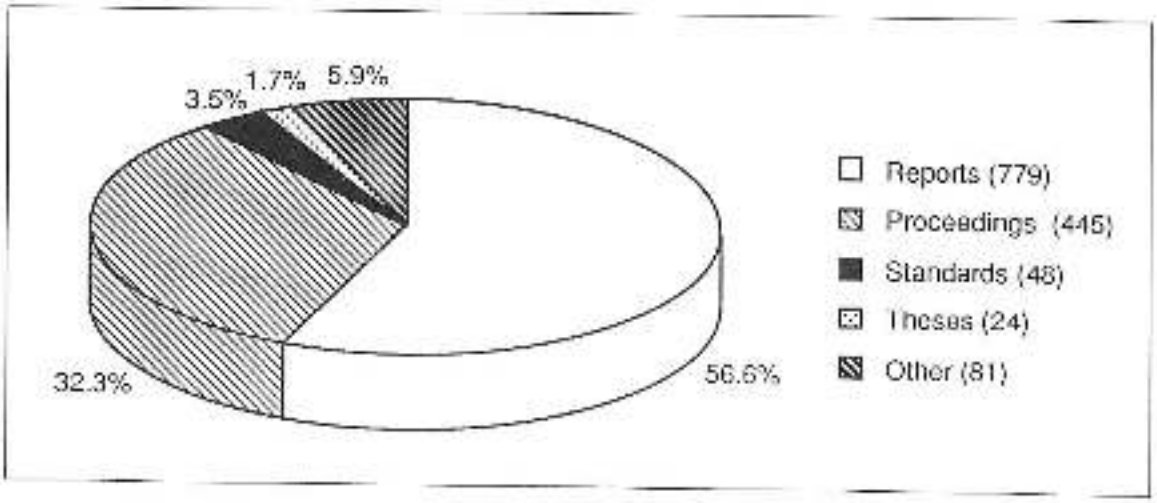

Fig. 2. - Total numbers (in brackets) and percentages of GL references according to the types of documents

Table 2. - *Types of GL in the references of articles of selected periodicals (1990-1991)*

Titles	GL references	Reports	%	Proceedings	%	Standards	%	Theses	%	Others	%
Boll Inf AIB	115	57	49.6	33	28.7	6	5.2	-	-	19	16.5
Bull Med Libr Assoc	240	148	61.7	71	29.6	-	-	1	0.4	20	8.3
Documentaliste	128	73	57.0	46	35.9	4	3.1	4	3.1	1	0.8
IFLA J	268	125	46.6	107	39.9	13	4.9	8	3.0	15	5.6
Indicizzazione	54	17	31.4	17	31.5	4	7.4	-	-	16	29.6
Inf Technol Libr	102	64	62.7	26	25.5	7	6.9	1	1.0	4	3.9
Inspel	93	66	71.0	20	21.5	1	1.1	2	2.2	4	4.3
Interlend and Doc Supply	195	124	63.6	66	33.9	2	1.0	1	0.5	2	1.0
Int Classif	113	61	54.0	39	34.5	9	8.0	4	3.5	-	-
Program	69	44	63.8	20	29.9	2	2.9	3	4.4	-	-
Total	1,377	**779**	**56.6**	**445**	**32.3**	**48**	**3.5**	**24**	**1.7**	**81**	**5.9**

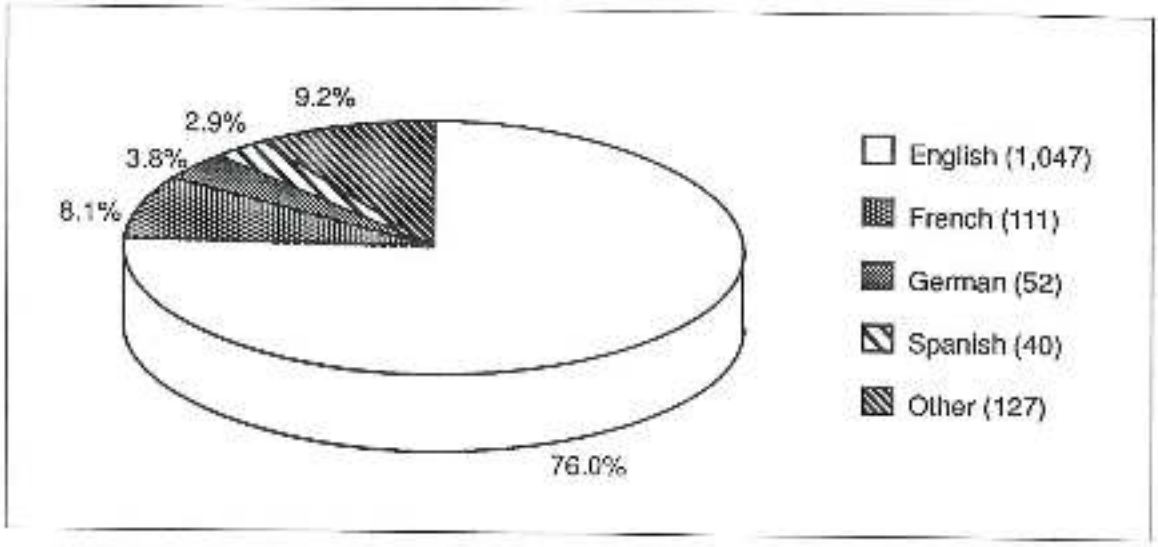

Fig. 3. - Total numbers (in brackets) and percentages of languages used in GL references

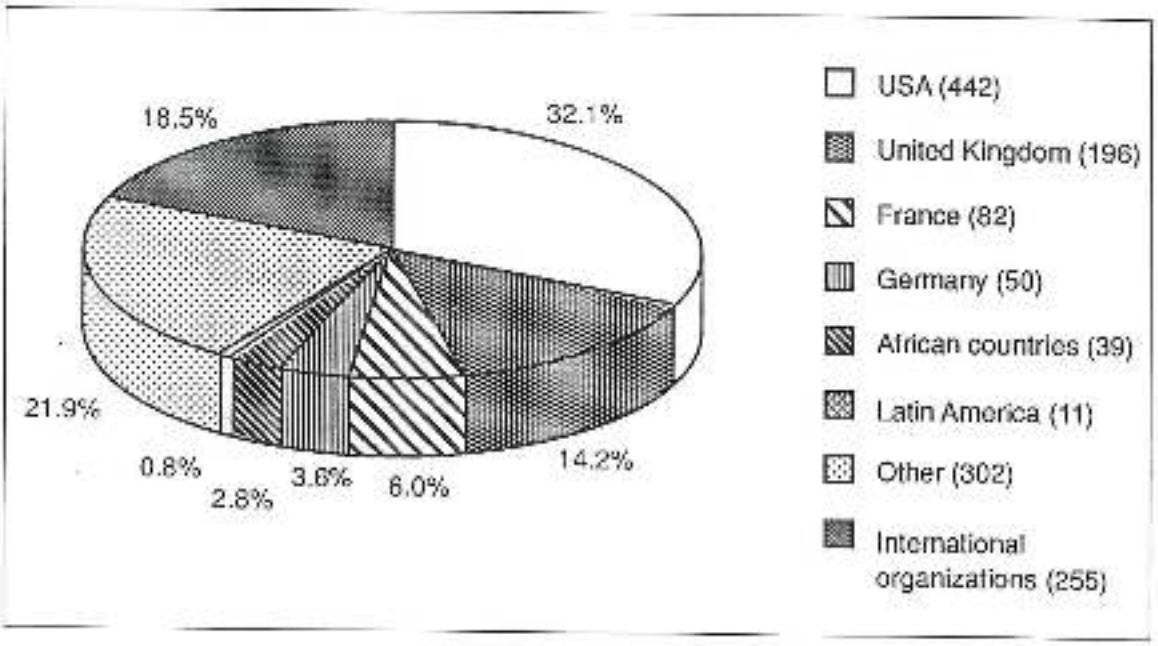

Fig. 4. - Total numbers (in brackets) and percentages of originating countries/international organizations in GL references

research, as English prevails as a language so the USA and the United Kingdom prevail as originating countries, but the percentage of GL produced by the USA and the United Kingdom together (64.8%) does not match the total of GL written in English (76.0%). This means, as data confirm, that most documents are written in English although they are not produced by the USA, the United Kingdom or other English speaking countries. We refer mainly to international organizations, some African and some Latin American countries.

The evaluation of GL impact in Physical sciences using bibliometric indicators. Preliminary results.

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ABSTRACT

In this paper the results of a survey on GL use in the bibliographic references of the Physical literature are described.
The definition of GL is briefly discussed. Three categories (Dark-grey, Medium-grey and Light-grey) are introduced in order to account for different *tones* of Grey GL documents. Moreover, some bibliometric indicators are proposed to evaluate the impact and examines the characteristics of GL documents cited. Data used for this analysis were obtained from a sample of Journals indexed by Science Citation Index, in the category of "Physics".

1. INTRODUCTION

Given the increasing relevance of Grey Literature (GL) in the information and documentation field, we have undertaken an analysis using bibliometric indicators similar to the ones widely used for conventional literature. The main objective of the study was to investigate whether the citations of GL in the bibliographic references represent an efficient tool for exploring both the frequency and modalities of GL use in conventional literature.

Examining the bibliographic references we attempted to evaluate both the role and purpose of GL in scientific communication and to get useful information in order to improve bibliographical control, which is the "weak point" of this kind of literature (1-5).

Most citation studies have widely recognised that different disciplines have different rates and different patterns of citation, but its motivation is not yet sufficiently understood (6-11).

The debate on citation analysis is up till now open and there are "good theoretical reasons for supposing that such analyses are not necessarily adequate to enable conclusions of general validity to be drawn". Nevertheless, it

remains an important tool for measuring and comparing scientific and technical literature.

The aims of this study were (1) to measure the impact of GL on physical sciences using bibliometric indicators and, (2) to describe the characteristics of GL documents cited from a sample of selected periodicals. In this paper we present the results of a survey on a sample of journals and we propose some bibliometric indicators to be used for GL analysis.

2. MATERIALS AND METHODS

2.1. Journals sampled

We analysed a sample of reviews indexed by the Science Citation Index. Eight Journals, with different impact factors, (Table 1) were selected from the Journals listed in the 1991 SCI in the category of "Physics". An additional Journal was selected from the category "Nuclear physics" of the same SCI to evaluate the use of GL in a physical subfield. All of them are published monthly except Review of Modern Physics, which is quarterly.

The Journals were selected irrespective of the country of publication, this said, in the future it would be interesting to analyse this aspect, too.

All selected Journals were available from the collection of the Central Library of the National Research Council (Consiglio Nazionale delle Ricerche - CNR).

Table 1
Sampled journals

Journal (Country)	Impact factor
1. Review of Modern Physics (USA)	16.800
2. Reports on Progress in Physics (UK)	4.732
3. Physics Today (USA)	3.327
4. Physical Review C: nuclear physics (USA)	1.876
5. Physica D. Non linear phenomena (NH)	1.805
6. Proceedings of the Royal Society of London. Series A: Mathematical and Physical Sciences (UK)	1.552
7. Progress of Theoretical Physics (JPN)	1.134
Nuovo Cimento D: Condensed matter, Atomic molecular and chemical physics, fluids, plasmas, biophys. (IT)	0.509
9. Chinese Physics Letters (China)	0.232

Data was collected directly from primary sources, that is the bibliographies of the articles in the selected Journals. For each Journal we counted the following: the number of "articles" including "brief reports" and "rapid communications" and, for each article, the number of references (including GL references).

2.2. Definitions and indicators

We defined GL according to the recommendations issued at the York workshop of 1978: grey literature is that which is not readily available through normal bookselling channels, and is therefore difficult to identify and obtain" .

For each GL reference we collected the following information:

- Type of material cited (meeting paper, private communication, report, "submitted-to manuscript", thesis, "to-be-published manuscript", unpublished material);
- Date: year of publication of the GL document;
- Self-citing: yes /no, depending on whether one of the authors of the GL document cited was also an author of the article examined.

Since we felt that the different types of GL document are not of the same "tone" (12) of grey, we decided to categorise them on the basis of their ideal distance from the "white" literature. Accordingly, we classified GL documents in three categories: "dark grey", "medium grey" and "light grey" documents.

The category of "dark-grey" documents is composed of GL documents that might disappear without leaving any traces, and, in our sample, includes the following three types of GL document: private communication, unpublished material and "submitted-to manuscript". The last ones have been included because most of the manuscripts submitted to Conferences and Journals not only are rejected but also pass away, as pointed out by Cronin (13).

The other GL documents are usually recorded in an information system of some scientific organisation. We divided them in two additional categories. The category of "medium-grey" documents is composed of documents (report, thesis) that, even if available from specialised information systems, might be unnoticed by the scientific community. The third category is composed of "light-grey" documents, that is GL documents of which the scientific community has been officially informed or is about to be so; this category includes two types of documents: meeting paper, and "to-be-published" manuscript.

To measure the impact of GL on the conventional literature we used the following indicators:

- the frequency of GL use (i.e. the proportion of articles with GL citations, out of all the articles examined);
- the frequency of GL citing (i.e. the proportion of GL references out of all the references examined);
- the intensity of GL citing (i.e. the frequency of GL citing divided by the frequency of GL use); this is an indicator of the average frequency of GL references per article with GL.

3. RESULTS

3.1. GL articles and references: general results

The selected Journals contained 1,480 articles for a total of 39,000 references. We found 2,335 GL references (6%) (Tables 2 and 3). In "brief reports" and "rapid communications" the average number of GL references was higher than in the articles.

Table 2
Frequency of GL use in our sample

Journal	Total number of articles	Frequency of GL use (%)
Review of Modern Physics	23	100.0
Reports on Progress in Physics	26	96.1
Physics Today	46	46.6
Physical Review C: nuclear physics	482	74.9
Physica D. Non linear phenomena	247	66.4
Proc. of the Royal Society of London. A.	140	45.7
Progress of Theoretical Physics	211	48.8
Nuovo Cimento D	135	34.8
Chinese Physics Letters	170	25.9
Total	1,480	57.6

Table 6 (continue)
Distribution of GL documents cited by category

Journal	GL documents cited	Proportion (%) of DGL*	MGL*	LGL*
Physics Today	33	24.2	33.3	27.3
Physical Review C:nuclear physics	1,033	38.6	50.1	8.1
Physica D. Non linear phenomena	412	19.0	51.4	18.7
Proc. of the Royal Society of London. A.	144	9.0	68.7	11.1
Progress of Theoretical Physics	181	13.2	74.6	4.4
Nuovo Cimento D	73	17.8	54.8	24.6
Chinese Physics Letters	63	23.8	25.4	44.4
Total	2,335	25.9	54.6	14.2

* DGL: Dark-Grey Literature; MGL: Medium-grey Literature; LGL: Light-Grey Literature

Table 7
Distribution of Medium-Grey Literature (MGL) documents by Journal and type

Journal	Number of MGL documents	Proportion (%) of Reports	Theses
Review of Modern Physics	105	80.9	19.1
Reports on Progress in Physics	139	72.7	27.3
Physics Today	11	90.0	9.1
Physical Review C:nuclear physics	518	62.6	37.4
Physica D. Non linear phenomena	212	75.5	24.5
Proc. of the Royal Society of London. A.	99	63.7	36.3
Progress of Theoretical Physics	135	87.4	12.6
Nuovo Cimento D	40	67.5	32.5
Chinese Physics Letters	16	75.0	25.0

DGL and LGL documents are unevenly distributed by type and no dominant type can be identified (Tables 8 and 9). Nevertheless, the physical subfield (Physical Review C: nuclear physics) accounts for 66% of the DGL documents (compared to 41% of MGL and 25% of LGL) and most of the DGL documents for this subfield are private communications and unpublished materials.

Table 8

Distribution of Dark-Grey Literature (DGL) documents by Journal and type

Journal	Number of DGL documents	Proportion (%) of		
		Private communic.	Unpubl. mater.	Submitt. -to manuscript
Review of Modern Physics	19	31.6	52.6	15.8
Reports on Progress in Physics	35	60.0	25.7	14.3
Physics Today	8	12.5	25.0	62.5
Physical Review C:nuclear physics	399	44.9	50.9	4.2
Physica D. Non linear phenomena	78	34.6	29.5	35.9
Proc. of the Royal Society of London. A.	13	15.4	0	84.6
Progress of Theoretical Physics	24	70.9	8.3	20.8
Nuovo Cimento D	13	46.2	23.0	30.8
Chinese Physics Letters	15	13.3	33.3	53.4

Table 9

Distribution of Light-Grey Literature (LGL) documents by Journal and type

Journal	Number of LGL documents	Proportion (%) of	
		Meeting papers	To-be-published
Review of Modern Physics	25	40.0	60.0
Reports on Progress in Physics	67	23.9	76.1
Physics Today	9	11.1	88.9
Physical Review C:nuclear physics	84	56.0	44.0
Physica D.	77	10.0	90.0
Proc. of the Royal Society of London. A.	16	100.0	0
Progress of Theoretical Physics	8	0	100.0
Nuovo Cimento D	18	66.7	33.3
Chinese Physics Letters	28	25.0	75.0

b) Date of publication

Overall, in 57,2% of the GL documents the date of publication was missing. It is interesting to note that as the impact factor decreases, the number of undated references increases (Table 10).

Table 11 (continue)

GL document cited by date

1981	19	84.1
1971-1980	110	95.1
1961-1970	29	98.0
1951-1960	13	99.3
1941-1950	2	99.5
1930-1940	4	100.0

c) Self-citing

The proportion of self-citations (16%) observed lies in the "theoretical" range of 10-30% (14). Most Journals in our sample appear only marginally affected by the phenomenon of self-citing but, in Physical Review C:nuclear physics (the only specialised Journal examined) the proportion of self-citations almost reaches 50%. Table 12 shows the results for the Journals of our sample.

Table 12

Self-citations in our sample

Journal	total of GL references	Number of self-citation %
Review of Modern Physics	151	3.2
Reports on Progress in Physics	245	2.6
Physics Today	33	0.5
Physical Rev. C: Nuclear Physics	1,033	48.7
Physica D	412	18.4
Proc. of the Royal Society of London, A	144	6.4
Progress of Theoretical Physics	181	9.0
Nuovo Cimento D	73	6.1
Chinese Physics Letters	63	5.1
Total	2,335	16.1

4. CONCLUSIONS

GL has received increasing attention in the last decade; nevertheless, a number of methodological issues remain unsolved making any survey of GL use difficult.

A widespread agreement of GL definition exists, but it did not lead to a standardisation of the bibliographical references for GL documents, except for reports which represent the traditional type of GL and therefore the criteria for their presentation have been much more accurately standardised (15,16). Moreover, no agreement exists concerning the type of indicators to be used for quantifying GL use: we chose three types of indicators that seemed to be useful foe measuring GL use in the field. Their application for routine monitoring should be evaluated in the future.

Our results confirm that the Grey Literature is an important source of information, even if a great variability in its use has been observed among different journals. It is interesting to note, for example, that in Nuclear physics GL is more widely used and the types of document cited are different from the ones cited in other types of journals. Moreover, GL use changed according to the impact factor of the journal: in high impact factor Journals GL is used regularly but with a pinch of salt, whereas in low impact factor Journals GL is used sporadically, but in plenty. This points out that the impact factor and the specialisation of the journal could be two important variables in explaining the GL use.

The determinants of the variability observed in GL use in our study should be further investigated: other variables such as affiliation, language, country of the GL document's authors might allow one to gain a deeper insight into the diffusion and availability of GL and therefore into the GL use.

In order to understand the nature and the relevance of Grey Literature compared to conventional literature, more efforts should be focused on quantifying its pattern of use and understanding its principal determinants, using standardised and widely agreed measures.

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Current Research Information Services (CRIS) and Grey Literature.

Drs. Auke van Dijk

In the next 20 minutes I have the opportunity to report about the results of the International Conference 'Current Research Information in Europe', that took place in Amsterdam between 2 and 4 december 1993.

This conference on Current Research (1), organized by the Netherlands Current Research Agency (NBOI) was the second one; the first took place in Bergen, Norway, in february 1991. The proceedings of it are still available (2). This Bergen Seminar, an initiative of the Norwegian Computing Centre for the Humanities, was in fact the consequence of activities of the Working Group of the European Commission in the years 1988 - 1990. This Working Group, together with the Rectors' Conference and co-workers from the DG XII-bureau, succeeded in preparing the Common European Research Information Format (CERIF). This format can be used to harmonize R&D information (also of Ongoing Research), in order to facilitate exchance of this information in and between the member states. In fact, the CERIF became part of the European legislation in 1991.

It is interesting to note that the title of the Bergen Seminar is quite different from the one of the Amsterdam conference. The proceedings of the Bergen Seminar speaks of Current Research 'Documentation' and the contributions are full of the term 'availability'. The central questions were about how specific information can de obtained, what kind of systems can be used to handle this information and how national and local database producers have build en develop their information systems. The title of the Amsterdam conference 'Current Research Information in Europe' reflects, I think, the wishes and needs of enhanced co-operation in this field within and between the member states. Futhermore, the subtitle suggests a different approach then the seminar two years ago: 'A conference on user needs and the relation to other science information sources'. This, to my opinion, is the change for the better that apparently has taken place in the field of Current Research Information Services (CRIS). Notice that this term 'Services' has only recently entered the vocabulary of librarians, documentalists and database producers and that they are more and more concerned with what users really need. Futhermore it is relatively new that they are searching for ways to establish relationships between Current Reseach Information and other science information sources.

Let me first give a definition of Current Research Information and explain the relation to Grey Literature programmes. Current Research Information refers to: " a standardized set of scientific, technical, and administrative data which describes research projects about to be initiated, actually in progress, or recently completed". The relation between Grey Literature - also the result of Ongoing Research - and Current Research

Current Research Databases
Grey Literature
Scientific articles / Bibliografic databases
Patent information
Timeperiod of research project (average 4 years)

figure 1

THE RESEARCH PROCESS

- Genesis of a project
- Application phase
- Funding phase
- Start-up phase
- Execution phase
- Pre-publication phase
- Final result documentation and publication phase.

figure 2

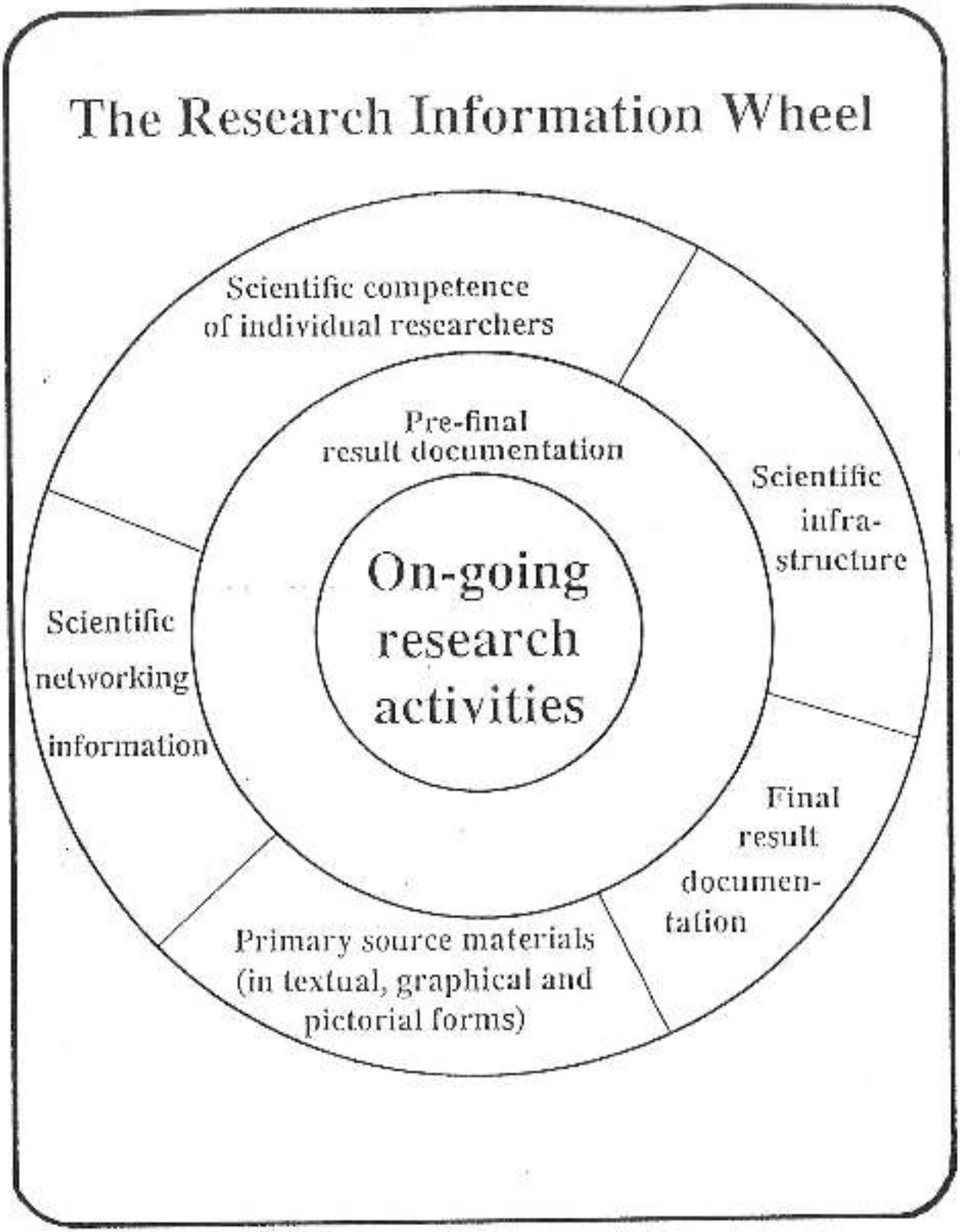
The Research Information Wheel
Scientific competence of individual researchers
Pre-final result documentation
On-going research activities
Scientific infra-structure
Final result documen-tation
Primary source materials (in textual, graphical and pictorial forms)
Scientific networking information

figure 3

The Incidence of Grey Literature in On-line Data Bases: a Quantitative Analysis

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Abstract

This study aims to examine the diffusion and distribution of Grey Literature (GL) documents in commercially available on-line data bases. It has been undertaken in response to the growing importance of GL, on the one hand, and the increasing supply of on-line data bases, on the other.

The work focuses on the on-line data bases distributed by DIALOG Information Retrieval Service. The first part supplies the results of a quantitative analysis of data bases containing GL documents. In order to check the incidence of GL documents, data bases containing both conventional and non conventional literature have been analysed in the second part of the study.

The results also illustrate the difficulty of identifying GL documents in an unambiguous way, and the need for greater standardisation in organising access and in using normalised terminology to define them.

Introduction

There have been many studies, both recent and less so - among which the Weinberg report must be cited - which attempt to quantify the Grey Literature (henceforth GL) produced in a specific field and/or by a particular organisation.

Alongside such studies there exist others [1] which discuss possibilities of acquisition, indicating specialised bibliographies, issuing agencies or announcement services from which information on non conventional literature may be obtained. Others still, in response to York's recommendations [2], aim to identify, through the use of questionnaires [3-4], centres which produce and store GL .

From this intentionally simplified picture emerges the continuing problems of identification and availability posed by GL: it is difficult to define, to treat and, as a consequence, to access.

This is in contrast with the general increase in the diffusion of information due in part to the development of new tolls and channels of communication. Of these, commercially available on-line data bases are clearly significant. They allow the retrieval of a great quantity of information taken from a wide range of sources of information in all fields of knowledge.

The present study consequently aims to explore the impact which increase in sources of information has had on the availability and distribution of GL. In particular, it intends to verify whether, and in what extent, on-line data bases constitute an instrument of diffusion and access to GL, as well as a medium of document delivery.

Clearly, the availability and diffusion of GL depends on a number of factors, first among these being the willingness on the part of producers to circulate such

documents outside a limited circle of users. The other fundamental point concerns the ways in which documents and/or bibliographic information are acquired by producers and distributors of secondary on-line services. This aspect would be worth studying separately in order to identify the main obstacles which can be encountered, from the production of GL to the diffusion of the information it contains.

To this should be added what can be defined as the *visibility* of GL. Once the GL has been indexed in the data bases, particularly when they contain both conventional and non conventional literature, the primary documents should necessarily be defined unambiguously and the bibliographic description should contain a standardised form of definition leading to the immediate identification of the document. The problem of standardisation is obviously not unique to GL, as the ICSTI (International Council for Scientific and Technical Information) Group on Interdisciplinary Searching [5] has made clear. In the case of GL, however, it is even more important to distinguish it from conventional literature and above all to facilitate the exchange and diffusion of bibliographic information without losing the characteristics peculiar to it.

Object of the study

The present study has been structured in two parts. The first aims to provide:

- a quantitative analysis of data bases which contain GL, highlighting in particular:
  a) type of information contained in data bases
  b) subject coverage

The second part examines:

1) the incidence of GL in data bases which contain both GL and conventional literature with particular reference to whether this incidence depends on:
   a) subject area
   b) size of the data base
   c) types of GL document

2) trend of incidence over the last five years in relation to:
   a) conventional literature published from 1988 to 1992
   b) GL documents issued before 1988

The survey has been based on the data bases distributed by DIALOG Information Retrieval Service [6] since it is also one of the most widely used host in Europe. Moreover, DIALOG makes a great number of data bases available on a wide range of disciplines and offers detailed documentation both on-line and on paper.

The first part of the study will indicate the number of DIALOG data bases which index GL and compare them with those containing information on conventional literature. This analysis aims to highlight the interest shown by the on-line information market to distribute this type of information. To this end both data bases devoted specifically to GL, as well as those providing information on both conventional and non conventional literature have been examined.

The latter are analysed in more detail in the second part of the study, in order to determine the real availability of GL documents in on-line data bases. The GL has not been quantified, however, since this would involve taking the overlap of information in the various data bases into account. On the other hand, an analysis of incidence of GL could provide a key to an understanding of the GL information supply and demand, considering that the on-line information market clearly exploits information resources also in economics terms.

Methodology

As indicated above, the survey was conducted using the data bases distributed by DIALOG Information Retrieval Service. The service mark *DIALOG Bluesheets* was chosen from the documentation provided by DIALOG. Here, each data base is described and information on the producer, subject, time span and geographic coverage is provided, together with sources of information taken into consideration.

The greatest difficulties in the retrieval of data were encountered in the identification GL documents. Each data base organises information in its own way (e.g. subfiles) and gives its own definition and content of specific data element and fields. Of particular importance to this study is the information recorded in the field *document type* which has been used for the selection of data relating to types of GL documents.

A *top down* analysis has been carried out in this study. It can be summed up as follows:

a) identification of data bases containing GL from the field *document type* in *DIALOG Bluesheets*;

b) analysis of the *document type* in each single data base in order to check the results from point a), and to obtain a first set of data bases to analyse;

c) analysis of a sample of records of each document type cited in these data bases (point b) and selection of GL documents published from 1988 to 1992 to be compared with conventional literature published in the same period.

As mentioned above, the search strategy involved the retrieval of information specifically from the field *document type*. Alternative strategies such as search in free text in the abstract or within key words were excluded in order to obtain results in a standardised form which would make comparison easier. Moreover this approach made it possible to check the descriptions of various types of GL documents indexed.

As a first step only data bases containing *"annual reports"*, *"reports"* and *"theses and dissertations"* were selected from *DIALOG Bluesheets*.

As it is clear from this selection, a narrow interpretation of GL was applied, excluding for example standards, patents and translations. Items which did not unequivocally indicate non-published documents such as "conference, symposia and meetings", were also left out. This was done in order to focus on apparently similar GL documents, i.e. reports literature and theses, as well as to achieve comparable results.

significant number of data bases, all of which are of an economic-financial nature, specialise exclusively in GL.

In Science & Technology there is more of a balance between data bases containing GL and those containing conventional literature: GL documents can be found in 47.6% of DIALOG data bases. This confirms the presence of GL in a field where it has always been an important vehicle of information.

The proportion is smaller in Life Sciences, where 29.2% of data bases include GL documents. In this field there are no data bases specialising exclusively in GL. This is not surprising, given that in biomedicine in particular, conventional channels are generally uses to spread information [9]. It should nevertheless be noted that well known data bases such as *NTIS* and *Energy Science & Technology*, include medical and biomedical information within their major headings.

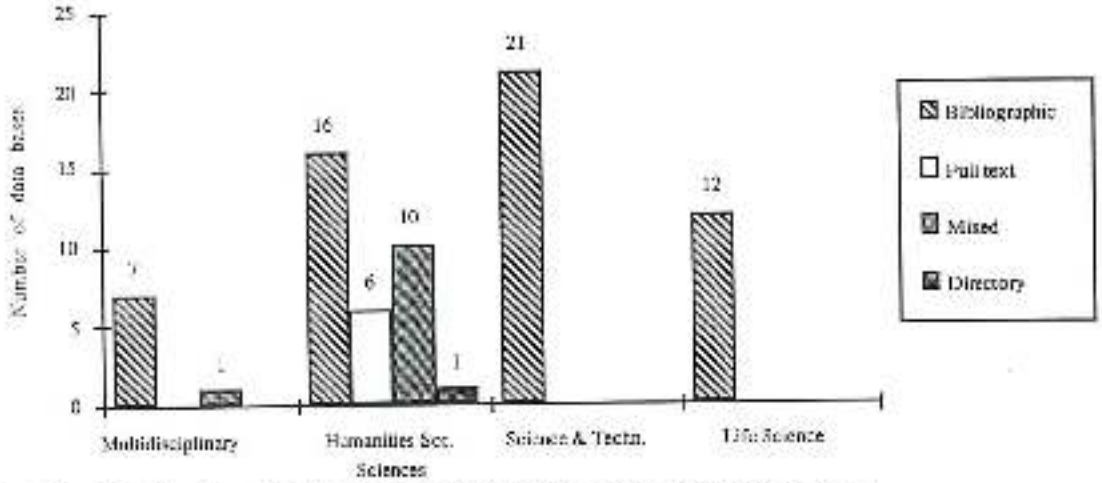

Fig. 2 - Distribution of data bases containing GL by type of information

Figure 2 shows the types of information contained in data bases which index GL document. In all the subject areas taken into consideration, there is clear evidence of bibliographic data bases. Only in Humanities & Social Sciences do both full text and mixed data bases appear. The latter includes in most cases (6 out of 8) both information in full text and numerical data.

It is worth noting the prevalence of bibliographic data bases in all of these areas, while the general tendency of the on-line information market is to increase the supply of primary information in full text or factual data [11]. The exception represented by Humanities & Social Sciences can be explained once again by economic-financial data bases. In fact, analyses of specific markets, and data on industries and companies are subject to rapid changes, they can become obsolete in a short space of time and must, therefore, be updated frequently. For these reasons, full text and/or numerical data on-line data bases constitute one of the most suitable channels for the retrieval of primary information in real time.

The GL produced in this field nevertheless merits a closer analysis, the relevant points being: its relatively recent and expanding development, the

characteristics and function of the information, and the way in which it is produced and distributed.

Even a brief look at some of the inherent characteristics of GL in this sector invites a comparison with the GL produced in the technical-scientific field. The latter has developed mainly within public research agencies as a channel of communication between a select group of users with the aim of distributing reserved information quickly. The GL distributed by on-line data bases in the field of economics and finance, on the other hand, is produced by economic research organisations and companies which are mainly private (Arthur D. Little, ICC Stockbroker Research LTD, Predicast, etc.). With the exception of those cases in which such research is commissioned by an individual user and therefore reserved, the economic interest of producers is served by distributing their results to the widest possible group of users.As is well known, the on-line information market makes most of its profit from financial and economic data bases, where the cost of information is also among the highest. Such data bases very frequently include an indication of the ordering price of the original document.

Another characteristic of the GL produced in this field is its specific types of documents: *annual reports, market research reports, company reports, stockbroker reports.* This clear distinction between different types of documents has the advantage of rendering both the GL as such and the type of information it contains, easier to recognise. This is important to the user, who is thus better able to identify and retrieve the required information.

Bibliographic data bases

In this part only those bibliographic data bases which contain both GL and conventional literature are considered. 43 data bases have been examined, selected according to the criteria explained above. Moreover, data bases in which it was not possible to limit search to years of publication have been left out, as have those with access limited to a particular type of user and/or country [12].

Whilst the data in the preceding paragraph highlights quite a number of data bases containing GL information, the results on GL documents really available is not particularly encouraging.

Restricted criteria were also applied in this part. In fact, these categories of documents in which some ambiguity in the use of the term *report* was evident from the bibliographic description have been left out.

Table 1
Incidence of GL in bibliographic data bases

CLASSES OF INCIDENCE %	HUMANITIES & SOC.SCIENCES		SCIENCE & TECHNOLOGY		LIFE SCIENCES	
	Abs . Val.	%	Abs . Val.	%	Abs . Val.	%
< 1	5	31.25	3	18.75	6	54.55
1-3	2	12.50	8	50.00	4	36.36
4-6	1	6.25	3	18.75	-	-
7-9	1	6.25	-	-	-	-
10-12	1	6.25	1	6.25	-	-
13-15	4	25.00	-	-		-
16-18	1	6.25	1	6.25	1	9.09
>18	1	6.25	-		-	-
TOTAL	16	100.00	16	100.00	11	100.00

Table 1 displays results of incidence obtained on the basis of the comparison between GL documents published in the years 1988-92 and conventional literature published within the same period.

The majority of the data bases fall within a low class of incidence (0-3%). This is particularly evident in Life Sciences, where 90.9% of the data bases are in this class. The only exception is *Agris International*, where GL has an incidence of 18.3%.

In Humanities & Social Sciences 43.7% of data bases appear within the class of incidence 0-3%, while the remaining 56.2% are distributed among successive classes. It should also be noted that 48% of the data bases are to be found in the classes from 10-18%. Four of them, indeed, are to be found in the 13-15% range of incidence (*Ageline*, 12.15%; *Historical Abstracts*, 13.78%; *Linguistics and Language Behaviour*, 14.17%; *America: History and Life*, 14.95%). Of all the data bases considered in all subject areas, only *NCJRS* falls within the highest class of incidence.

87.5% of data bases in Science & Technology appear within the classes of incidence 0-6%. Only two data bases are found in the higher classes (*Georef*, 10.4%; *Energy Science & Technology*, 17.08%).

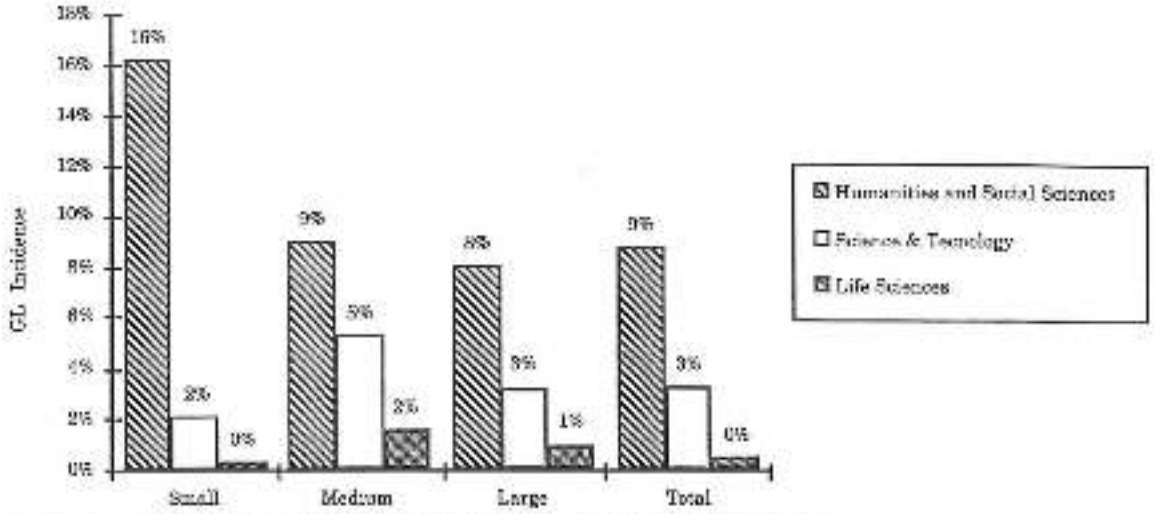

Fig. 3 - Incidence of GL by size (number of documents) of data base

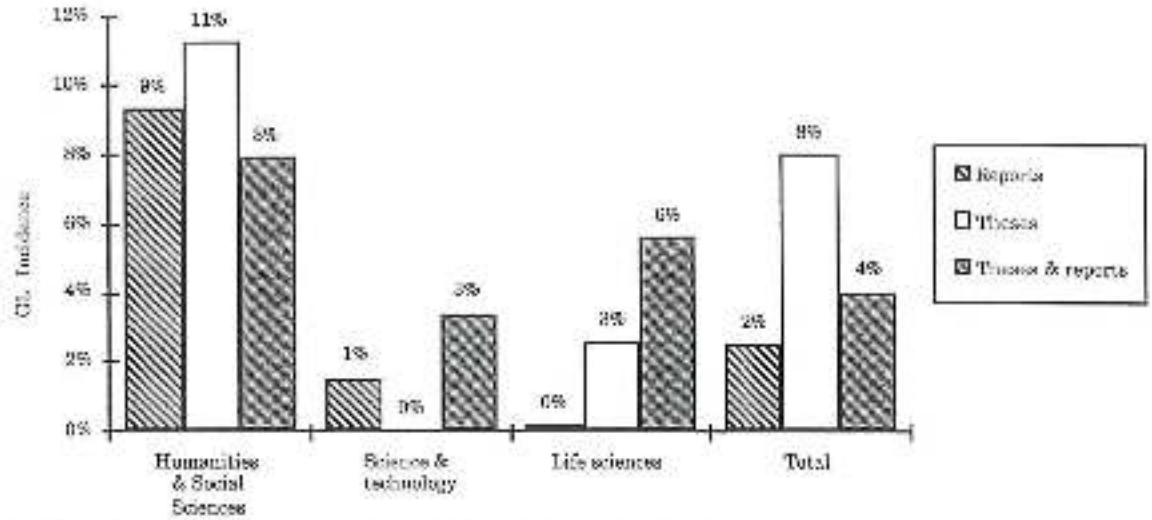

Fig. 4 - Incidence of GL by type of document indexed in data bases.

The total number of documents published from 1988 to 1992 has been taken into account in order to classify the data bases into similar sized groups (i.e. small, medium and large) containing a equal number of data bases (Fig. 3).

In comparison with other subject area, the highest incidence in all classes appears in Humanities & Social Sciences. It should be noted, however, that the result concerning small data bases is affected by the *NCJRS* data base, in which the percentage of GL reaches 44.98%.

If this figure is not taken into account, the incidence of GL in small data bases decreases to 3.43%: little more than the incidence of the same sized class in Science & Technology and Life Sciences.

The results obtained in Science & Technology and Life Sciences are comparable. In both cases the percentages are affected by size: there is a greater

incidence of GL in the medium sized group (5.25%, 1.59%). In the larger sized group, the incidence is greater (3.19% and 1.02%) than it is in the small sized group (2.13% and 0.39%).

An analysis of incidence based on document type (Fig. 4) reveals once again differences according to subjects areas. Data bases containing only theses, for example, are for the most part concentrated in Humanities & Social Sciences, where they make up the highest percentage (11.23%). It is interesting to note that these data bases cover humanities in particular (*America: History and Life, British Educational Index, Historical Abstracts, Linguistics and Language Behaviour Abstracts*).

In Science & Technology, on the contrary, theses are never entered as a single document type; they are always listed together with reports literature. Indeed, it is sometimes difficult to differentiate theses from reports, given that they often appear with their own title and report number.

The incidence of GL in Science & Technology (3.4%) and Life Sciences (5.6%) is higher when a wider variety of GL document types are indexed, while the incidence in data bases which only contain reports is only significant in Humanities & Social Sciences (9.33%). It is of little significance in Science & Technology (1.49%), and almost none in Life Sciences (0.1%).

The overall total obtained without considering separate subject areas, shows the highest incidence where only theses are indexed. This may indicate greater availability of document or at least of their bibliographic references. In fact, many data bases quote information taken from *Dissertation Abstracts Online* in their bibliographic record. It would be useful to further analyse this type of document in order to ascertain to what extent specialised data bases contribute to the diffusion of this type of information, and at the same time, to determine the extent of information overlap.

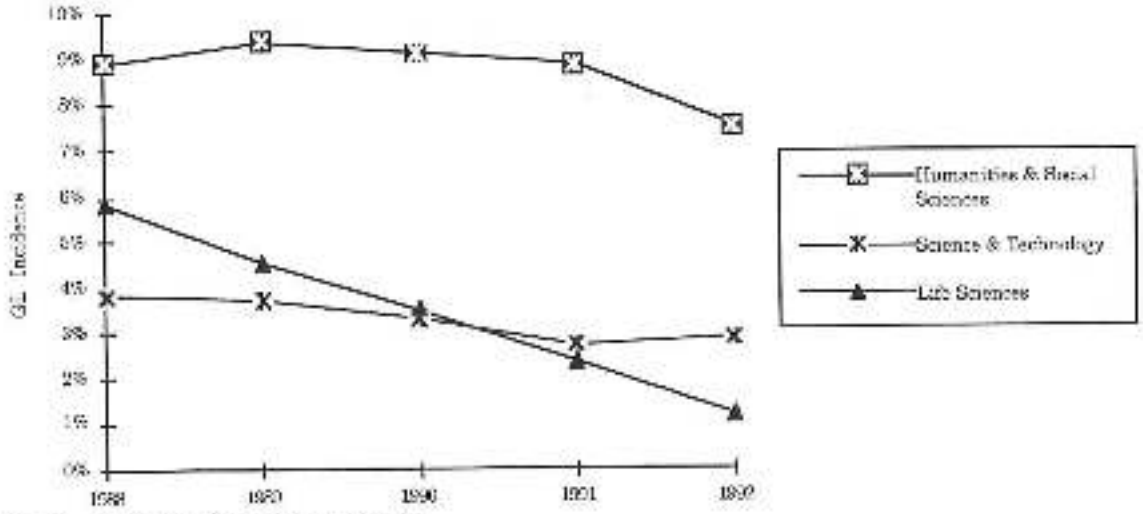

Fig. 5 - Trend in GL (1988 to 1992)

Figure 5 illustrates the incidence of GL from 1988 to 1992. There is not much variation in Humanities & Social Sciences (from 8.94% in 1988 to 8.89% in 1992) and in Science & Technology (from 3.81% in 1988 to 2.74% in 1992), although a

slight decrease can be noticed towards the end of the period. In Life Sciences, on the other hand, there is a very clear decrease (from 5.8% in 1988 to 2.36% in 1992).

Table 2
Comparison of GL published from 1988 to 1992 with GL issued before 1988 - Humanities & Social Sciences

DATA BASES COVERING HUMANITIES & SOCIAL SCIENCES	GL 1988-92	TOTAL GL IN THE DATA BASE	% GL 1988-92 ON TOTAL GL	TIME CHANGE INDICATOR
ACCOUNT. & TAX DB	4109	4272	96.18	85.71
AGELINE	1461	7242	20.17	0.51
AMERICA: HISTORY LIFE	12583	33433	37.64	2.90
ART LITERAT.INTER.	0	1870	0.00	0.00
ARTBIBLIOGR. MODERN	11	1361	0.81	0.02
BRITISH EDUCAT IND.	464	11707	3.85	0.31
CHEM. BUS. NEWSBASE	11173	18763	59.55	1.18
DELPHES	394	468	84.19	8.52
ERIC	22192	238108	9.32	0.45
HISTORICAL ABSTRACTS	10600	18846	56.25	3.86
LINGU. LANGUAGE BEHAV.	6033	7297	76.40	9.06
MATERIALS BUSINESS FILE	81	146	55.48	0.75
MENTAL HEALTH ABSTR	0	600	0.00	0.00
NCJRS	11262	46935	23.99	1.01
PSYCHINFO	33547	160882	21.04	1.12
SOCIOLOGICAL ABST	5375	7637	70.38	11.88

In tables 2, 3, 4, figures relating to GL documents published from 1988 to 1992 are compared with those published previously. An indicator which measures changes in time has been applied. It was worked out by comparing the average yearly number of GL documents published from 1988 to 1992 with the average yearly number of GL documents published before 1988. The indicator obviously takes the date bases' period of coverage into account. If the indicator is greater than one, there has been an increase in GL documents, if it is less than one, a decrease is indicated.

In Humanities & Social Sciences (Table 2), the indicators for nine out of sixteen data bases show an increase from 1.01 up to 85.71. Of these nine data bases, seven in fact display a variation which goes from 55.48% to 91.18% of GL documents published in the last five years. Three data bases have an indicator which reveals a notable decrease in GL documents (*Art Literature International, Artbibliographies Modern, Mental Health Abstracts*), while the rest show a more contained decrease.

Table 3
Comparison of GL published from 1988 to 1992 with GL issued before 1988 - Science & Technology

DATA BASES COVERING SCIENCE & TECHNOLOGY	GL 1988-92	TOTAL GL IN THE DATA BASE	% GL 1988-92 ON TOTAL GL	TIME CHANGE INDICATOR
ALUMINIUM IND. ABSTR.	781	3283	23.79	1,25
APILIT	1605	14894	10.78	0,58
CA SEARCH	47493	76461	62.11	6.89
CHEMENG. BIOTEC ABS	72	252	28.57	1.36
CHEMICAL SAF. NEWSB.	134	393	34.10	0.72
COMPEDEX PLUS	140	317	44.16	2.85
ENERGY SCIENCE & TECH.	133703	590054	22.66	0.82
ENGINEER. MATER. ABSTR	3105	5721	54.27	0.47
GEOARCHIVE	177	5103	3.45	0.10
GEOREF	25763	156464	16.47	0.12
INSPEC	7142	47230	15.12	0.68
MATHSCI	14867	49140	30.25	4.16
METADEX	6476	18036	35.90	2.46
PASCAL	29488	161559	18.25	0.67
PIRA	812	2442	33.25	1.30
RAPRA	6332	28443	22.26	0.92

Table 4
Comparison of GL published from 1988 to 1992 with GL issued before 1988 - Life Sciences

DATA BASES COVERING LIFE SCIENCES	GL 1988-92	TOTAL GL IN THE DATA BASE	% GL 1988-92 ON TOTAL GL	TIME CHANGE INDICATOR
AGRIS INTERN.	58110	335391	17.33	0.54
AIDSLINE	105	121	86.78	10.50
ANALYTICAL ABSTR.	586	2607	22.48	0.46
AQUATIC SC.FISH.ABSTR	21	26896	0.08	0.00
CANCERLIT	4406	11901	37.02	2.94
CURR. BIOTECHN. ABSTR.	55	196	28.06	0.39
HEALTH PLANNING. ADMI	49	8029	0.61	0.02
NURSING. ALLIED HEALTH	2191	2255	97.16	34.23
POLLUTION ABSTRACTS	0	508	0.00	0.00
SPORT	1812	11176	16.21	1.51
TOXLINE	13	289	4.50	0.12

In Science & Technology seven out of sixteen data bases display an indicator which shows variation in a smaller scale (from 1.25 to 6.89) than those in Humanities & Social Sciences. Also with regard to the percentage of documents

published from 1988 to 1992, a wide range of data bases (12) have values which vary from 10.78% to 35.90%. Important data bases such as *Ca Search* and *Compedex Plus* have both high percentage values of documents published in the last five years (62.11%; 44.16%) and an indicator of marked increase (6.89; 2.85). On the contrary, the data base Engineered Materials Abstracts, although it has 54.27% of documents published from 1988 to 1992, nevertheless reveals a decrease (0.47) with regard to documents published in the preceding period.

In Life Sciences (Table 4), only four data bases have a positive indicator, while the rest have values which show a clear decrease in the documents published in the last five years. This is also true for the percentage values.

Conclusion

There exist a substantial number of data bases which include reports literature and theses among primary sources of information (74 out of 234 data bases, i.e. 31.6%).

However, the incidence of GL does not appear to be so high as to render on-line data bases the only vehicle for the diffusion of GL as the majority of data bases fall within classes of incidence from 0 to 6%.

Incidence seems to be especially affected by subject areas. In Humanities & Socials Sciences GL incidence is higher than in the other subject areas and this is also confirmed when data bases are broken down by size and by type of documents indexed. In Science & Technology and Life Sciences the incidence of GL seems to be only partially affected by size of data bases and by type of documents. In fact incidence increases in medium sized data bases and in those data bases which index both reports and theses.

Beyond this general picture others considerations on scope and mission of data bases should be analysed in detail in order to obtain a more precise picture of trends in GL diffusion and distribution. In fact, the way in which producers and distributors of on-line data bases acquire GL remains a key question, as does the willingness on the part of producers to diffuse these documents through channels of communication which could be open to a wider range of users.

The comparison of GL published in the last five years with that published previously indicates a tendency towards a greater diffusion of such documents especially in Humanities & Social Sciences and to some extent in Science & Technology.

The way in which bibliographic elements are standardised, together with the way GL documents are defined, are clearly fundamental for document identification. Greater standardisation would in fact contribute to a greater visibility of GL, making it easier both to exchange bibliographic information and to make such information available outside a limited number of specialist users who are already aware of the information value of GL documents.

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Italian grey literature in SIGLE in the scientific and technical fields

Armida Pagamonci

CNR Central Library - National SIGLE Centre

Abstract

The central role of the Italian National Research Council (CNR) in national scientific and technological research policy is pointed out. Particular reference is made to the increasing scope of CNR activities at the European and international levels. In this framework, the CNR Central Library has acquired an increasingly important role in the relationship between research activities and scientific information. This explains why CNR was selected in 1985 as the most qualified body at the national level to adhere to EAGLE/SIGLE, and become the national reference authority within the system. A brief outline of the organization of the Italian national authority is given with details on its cooperation and management policies, aiming at the promotion of a system for the collection, processing and supply of documents produced by the main Italian scientific bodies.

1. Historical Background

The National Research Council (CNR) and its Central Library of Sciences have played an active role since the 20s in the dissemination of the information, data, reports and projects which the Italian technical and scientific research centres exchanged for their mutual benefit, as was common practice in the scientific communities of all countries.

The fact that the CNR Central Library had the legal deposit for every technical and scientific publication, as well as the prestige of this institution and its role in promoting and supporting research were among the factors that led to the inflow of unpublished documents produced by universities and other public and private research centres, including naturally the CNR's own research bodies.

The CNR Central Library has always been aware of the importance of this type of non-conventional literature and this interest is substantiated by the important collections of grey literature (NACA, NASA, U.S. ORNL, NATO/AGARD and others) which were initiated after the war.

The CNR set up a special division to collect and disseminate non-conventional literature which was otherwise difficult to identify and to access. This important and specific function was well known to the scientific community and widely utilized.

From the 70s onward, the production and communication of technical research reports and other types of grey literature has greatly increased. There has also been a growing awareness of the importance of the circuits for the acquisition and dissemination of these documents that are crucial for scientific research beyond national borders, as well as the need to identify specific and homogeneous processing and control criteria at an international level. For these reasons, the CNR welcomed the invitation to adhere to the System for Information on Grey

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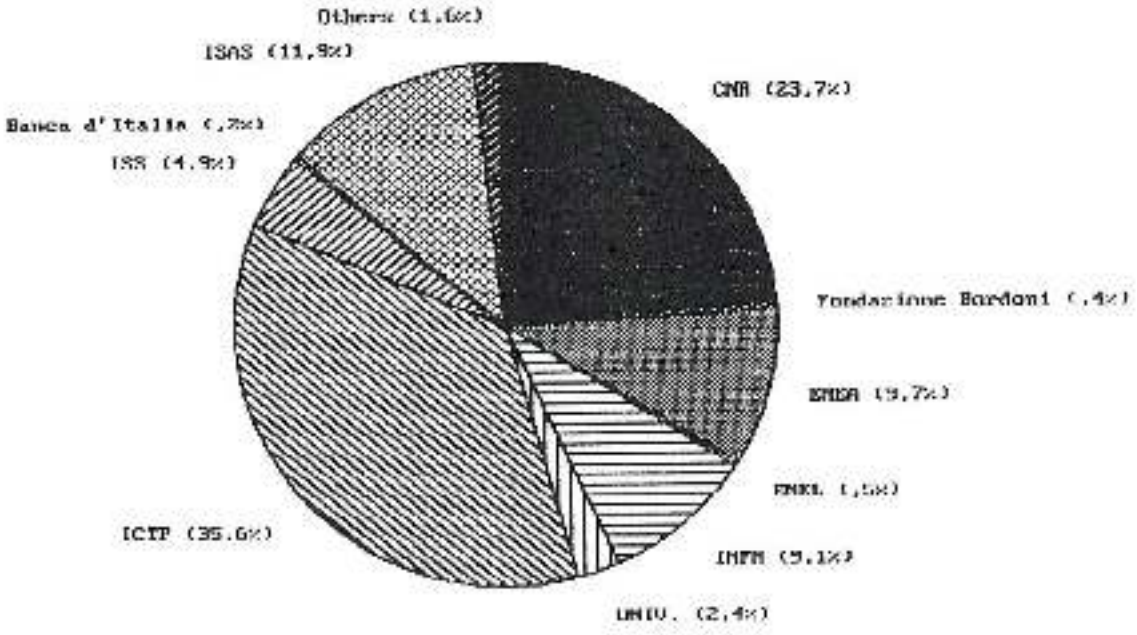

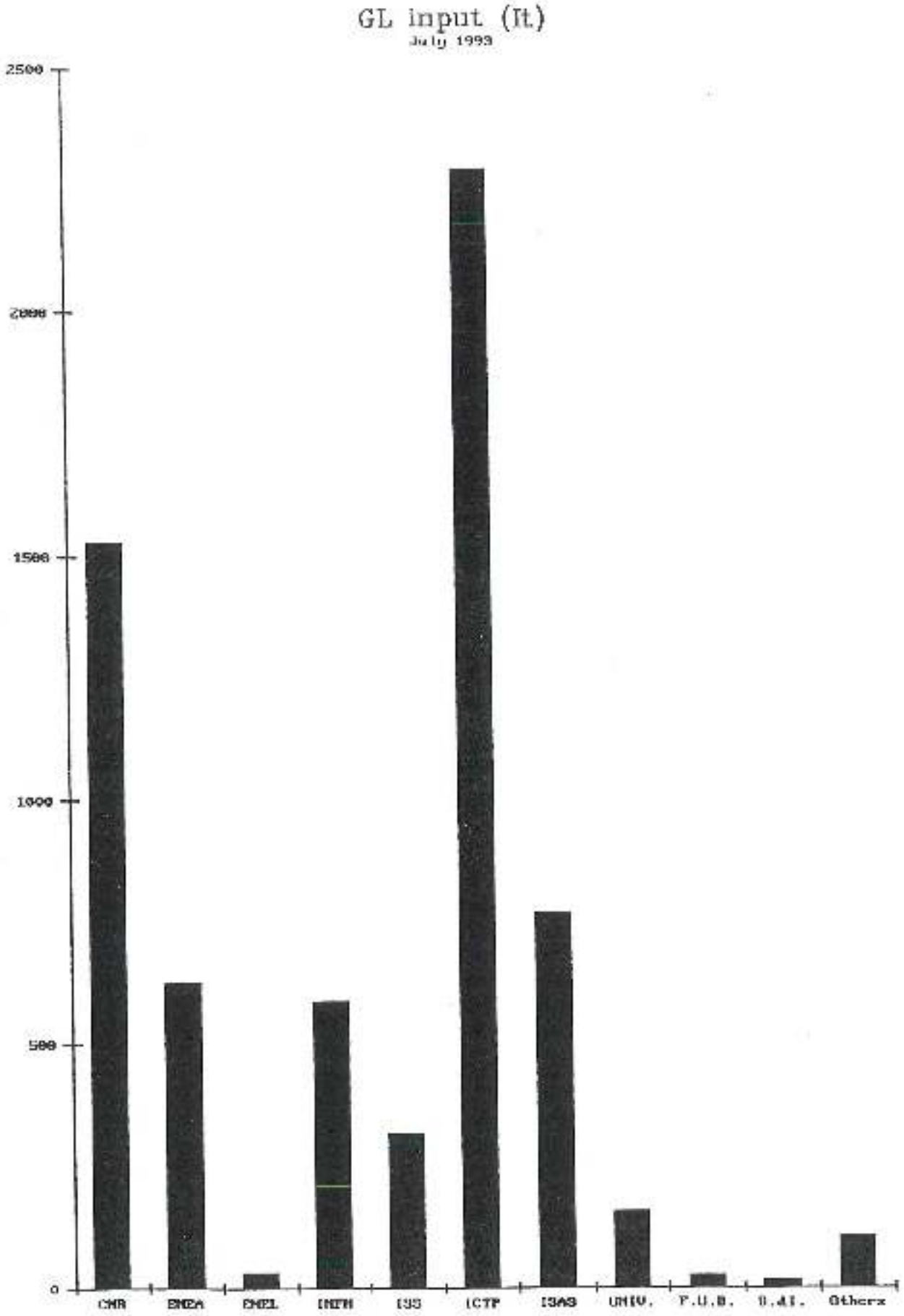
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Others

CNR (National Research Council):

"A state agency that promotes and oversees research for the scientific and technological development of the country".
The entire scientific community is represented by 15 National Committees which provide consultancy, or focus on scientific disciplines or single issues.
Scientific activity is carried out by research bodies (institutes, study centres and research groups) which report to their respective Consultancy Committees.
Scientific research of special interest to the nation is carried out within the framework of Oriented Projects and Strategic Projects.
Other research projects are funded through contracts and grants.

ENEA (National Agency for New Technologies, Energy and the Environment):
The main research areas include the following: renewable energy sources, energy saving, nuclear fusion, the environment, innovative technologies, control of the peaceful uses of nuclear energy, information technology, and transfer of research results to the industrial sector. ENEA provides technical reports (RT) in the following areas identified by the RT reference series:

- Energy area	RT-ENERG
- Nuclear area	RT-NUCL
- Energy environment and health area	RT-AMB
- Energy and innovation area	RT-INN
- Area DISP (education)	RT-STUDI
- Other units	RT-GEN

Grey literature accounts for a substantial part - roughly 80 per cent - of this body's overall scientific production.

ENEL (National Agency for Electric Power):
ENEL carries out research and development activities in technologically advanced sectors including the following: automization research (Cra), electrical power research (Crel), hydraulic and structural research (Cris), thermal and nuclear research (Crtn).

INFN (National Institute for Nuclear Physics):
Its research activities are focused in the following fields: sub-nuclear and basic nuclear physics, interdisciplinary technological research.
Annual estimated production: 150 reports.
The INFN has an important role in Italian universities, as it integrates its facilities with those of the Departments of Physics, through 19 sections and 6 integrated groups.
Its organizational model is considered unique.
INFN performs an important role not only in the production but also in the dissemination of know-how in the field of physics and related experimental technology.
In its four large Italian laboratories (Frascati, Gran Sasso, Catania, Legnaro), INFN makes available accelerators and highly sophisticated research instruments to the national and international scientific community.
INFN has traditionally pursued an international cooperation

policy and also supports a highly qualified participation of scientists in the most important laboratories in the world, besides Italy.

ISS (Superior Health Institute):
The ISS is the main Italian institute for technical and scientific research in public health, and it provides control and consultancy.
Since 1978, the ISS has been the technical and scientific agency of the Italian National Health Service.
Its role is to promote public health through scientific research, surveys, trials and analytical tests in the different fields of health sciences: infectious and non-infectious pathology, the environment, food and drugs.
The institute has WHO Collaborating Centres active in many fields.
Annual production estimate: 50 reports.

ICTP (International Centre for Theoretical Physics)
The broad range of ICTP programs reflects the Centre's aim to deal with contemporary problems of science and society in a multi-disciplinary approach.

- Fundamental Physics including Astro Particle Physics
- Physics of Condensed Matter
- Mathematics
- Physics and Energy
- Physics of the Environment
- Physics of the Living State
- Applied Physics
- Physics of the Space
- Physics and Mathematics Teaching

The estimated annual production of reports and grey literature amounts to an average of 420 units.
ICTP, as it operates in Italy and is funded by the Italian government, comes under the responsibility of the SIGLE National Centre for grey literature input.
The ICTP collaborates with the main Italian scientific institutions such as INFN, CNR, ENEA and ISAS.
ICTP is also very important for developing countries and is a model of international cooperation in the scientific sector.
"It is the embodiment of the scientific quest for knowledge, the first attempt under the aegis of the United Nations, to create a research institute in basic science, with a special focus on the needs of developing countries".

ISAS (International School for Advanced Studies)
The activity of ISAS is organized into sectors, for the various disciplines, and also in the Interdisciplinary Laboratory for Advanced Studies.
Currently, the research sectors include the following:

- Functional Analysis and Applications
- Astrophysics
- Biophysics
- Mathematical Physics
- Elementary Particles
- Condensed Matter Theory.

Estimated annual production: 200-250 reports.
In the ISAS framework, the Interdisciplinary Laboratory for Advanced Studies, founded in 1986, is organized into sectors based on the various research activities and has the aim of investigating new fields of research in natural science and the humanities, as well as the links between different branches of science.

Ugo Bordoni Foundation
This foundation is the Italian research body which carries out the most advanced research programs in the field of telecommunications.
The technical documents produced by the foundation are in the form of reports, of which about 20 per cent are published, while the bulk is to be considered grey literature.
Such literature is disseminated following a documentary control process which guarantees the pertinence and terminological accuracy of the abstracts and selected key words.
The scientific and technical terminology pertains to highly advanced sectors in telecommunications research, and 50 per cent of the technical terms are not included in commercially available technical dictionaries.

The above considerations on the bodies producing documents highlight the prevailing disciplines and issues, and the fact that the documents consist essentially of technical research reports.
The participation of the International Centre for Theoretical Physics in supplying the system and in its use is of special interest, as this Centre is an important channel for developing countries which are generally under-represented in databases and otherwise isolated.

3. SIGLE Centre

The SIGLE Centre Service was set up in compliance with the obligations undertaken through the adherence to the European initiative, and it offers a service which meets the needs of national, European, and international system users.
In order to promote the awareness and utilization of the SIGLE databases on a national scale, the Service has organized seminars, training courses for librarians and users of the Central Library and for representatives of the scientific community.
In compliance with the decisions adopted by EAGLE, the Service has carried out promotional activities for the CD-ROM product and - thanks to support received from the Ministry of the University and Scientific and Technological Research - it is preparing to disseminate the product online to universities and public and private research bodies.
A growing numer of requests for searches in the area of human and social sciences is also to be noted.
The automatic SIGLE data acquisition procedure for the monthly delivery of the magnetic tape is provided by the CNR Electronic Centre. It was first set up in 1987, and has since been subject to continuous modifications and new applications, due both to the variations introduced in SIGLE standards and to gradual refining

of input and data compatibility and formality control techniques. The Centre also manages a file listing all of the Italian bodies which produce documents for the SIGLE database.

The SIGLE Centre, whose national activity is closely linked to European scale activity, would benefit from an expansion of the service organization, with the aim of better monitoring document producers and the collection and processing of documents and also performing a more broad-based coordination activity.
Also, in line with a need voiced by numerous research laboratories, the National SIGLE Centre would like to embrace the fields of humanities and social sciences and contribute to fostering a dialogue between these fields and basic and technological science.

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Translations, a darker shade of grey; their value and accessibility

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Abstract

"The limits of my language are the limits of my world" (Ludwig Wittgenstein).
Ad hoc translations of scientific and technical documents, whether they be English translations of Japanese journal articles, Russian conference proceedings or German patents may not immediately be classified as grey literature although closer examination will firmly place them in this category. Foreign research findings are of immense value to the world's scientific and technical community. When such information is not made available through one of the many translations journals, it might be necessary for an individual or organization to commission a translation. Since translation costs are high, this is not always a practical option. For those without the resources to translate themselves, the answer would seem to lie in easy access to existing ad hoc translations.

Such access is already possible, however, the extent to which translations are available is dependent upon cooperation from the following groups worldwide: commercial and not-for-profit organizations with translating facilities; government science and research bodies; academic institutions; and to a certain extent libraries and publishing companies.

This paper will outline the value and accessibility of ad hoc translations, the resistance to cooperation that exists in some quarters (areas) and how this can be overcome.
The role played by the International Translations Centre (ITC), an International awareness Centre for scientific and technical Translations, and its database the World Translations Index in facilitating access to ad hoc translations will receive particular attention.

1. INTRODUCTION

The status of translations in the field of grey literature is not clearly defined. What is indisputable is the value of foreign (i.e. non-English) research findings and the importance of translations in making this information available to the world's research community. In this paper, I would like to discuss the role of translations as an important component of grey literature and outline the various ways in

which the International Translations Centre (ITC) ensures these documents are accessible to scientists and researchers worldwide.

Not all translations qualify as grey literature. A large number is readily available, for example, in translations journals. These publications contain either a full (i.e. cover-to-cover) or partial translation of an already published foreign language journal or a selection of translations from multiple sources. The translations are linked to the original articles through bibliographic data.

There are, however, many translations in existence around the world which for various reasons are not so easily available. These are ad hoc translations which, on the whole, have been commissioned by companies, academic institutions or even individuals for their own use. The fact that ad hoc translations are often translations of published foreign papers does not in any way diminish their standing as grey literature; the information contained in an article published in Russian is not accessible to a non-Russian reader unless it has been translated. Since the translations themselves are not published, they fall into the category of "unconventional" or "difficult to access " literature, although the fact that they are not published does not mean that they are unobtainable. The types of documents translated range from patents, standards, journal articles, monographs, conference proceedings, reports and even maps.

Table 1
DISTRIBUTION OF DOCUMENT TYPES IN WTI

Conference proc.	7541	2%
Monographs	13472	4%
Patents	29804	9%
Reports	3996	1%
Serials	262726	77%
Standards	21857	6%
Others	4261	1%
Total	343657	100%

Source: ESA/IRS WTI file 33

2. THE VALUE OF UNPUBLISHED TRANSLATIONS

In common with other forms of grey literature, ad hoc translations have advantages compared with material published in periodicals: they may be more rapidly available since there is always a certain delay before a translation is published in a translation journal; an ad hoc translation may also contain greater detail than its published counterpart which might omit

some background tables or appendices. The real value of a translation must however surely be that it provides information that would otherwise be unavailable.

Although the number of foreign language journals that are being translated cover-to-cover is steadily increasing, there are still a great many for which translation is not a commercially viable proposition. One notable exception is the range of Interperiodica publications (Interperiodica Publishing, Birmingham, Alabama, USA). These are translated into English and released at the same time as the Russian editions, reflecting the demand for immediate access to foreign research findings.

Translating a foreign scientific or technical document is a specialised, costly and time-consuming operation. It is therefore important that translations produced for in-house purposes are not just filed away after use to gather dust, or worse still disposed of, but made available to others who also have an interest in the document. By offering an ad hoc translation to others, an organization prevents the costly duplication of translating effort and is also able to recover some of the costs of translation by charging an appropriate fee for the provision of photocopies, should it so wish.

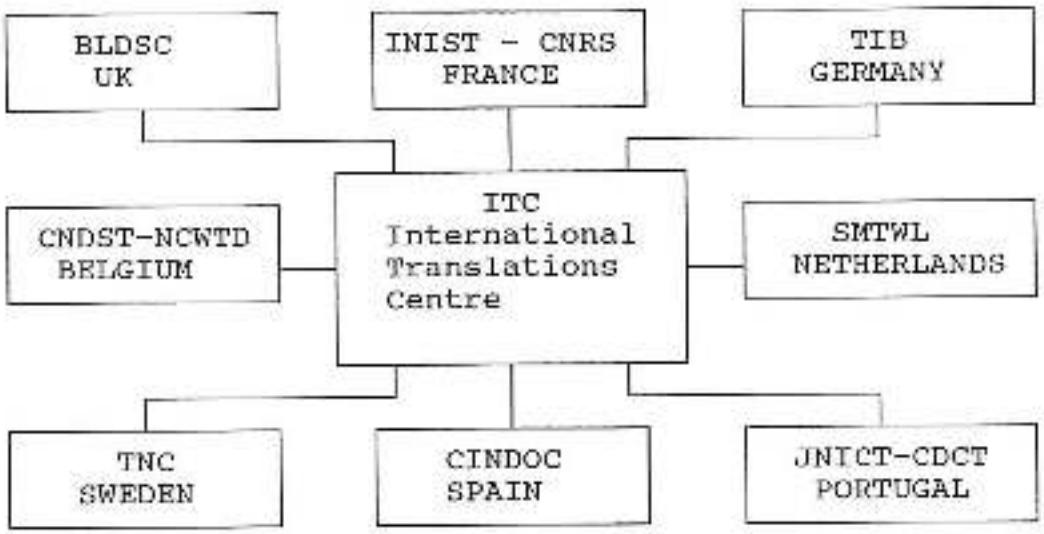
It has long been recognised that transfer of information is an inseparable part of research and development. The Weinberg Report 2000 published in 1963 summarized the situation well when it said "Science and technology can flourish only if each scientist interacts with his colleagues and his predecessors and only if every branch of science interacts with other branches of science; in this sense science must remain unified if it is to remain effective" (part 1, p.7). One could add here that this must be achieved in spite of the language barrier. Therefore, the essential role language plays in information exchange and communication was recognised with the foundation of the International Translations Centre (ITC) in 1961.

3. ITC: AN INTERNATIONAL AWARENESS CENTRE FOR SCIENTIFIC AND TECHNICAL TRANSLATIONS.

Translations are part of the information transfer chain. The ultimate aim is to connect the user to the translated paper, be it grey or white. "All the problems that beset domestic communication beset international communication, but with certain additional complication; most obvious is the diversity of languages" (p.22 Weinberg Report). Of course, there are other obstacles which also impede the transfer of information on an international level, for example politics and economic considerations.

Free access to translations held by organizations around the world is not practically possible without some central organizing body. ITC, through its international network of national participating centres, provides a framework for international cooperation in the field of translations.

Fig. 1
I.T.C.'S INTERNATIONAL NETWORK



By collecting the bibliographic data of translations held worldwide, ITC acts as an awareness and information Centre for (mainly) sci-tech translations. ITC collects data on both published and unpublished translations.

The bibliographic data of each individual translation is processed and used to create a translation record which is entered into the World Translations Index (WTI) database which ITC co-produces with the Institut de l'Information Scientifique et Technique, Centre National de la Recherche Scientifique (INIST-CNRS) Nancy, France. WTI currently contains some 350.000 records of translations and covers the period 1979 to present. (Information on pre-database translations i.e. 1961-78 can be obtained from ITC's customer services).
The WTI covers translations from all source languages (Table 2) into Western language (Table 3) and every field of science and technology (Table 4).

Table 2
DISTRIBUTION OF SOURCE LANGUAGE IN WTI

Russian	144558	42%
German	67052	19%
Japanese	54035	16%
French	19567	6%
English	9991	3%
Czech	9242	3%
Chinese	8880	2%
Polish	7053	2%
Others	23279	7%
Total	343657	100%

Source: ESA/IRS WTI file 33

Table 3
DISTRIBUTION OF TARGET LANGUAGE IN WTI

English	277259	80%
French	37399	11%
German	16431	5%
Spanish	9071	3%
Others	3497	1%
Total	343657	100%

Source: ESA/IRS WTI file 33

Table 4
DISTRIBUTION OF SUBJECT CATEGORIES IN WTI

Materials	71783	21%
Mechanical, industrial, civil and marine engineering	57790	17%
Biological and medical sciences	55487	16%
Chemistry	46684	14%
Earth Sciences and Oceanography	22068	7%
Physics	18543	5%
Agriculture	15141	4%
Others	56161	16%
Total	343657	100%

Source: ESA/IRS WTI file 33

Some 70% of the translation records in WTI represent unpublished translations.

A WTI record gives full details of both the translation and the original document from which it was derived. This enables anyone looking for a translation to locate it on the basis of very limited bibliographic data. The WTI database is available from the hosts DIALOG (file 295) and ESA/IRS (file 33). A printed index is also available on a subscription basis.

Recently ITC entered into a partnership with Engineering Information Inc. (Ei) in the USA to provide engineers and information specialists with an integrated research source that helps overcome language barriers. Ei has added some 30.000 records pertaining to translated articles in the fields of physical sciences, technology and engineering from the WTI database to its Ei Page One CD-ROM. Most of the translations are unpublished documents notified to the ITC network by the public or private organization that commissioned the translation. In this way, researchers are alerted to the

availability of existing translations making it possible for cost savings to be made on research.

Fig. 2
SEARCH SAMPLE AND DISPLAY OF A WTI RECORD

```
? SELECT PY=1992(C)LO=JAPANESE(C)AV=BLDSC
          5364  PY=1992
         53369  LO=JAPANESE
         20104  AV=BLDSC
      S1     9  PY=1992(C)LO=JAPANESE(C)AV=BLDSC

 1/2/3
  00330020   WTI No.: 93-0002046
  Translated Title: Explosion experiments on model underground magazines
  Author: NAKAYAMA Y; MATSUNAGA T
  Translation Year: 1992
  Translating Organization (Availability):  BLDSC -- The British Library
Document Supply Centre.   Boston Spa, Wetherby, West Yorkshire LS23 7BQ,
U.K.; HSE -- Health and Safety Executive.   Translation Services, Harpur
Hill, Buxton, Derbyshire SK17 9JN, U.K.  (BLDSC 9022.381(HSE-Trans-14438)
HSE 14438)
  Translation Language: English
  Document Type: TV (Translation) ; Level: LM (Monographic)
  Translation Country: United Kingdom

Translated from:
Source Journal:  KAGAKU GIJUTSU KENKYUJO HOKOKU, v. 87  no. 3
  Original Publication Year: 1992, p. 118
  ISSN: 0388-3213  CODEN: KGKHEP
  Original Language: Japanese
  Document Type: XP (Serial) ; SA (Analytic)
  Country of Publication: Japan
Descriptors: Engineering; Physics; Medicine
Subject Classification: M16   Industrial explosives
```

Source: Dialog, WTI file 295

The translations themselves are, with the exception of a small collection, not held at ITC, rather each WTI record indicates where a copy of the translation can be obtained. In the case of published translations, this is usually a translations journal. For ad hoc translations the translation availability (name and address of the translating and/or holding organisation) is given. ITC will act as intermediary in cases where an organization is either reluctant to become involved in the administration of supplying copies of the translations to WTI users or because it does not wish its competitors to know that certain translations have originated from their organization. In such cases, ITC allocates the translations ITC order numbers and handles any requests for copies through its Customer Services. This service will also provide information on older "pre-database" (1961-78) translations.

Owing to the growing tendency towards the abstracting of foreign language documents, the increase in the number of

journals translated cover-to-cover and the recession, recent years have seen a steady decline in the number of translations commissioned on an ad hoc basis. In spite of this, there is still a strong requirement for this type of translation. Only a very small proportion of all scientific and technical journals published are translated cover-to-cover on a regular basis. Others are translated selectively, but a large proportion are never published in translated form. It might be argued that the major journals or those of specific interest internationally are translated, but this still leaves a lot of material untranslated.

Many researchers successfully locate translations they have been unable to obtain through conventional commercial channels, in the World Translations Index. Sometimes they are less successful and discover that the article or patent they are interested in has not been translated, or at least the bibliographic data have not been notified to ITC.

4. SUMMARY

Having outlined the value of translations as a type of grey literature and the role played by the International Translations Centre in providing access to these documents, I would like to conclude this presentation with a request. All bibliographic data on ad hoc translations sent to ITC is done so on a voluntary basis so that other researchers might also benefit from the information. ITC greatly values this cooperation from both the private and public sector and appeals to any organizations holding unpublished translations which have not been notified to ITC, to seriously consider offering the bibliographic data for entry into the WTI database. Let us aim to make translations a lighter rather than darker shade of grey.

LIST OF ACRONYM'S:

BLDSC	- British Library Document Supply Centre
INIST - CNRS	- Institut de l'Information Scientifique et Technique - Centre National de la Recherche Scientifique
TIB	- Technische Informationsbibliothek
CNDST-NCWTD	- Centre National de Documentation Scientifique et Technique - Nationaal Centrum voor Wetenschappelijke en Technische Documentatie
TNC	- Tekniska nomenklaturcentralen
CINDOC	- Centro de Información y Documentación Cientifica
JNICT-CDCT	- Junta Nacional de Investigaçao Cientifica e Technologica - Centro de Documentaçao Cientifica e Técnica
SMTWL	- Stichting voor Moeilijk Toegankelijke Wetenschappelijke Literatuur

ACCESS TO ADMINISTRATIVE GREY LITERATURE: THE FRENCH EXPERIENCE

P. Buffet, INSEE – CCDA

The CCDA (Commission de Coordination de la Documentation Administrative – Commission for Administrative Documentation Coordination), under the authority of the Prime Minister, was commissioned by the Prime Minister to set up a system for the collection, description and dissemination to the public of non-commercialized reports ("grey reports") produced by or for French government administrations.

Because of the number of problems involved in setting up such a system, it was thought best to first test the proposed set up in a few administrations who volunteered to participate in the experiment. The experiment was launched in early 1992 with the help of two documentation centers which produce data bases that already include grey literature.

The purpose of this paper is to present the general guidelines of the proposed system and the conditions under which they have been tested during the past 18 months.

1. THE PROPOSED SYSTEM

1.1. – The three major functions of the system are as follows:

– set up channels through which administrations transmit their reports to documentation centers able to do documentary processing.

– entrust these documentation centers with the processing and indexing of these documents for bibliographic data bases accessible in France and from

abroad, without having to create a new data base dedicated to that type of documents.

– make it possible for the public to access these documents either through the administrations that produced or commissioned them or through the documentation centers.

This system is not intended to replace the document retention or archival procedures already in place at the Bibliothèque de France and the Direction des Archives de France, respectively. It is designed to complement existing systems and provide the public with quicker and easier notification of and access to this type of documents.

1.2 – If such a system gives a key role to the documentation centers that will collect and process the reports given to them by administrations, it is because it is based on the documentary structures of these documentation centers.

This is already the case in a number of Ministries or Agencies like the departments of the Ministry of Equipment and the Environment, which have set up procedures for the internal itemization and processing of grey literature. However, such situations are exceptional. It is still frequently the case that, within an administration, there is a general unawareness from one department to the next of the type of reports either produced or commissioned. Of course, such departments will have to remedy this situation. The implementation of the system can and should be an incentive to do so while at the same time providing some assistance. But the general objective of the system goes beyond simply helping administrations with their own reports; it is to give the public access to all the reports.

This is precisely where the two selected documentation centers come in: INIST, the Institut de l'Information Scientifique et technique of the CNRS and

Documentation Française (DF). Each has recognized documentary expertise in its own field: scientific and technical for INIST, and administrative and public policies for Documentation Française. Both own data bases and have the necessary structures to communicate to the public the documents they hold.

Both these documentation centers can offer a range of services, such as putting on microfiche the reports sent to them or the creation of catalogs, which the producing administrations are often unable do themselves. All this could be an additional incentive for these administration to participate in the proposed system.

1.3 – The last but not least feature of the system is that it is to be as simple as possible. By providing the best conditions of clarity, efficiency and cost effectiveness, it must foster collaboration between administrations and the two selected documentation centers. This is what the current experiment is attempting to verify while at the same time flushing out unforeseen problems and proposing solutions.

2 – CONDITIONS OF THE EXPERIMENT

2.1 – Out of the various administrations who had volunteered to participate in the experiment, five ministries and one agency were selected for the experiment: Ministries of Agriculture, Environment, Equipment, Justice, Labor, and the Commissariat General du Plan. They were to constitute a representative sample of the various situations and problems the implementation of the proposed system could encounter. These six administrations differ from one another in many ways: size and organization, nature of their activities and nature of the reports they are called upon to produce or commission, documentary policies and structures and also level of commitment to the collection of and access to grey literature.

2.2 – Within each of these administrations, a document center was

designated to act as interface between its parent administration and the two documentation centers. As such, the center is in charge of the internal organization of the experiment and acts as coordinator between the departments' documentary units and the participating administrative sections. When the experiment was launched, a high level meeting was held, at the request of CCDA, with the major decision makers involved in each of the volunteering administrations. The purpose of the meeting was to clarify the operation's objectives and procedures and to stress a commitment at decision-making levels for each of the administrations involved. It was at that time that, generally on a volunteer basis, the document centers that were to be in charge and the participating departments and sections were designated.

INIST and DF for their part, each designated a project leader who was to work on the experiment on a part time basis. The CCDA team was to act as general coordinator.

2.3 – A steering committee, nominated by the Chairman of CCDA , meets about three times a year to regularly review the progress of the experiment. This review is done according to the experiment protocol defined by the steering committee and endorsed by CCDA. At this time, no budget has been slated for this operation.

3 – ORGANIZATION AND PROCEDURES TESTED

The practical experimental set up is as follows:

3.1 – Participating organizations send INIST and DF on a regular basis (depending on the volume of "grey reports" they either produce or commission) a list of the reports with their general bibliographic data. From this list, INIST and DF request the reports that appear to fall in their field of expertise for indexing in their data bases.

Administrations retain reports they consider confidential until such a time as their access is deemed no longer restricted. Such reports must bear a stamp with the date at which their restricted status end.

3.2 – The reports sent to the two documentation centers are put on microfiche by them and then returned, whenever necessary, to the parent administrations. The centers then process the reports and enter them into their own data bases (PASCAL and FRANCIS for INIST and LOGOS for DF) and eventually into SIGLE as far as INIST is concerned.

3.3 – The public can then access the contents of these reports by asking INIST or DF for paper or microfiche copies, or in the case of DF, by consulting them in the reading room. Of course, this is in addition to whatever access the various report producing or commissioning administrations can already provide.

4 – FIRST RESULTS

4.1 – An evaluation study of the experiment was instigated by the steering committee. It is currently being conducted with the participating administrations and the two documentation centers and its results should be available by the end of the year. However, we can already present some preliminary results.

4.2 – First we need to point out that the various participating administrations did not get into the experiment at the same rate. Overall, a minimum of six month to a year are needed from the official launching of the experiment for administrations to set up their in-house procedures. In some cases, it might be even longer. After that, things go much faster when it comes to organizing the relations with the documentation centers.

The first contributions were sent to the documentation centers at the end of 1992 and the beginning of 1993 by three participating administrations,

during Spring 1993 by two others and at the end of Summer 1993 by the last one.

These differences reflect for a large part the variations in complexity of the administrations' structures and the coordination and development level of their documentary organization and policies.

4.3 – The importance of the role played by the steering committee in this operation is twofold: on one hand it is the organization responsible for the follow–up and evaluation of the progress and on the other it acts as a forum where the heads of the documentation centers involved can exchange ideas, share information and experience.

As a result, certain interesting actions initiated by one or the other were taken up with success by others. This can only be positive for the smooth operation of the system and can enhance the role played by these centers within their own administration, where all too often documentation problems are met with a good deal of indifference.

4.4 – The current experiment make it possible to have a good idea on the actual number of "grey reports" produced or commissioned by administrations during one year. Quantities fall between a few dozens and several hundreds depending on the size and the activities of the administrations involved. Those with more technical or scientific responsibilities produce or commission a larger volume than those with more "administrative" responsibilities. We all know that so called "administrative" reports are usually more difficult to track down.

By extrapolation, we can evaluate at around 2 000 the annual number of "grey reports" issued by all departments of government agencies. This number may vary from one year to the other due to government budget allocations.

This estimation, however rough, is quite useful to evaluate the eventual work load and costs linked to the generalization of the current experiment which for the time being is operating on a volunteer and no charge basis.

4.5 – The system by which administrations forward to INIST and DF lists on which either center selects the reports of interest to them seems to be sound, cheap and easy to apply. The fact that both INIST and DF are able to put the requested reports on microfiche and return them to the producing administrations within 15 days, greatly relieves the latter from the burden of having to supply documents often issued in very limited numbers.

In order to facilitate the implementation of this system, all participating administrations now include in study contracts a clause requiring the persons responsible for the study to submit two additional copies of their reports.

Even more, they often make this submission of copies to the document center in charge of report collecting, a mandatory requirement for payment of the contract fees.

4.6 – The risk of records duplication incurred by having two documentation centers involved in the processing proved to be minimal. In fact duplicates can prove necessary and even beneficial since the purpose of these types of data bases is not the same.

A real problem is that some reports are not integrated in any INIST or DF databases because they do not fall within the selection criteria defined by these centers. We are trying to evaluate the magnitude of the problem and to find a solution so that the existence of such reports is not overlooked. However, we must remember that exhaustive cataloging description is already provided in SIGLE.

4.7 – Presently, INIST and DF do their own description of the reports they receive and enter the references in their data bases. Some administration facilitate this task by including with a report a form filled by the person submitting the report. To this day, there has been no attempt to provide for electronic transfer of bibliographic records from the data bases of the producing administration, when they exist, to INIST or DF data bases. In view of the variety of computer formats used and the number of reports involved, it was felt that it would be reasonable to re–enter those records. Eventually, it might prove to be more cost effective to write reformatting programs for those administrations liable to send a large number of records to the documentation centers concerned with the processing.

4.8 – Another real problem is finding reliable indicators to evaluate the use of such a system describing and providing access to those reports. On the one hand, short of creating a specific data base, the implementation of a consultation counter for reports in the data bases would be very costly. On the other hand, it is virtually impossible to measure the increase in consultation and communication of these reports linked to improved notification. Quite often, users who found out the existence of reports through searching these data bases will go directly to the documentation center of the department or administration concerned to request a copy or consult the reports.

Short of a permanent evaluation system, regular, limited surveys need to be conducted on a sample of document centers. Studies of real and potential users of the system need also be conducted. Such studies however can only be done after the system has been operating for several month. At this point in the experiment, the volume of reports catalogued and cited is not large enough to justify undertaking such studies or any type of information and promotion actions for potential users. This also raises the question of the best available means for such actions.

CONCLUSION

The conditions in which such an experiment was conducted obviously impose certain limitations. In particular, it cannot answer all questions it raises as long as it has not attained an amplitude such that the system tested can prove trustworthy and therefore can be promoted. However, we can say that , even if getting this experiment going was not always easy, first results are definitely encouraging and that we must forge ahead with it.

Numerous hurdles remain to be overcome linked to a certain degree of "overcautiousness" on the part of administrations, not to mention their limited resources for such a project. But there are a number of favorable factors for the development of the experiment launched by CCDA. Not the least of which is the conclusion of the negotiations for an ISRN or international standard report number and, in France, the AFNOR guidelines for a standardized presentation of reports, which should both facilitate identification and referencing of reports. It is also the initiative undertaken by the Ministry of Higher Education and Research together with CCDA, to promote the collection of and the access to scientific and technical grey literature. This action, backed by significant financial means, is somewhat different from that of CCDA. If it is maintained and conducted as is today the case in synergy with the CCDA project, it should contribute at the national level to promote a coherent and global policy for the collection and referencing of grey literature.

FIRST INTERNATIONAL CONFERENCE ON GREY LITERATURE
AMSTERDAM, NETHERLANDS
13 December 1993

"Academic Libraries and Collection Development Implications for Grey Literature,"

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I commend the organizers of this conference and the parties involved in assembling such a diverse, experienced and internationally represented talent pool to discuss the role of grey literature. This conference takes place in a more global context than discipline specific discussions since it is neither subject nor format or source of publication oriented, yet it is a correlate to the myriad of activities and meetings on electronic publishing and products and evolution to fulltext document distribution explored in government, scholarly and commercial publishing sectors. I urge you to consider the new kinds of grey literature rather than only print sources for the purposes of my paper. My contention is that materials such as patents, American dissertations or other numbered technical reports do not qualify as grey literature - access is easy and reliable. Grey really refers to difficult to obtain materials from nontraditional sources.

Nearly three months ago, I had the chance to participate in the Foreign Acquisitions Workshop that NASA hosted in Washington, (another paper describes the conference more fully) where the theme this year was also Grey Literature. At that workshop, I became convinced that grey literature lends to requiring a greater market

vision, economic vision and social vision so that it is considered a product of communication as a market commodity, as a springboard for national economic growth and development and as a vital component in the design of a social infrastructure. If these kinds of communication strategies indeed fit for grey literature we are further ahead in determining what kinds of implications it has in many environments, including those of collection units in academic libraries.

Gray literature is to a science librarian like myself whose job it is to anticipate information needs of the merging, emerging, frontier and multidisciplinary sciences, and incorporate the publishing trends to support the discovery of new relationships, a curious, puzzling and mystifying component of my work. The reasons are many, first, until an information seeker recognizes the value of grey information, and determines how valuable it may be, and discovers why it is grey, and not black nor white, it is usually information NOT missed nor considered a void in conducting a literature review. This first slide designed by Peter Graham of Rutgers University, demonstrates the process of scholarly communication in a user-based reading and publishing environment and it is my interpretation that grey literature fits in like any other example of white or black literature, for many of the properties pertain the same ways.[1]

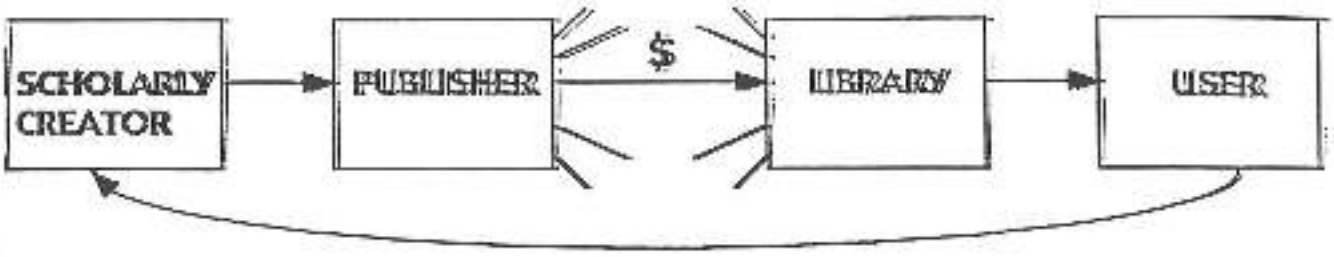
However, with so much electronic power behind the publishing engine these days, so much interconnectivity in evidence, and the

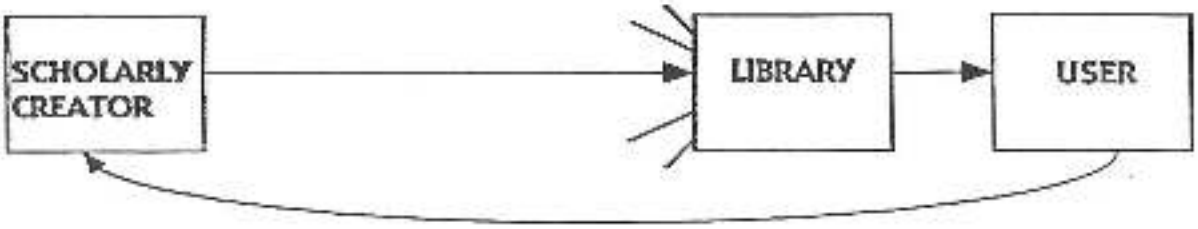
[1] Peter S. Graham, "The Cycle of Scholarly Communication," used at the IEEE Workshop on Electronic Dissemination of Engineering Information, September 18, 1993, Parsippany, NJ, USA.

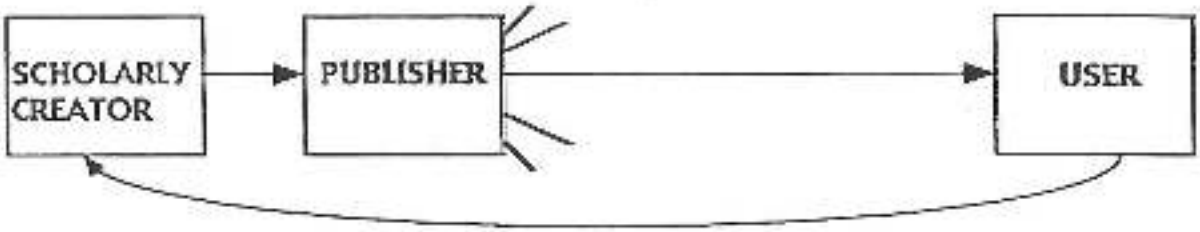
IEEE Workshop on Electronic Dissemination of Engineering Information
September 18, 1993

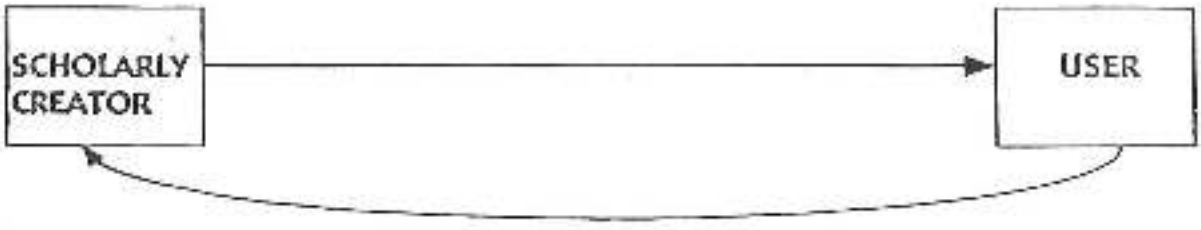
Peter S. Graham

THE CYCLE OF SCHOLARLY COMMUNICATION









(UNLIKELY — WHY NOT?)

PG 9/93

movement towards open files and public domain information, a greater capacity for just-in-time indexing, I am increasingly convinced that with electronic scholarly publishing and communication, primarily in the sciences and applied fields, but also in the bridging literature with the expanding social sciences, and with government bodies and agencies individually and collectively creating more grey literature that is posing greater consequences, and the need for new decisions, grey literature is in a new heyday.

With your expressed interest in the subject of this conference and your attendance, I am probably speaking to the converted, that you are not intimidated by grey literature but feel that it has an important role in information delivery, the proliferation of information, and collection development and you share my concerns that libraries need to be better prepared to acquire, maintain and promote its use, whether you are a user, contributor, producer, distributor or librarian.

The abstract to my paper suggests my interest in the challenges, concerns and responsibilities for grey literature in the academic library environment. With greater academic and scholarly value placed in grey literature and it being an original and primary source for information, the links to public opinion, and extensive press and media promotion of it being the source for new discoveries, information, and dialogue, libraries and publishing arenas are forced to respond with a better grasp of the issues associated with making it more widely accessible. The avenue of collection development policies and procedures dictating

how such material is acquired, handled, processed, protected and preserved is not much different in how we treat other library materials, such as books and monographs, serials, data files, special collections, manuscripts, maps and other resources commonly expected in research level collections. Libraries that never had collection development policies in the past are composing them; the greater integration of TQM (Total Quality Management) principles in library managment structures encourages collection development policies to document priorities and goals.

The dilemma of conflicting priorities and the controversies inherent over stretching budgets not only to purchase, when libraries consider the special needs grey literature can require becomes compounded. These needs may include developing human resources with special expertise and subject background to solicit and become aware of the literature, often original cataloguing and special processing to make it easily, expediently and readily available and perhaps creating storage systems offering protection for long term retention. One thing about the selection process, that makes it difficult to assess, is value. Grey literature ages well and to some users, becomes more valuable over time, in historical sequences, which makes it a somewhat different example when studying the economics of scientific information where the emphasis is usually on timeliness and currency and value diminishes over time.

My own work is concentrated as a bibliographer of the applied sciences and technology, multidisciplinary sciences, new and emerging fields of specialization in the environmental and

developmental sciences where I support faculty, graduate and undergraduate students, the scientific industrial community and the lay public who have increasing consumer information needs. I have explored how large academic libraries have traditionally responded to grey literature and the changing trends for better accommodating it in a library context and found few good examples to follow. However, libraries are the testing sites of the growing number of joint ventures between telecommunication networks, publishers and users; if libraries don't want to be bypassed, they need to place greater or higher value on grey literature.

Trust me to say that grey literature has always had a role in academic research but librarians hate it and tried their hardest to provide obstacles in not promoting it very well. Why? - Because it is not easy to collect nor control. In our hunting and gathering role we see ourselves as collectors or acquisitions agents, and organizers to make information available and then preservers for future generations.

Gray literature is not easy to bibliographically describe and in this day of simple and routine procedures being the preoccupation of library practice it is considered expensive and difficult. As I indicated earlier, it usually requires additional expertise and time to process, describe and classify. It does not come from traditional sources, we don't get it automatically nor do we always experience a heavy demand for it. Unit costs and transaction costs are high as well, and when we are pressured to reduce those expenses, it is hard to justify being overly

proactive. As librarians we have not practiced an aggressive approach to collecting grey literature either. Instead we are reactive, satisfying demands that are more likely to be introduced on the Internet. This new wave of access to grey literature has opened a pandora's box.

But when we offer it, the value can sometimes override other sources and an information seeker can get very excited and charged by the findings, feeling like a part of the puzzle of curiosity and mystery is being solved. Some scholars purposely seek out publishing in the grey literature for it tends to be released in a more timely fashion, gets in the pipeline for quicker response and does not go through such a tedious review process. Disadvantages include its not being perceived as "most critical" or not heavily refereed, with distribution not as wide as traditional works. That is a myth and perhaps it is analogous to the increase in electronic activity we currently see on the Internet - (for which there is hard data to support the exponential growth in electronic use by new distributed passwords), listservs and bulletin boards, new publication arenas and products daily being added from around the world. We actively use these sources of information but are often cautious to cite them as authoritative, although that is rapidly changing.

Research libraries in the US, and around the world, are indeed changing their missions and goals. They realize they can no longer be all things to all users - the scope of collection development has shrunk and in the US and Canada, the 119 current members of the Association of Research Libraries (ARL) can be defined as either

the largest libraries or the richest libraries in North America. How do we count gray literature? As we shift from an ownership mentality to one of providing access and redistribute our resources to channel and facilitate better access at less expensive rates, we see a convergence. A paradigm shift has taken place whether librarians want to candidly express or suppress it from measuring or evaluating quality in a collection with quantitiative holdings data. That shift takes us from having collections that are strictly composed of print - today monographs, serials, series, nonprint, audiovisual, maps, machine readable data files, software, electronic, multimedia elements, posters, constitute the holdings of all libraries.

New alliances have been developed. In North America, the Coalition of Networked Information has brought about a new management style and distribution channels for libraries, publishers and international standards finally are offering clearer expectations in how to proceed in handling information, even the grey literature. As librarians, we must defend what we do best and be happy with that, not stretching our concerns to be everything, but encouraging that special treatment be exercised for all resources that need it. That is now an easier burden to bear because of the global sharing that takes place on bibliographic utilities and thankfully to these alliances and standards. For electronic products we now have SGML and EDI to embrace.

The classic finding aid to grey literature that most librarians have come to depend upon, Auger's, Information Sources

in Grey Literature (3d ed, by Bowker-Saur will be released in early 1994) identifies many sources of grey literature: report literature, theses, translations, dissertations, conference proceedings, microform sets, trade literature, to name some chapter headings. Today, this is easy to find for the most part - "in process" or first passes of long works in progress become the new core of grey literature.

What we have seen in the last 3-5 years is a startling proliferation of finding aids to help librarians and users in the commercial identification of such materials and more specialized directories of laboratories, centres, think tanks, consultancies conducting sponsored and independent research and developing new spinoff technologies and products that the public has an interest in. Reference collections are swelling with these physical works and navigational tools for specialized databases devoted to a splinter science have drained our resources and made us consider our priorities very seriously.

But is that really the gray literature that we talk about? What do we do with such materials, besides eventually process them and shift them from backlogged holdings to a shelf somewhere and I bet increasingly to remote storage facilities. I urge you to consider the concept of vertical files. Traditional grey literature frequently ends up in "office grey" physical vertical file cabinets and librarians dislike that because we can't count it adequately, and it requires special care and curatorial management to effectively retrieve anything from it. It takes valued real

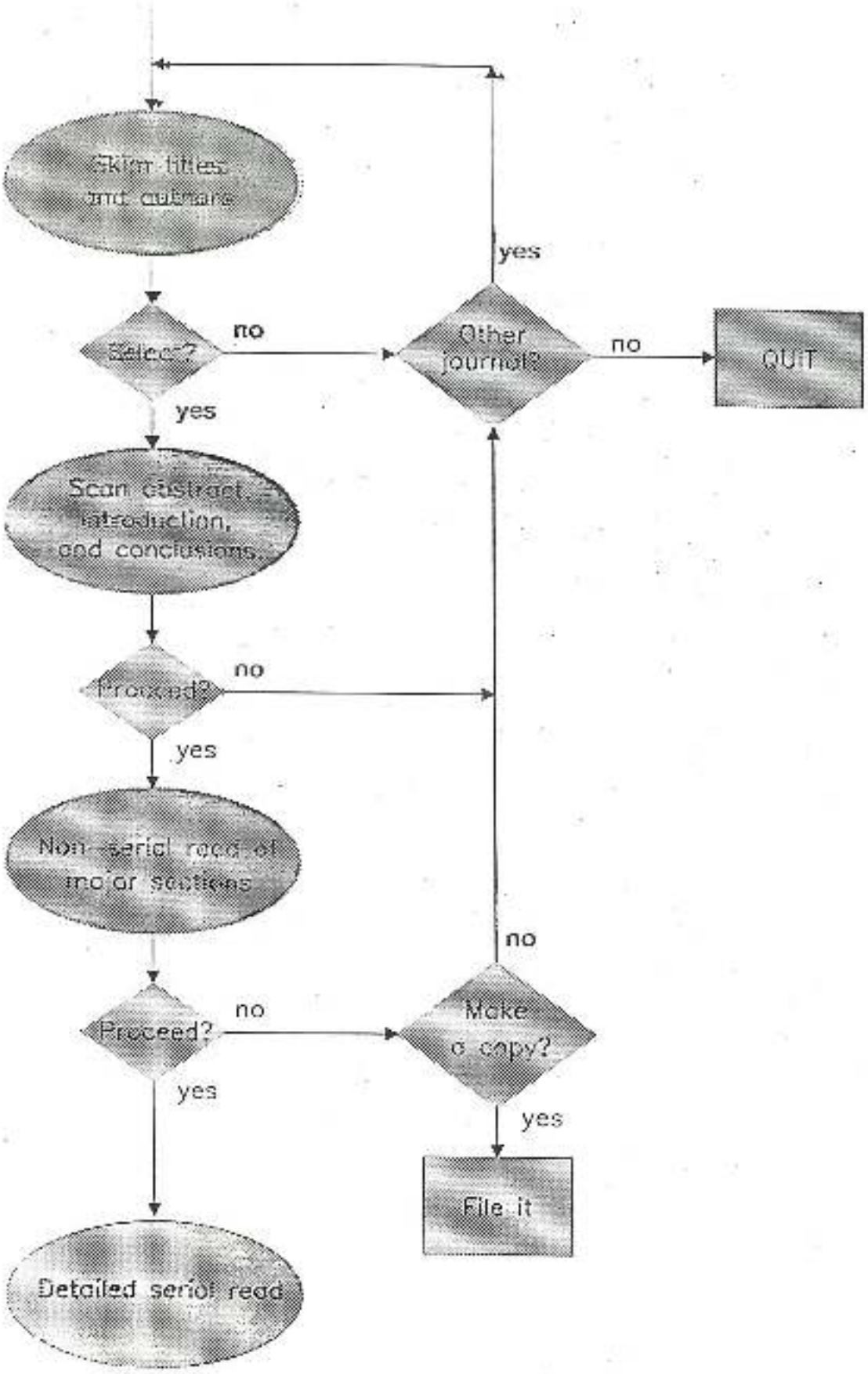
estate in libraries which have no room to expand as is and suffers from a high degree of lack of comfort in use. Microform was once a substitute, now replaced by low use CD-ROM titles. Controlled subject access is difficult to assure unless subject thesaurus construction becomes a priority and that tends to require major commitments to ongoing publishing on that topic. Usually the grey literature is unprocessed papers and folders, obscure works and most recently downloads of database files.

User behavior has changed - the just in time vs the just in case scenario points to this almost daily. Figure #2 indicates how typical journals are used and can be a source of comparison with grey literature.[2] Some of the grey literature that has become increasingly visible contains the archives of television programs and news releases, where if you missed it at the time of programming, it is easily retrievable and available for later viewing and study because some repository or library is committed to retaining it.

The historical relationships to literature are changing - scholarship in the history of science has demonstrated the value of computing or resistance to new technologies in social and sociological contexts that we must retain for historians and anthropologists. Another population that has placed enormous demands on gray literature is the business and management communities - they want longevity data retained for historical

[2] A. Dillon, "Typical Journal Usage," Computers in Libraries, v. 11, 1993, p. 23.

Typical journal usage *



* A. Dillon, Comput. Libr. 11 (1991), 23

purposes to study influences of industrial and technological developments.

All libraries do not have to be the source of last resort. One of the reasons I believe this conference was conceived and convened is to "share" the need to have expertise available in the compiling and editing, publishing, distribution and retrieval of information for different purposes of information exchange. Government agencies have traditionally been the source in the US for much grey literature in the sciences. The breakdown in the depository system highlights uneven distribution. Around the globe the situation varies, and regardless of one's passport, or location of residence and work, information travels and the chain may break down occasionally, but human and cable networks illustrate how important information transfer becomes. In addition to the governments, broadcasting and journalism media, the corporate and consulting worlds, philanthropic groups and consumer research each provide information that we may define as grey but want very much.

In examining the following series of scenarios that suggest different outcomes for a library environment regarding the relationships between scholarly creator, publisher, library and user we see some common themes. First, let's assume that in the current economic climate, the materials budgets are stretched very taut, the collection development policies of academic libraries reflect the primary emphasis of supporting current academic research and instruction missions of the institution with very

little padding or fluff and that acquisitions must come from very established sources - traditional suppliers and agents who get heavy discounts from volume buying - meaning the major publishing houses worldwide who offer discounts that can be passed on to the library customer with the agent still making some profit. The processing and procedures are mainstreamed to reflect a popular downsizing of staff and most have been converted to automated operations. The buying costs of grey literature are not what makes it expensive, it is the associated costs, already mentioned.

Collectors and convinced users of grey literature can look at another body of literature for some direction in how to better incorporate a commitment to acquiring grey literature for library collections.[3] That is the increasingly visible role of MRDF in academic libraries. It, too, can be characterized as specialized and multidisciplinary and always having major hardware and software engines to steer it for sophisticated use. Numerical data became the mainstream method of social science research in the 1960s and had to be shared by wider communities of users. It took time to convince libraries to regard data files as within their collection and service parameters and until then, data archives were operated and managed independently of libraries. The referral networks were born outside of libraries.

As academic libraries want to see more consolidation of

[3] Dan Tsang, "Academic Libraries and Collection Development of Nonbibliographic Machine-Readable Data Files," Paper presented at the annual meeting of International Association of Social Science Information, Service and Technology (IASSIST), Washington, DC, 26-29 May 1988.

service points and fewer departmental reading rooms or specialized collections, they are forced to blend and incorporate nontraditional materials and create service plans to promote their use. Concerning MRDFs, there was a resistance and avoidance to cataloging such materials, except perhaps for codebooks. Still today, there is a great void and absence of any overall policy that would state clearly the role MRDFs play in the library's collections. That may be due in part to a library-phobia about the special needs they require (MRDFs usually run off a mainframe), but as we become more electronically oriented for other purposes and incorporating end-user searching, a variety of easy and complex CD-ROM products emerge and we consider ourselves living in a cyberspaceship, the ironies are immense.

Two librarians have explored these scenarios in the context of collection development very comprehensively. Ross Atkinson, currently at Cornell and Charles Osburn, University Librarian at Alabama, have strong links to the humanities, but have been successful in identifying the conditions of how collection development have become chronically tied to the financial resources of the institution.[4] Expectations of providing more for less is the way we come to function. Most librarians try and follow a standard set of guidelines in revising the collection development

[4] Atkinson, Ross, "The Conditions of Collection Development," in Osburn, Charles B. and Ross Atkinson, eds., Collection Management: A New Treatise, in Foundations in Library and Information Science, volume 26A. Greenwich, CT: JAI Press, 1991, and Atkinson, Ross, "Old Forms, New Forms: The Challenge of Collection Development," College and Research Libraries, vo. 50, #5, September, 1989, 507-520.

policy to reflect current directions and document ways that materials budgets are allocated.

Grey literature may lend well to a narrative approach that describes the scope of languages and chronological emphases, format, and exceptions to the policy. It is difficult to anticipate exactly what segment of the grey literature will be most heavily used and by whom. It will be determined by current events and the depths of the collection and access to other local and specialized resources. It is incredibly hard to promise that balance in grey literature can be achieved. Collection strength will be determined by the good fortune of having the materials sent to the library, or cultivated by someone with a keen sense of speculation and anticipated need.

Most academic institutions have different kinds of collection policies, annually reviewed and revised. Grey literature is not usually among the separate chapters, but is mentioned in the context of support for science literature, social sciences and in the policy for government publications. In late 1986, at my institution we created an addendum to our policy, "Collection Policy Governing Machine Readable Data Files," which recommends substituting MRDFs for printed information only "with extreme caution," given the volatility of the information industry, the limited number of simultaneous users and need for staff assistance. It also cautions against acquiring MRDFs purely as a depository function and urges that all collecting be evaluated against other potential acquisitions and weighed against other uses of book

monies.

The University of California, spread over 500 miles, also has an active collaborative collection development program for all nine campuses and which includes Stanford as well. This "Shared Resources" pool of money includes consortia membership to the Center for Research Libraries, certain backfiles of materials, large microform sets and cartographic information products, translations of science journals, tape loaded of major commercial indexing and abstracting tools and now increasingly full text products, cooperative yet informal ILL via fax agreements and other projects. The monies are drying up as many of the commitments have ongoing responsibilities, but the criteria indicates that the materials must be easily shared and transported and easily copied within the current interpretations of copyright.

Earlier this year, I conducted a rather crude survey of six major questions of the 9 campuses of the UC to learn how they treated grey literature in their collection development policies. I found out that no separate mention was made or an isolated example defined, but it was not to be any different than collecting other materials. "One should not acquire material that is clearly being added to the processing backlog" or that "requires such specialized processing that it becomes not cost-effective to add," says another respondent.

What I can summarize is that not much thought and planning focuses on grey literature at all. The units to which it is most important appear to be government documents where foreign

collections are valued. Science bibliographers did not respond very precisely to these issues at all.

In conclusion, we continue to see collection policies for books and serial titles and nonprint media at major academic libraries generally divided by subject and within each subject by level of collecting, basically modelled after CONSPECTUS or other criteria suggesting comprehensive, research or basic levels. We must realize that having any formal written policy does not mean that it is engraved in stone; it must be flexible and open to revision. Some important elements of a grey literature collection policy may include: See Figure #3.[5]

FIGURE #3

THEMES FOR COLLECTION DEVELOPMENT CONSIDERATION

1. Selection responsibility.
2. Budget source - who pays?
3. Level of collection activity.
4. Subject scope.
5. Temporal domain - time periods.
6. Spatial domain - geographic specific or publishing origin.
7. User needs
8. Uniqueness of data - how grey is grey?
9. Currency of information.
10. Confidentiality of data.
11. Format of product

[5] Adapted from D. Tsang, op cit.

12. Compatibility with other collections.
13. Documentation?
14. Quality of product.
15. Access to the literature.
16. Historical significance.
17. Levels of analysis.

Perhaps grey literature is not all that different than anything else, but I have a hunch that it is and will continue to be a thorn for libraries to deal with. Science communication patterns will continue to change radically in coming years and thus user behavior will change and the contributions to the literature will come from a more highly sophisticated population as well. The Internet will continue to challenge us and the entire information industry in mounting more ways to creatively seek information and learn new things and grey literature will continue to have a long future on the net. My crystal ball suggests that librarians will become more proactive in utilizing information on the Internet and demonstrating its potential value for its users and that libraries will be more open to all examples of nontraditional materials because the demand is certainly increasing for it. The collection management and acquisition efforts will become interwoven and the scholarly communication process will develop in grey literature.

Description of grey literature: Demand for standardization

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Abstract:
Publishing houses, database producers and document suppliers are well prepared for the electronic document delivery as international standards and practice had been harmonized for journals and books.
For patents and standards the problems are solved, too. But for grey literature the situation is still very difficult: (corporate) authors do not use standards, database producers offer different depth of description and use different rules, electronic document delivery is not installed.
The paper compiles the different descriptions of bibliographic and subject elements in the most important databases.
Existing rules and standards are compared with practice and lack of standardization.
Grey literature is not used as frequently as i.e. journal articles, therefore economic considerations influence depth of description and storage, too.
The electronic storage, ordering and document delivery for grey literature must be prepared and harmonization of procedures is needed.

1. INTRODUCTION

Grey Literature has its name from the color, that is badly visible, that is a synonym for fog and dust. The cataloguing and description of the contents of this kind of literature has much the same character than the color, it is grey, too, and information retrieval means raking out in a misty environment. But do we really have grey prospects to achieve the application of existing standards? Should we not be working on our grey matter to achieve comprehensive description and thus making grey literature available and thus promoting the value of grey literature?

It is very important to have a forum at the 1. International Conference on Grey Literature and standards included in the plan of action, might be the vehicle for promoting their application. We need further promoting, as many individuals and professions involved in grey literature are professionals for others tasks, but have to handle with it.

The Producer:

> Is a professional in his subject and techniques, but not in the environment of publishing. In many cases reports, technical notes and handbooks or other supplementary literature are **not** written or compiled voluntarily but are the most unpleasant part of a research work or a new developed technique.

The Publisher:

> Their refereeing systems and application of standards are of a high level, but they are not interested (?) in literature with low numbers of copies to sell!

Abstract:

An abstract should be included, whenever possible. It is the most expensive part for the producer of the information service. But for the user it might be the most cost-effective information.
In an other paper, you hear about ideas, how we can achieve to get abstracts. Modern techniques will help to save cost to include them in databases for the future.
Descriptors and classification are depending on the type of databases and therefore not subject of this paper.

4. CONCLUSION

Implementing the relevant ISO-standards and the mentioned rules for bibliographic description by all partners in the chain from production to usage of grey literature could bring them together. It is true that a report published with all elements described and an exact bibliographic description means more work and therefore costs more money. But if they are used, it is cost-effective, because all partners could use the information in the same way. It is cost-effective, because literature not used for information exchange is very expensive and it is cost-effective, if the work has to be done only once and can be used again and again.

ACQUISITION OF GRAY LITERATURE: RESULTS OF A U.S. INTERAGENCY WORKSHOP

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Abstract

This paper reports on the results of the third *Foreign Acquisitions Workshop*, held in September 1993 in Washington, D.C. The workshop focused on a number of topics relating to the theme of *Improving Access to Foreign Gray Literature*. These topics included defining the scope and value, identifying sources, understanding intellectual property issues, discussing other issues and policies, and examining technologies useful in the acquisition, analysis and use of gray literature. The workshop was sponsored by the U.S. National Aeronautics and Space Administration (NASA), and the U.S. Air Force Foreign Aerospace Science and Technology Center (FASTC), and the Open Source Coordination Office (OSCO). Speakers representing U.S. Federal agencies, domestic commercial providers, and foreign agencies and organizations were invited to report on and discuss aspects of gray literature. It is appropriate to summarize the findings and issues of this workshop for the international community at *Grey Literature '93* as a means to further promote international cooperation in increasing the access to the world's gray literature.

1.0 INTRODUCTION

In 1991, the U.S. National Aeronautics and Space Administration (NASA) organized its first interagency workshop to exchange information on access to and acquisition of foreign scientific and technical information. At that time NASA had a series of ongoing bilateral and multilateral activities with a variety of agencies.

The idea of the workshop resulted from the observation that these many activities had a few common themes and that the participating agencies had a potential interest in opening the activities to broader participation. The first workshop started with 40 people from 18 agencies with a general theme of educating one another about various foreign information programs. The 1992 workshop grew to 90 people from 27 agencies. As a result of input from the first two workshops, it was determined that the focus of the 1993 workshop would be "gray literature." As it turns out, the pulse that was taken turned out to be the right one. Here

on the other side of the Atlantic, a similar recognition of the issues and the importance of gray literature resulted in the planning and expansion of your workshop here in Amsterdam.

The third NASA Workshop was held for three days from September 23-25, 1993. Sponsorship was expanded to include the Foreign Aerospace Technology Center at Wright-Patterson Air Force Base (now known as National Air Intelligence Center (NAIC)) and the Open Source Coordination Office in Washington, D.C. There were over 230 attendees, representing about 100 organizations, including government agencies, universities, business and industry as well. There were 57 speakers representing U.S. domestic, foreign, and international organizations in an attempt to share information.

What we would like to do in this paper is provide the highlights that came out of our meeting in September 1993 and note the challenges that have been identified for continuing interorganizational cooperation in providing better access to the world's information capital. As a result of this paper, it is our hope that continued discussion will take place and ideas will be generated here in Amsterdam that we can take back to the Planning Committee for our 1994 workshop. In this way we continue to build our understanding and identify new pathways to meet our information access goals.

2.0 THEMES IN THE ACCESS AND MANAGEMENT OF GRAY LITERATURE

At the Washington meeting, there were a number of key themes that captured the issues in access and management of gray literature.

2.1 Gray Literature Is Easier to Describe Than It Is to Define.

A number of speakers gave definitions of gray literature. However, most of the definitions were based on some of the characteristics of this type of literature: for example, it was difficult to locate and was not published through regular or commercial channels.

It was also pointed out that gray *information* may be different from gray *literature*. Gray information may be the more significant concept in terms of user needs. The term *literature* is instructive since the phrase and its association with being *gray* comes from the documentalists' or librarians' sense that it is not under effective bibliographic control and, once identified, cannot be easily obtained in a traditional documentation format. In today's technological environment, the concept of gray information in new forms and envelopes may present even greater challenges. You will notice that both terms are used here as they were at the conference, interchangeably and with a lack of precision regarding how and why they are used differently. This is perhaps a point bearing further consideration.

2.2 Pink Literature

Literature is talked about in terms of gray. One can view information that is not accessible as being black and fully accessible information as being white. The color analogy was applied to information being purposely withheld because of security, privacy, or classification reasons. For information that does not fall in a legally withheld (red) category, but is not released (white), the genre of pink information was recently created. This bit of levity points to an important issue in defining gray literature and in circumscribing types of information that may present acquisition difficulties.

2.3 Free Information Versus Freely Available Information

The theme that information being *freely available* is not the same as *free information* was significant for improving access to gray literature, especially in the context of government information. In the U.S. many believe that government information should be free. Implicit in this assumption is that free means free to the public since the taxpayers' dollar already is paying to develop, package and disseminate it. To the extent that agencies cannot charge for information, are not funded for public dissemination activities, or are unable to put a price tag on the activities, resources for getting this information packaged for dissemination are constrained. To the extent that information is recognized as having a cost and this cost is factored into making information available, more gray information will become more easily accessible, not only through government channels, but also through the public/private interface.

2.4 *Just in time* Versus *Just in case*

In today's economic and technological environment, management must consider a *just in time* versus a *just in case* modus operandi. The notion of collecting everything, including the grayer material, *just in case* is giving way to the procedure of identifying where information may be obtained when needed. This has meant an increasing division of labor in terms of collection development. It also has been a driving force in interagency cooperation on acquisition of gray literature and the increasing success of this conference. From a library perspective, it was also noted that, as collection policies become more restrictive, it becomes increasing more important to educate users on navigational tools to obtain the information from other sources.

2.5 Networked Information Is Not a Linear Extension of Print.

The rapid implementation of a networked information world and, in particular, the development of the Internet, has had dramatic impact on what is and how we deal with information access in general, but it is particularly interesting as we address the concept of gray literature. The problems in information access in this networked world highlight a salient characteristic of gray literature: it is not under effective bibliographic control. In the 1950s and 1960s the fact that government technical reports were not well controlled either bibliographically or in terms of document delivery made them a major corpus, if not the essence, of gray literature. In the 1970s and 1980s, this material has become well controlled for the most part. With the rapid development of information technology and networked information, two things have happened: the sheer volume of information generated has outstripped our ability to manage it, and new forms and media for information have been created. To the extent that we do not have the navigational tools to identify what is there, we have the problem of gray information. There are many experiments and tools being developed to provide the function that bibliographic databases, abstracting and indexing services, and directories have served for the print world. However, there is still significant gray fog in that environment.

2.6 "Too much data but not enough information" or "Are we trying to drink from a fire hose?"

Related to the questions of information overload, about half the speakers were talking implicitly about too much information, while the other half spoke from the premise that they needed more information. The *fire hose* analogy, which was first noted in *Science* magazine about two years ago, supports the point that we that we need to find better discriminators in information seeking. In a world with too much information, gray information which, by its nature, is more difficult to access, must pass an increasingly higher value threshold to be worth acquiring.

2.7 Networking Can Be Personal.

A major point was made that one of the most positive outcomes of the Workshop was the opportunity to network with the other attendees. Many of the people had been interacting on bilateral bases via telecommunications and mail. Listening to people in the flesh and then being able to sit down and discuss ideas between twos and in small groups as ideas developed was considered by many to be the most valuable part of the workshop. This was considered particularly true because the problems of gray literature

management and the efforts to share resources in this area require clear understanding of motivations, confidence among partners, and the opportunity to fine tune common objectives.

2.8 One Person's Gray Literature Is Another Person's White Papers.

Another point with regard to networking and interpersonal communication that was duly noted was that one group's *gray literature* may be another group's *white papers*. (Pun intentional.) A particular case in point was made when the head of publications at an international organization described the publication process and access tools of that organization. In fact, documents were available through regular, if not commercial mechanisms. The information from that organization was unknown to some of the audience and therefore viewed as gray. Once the system was explained, the same audience viewed the material as more accessible and, therefore, *less gray*.

In a more general sense, libraries, database producers, information brokers, end users all have their own standard sources for information and these are not considered gray. However, when one actor tries to trace another's sources, they venture into what might seem gray areas to them.

Gray literature can also vary by the subject field. Science communities differ in this regard. For example, preprints are a standard format for exchange in high energy physics and these are controlled through preprint management systems within the community. Biologists, on the other hand, wouldn't consider sending out preprints broadly for fear of insulting colleagues or being scooped.

2.9 Having Information Doesn't Mean Understanding Information.

The issue of cultural diversity and cultural awareness was very evident in a number of talks. This is especially important in understanding some of the less traditional information sources. It was pointed out that if one understands the people, the culture and the context in which the information was produced, then one gets more and perhaps even a different meaning from it.

In this regard, the issues of language barriers and translations were also raised from various perspectives. One speaker talked about the ISO standard on Universal Coded Character Set Standards, which interestingly enough raised many political questions during development because of different cultural approaches and relationships to alphabets. From this basic element of languages to the broader issue of full text translation, the language barrier remains a problem of special importance to the acquisition of gray literature.

3.0 MAIN TOPICS IN THE ACQUISITION OF GRAY LITERATURE

In addition to themes running through the meeting, the Workshop was divided into nine broad areas.

- Scope and Value of Gray Literature
- New Thrusts in Open Source Activities
- Specialized Sources of Foreign Gray Literature
- Foreign Sources of Foreign Gray Literature
- Intellectual Property Issues in Gray Literature
- Federal Agency Update: Focus on Foreign Gray Literature
- A Session with Experts in Searching and Sources of Foreign Gray Literature
- New Techniques and Technologies for Access and Evaluation
- Where Do We Go from Here?

3.1 Scope and Value

In addressing the scope and value of gray literature, perspectives ranged from a pragmatic information analyst who gave concrete examples of the value of gray information, to a futurist who gave a vision of the new gray literature in a networked world, to a librarian who provided an intermediate perspective on the challenges of gray literature in the 1990s. Also as part of the scoping discussion, the information programs of the United Nations and the World Bank were discussed to give a sense of two international organizations with gray literature holdings of broad U.S. information interest.

3.2 Open Source Activities

The *Open Source* session is of special interest because of the transformation of our geopolitical environment. Increasingly, economic competitiveness issues are seen as fundamental to national security concerns. Scientific and technical information plays a key role in both areas. Open source intelligence, especially in the STI arena now has upgraded status within the intelligence community. The area of gray open source information is the intersection of a common area of concern for the STI and INTEL communities and the area in which sharing has the most potential.

There was a natural focus on the geopolitical changes that are taking place in the world. These included the descriptions of the deterioration of the publishing and information infrastructure in the former Soviet Union and the truth and fiction of difficulties in getting access to Japanese information.

In the case of the former Soviet Union, and especially Russia, organizations seeking to do business or acquire rights to information must be aware that control lies in possession. Signing a contract with a person who holds a position within an organization is not equal to a binding contract with the organization as is the accepted practice in the West. Rather, if the negotiator or signatory leaves, the commitment may, in fact, not be honored by successors.

In the case of Japan it was pointed out that there are many excellent sources of Japanese information. Many Japanese organizations have offices or representatives in the U.S. that are happy to provide good information. The language barrier is certainly a real one and makes some Japanese information darker gray than it needs to be. However, this is not to be confused with active attempts to withhold information.

3.3 Specialized Sources

In the session on specialized sources of foreign gray literature, an array of topics were covered from resource sharing through the Center for Research Libraries, to information from the Agency for International Development, to two subject oriented programs in geology and minerals. The common thread mentioned earlier, that one person's gray literature is another's basic information tool, was evident as the audience listened to the description of the resources.

3.4 Foreign Sources

Since this was a U.S. oriented meeting, the focus on *foreign* sources means, of course, *non-U.S.* The Workshop was fortunate to have visitors from abroad provide insight into the work they are doing to make gray information more available. This included discussion of Canadian STI collections, German information management and its relationship to Sigle, European Community Information, and nuclear energy information from world-wide sources as managed through the International Nuclear Information System in Vienna. Three U.S. based speakers discussed Japanese and Latin American sources in general and worldwide biomedical gray literature available through the Pan American Health Organization.

3.5 Intellectual Property Issues

A session at the Workshop focused on intellectual property rights in this changing environment. Questions are both technological as well as policy

related. From the U.S. perspective, particularly since we are a recent signatory to the Berne convention, and because U.S. Government documents are not permitted to be copywritten in the U.S., the issue of national treatment or *open material* reciprocity was highlighted by two speakers. It was also noted that copyright enforcement has been dramatically increasing recently. One of the watershed issues in the success of suits against copyright violators is that there is now a mechanism (Copyright Clearance Center (CCC)) which provides reasonable means for users to pay for use of copyrighted material. In this regard gray literature continues to have the problem that it is not generally covered by such organizations as the CCC because they are generally commercial publisher based. In the U.S. Federal Government, issues of copyright and data rights are changing in view of various competitiveness oriented legislation. Increasingly, contractors are given more opportunities for capturing intellectual property rights. New public/private relationships such as Cooperative Research &Development Agreements (CRDAs) increasingly cause gray literature to be withheld by contractors in the interest of commercialization. Looking at the technological impacts on copyright, the issue of software is a key concern. The new forms of *literature* created with networked information is a question that is being addressed in many forums, especially as it relates to digital library development. In the U.S. there are a few testbed experiments in this area.

3.6 Federal Agency Update

Because of the orientation toward U.S. Federal STI sharing, a special update session was held on the major STI agencies and what they are doing with regard to the collection and management of gray information. Activities range across the board from formal international multi-national exchanges covering such areas as energy to areas where gray literature is obtained through individual programs of institution by institution exchange or through purchase or items on an *as identified* basis.

3.7 Searching and Sources

The user view was presented from the perspectives of an end user, an information broker, and a directory publisher. It was evident that each had found both formal and informal methods to make the system work for them. In all cases, the ability to make personal contact with people with *institutional memory* rose high on the list of sources for the most difficult to obtain gray information.

3.8 New Techniques and Technologies

The final technical session focused on new techniques and technologies for access and evaluation. Two of the talks focused specifically on the networked environment and the tools and techniques for improving navigation and post processing of material on the network. The others focused on experiments on how to enhance the new types of gray information with methods of abstracting, indexing and creating surrogates or directories of these new forms so there are hooks for better retrieval.

3.9 Where Do We Go From Here?

The final session was an open group discussion and an overall assessment of the conference from the participants. The overall feedback indicated that it was a very successful meeting. Attendees felt that they got both an overview perspective and operating details. They learned about a number of collections that are available and how to access them. They went as far as exchanging phone numbers with each other for follow-on work.

4.0 PLANNING FOR THE FOURTH ANNUAL FOREIGN ACQUISITION WORKSHOP

There is always room for improvement and suggestions for consideration for the Fourth Annual Workshop included the following:

- Have more industrial representation
- Encourage more end user participation
- Reduce the total number of speakers and give each more time, with more overall time for discussion both in the formal program and during breaks

Regarding the technical program for 1994, there were a number of themes proposed for possible deeper examination:

- New forms of STI, especially multi-media, and how they can be indexed and identified.

- Foreign information acquisition from a user perspective and what we know about user needs in this area.

- The relationship of the concept of digital libraries in a networked environment and how they relate to foreign acquisitions and gray literature.

- Continuation of the cross fertilization between the STI community and the open source intelligence community each of which has developed tools and techniques that might be used by the other.

We hope we have given you a useful overview of the results of our Workshop. If you want more detailed information, a Notebook of abstracts and speakers notes was compiled. Although it's gray, and will not be formally published, it is available at the cost of reproduction. For more information about the meeting or to obtain a copy of the notebook, please contact:

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GREY LITERATURE Revisited : The Southern African perspective

Abstract

The 1985 UNESCO-sponsored workshop on Resource sharing amongst the Southern African Libraries recommended inter-alia; that some sub-regional centres be recognised as national depositories of Grey Literature. The proposal itself was seen as a success by those documentalists (the author included) whose then persisting problems with this literature, had marginalised them in several ways.

That notwithstanding, 9 years later, alas the implementation of that recommendation has been difficult. Moreover, time after time those institutions concentrating on this type still have to grapple individually with numerous locally-related problems of the literature, especially the:

- definitions; so as to distinguish it from books and archives;
- acquisitions; due to it being fugitive, often unavailable in bookshops, and hence being difficult to trace/collect;
- formats, which are unusual and can't lend themselves to normal library techniques;

also, as unpublished, this material often lacks full bibliographic details that facilitate processing.

Consequently, through literature review and questionnaire to some centres, the results make this article a compelling re-visit to Grey Literature on Southern Africa; so as to:

- analyse the material from the actual geographical field of concern; to determine the suitable handling approach;
- assess the extent to which the politico-economic and technological changes in Southern Africa have affected this literature, in terms of its quantities, subject matter, formats, use, etc: all of which will require adequate attention;
- determine once again how to instil awareness of the value of grey literature first to sub-regional information scientists who will then promote networking; secondly, to suppliers and users who will support availability and protection.

Introduction

When the representatives of Botswana, Lesotho, Malawi, Mozambique, Swaziland, Tanzania, Zambia and Zimbabwe met in Dar es Salaam in 1985, the theme was not Grey Literature. The theme of that UNESCO and IDRC sponsored workshop was Resource-Sharing in Southern Africa. Though it was not the first time those archivists, documentalists and librarians met to discuss the same topic either at national, sub-regional or continental level; it was definitely the first time that their gathering mentioned in specific terms aspects of grey literature. Despite it being for the first time, that initial reference to Grey Literature (GL) was certainly explicit. Firstly, the "problems surrounding grey literature were discussed. It was noted that grey literature required hunting for, it was difficult to handle and organise. It was stressed that such literature was extremely important as a source of local information for development, and that it was mostly available free requiring no foreign exchange outlays."[1] Regarding Cooperative acquisitions as an appropriate scheme for resource-sharing; the workshop noted that careful attention ought to be paid to acquisition of local grey literature and items produced by locally based international organisations.

Under the subtopic of National Bibliographies as one of the four important tools for resource sharing, it was emphasised that such bibliographies need to be comprehensive, a condition which may be satisfied by inclusion of grey literature that is adequately covered in legal deposit laws. Indexes and abstracts were a second type of important tools in resource sharing. By indexing local research and consultancy reports, proper documentation and inventory of completed studies are provided, such that unnecessary duplication of research efforts is avoided. Finally, the workshop considered it necessary to recommend that a national institution in each country be identified and be mandated to handle grey literature; and that such an institute should be given appropriate government support. Needless to mention that the workshop was later followed up by an official mission to all the countries; to conduct an indepth study of conditions that would facilitate resource sharing. That notwithstanding, nine years later when one assesses progress made in the implementation of the stated resolutions and recommendations and with their particular reference to grey literature (GL), the picture is rather tricky and uncertain. Uncertain because on the one hand there is just a ray of awareness of the importance of GL in the subregion while on the other hand, the actual collection and control by the locals, is either minimal or non-existent.

For the purposes of this paper, the total membership of the Southern African countries is eleven. Angola, Namibia and South Africa completes the list of those which participated in the Dar es Salaam meeting. Besides Angola and Mozambique which are Lusophone the rest are Anglophone and former British colonies. Tanzania and Namibia were at some stage in their History under the German rule. There are also major intra-national languages plus minor local ones. As Table A shows, four countries belong to the Common Monetary Area; five are members of the Southern African Customs Union. All of them, except South Africa form the Southern African Development Community. The Preferential Trade Area of Eastern and Southern Africa also constitutes seven. The biennial Standing Conference of Eastern Central and Southern African Librarians attracts all except South Africa; and so is the Lusaka based Eastern and Southern African Documentation and Information System of PADIS. All their University Research Institutes excluding South Africa form the Southern African Development Research Association (SADRA). Seven countries participate in the Southern African Inter-lending Scheme.

TABLE A

Membership of Southern African countries

Country	CMA	PTA	SADC	SACU	SAILLS	SCECSAL	ESADIS	SADRA
Angola		X	X			X	X	X
Botswana			X	X	X	X	X	X
Lesotho	X	X	X	X	X	X	X	X
Malawi		X	X		X	X	X	X
Mozambique		X	X			X	X	X
Namibia	X		X	X	X	X		X
South Africa	X			X	X		X	
Swaziland	X	X	X	X	X	X		X
Tanzania		X	X			X	X	X
Zambia		X	X			X	X	
Zimbabwe		X	X		X	X	X	X

Whereas these countries are geographically together and of some similarities, they form a sub-region of great differences as well, and such challenging pecularities even in the very study of Grey Literature.

This paper therefore, attempts to analyse the regional scenarios upon which GL was the topic in 1985. The object is also to highlight social, economic, cultural and political trends in the world; all of which determine the type of GL that pertains to Southern Africa. The discussion also outlines the market for this material, as well as their problems and prospects for its networks.

The Delayed but Confused Concept

When the term Grey Literature was touched in Dar in 1985 and within the broad theme of resources sharing, the subject had already been discussed in York in 1978 by the Commission of the European Community and the British Library. With the latter, the seminar was focusing directly on Grey Literature. By comparison then, in Southern Africa, though the Dar es Salaam gathering marked the *emergence* of professional consciousness of GL, its existence and importance, there is still a delay because the sub-region has not yet specifically put the literature on the agenda. Moreover, when it was mentioned in passing as it was, the concept was perceived exactly the way it is understood in Europe or elsewhere; as if such adopted definitions and descriptions may be applied entirely and religiously without questioning.

The 1970's or earliest efforts to identify and describe GL forward some open-ended and subjective definitions which pose problems to the Southern African region[2]. The study by DEVSIS (Development Sciences Informative System) (1975) categorised the world's Development Literature into three categories namely journal articles, 22%; commercially available books or monographs 18%; and the invisible, unpublished, grey, less accessible, fugitive material like "unpublished working papers, feasibility and pre-investment studies, theses, research reports and documents of governments and international organisations which

are not widely disseminated"[3] being 60%. Though herein emphasis was on *development literature*, the similarity and the relevance of its third category to GL is therefore not far fetched. However, this category is described by negative terms and in comparison with other material. The dilemma is then what makes the material "invisible", "less invisible" or "unpublished". A few examples given above qualify well in the Developed Countries where before they are published, theses for instance, are less accessible and not widely disseminated. But in the developing regions like the one under discussion where even visibly bookish material are not widely disseminated due to poor publishing industry, weak bibliographic control or purchasing power, the definition is not very adequate. The York Seminar too concluded that GL may be roughly equivalent to *non-conventional* literature. Non-conventional literature is yet another term which having been elaborated by (Posnett and Baulkwill) has become almost synonymous with GL. Another problem is what determines non-conventionality. If it is poor appearance, weak format, failure by originator to draw the attention of potential users to the document, lack of capacity to publicise it to centres of interest or users, security restrictions, small quantities, lack of international standard book/serial numbers; then a majority of Southern African material would by default become GL. (Kabamba) too agrees that "Africa with relatively poor network of contacts between generators of non-conventional literature and documentation centres, should have a lower level of publicity of this literature than in ----- developed countries[4]. Perhaps another confirmation is made by (Gehrke) that more of what we have and we see in Southern Africa is non-conventional. He defines GL generously as embracing all those publications which are published outside the book trade and which have information value either for practical or research purpose. Whereas one would have preferred that to read as "all those material which are issued or produced or announced" instead of "all those publications ... "published"; his definition well suits published archives and some ephemera. Yet (Line) believes GL excludes ephemera[5]. And on the contrary (Ambrose) observes, and from the Southern Africa point of view that archives, once photocopied, may become GL[6]. (Ambrose) philosophy may be expanded further that if GL undergoes some metamorphosis, from semi-visible to invisible, or from light to dark grey the most common practise of translating, photocopying or clipping from conventional published items, also augments a great deal of Southern African GL by photocopies of journal articles, excerpts from books, newspaper cuttings, press clippings and such reproductions. The advent of technology in reprography including email will therefore contribute immensely to the growth of this region's GL.

The DEVSIS term "fugitive" itself tells something important about GL which is relevant to this region. The material has that tendency of fleeing away; it passes out of scene quickly and therefore runs the risk of being lost forever. Since it is the literature produced in limited quantities within a given geographical area and for a limited topicality or very definite purpose, it thus becomes less accessible to a wider public which is not at a given area at that particular time. In Southern Africa where libraries are not widespread to attract these material at every spot; where documentalists are few and not as outreaching as journalists, numerous events rich with GL, like rallies, come and go without records, and a thing which makes this literature in this region more fugitive than it can be imagined. Here people go to rallies, papers are distributed, some people are illiterate and they ignore this literature. Others read but innocently destroy or simply throw this GL away.

In Southern Africa, Government Archives were developed earlier than most of public or the post independence state libraries. Perhaps this was due to the abundant colonial

records and new historical manuscripts which had to be preserved then. Consequently it follows that most of the fugitive or GL of the past still exists in the Archives of this region. Finally, to clarify this confused concept and the idea of shades of Grey, (Schidmaier) indicates that GL "is that in the libraries which is not "white" (available, catalogued, classified) or "black" (not available unknown, not obtainable, secret)"[7]. One wonders then, if "libraries" here is used in its generic sense, so as to include archives as mentioned, and documentation centres which commonly abstract, index and do clippings. GL is that which is between "black" and "white", however the range is wide and the shades of grey vary because some may be more towards black, for instance politically censored items in the apartheid South Africa; whilst others may be closer to "white" like material which are meant to be published but due to perhaps economic factors, remain as manuscripts and in limited quantities.

To conclude, the perfect identification for Southern African GL, and to demystify the confused definitions, is that which may be so judged at the discretion of the beholder. However, generally the list includes conference proceedings, seminar papers, university publications, patents, standards, research reports, development bulletins; public speeches and addresses, government publications, business documents, some magazines, newspapers, their cuttings, teaching notes, press and radio services, translations, posters, exhibition, ephemera, statistical reports, leaflets, rally literature, consultancy documents.

Sources and the Market

The Southern African GL is produced within and outside the sub-region. Major producers are:

Governments: through their local and centralised administration; as well as regional governmental organisations such as SADC, PTA, OAU; plus various international ones like the Commonwealth, UN, Non-aligned Movement, and the ACP/EEC. These are the type of sources whose material are often of limited or restricted circulation. Their material usually end up in the executives' offices unrecorded and then finally get lost before they are collected by any library. In addition there are local, regional and international NGO's which include the grassroot groups whose literature of manual or promotional type may be in local vernaculars that are easily overshadowed by the so-called official or international languages. Of late, it is clear that this category of sources play a significant role in development such that their literature no matter how 'grey' it should be attended to. The NGO's role in both the Rio's Environment and Vienna's Human Rights Conferences is proof of their prominence and influence. The Lesotho Council of NGO's with over 200 members, on its own is the Commonwealth Liaison Unit of the Country. This is another indication that as they mushroom NGO's interconnect like labyrinth which is so tightly knit that an attempt to tap all their "publications" in the developing regions is the documentalist's nightmare.

Academic Institutions: Over 20 Universities inside the sub-region are very active producers of various types of GL. In addition several European and North American institutions of higher learning are not only other sources, but markets as well of this valuable information for African Studies. In the UK, about nine members of SCOLMA (Standing Conference on Library Materials on Africa) are well established libraries that collect and generate GL and published items pertaining to Southern Africa. In the US there are even more Africana

resource-sharing of GL and other material. So, whilst these librarians were willing to share GL their humble budgets do not permit comprehensive acquisition of GL from within, let alone from the overseas sources.

Misplaced Emphasis: The region under discussion has no conventional material. It has no significant published items or books. In addition to indigenous knowledge which is indeed abound, as (Mchombu) proves, what we have is certainly GL. It is the unique GL which is issued from our own oral or other indigenous sources, as well as GL we sieve from imported books and periodicals respectively, as excerpts or clippings. Yet we do not promote what we have; we emphasise most of the time what we do not own. This wrong orientation by librarians by researchers and by training is just on conventional items or books. Librarians are taught how to order books how to classify, catalogue and shelve books. If these books have CIP they are taught (I believe) how to copy it! When they are then faced with GL which has no title page, which is too limpy to be shelved conventionally, we develop fears of GL as (Schmidmaier) is convinced. So are library users. It is common in our documentation centres to get enquires like: "Do you have any books on such and such a topic?" This gives the impression that only books are handled in these centres.

One is not underestimating the wealth of knowledge contained in books, but instead calling for a fair balance of efforts in handling conventional and non-conventional carriers of knowledge. The story goes that in Uganda when the economic decline during Idi Amin's rule was taking effect on academic libraries, there were virtually no books coming in. Students, lecturers and researchers had to depend on the locally available GL and indigenous knowledge. It was later discovered that the originality of reports, lecture notes and research papers that were issued at such adverse times were a unique opportunity ever.

Contradictions about South Africa

For a long time, South Africa was ostracised due to its apartheid policies. That is why it did not participate in the mentioned Resource-Sharing Workshop. But at the very same time that the region attempted to leave South Africa out, Botswana, Lesotho, Swaziland, Malawi and Zimbabwe were freely contributing their library catalogue records for the union catalogue which is determined, owned, and administered by South Africa. Though the participating libraries do not necessarily specialise in GL; the small proportions that may find their way into that consortium, will not be well served as (Moshoeshoe)[12] observed. So dictated the SADCC spirit of attempting to reduce these countries' dependence on South Africa; let alone the related concerns of (Datta) that the scheme promotes dependence more than cooperation.

On the other hand, (Wood)[13], comments that whereas reading "the literature on interlending in Africa is, in many cases depressing... To some extent the problems are not so great for those countries in Southern Africa .... which participate in South Africa's interlending system". Indeed there are some benefits nevertheless, and these are of course some of the contradictions or some irriversible facts to be taken into consideration even in the post-apartheid South Africa. Whatever the situation now, the exodus into South Africa

will again mean the region's GL boom which requires the documentalist's professional preparedness. The question is then "do we negotiate the terms of strengthening the Pretoria's network; or do we establish anew, the regional one which will be adequate for GL".

Prospects

On Bibliographic Control of GL which the workshop rightly recommended, one notes that despite the fact that large proportions of Southern African GL is still not collected, sporadic efforts are noticeable within the region, by some individuals, centres and systems whose acquisitions on GL are periodically annotated and listed in such tools as Devindex Africa by PADIS, Devindex Botswana by NIR and Lesotho Index by ISAS (Institute of Southern African Studies). In South Africa at the University of Natal the Innovation journal has been publishing a series of innovative articles on South Africa in transition; a bibliographic introduction to new grey literature. Finally, unlike in the past, several governments are now issuing lists of "publications" by their Government Printers.

It is likely, as it was recommended by a majority of local professionals contacted, that an effective handling of this literature will be by a Sectoral approach. The obvious fields include Agriculture whose 50% is estimated to be non-conventional (Wood)[14]. The SADC's Southern African Centre for Cooperation on Agricultural Research (SACCAR) is doing a commendable job with a country by country bibliographies on Agriculture and related efforts. Human Rights is another sector whose effective documentation most of the time require clandestine methods. In the region, EDICESA (Ecumenical Documentation and Information Centre for Eastern and Southern Africa) in Harare, and ISAS are the examples. Environment, as handled by the national focal points of INFOTERRA and Gender Issues or Women in Development are other disciplines for which there are prospects for sectoral approach to bibliographic control of Southern African GL. SCECSAL which has been contemplating special sub-committees could play a role in the establishments of the mentioned subjects.

Awareness: It being a fact that progress may be marked if all the affected groups of suppliers, producers and users of GL are fully aware of its existence and importance, through PADIS, the ECA Conference of Ministers by Resolution 732 (XXVII) of 1992 invited member states to declare 19 November as African Development Information Day. As this paper is being written, preparations are underway in Lesotho to celebrate this day such that policy makers, researchers, students and information workers are made conscious of development information whose relation to GL has been outlined. As these awareness services gain momentum, it will be worthwhile that the sub-region, in conjuction with the ESADIS office, on the subsequent 19ths of November, consider seminars, training workshops or other meaningful events whose specific themes will be GL.

Recapitulation on Networking

It was an important proposal made in 1985 that there be national centres which specialise

in GL collection, and documentation. Whereas the participants there, now report that no official designation has been done, the task is haphazardly shared by several libraries in the given countries. Malawi has in addition, a newly established national documentation centre which is hoped to focus on this area.
The challenge then is if such centres have not been designated, is it not hightime the professionals met, but this time focusing on the theme GL, and also considering the aforementioned national, regional and international structures! There seems to be four alternatives for the network. The first is the SAILLS. Its attributes are that it has acquired experiences of interlending. But whose scheme is it? The second possibility is within ESADIS which is often rigidly administered as it follows government's protocols. Since it comprises Eastern and Southern Africa its size is likely to be unmanageable for this regional GL, and as it is indeed the biggest of PADIS sub-regions. SADRA arrangement is a third consideration. Its secretariat being in Lesotho which is surrounded by South Africa, puts it within a desirable proximity to the information hub and the advanced technology of the region. The fourth is of course either the combination of some these options or the creation of a new structure altogether. This particular international conference is obviously a ground-breaking force for all the regions to consider the way forward.

Southern Africa in the Globe

Finally, it is imperative that the Southern African prospects should positively take charge of developments made internationally. Of significance we shall learn from the experiences of the Western countries which notably have some milestones now on GL. But not only that; in addition that we negotiate formal means and way of fitting into their networks. Of relevance again are structures within the South-South cooperation whose common problems persist in GL. Assistance of international bodies such as IFLA, Unesco, IDRC, HURIDOCS, The British Council and FID are of immeasurable importance in the entire GL discourse.

Conclusion

This paper has tried to make the resolutions of the Dar es Salaam workshop a centre of debate in determining the conceptualisation of GL in Southern Africa. Different actors in collecting, generating, documentation and exploitation of this GL are enumerated. The scenarios indicate progress on the one hand, while on the other it is a worthy challenge for the region to ask: what do we do next?

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THE PROBLEMS OF ORGANISING AND DISSEMINATING GREY LITERATURE IN AFRICA

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ABSTRACT

Grey literature constitutes a substantial proportion of literature produced in Africa. The major producers are government agencies, universities, research organisations and the private sector. Most of the development literature produced in Africa usually appears in the form of grey literature. Unfortunately grey literature is hardly organised or disseminated in Africa.

The difficulty in organising and disseminating grey literature stems from the fact that producers, for one reason or the other tend to neglect them once they have satisfied the purposes for which they were created . Also most countries do not have well developed infrastructures for organising and controlling grey literature. In addition to these problems,the potential users of grey literature such as researchers, students and other professionals do not know that a lot of information they may never have found in conventional literature abounds in grey literature, hence they hardly exploit the contents of grey literature.

In order to ameliorate these problems, it is recommended that every country should establish a national documentation centre for grey literature with the main objective of collecting, organising and disseminating grey literature emanating from the country. This is without prejudice to national libraries which are empowered by law to collect and provide bibliographic access to all publications emanating from a country. The national libraries can concentrate mainly on conventional literature. Progressive information professionals should become private entrepreneurs and get involved in information broking. Thus they can provide bibliographic access to some kind of grey literature such as conferences, theses and dissertations, technical reports,feasibility reports, technical papers,etc. Such information products which could be produced periodically can be sold to interested buyers all over the world. Learned societies and associations must provide for the collection of grey literature produced within their disciplines and ensure that there is a bibliographic access to them by co-operating with the information brokers in their subject fields.

INTRODUCTION

Many writers have characterised grey literature in various ways as fugitive,ephemeral,non - conventional, invisible,

unpublished,informal etc. In spite of these attributes of grey literature, the general consensus is that it contains invaluable information which may never be found in the so - called conventional literature. According to Wood (1984) it contains information that is likely to be of use to a considerable number of people. Posnett and Reilly (1986) reported that at least 50% of the information supplied to answer users' queries at the United Kingdom Resources Development Centre came from grey literature. Studies have revealed that many researchers in basic and applied sciences use a high proportion of grey literature. The same thing applies to development literature as many surveys and consultancies undertaken by many government agencies and organisations contain useful information about solutions to local problems which conventional literature may not be able to supply (Zulu,1993) since such reports will normally appear in the non-conventional format.In a study I carried out on the literature cited by agricultural researchers in Nigeria, I found out that as much as 14.2% of the literature cited in 33 doctoral theses in agriculture was grey literature (Aina, 1987). It has been revealed that majority of the literature produced in developing countries are grey literature. According to Posnett and Reilly (1986), at least 50% of a developing country's agricultural literature could be grey literature.

To us in Africa it assumes a wider dimension, as most of our literature output appears in the non-conventional format. In a recent analysis of development literature in Botswana for a three year period I found that grey literature constituted about 98% (Aina,1992). Most of the literature produced in Africa are technical reports , annual reports, conference proceedings, seminar papers, consultancy reports, theses and dissertations, reports of commission of enquiries, panel reports,etc. The producers of grey literature in Africa are mainly government agencies, universities and research institutes, private sector and non-governmental organisations.

In spite of the importance of grey literature it is generally not accessible even in their countries of origin (Posnett,1986). According to Chillag (1982) it is difficult to identify, acquire and provide bibliographic control and accessibility to grey literature. A problem highlighted by Wood (1984) is that originating organisations have neither the staff nor the funds with which to control and disseminate grey literature . It is therefore not surprising that many organisations in Africa could not even produce a list of documents produced from within their organisations since they tend to neglect the documents once they have satisfied the purposes for which they were created. It is very common in many African countries to see such documents being used by market women as wrappers. Since the documents were not publicised in the first instance it invariably becomes a problem for libraries and other information centres to collect grey literature and make it available to potential users. This seems to be the crux of the matter in Africa where infrastructures for national bibliographic control are generally lacking. Only very few countries in Africa produce up - to- date national bibliographies and even fewer have comprehensive national bibliographies that cover all types of literature including grey literature. Kwafo -Akoto(1988) mentioned the few

countries having national bibliographies in Africa as Botswana,Ethiopia,Ghana,Nigeria,Senegal,South Africa and Zimbabwe. Kohl (1975) said that few countries in Africa that have national bibliographies can be said to have satisfactory referencing which will necessarily make acquisition very difficult. This presupposes that a lot of valuable information contained in grey literature will be unavailable to users. The effect will be more felt in Africa given the fact that grey literature constitutes the bulk of literature produced in Africa. Also most of the development literature in Africa appears in this form. It is therefore not surprising that our planning has always been haphazard since our policy makers do not have access to documents that contain all the facts and information needed for decision making.

FACTORS RESPONSIBLE FOR INACCESSIBILITY OF GREY LITERATURE IN AFRICA

Many factors militate against organising and disseminating grey literature in Africa. The prominent ones being the so -called confidentiality of grey literature, the librarians'low perception of grey literature and the lack of infrastructures to support the bibliographic control of grey literature.

The major producers of grey literature are the government agencies and documents that emanate from government agencies are generally treated as confidential thus as much as possible the circulation is usually restricted hence in most cases it is difficult to know of the existence of such reports and even when known they are extremely difficult to acquire. This obviously affects accesibilty of such documents. In a study by Kwafo - Akoto (1988) she reported her encounter with government officials while trying to collect census reports and other government documents for Population Information and Documentation System for Africa (PIDSA) based in Ghana in which many of the officials were reluctant to give her the documents she wanted as they perceived such documents as confidential and that it was politically inexpedient to make such documents available to the public. The documents were kept under lock and key in their offices. This is also true of the private sector where their working papers especially technical papers, feasibility studies and consultancy reports
should not be divulged to their competitors who may used it against them hence they are hardly organised thus creating inaccessibilty.

Conventional literature constitutes the bulk of the collection of most libraries and information centres in Africa thus non - conventional literature is treated as an extra burden. Indexers find it more difficult to catalogue grey literature than conventional literature because of its non -conventional format thus the usage of grey literature by users is given low priority. Most libraries hardly provide subject access to grey literature as only author or organisation access is provided thus users are unlikely to gain access to grey literature since a majority of users approach the catalogue by subject. In such a situation readers are not likely to know of the existence of

any grey literature that might be useful to them. Even when readers are able to locate relevant grey literature through the catalogue the documents may not be readily available on the shelves because of their ephemeral nature. Storage facilities for grey literature in libraries are generally poor.

Another important factor is the lack of infrastructures to support bibliographic control of grey literature in Africa. Most countries in Africa have national libraries which are empowered by law to have all publications emanating from within each country to be deposited with the national library. The library is thus expected to publish annually a national bibliography which will invariably include grey literature every year. Publishers and authors are mandated to deposit their publications with the national library of each country but this is hardly the case and no sanction is made against them, hence only a fraction of producers do deposit their publications with national libraries. Many countries in Africa have stopped publishing national bibliographies, and those that do, are many years behind schedule. Even within various organisations, as earlier reported ,only very few of them can produce a list of their publications.This is also true of researchers and scholars who attend conferences and workshops, once proceedings of such workshops and conferences are not published, the writers may never locate such papers physically.

THE WAY FORWARD

In many African countries it is difficult to identify all producers of grey literature. The first step forward is to have an inventory of actual and potential producers of grey literature within each country. Having identified the producers it will be necessary to sensitize them on the need to deposit at least a copy of their publications to a designated depository centre within each country. In addition, each producer should be encouraged to maintain a textual data bank of all their publications as well as a bibliographic database of all their publications which they can make available to their actual and potential users.

Learned societies, as major producers of grey literature, have a crucial role to play in the collection of grey literature given the fact that they have advanced degrees in the various disciplines and they are thus in a position to monitor all the activities that will generate grey literature. Thus apart from depositing a copy of all their publications with the designated depository centre in each country it is necessary for each learned society to maintain a small documentation centre in which all publications including grey literature that emanate from the society will be collected , organised and disseminated. It will not be difficult for them to abstract such documents and make such abstracts available to potential users.

The designated national depository centres in each country are expected to have professionals who are highly qualified and adept at organisation of knowledge, and have good knowledge of information technology. In addition, they should have at least first degrees in their first disciplines, preferably advanced

degrees. This will ensure that any publications deposited with them, that are not abstracted, can be done at the designated centre.

There is also the general belief in Africa that any product that is free has little or no value, hence producers of grey literature must price their products by advertising and selling them to potential users.

CONCLUSIONS AND RECOMMENDATIONS.

There is no doubt that grey literature is an important component of the literature of any country. Given the fact that it contains valuable information which is very useful to planners and decision makers, grey literature should be treated just as conventional literature, if not more. A policy for collecting and disseminating grey literature should be formulated as separate from conventional literature.
Because of the nature and characteristics of grey litearure it needs more special treatment than conventional literature thus its collection and organisation should be given the importance it deserves by African governments.

It is recommended therefore that every country in Africa should establish a national documentation centre for grey literature with the objectives of collecting, organising and disseminating grey literature. This centre should have the same status as a national library. While the national library should be charged with the collection , organisation and dissemination of conventional literature, the national documentation centre for grey literature should concentrate mainly on grey literature. The centre should establish links with the various types of producers of grey literature in the country, it should identify potential producers within the country and it should monitor all their activities that will result in the production of grey literature. A databank of all producers of grey literature should be maintained including all their activities for the year. There should be a textual databank of all grey literature deposited with the centre. The centre will be expected to disseminate abstracts of grey literature in their data bank to potential users. In the alternative, poor countries or countries with small population can establish a semi-autonomous unit within the national library to cater mainly for the documentation of grey literature.

Retired information professionals and young dynamic information professionals must be encouraged to be involved in information broking as they can profit from collecting,
organising and disseminating one type of grey literature or the other which they may sell for profit. Thus we may have information brokers who will be involved only in conferences and workshops, or theses and dissertations or technical papers etc.

Finally, it is hoped that library and information science schools will give special attention to grey literature in their curricula. The cataloguing of non -conventional literature should be given the same treatment as conventional literature as this will ensure that their products will be adept at organising

grey literaure.

Once these various infrastructures are present in each country it will not be difficult for countries in Africa to co-operate among themselves and with relevant international organisations and thereby making grey literature available globally.

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FROM WEIMAR TO MAASTRICHT AND BEYOND - Half a century with grey literature

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1st International Conference on Grey Literature GL '93 , Amsterdam, 13-15 December, 1993

Abstract:
The paper sketches the author's first encounter and his close association with grey literature over half a century.
The background to how the present BLDSC became the largest single centre for collecting grey literature is given. Starting from his links with the early days of EURATOM, some details of EUR documents are explained, citing it also as an example on how 'grey' literature can become 'white'. With another EC example, the converse is shown with a drift from 'white' to 'dark grey'.
The paper concludes with a brief description of the role Euro Info Centres play in helping business and industry with its need for often elusive, grey EC information and documentation.

If anyone thought from the title that this is going to be a paper on European history of the last 75 years, they will be very much mistaken. Invariably, history is tangled up in it, because report literature, grey literature is essentially a creation of the 20th century, and particularly of the last 50 years.

It was in **Weimar** in July 1945, that I had my first conscious encounter with **grey literature**. As a young 'assimilated rank' attached to the US Army, I was involved in the gathering together and the shipping westward of wartime German research reports now known as the 'German documents'.

Working in adjacent offices at the Allied Control Commission with one Captain Robert Maxwell was another 'encounter' of that period!

On joining the National Lending Library (now BLDSC) in 1963, by odds equalling that of the 'breaking of the bank at Monte Carlo', my first job at Boston Spa was the sorting out of a vast mountain of paper - the remnants of shipments from Weimar in 1945 !

Working in the years between mainly in energy and nuclear research establishments, - at that time virtually the only work-place where GL was the norm for technical literature -, atomic energy reports became the 'staple diet' in essential reading.

In researching for this presentation, the first 'unclassified' report (MDDC-1) of the then US Atomic Energy Commission came to light. It is a prophetic paper, written by Enrico Fermi in 1945 on the future of nuclear power, its benefits and problems. A paper which could appear, without alteration, as the main editorial in any of today's newspapers.

In my nuclear past, some of my work was done in conjunction with EURATOM, an association which led later to involvement with EC documentation. To this subject we shall return later.

With this sort of background, it is perhaps not surprising that I spent my last thirty years in the identification, acquisition and supply of grey literature.

It is not intended to say much here about the BLDSC or its predecessors. The same applies also to SIGLE. One can be sure that some of the other papers will do so.

However, to set the scene, some historical background: in the late 1950s two events helped to shape the future in which 'Boston Spa' developed into the world's largest single centre of grey literature and all that term entails today.

The Tri-partite Group of USA, Canada and UK, originally set up during the war to develop the atom-bomb, met around 1957 to chart a path for wider dissemination of what at that time was still very much wartime R & D being declassified and channelled into civilian use. Most of this material was report literature. The UK participant in these meetings was DSIR, the Department of Scientific and Industrial Research. DSIR was also the government department at that time putting together a brief for a then still only planned national lending library for science and technology. On its establishment two years later, the NLLST became part of DSIR. Most of the 'unclassified' stock of wartime and post-war nuclear and other report literature, collected and stored on a rather *ad hoc* basis by DSIR 'divisions', other government departments, etc., was transferred to this new library at Boston Spa. So were the US reports (AD, PB, TT) held in the UK under the tripartite agreement. The NLL was also designated a depository library of the USAEC.

As the subject coverage of the NLL/BLL/BLDSC increased to include not only science and technology, but also the social sciences and humanities, and the type of grey material collected diversified from just reports and translations also to conference material, theses, etc., it became almost inevitable that Boston Spa built up the largest collection of 'unclassified' grey literature. Where else would one find under the same roof material from NASA and ERIC, EURATOM and ESRC, ASI and AGARD, - and of the types just mentioned. Of course, NASA will have a more comprehensive aerospace collection (even for 'unclassified material), etc.

Terms like *unclassified, unlimited* have been mentioned. This is the only group of material knowingly collected by BLDSC. One recalls at the height of the 'cold war' US federal agents coming to recover a sensitive AD report which slipped through, and one hopes that no one made nuclear devices in their backyard from the *Los Alamos Primer*.

There is an interesting phenomenon regarding 'markings' worth a mention:

Grey literature from within a single nation may have security markings for national, defence or commercial reasons ('unclassified to 'top secret' and beyond). However, generally such material - albeit on a 'need-to-know' basis is usually well documented. For example, NASA produces not only *STAR* for its 'unlimited' content, but also *XSTAR* for other documents, etc.

With international organisations : **United Nations, OECD,** the **European Communities,** the problems are quite different. Great play is made of what **is a publication** and what are **documents.** In theory, and generally speaking, the former are not grey literature at all. They usually appear in the organisation's sale catalogue and are available through a variety of commercial sales outlets.

After these generalities and background, let me turn to documentation of the European Communities. Even to attempt to cover the complexities and diversities of this material in a few minutes would be futile, particularly as the subject has been dealt with in *Documentation of the European Communities* '.I would like to concentrate on just two sets of the EC material as an example of how grey literature can turn almost white, and conversely, how light grey has a tendency to become nearly black.

The former can be illustrated by the **EUR** reports, originally started as documentation of the scientific research results of **Euratom,** established by the Treaty of Rome on 25 March 1957.

Curiously perhaps, the very first **EUR Report,** issued in 1960, is a properly published book. There is no mention of any report number in it at all, although in the first *List of Euratom Scientific and Technical Reports (up to 31/12/1963)* (**EUR-225.e**) it is shown as **Report EUR-1.** The first report with an EUR report number printed on it is **EUR-CNT-1** According to the '*List*' this is Eur-2.f, but the latter number appears neither on the cover, nor on any inner page of the document. Not the most auspicious beginnings ! But are the above really the first EUR reports? They are not. That claim belongs to **EURAEC-1.** EURAEC, an R & D program of the Joint United States - Euratom Research and Development Board, was established in 1958.

Early Eur and EURAEC research reports often were just journal articles inside their report covers. But whatever they were, they were listed in Eur-225.e and later in *Catalogue Documents 1968-1979,* and *1980-1982* ,respectively (both EUR-7500).

There is an interesting story behind certain number gaps in these listings of EUR documents. Neither the Commission, nor its relevant directorate(s) could locate even archival copies of some of the reports. It has been mentioned that the author had some links with Euratom in its very early days. Partly as a result of that, but mainly because the NLL became so well known as the repository for grey literature, - when the Directorate 'Dissemination of Knowledge' moved from Brussels and from its city premises in Luxembourg to Batiment Schuman -, lorry loads of their reports were despatched across the Channel to Boston Spa.

Technical grey literature at the Delft University of Technology Library

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Abstract
The Delft University of Technology Library (DUTL) plays an important role in the dissemination of grey literature (GL) among industry and research agencies in the Netherlands. Reports are obtained and selected from approx. 150 organizations. Motivated by a growing market-awareness we investigated our customers' use of GL by analyzing a survey among major external (outside the Delft University of Technology) clients, and measuring the loan of GL directly in the DUTL collection. The survey shows that report literature amounts to 9 percent of the customers' demand. Its use is concentrated in subjects related to the practical application of technology rather than fundamental research. In the loan measurements, we studied the relation between the use and age of GL. There is an unexpected high use of older reports which is, however, dominated by a limited number of subject categories, often with local, economic or policy-making aspects besides purely technical ones (e.g. housing, urban planning). Another point of interest is the correlation of loan with the level of subject indexing, which is studied for dissertations. It is found that the addition of keywords enhances the loan with a factor 3 to 15. Implications of the results are: (1) selection of reports as well as the weeding of old ones in a general technical environment should be discipline-dependent; (2) good indexing is essential in a GL database and may be preferrable above completeness of coverage.

1. INTRODUCTION

The Delft University of Technology Library (DUTL) has a national task in the Netherlands for the collection of technical literature. As such, it is also the focal point for collecting technical GL from the Netherlands, and cooperates with SIGLE and NTIS for disclosure of this material beyond the own library catalog. The library has contacts with approx. 150 organizations which regularly send their reports. These reports are pre-selected by administrative staff on the basis of subject-independent criteria, e.g. preprints for journal articles are filtered out. The final selection as regards content is carried out by discipline-oriented information specialists.
As a library collecting GL, we highlighted the existence of GL towards our customers on various occasions. Knowledge about the customers' use of GL, however, has been scarce. With ever tighter budgets and increasing demand for efficiency we had to fill this knowledge gap. Important issues that deserved investigation, were:

1) How important is GL for our users?
2) What are the main subject areas of interest for GL?
3) At what age does GL become obsolete?
4) How should GL be treated in the online library catalog and how effective is subject indexing?

We analyzed a survey by questionnaires among major external (outside the Delft University of Technology) clients to answer the first two questions. In addition, we measured the loan of GL in the DUTL collection as a function of its age and the presence or absence of keyword indexing.

2. GL IN DIFFERENT SUBJECT AREAS

The first question we asked ourselves was: how important do our customers estimate GL compared to other literature? To this end, we compared the use of the most common 'grey' document type, reports, with other document types: journal articles, conference proceedings and books. We used data from a large survey, held in 1992 among major 'external' clients in industry, research and technical services [1]. The survey was not set up especially to study GL; in fact, it was much broader, covering the whole spectrum of information products, service and collection of the DUTL. One of the questions dealt with the frequency of requests for loan or copies of the different document types, viz.: (1) reports, (2) journal articles, (3) conference proceedings (either loan or copies from articles), (4) books. The questionnaire offered a choice between daily, weekly, monthly, occasionally and never. From this, we calculated an estimated request frequency as a measure of the relative importance of the four document types. The results are depicted in figure 1. As expected, journal articles are by far the most requested type of literature. Reports, however, score 9 percent of the total, which is far from negligible and hardly less than the score for conference proceedings.
This leads us to the next question: how is the need for report literature related to its subject? For this purpose, we calculated the relative frequency of requests for reports and other document types within each discipline or field of interest (one or more of 20 categories could be chosen from in the questionnaire). The result can be seen in figure 2. One can see a clear trend in these data. The more the subject tends to the practical application of technology, the higher the influence of report literature is. On the other end of the scale, for subjects that are more close to pure science and fundamental research, reports are less important. This trend conforms with the common view that fundamental research is well served by regular journals but the dissemination of knowledge in applied and technical research follows more complicated patterns, including a larger grey sector.

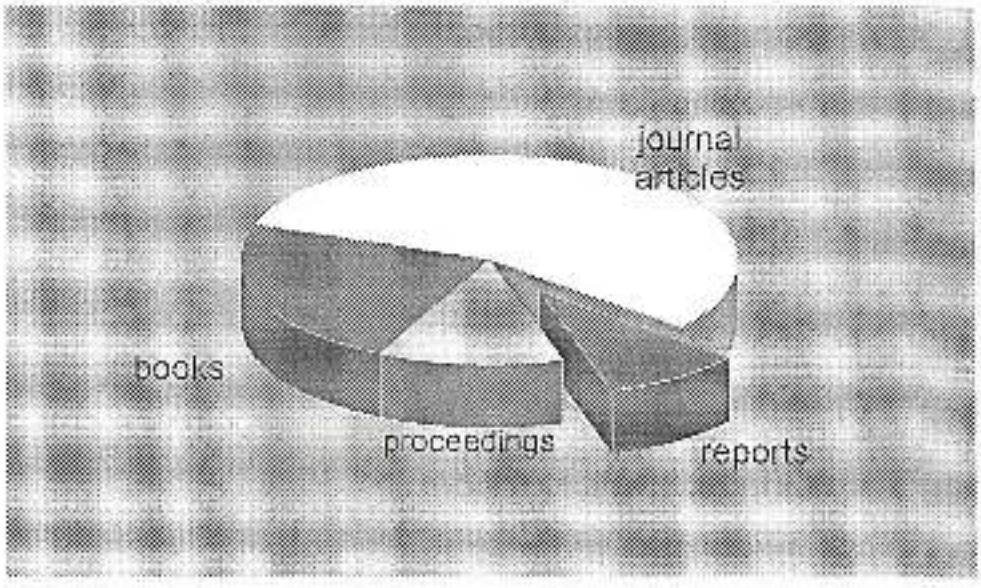

FIGURE 1 Relative number of requests for different document types, calculated from 300 answers from a survey by questionnaires among major clients. Reports comprise 9 percent of the total.

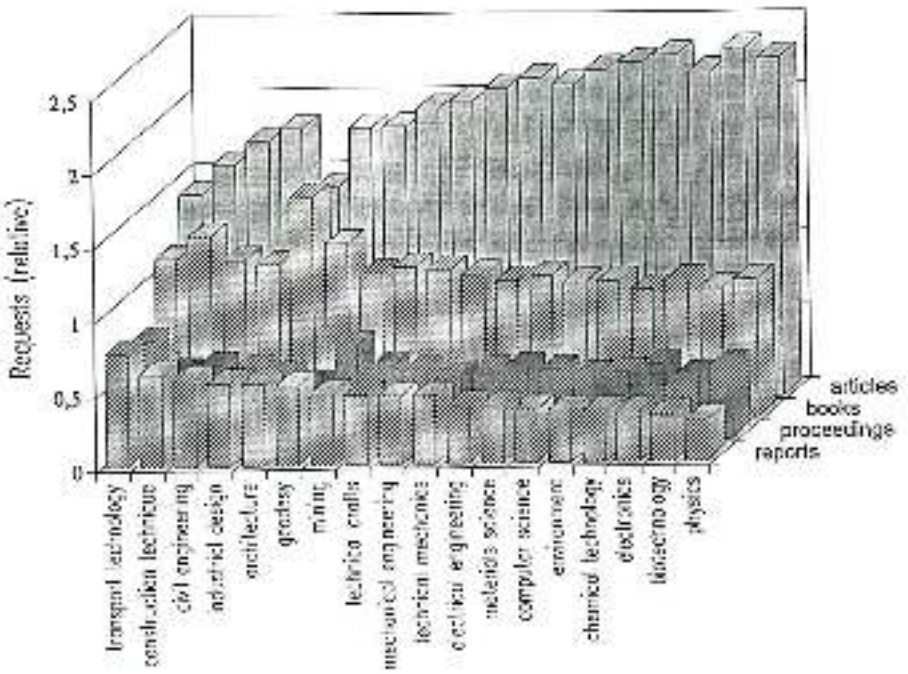

FIGURE 2 Relative number of requests in 18 subject areas from the survey mentioned in the text. The data are normalization so that the average over the document types is 1 for each subject. The subjects 'aerospace' and 'shipbuilding', which scored relatively few answers, were combined with 'transport technology'.

3. AGING OF GL

Reports are often referred to as a type of literature that relatively quickly after publication loses its value by a number of mechanisms, most noticeably by 'white-washing'. We went out to test this assumption by looking at the actual amount of loan in our library, as a function of the publication year. For comparison, we measured the loan for reports, dissertations and books, and requests for journal articles. The cumulative number of these documents on loan or requested *vs.* their age is depicted in figure 3. What strikes immediately is the similarity of the three curves for reports, dissertations and books, with half-times between 4.5 and 5 years, compared to a short half-time of 1.6 years for journal articles. These curves, however, are influenced by the size of the collection for each year and document type. Since we want to monitor the users' lending behavior, we have to correct for these factors. In figure 4 we plotted the results for reports, dissertations and books. The plot is non-cumulative, which emphasizes differences between the curves. Nonetheless, the amount of loan L shows a decay which has roughly equal characteristics for all three document types. It drops significantly after a few years and can be modelled reasonably well as an exponentially decaying function of the age t of the publication plus a constant background:

$$L = L_0 \left(e^{-t/T} + b\right)$$

where L_0 is a constant, T is a decay time and b is the constant background. This function was chosen as a special case of the sum of n exponentially decaying functions with different decay times, each exponential representing the loan in a specific part of an inhomogeneous collection. We used $n = 2$, with decay times T for the 'fast' and *infinity* for the 'slow' subjects. The line drawn in figure 4 with $T = 6$ *years* and $b = 0.1$ fits the measurements for reports and books

equally well. The fact that loan patterns of reports and books do not differ significantly agrees with earlier measurements of technical report demand at a research university [2], but seems to undermine the common notion of GL as 'volatile' literature with a half-time for *requests* of 2 years, as opposed to 4 years for books [3].
Puzzled by this result and in order to identify the nature of the long-time tail in figure 4, we took a closer look at the reports on loan which were published before 1980. The large majority of these titles appeared in civil engineering, urban planning, housing and environmental issues, often with economic, local or policy-making aspects besides purely technical ones. In the older *book* titles on loan, we see a similar but much less pronounced concentration in these subjects.

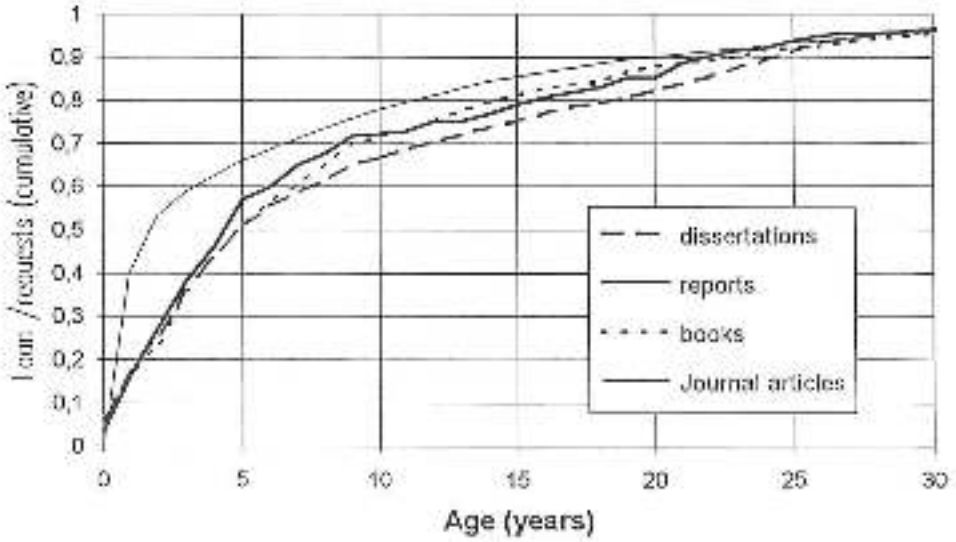

FIGURE 3 Cumulative loan vs. age of information, for dissertations, reports and books, and requests for journal articles. For each of the document types, the total loan has been normalized to 1.

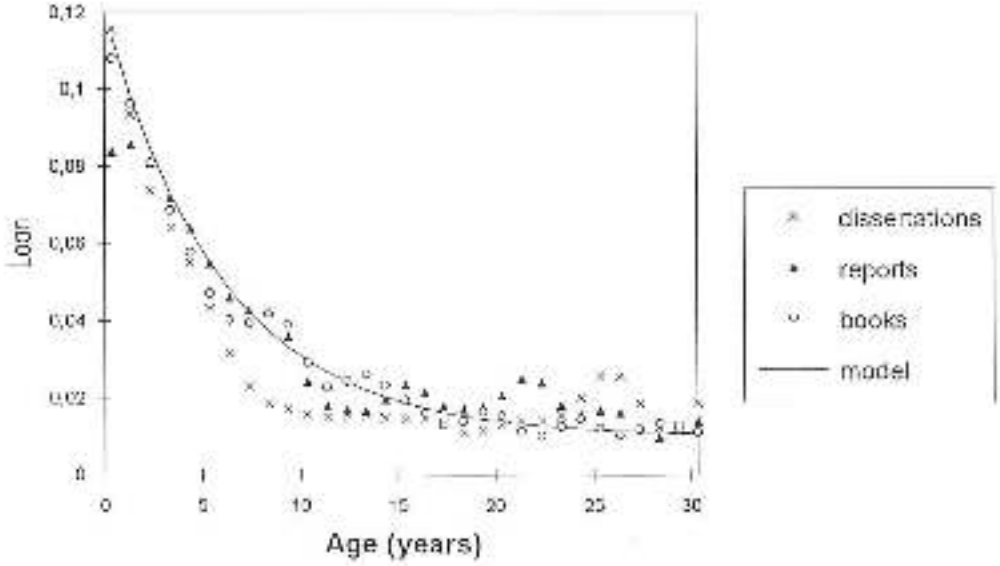

FIGURE 4 Loan vs. age of information, for dissertations, reports and books, corrected for the varying size of the collection and normalized to a total of 1 for each data set. For reduction of noise and better visibility of trends, each point except the first one represents an average value over three consecutive years. The model is explained in the text.

4. KEYWORD INDEXING

Although the acquisition itself may be free, the logistics of GL and the description in the library catalog are a costly affair. The overall cost at the DUTL is roughly estimated at $40 per document if full keyword indexing is applied, and $30 without keyword indexing. In this context, it is interesting to know if keyword indexing enhances the use of GL and, if so, to what extent. This question is particularly urgent in the case of closed stacks, as in Delft, where the only contact between the user and the collection is through the online catalog.

We studied the use of dissertations to answer these questions. The choice for dissertations was based on practical grounds. There is no reason *a priori* to believe that the results would be very different for reports.

Historically, some dissertations in the DUTL collection receive keywords (in Dutch) and some do not. Apart from the subject of the dissertation as a criterion, there is an important randomness in whether or not a certain dissertation receives keywords, depending on factors like the momentary work load of the indexer. This, in itself not being an ideal situation, offered us the opportunity to investigate the relation between keywords and loan of dissertations.

Eight sets of dissertations (1730 in total) were investigated for this test, four with keywords and four without, each set being as homogeneous as possible to exclude the effect of parameters other than the presence or absence of keywords. We attempted to reach this homogeneity by admitting only dissertations published in 1988 or later at universities other than the Delft UT (because Delft dissertations always receive keywords), in the subjects of mathematics and chemical technology, and in the English or German language. These languages comprise the vast majority of dissertations in the DUTL library: English because virtually all Dutch dissertations are written in English, and German because of an extensive exchange with German technical universities. The subjects were chosen so as to obtain sets of reasonable and comparable size.

The result is shown in figure 5. In all cases, the loan of dissertations *with* keywords is dramatically higher than *without*. The increase varies from a factor 3 to 15. The same trend is observed for dissertations in Dutch, albeit with poor statistics due to the small numbers. Although some of the effect may be reasoned away with the argument that the indexers tend to add keywords to those dissertations that they judge as specifically interesting, the effect is still striking.

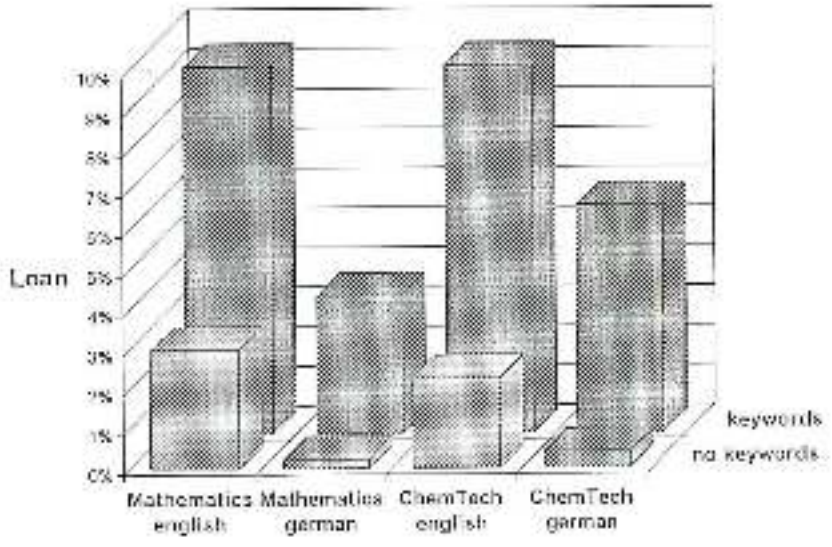

FIGURE 5 Percentage of dissertations 1988-1993 on loan, for mathematics and chemical technology, English and German language, with and without keywords.

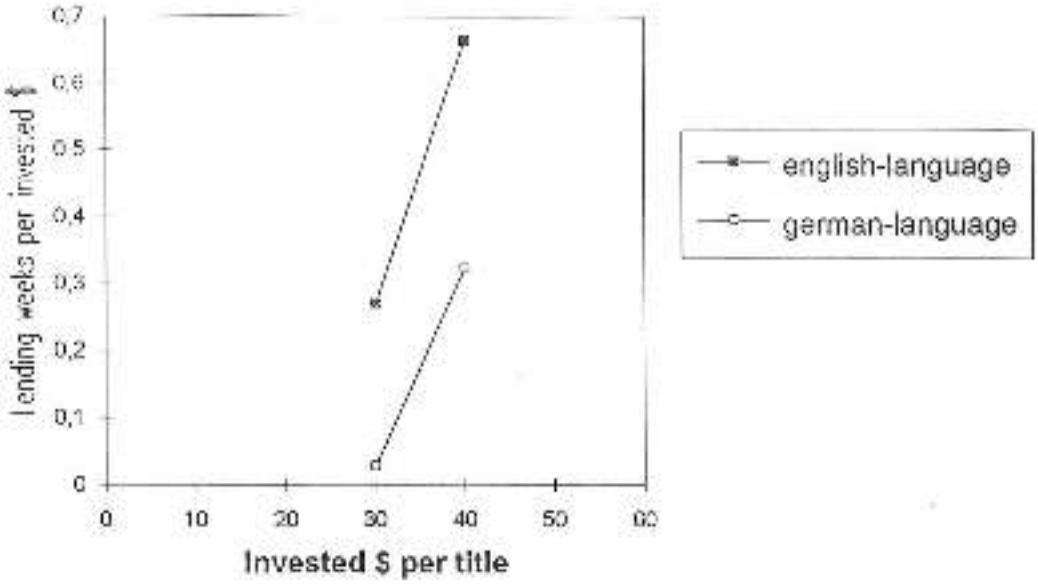

FIGURE 6 The economy of keywords. Average period of loan per invested dollar vs. investment per title, for English and German language dissertations. The $30 points are for dissertations without keywords, the $40 points with keywords.

This indicates that our users find their information mainly by subject searching, which makes the indexing a key issue. Even taking into account the extra cost, keyword indexing is economical in terms of use of the collection: the extra use more than justifies the extra cost (see figure 6).
Other document types, such as reports, may be sought after by other user groups with a different searching behavior, but for the conclusions above to change in a qualitative way, it would require a drastic difference in searching behavior for which no evidence exists. In fact, the preference for keyword searching in the DUTL catalog has been shown to be quite general [4]. Therefore, we believe that our findings can be generalized to other document types, which makes it tempting to apply full subject indexing, which is standard for books, to *all* GL. One should be careful, however, in one respect. Other parts of the collection, e.g. books, may become hard to find if large numbers of dissertations or reports are made accessible through the same keyword system. The online catalog should offer filters to cope with this problem.

5. CONCLUSIONS

What are the implications of the above? First of all, the selection of GL in a general technical environment like the Delft UT may be biased in favor of the subjects on the left end in figure 2, summarized as 'application of technology'. Reports published in these, often interdisciplinary, subjects may attract a larger audience than reports in pure science, which are more specialized into one narrow discipline and probably more prone to 'white-washing'.
Secondly, the supposedly 'volatile' character of report does not mean that all reports can be disposed of after a period of 5 or 10 years. Weeding procedures should be discipline-dependent, saving subjects where we observe a more long-term lending pattern.
Finally, good subject indexing is essential for any database containing GL. If resources are limited one may face the choice to cut either in acquisition, implying a sharper selection, or in indexing, implying that many relevant documents are not found by users. Our results suggest

that users are better served with a sharper selection, traumatic as it may be for any librarian seeking completeness.

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[4] R.P.C. Arensman and J.M. van der Velden, 'Evaluatie van het Automatisch Bibliothecksysteem Delft (AUBID) naar gebruiksgemak' ('Evaluation of user-friendlyness of the Automatic Library System Delft (AUBID)'), report UT Delft, 1991.

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The Importance of Social Science Literature as a Part of Grey Literature and the Representation of Social Sciences in SIGLE

Chapter 1: General Aspects

Since social sciences include not only the philosophical groundings but also the empirical analysis of various societal and individual problems they have become a discipline which not only produces discussions and some basic books and articles but a lot of research and empirical findings: there is a wealth of research projects with private or public sponsors who want to get regularly reports of progress and final reports of the results. On the other hand the possibilities of publishing in a journal or in a book are limited and the publication often needs a great time span. So the Grey Literature has become an important way of publication, even in the social sciences.

The general remarks of Auger are also valid within this discipline: "Over the years grey literature has come to constitute a section of publications ranking in importance with journals, books, serials and specifications, and the time has come to grant it full recognition."(1) And Grey Literature is also needed as a medium of the scientific communication especially in the social sciences(2). Therefore social science literature has also been included in the SIGLE database, and rightly so.

Chapter 2: The Representation of Social Science Literature in SIGLE

This chapter will show the shape and development of social science literature within SIGLE and discuss the steps and dimensions of this integration.

At first the input will be analyzed appropriate to the last 10 publication years (see Table 1). Referring to the respective publication year the input in SIGLE has an amount of about 30 000 documents since the publication year 1986. There is a big time lag of the input between the publication year and the input year of the documents. Related to the last three publication years the input is decreasing. At the beginning of December 1993 there have been only 5 700 documents in the

database which are published in 1993, only about 19 % of the estimated production of this publication year. There are surely some objective reasons for this delay as for instance the difficult way of acquisition of Grey Literature. But on the other hand there should be done some work to improve the situation. As shown in **Picture 1.1** the decrease of the input with publication years since 1991 catches the eye.

The average of the proportion of social science literature in SIGLE is 29 % (see **Table** 1). Referring to the last ten publication years the percentage of social science literature comes near to one third (see **Table 1** and **Picture** 1.2). The increase of this percentage for 1992 is probably caused by the above mentioned abnormal situation of the input for this time span. The absolute amount of social science documents comes to nearly 10 000 in each publication year (see **Table** 1 and **Picture 1.1**).

Another interesting aspect is the national proportion of input (see **Table 2**). The very most documents come from Great Britain with about 175 000 documents. Germany is following with about 90 000 documents. At the third place there is France with about 45 000 documents. The other countries (the Netherlands, Italy, Belgium, Spain, Sweden and Luxembourg) are supplying only a small number of documents. A considerable amount of documents (about 7 800) has been produced by the Commission of the European Communities.

The origin of the social science documents does not follow the general proportions (see **Picture** 2), because in countries with a low input there are heavy disproportions.

The description of the above proportions shows that the social science literature is very well represented in the database SIGLE as a whole. And it can be said that the social science literature is an integral and important part of this database!

Chapter 3: The Integration of German Social Science Literature into SIGLE

Focussed on the German part of the social science literature within SIGLE the fields of acquisition, data exchange, and availability will be discussed.

The German Grey Literature on social sciences is supplied by the "Informationszentrum Sozialwissenschaft (IZ)" which is situated in Bonn and Berlin. The IZ produces two online databases: 1. SOLIS which contains social science literature from German speaking countries, 2. FORIS which contains current social science research projects from German speaking countries (3). The subfile of Grey Literature is taken from SOLIS and - after conversion - put into SIGLE.

The acquisition of Grey Literature for SOLIS - and even for SIGLE - has its starting point in FORIS because all researchers or research institutes, which are located in Germany, Austria and Switzerland, are asked by a questionnaire whether they produce reports, discussion papers, preprints, unpublished dissertations and so on. The IZ also makes a request

to give one copy of this report or paper for purposes of documentation and of storage in a library. So in the first step there is a document on current research in FORIS, in the second step there is a document on Grey Literature in SOLIS and in the third step the storage of the report or paper takes place in the university library of Cologne. All steps are linked by the document number of the single piece of Grey Literature. The document number also serves as shelf mark in the university library.

Another important path of acquisition is the regular sending of reports by research institutes which publish own "grey" series. Finally several other sources are supervised, for instance annual reports of institutions, bibliographies, and the database of the national library.

The database SOLIS has a yearly input of between 10 000 and 12 000 documents. Over all the years about 10 % of this input can be characterized as Grey Literature; this proportion is very constant. Hence there will be about 1 000 to 1 200 Grey Literature documents per year (4).

There is a good precondition for the data exchange to SIGLE because SOLIS includes an English translation of the title of each document. The controlled terms are also available in English but they are not used for SIGLE. The classification codes of SOLIS are transformed into the SIGLE classification by a transformation list with a definite assignment of each classification respective of each classification code. The transformation into the technical format of SIGLE unfortunately destroys the advantages of the storage in SOLIS because the separate fields, of which each contains one distinct information particle, have to be concatenated for the SIGLE format.

Nearly all of the reports are available at the above mentioned university library of Cologne (Universitäts- und Stadtbibliothek Köln = UuStBKöln) and can be requested under the document number which is shown in the source field with its subfield availability. If there is another document supplier, it is indicated as well.

Chapter 4: The Interdisciplinary Usefulness of SIGLE: Two Examples

Two examples of interdisciplinary research will demonstrate the importance of the social science part of SIGLE and illustrate the importance of the whole database for interdisciplinary research. The examples are the research on time and society, and the research on qualifications and professionalisation in the field of scientific information and documentation.

The search for the examples has become a very good demonstration of the usefulness of SIGLE for research in interdisciplinary fields. Although the description of the contents of the documents does not reach into depth in this database, because there are no controlled terms or other controlled subject fields except the very rough classification codes. Even the search with search strategies which have not been sophistica-

ted has had acceptable results(5). The queries had been carried out with some Boolean operators, a distance operator and especially with free text in the basic index or in the title field, and had been combined with a subject classification (6). Probably it would be helpful to note the given controlled terms or free terms which are included in the original data in a separate field which should be included in the basic index.

Paragraph 4.1: The First Example: Time and Society

First I will mention a quotation of Wilhelm von Humboldt: "Time is surely the most marvellous thing of our human being".

The respective example concerns the subject of time and time related problems of the society. There has been a lot of research and discussions between several disciplines of science and social science, so as on one hand biology, medicine and physics , and on the other hand philosophy, sociology, psychology and law. Because of the interdisciplinary character of this field, it is not so easy to get access to the literature and reports concerning time research. The discussion takes place inside specialized communities and the papers are widespread published in journals, readers, proceedings, and reports which are connected to various disciplines. Even in the field of social sciences the situation is difficult, and Helga Nowotny remarks: "Although there have been many conferences and meetings on time .... they have tended to retain the ad hoc character of single events without follow-up activities."(7) These problems are similarly described by Rudolf Wendorff: "Many research projects are staying rather isolated and are - as books or articles written in someone or other language - often unknown for other persons who work in the same area. Libraries and booksellers have no place at which the different publications on time problems in any context can be put together. It is difficult to get an overview in this area - across all fields of science." (8)

So it is very necessary to get information on results within this field by studying Grey Literature!

There is only one international journal (and it is existing only since 1992) concerning the debate on time and its facets in different disciplines: it is called "Time & Society. An International Interdisciplinary Journal". On the other hand - Helga Nowotny states - "interest in time emerges rapidly from many studies; hence came to form a kind of temporary derivative, an interesting sideline, rather than the core of a continuing research programme. This may also account for the often remarked upon discontinuous nature of the study of time in the social sciences. (...) Anyone who has worked, even for a short period, in the area of time very soon comes to realize that the literature is booming, also in the social sciences."(9)

The field of time studies is marked out by the doyen of this research J. T. Fraser: "For the purposes of scientific division of labor, the study of time has been carried on four ma-

jor arcs of learning: They are: the socialization and collective evaluation of time (social sciences); time in the organizing, communicative and imaginative functions of the mind (psychology); the role of time in the life process (biology); and the time in the physical world (physics). The arts, the letters, no less than good philosophies straddle the phenomenal concerns of the four disciplines and bind their time-related themes together in many ways." (10)

Questioning SIGLE gives respectable results in the field of time research. Here will be shown some of them which are spread over the various disciplines (11):

TI **Demand over time. Attitudes, knowledge and habits that affect when customers use banks and building societies.**
AU East, R.;Lomax, W.;Willson, G.
CS Kingston Business School, Kingston upon Thames (GB)
SO May 1992. 60 p.
Availability: Available from British Library Document Supply Centre

TI **Is the path leading from the industrial society to the leisure time society?. aspects of changed recreational activities.**
Fuehrt der Weg von der Industriegesellschaft in die Freizeitgesellschaft?. Aspekte veraenderter Freizeit aktivitaeten.
AU Reske, Joachim
CS Daimler-Benz AG FoGr Berlin, Berlin (DE)
SO Berlin: 1988. 72 p.
Availability: UuStB Koeln=38*-6L1723.

TI **An investigation of coping styles in time-limited situations. (Loneliness within society.)**
AU Trent, D.R
CS Nottingham Univ. (GB) (05686F)
SO May 1988. 239 p. Thesis (Ph.D.).
Availability: Available from British Library Document Supply Centre- DSC:D87510.

TI **Time and social theory. (Philosophy of time and society.)**
AU Adam, B.E
CS University Coll., Cardiff (GB) (05878P)
SO Sep 1987. 502 p. Thesis (Ph.D.).
Availability: Available from British Library Document Supply Centre

TI **Economics of time. as an alternative economic theory of a free society; essays on the archeology of the buried economic theory of justice according to Marx.**
Oekonomie der Zeit. als alternative oekonomische

substantial; there is only marginal noise in this part of the database SIGLE. Although there are some more opportunities for publication and some more international journals, a lot of discussions and research are manifested in reports which only exist as Grey Literature.

TI **Marketing the information profession to the information society.**
AU Irving, A
CS Library Association Publishing Ltd., London (GB)
SO 1992. 52 p.

TI **Women in information science : an investigation into the characteristics of the professional group of female information scientists, the supply from the education and the position of the female.**
Vrouwen in de informatica : een onderzoek naar de kenmerken van de beroepsgroep vrouwelijke informatici, het aanbod vanuit het onderwijs en de positie van vrouwelijke informatici in arbeidsorganisatie.
AU Olde, Cora de
CS Directoraat-Generaal voor de Arbeidsvoorziening, Rijswijk
SO 's-Gravenhage: VUGA [distr.]. 1990. 173 p. ; 25 cm.
Availability: (Copy) available through: Library Technical University, Delft (Nr.47682);Koninklijke Bibiotheek, The Hague (Nr.B9120558).

TI **Quantification of overseas market for professional consultancy services in librarianship and information science (LIS) and information management.**
AU Carpenter, J.;Davies, R
CS British Library, London (GB). Research and Development Dept
SO 1992. 64 p.
Availability: Available from British Library Document Supply Centre- DSC:2113.56F(BLRD-R--6077).

TI **A framework for continuing professional development for library and information services staff.**
AU Brown, R
CS British Library, London (GB). Research and Development Dept
SO 1992. 63 p.
Availability: Available from British Library Document Supply Centre

TI **The UK professional resource for library and information science development overseas. A study for the Library and Information Services Council (England).**
CS British Library, London (GB). Research and Development Dept.; Carpenter Davies Associates, London (GB)

SO Sep 1991. 59 p.
Availability: Available from British Library Document Supply Centre- DSC:2113.56F(BLRD-R--6060).

TI **Continuing professional development for library/ information staff in UK professional firms.**
AU Webb, S.P
CS British Library, London (GB). Research and Development Dept
SO Apr 1991. 78 p.
Availability: Available from British Library Document Supply Centre- DSC:2113.56F(BLRD-R--6039).

TI **Provision of professional events for library-information workers.**
AU Slater, M
CS British Library, London (GB). Research and Development Dept
SO Jul 1990. 128 p.
Availability: Available from British Library Document Supply Centre- DSC:2113.56F(BLRD-R--6013).

TI **Curriculum development for librarianship. An outline of a systematic foundation for professional education and training and information service with recommendations for the decade 1980-1990.**
AU Burrell, T
CS Strathclyde Univ., Glasgow (GB) (05787Q)
SO 1982. 891 p. Thesis (Ph.D.). In 2 vols.
Availability: Available from British Library Document Supply Centre- DSC:D44870/83.

TI **Towards a unified professional organization for library and information science and services. A personal view. (Library/information services.)**
AU Saunders, W.L
CS Library Association Publishing Ltd., London (GB)
SO 1989. 83 p. Produced on behalf of ASLIB, The Association for Information Management and The Library Association.
Availability: Available from British Library Document Supply Centre- DSC:9236.056R(3).

TI **Information-intensive management. Impact on the employment market for information professionals.**
AU Moore, N
CS City of Birmingham Polytechnic (GB); Aslib, London (GB)
SO 1988. 62 p.
Availability: Available from British Library Document Supply Centre- DSC:88/29216(Information-intensive).

TI **Didactic fundaments** [wrong translation, means foundations] **concerning the vocational training for commercial professions in computer science.**
Didaktische Grundlegung zur informatikbezogenen schulischen Berufsbildung fuer kaufmaennische Ausbildungsberufe.
AU Koenig, M.
CS Mainz Univ. (DE). Fachbereich 3 - Rechts- und Wirtschaftswissenschaften (00151P)
SO 1988. 299 p. Diss. (Dr.rer.pol.).
Availability: Bibliothek Weltwirtschaft Kiel A 176153.

TI **Meeting the information technology learning needs of professional office workers. (Office worker IT training.)**
AU Eason, K
CS Loughborough Univ. of Technology (GB). Human Sciences and Advanced Technology Research Group (39981H)
SO Jan 1987. 13 p. Paper in NETWork 87 Workshop Bad Homburg (DE) 9-11 Apr 1986.
Availability: Available from British Library Document Supply Centre- DSC:4337.61(HUSAT-M--397).

TI **The documentalist profession through Italian literature (1959-1988).**
La professione del documentalista nella letteratura italiana (1959-1988).
AU Carosella, Maria Pia
CS Consiglio Nazionale delle Ricerche, Rome (IT). Istituto di Studi sulla Ricerca e Documentazione Scientifica
SO Mar 1988. 21 p. Miscellanea in onore di A. Vinay.

TI **Information transfer as profession: final report of a pilot project 'BID conceptions and development of courses of study in libraries, information and documentation centres'.**
Informationstransfer als Beruf: Abschlussbericht des Modellversuchs 'Konzeptionen und Entwicklung von Studiengaengen im Bereich Bibliothek, Information und Dokumentation'.
AU Bock, G.; Hueper, R.
CS Niedersaechsisches Ministerium fuer Wissenschaft und Kunst, Hannover (DE) (01500F)
SO 1985. 128 p.
Availability: Bibliothek Weltwirtschaft Kiel A 165952.
CC **02B Agricultural economics*
05A Management, administration and business studies (J2)

These titles show the good representation of the subject in SIGLE. The qualifications of information professionals, their training and their professionalisation are discussed in many

reports. This field is also subject of two reports which have recently been finished at the University of Potsdam concerning 1. the information and documentation as a field of professional training and occupation, 2. the qualifications and the manpower requirement for graduates in the occupational field of the information work (13). These reports are really grey, as type of literature and in their outfit.

Chapter 5: Grey Literature Databases as Important Resources for Social Science Research

As a conclusion can be stated that Grey Literature databases are important for social science research and for opening the opportunities of an interdisciplinary discourse. Using SIGLE the results are encouraging and fruitful. SIGLE can be called a useful resource of international social science research. The inclusion of more European countries and the quality management of the database shall be improved to strengthen the usability and the usefulness of SIGLE. This database deserves a good marketing of the online version and the CD-ROM!

Summary

After some general remarks on the importance of social science literature as part of Grey Literature the article shows the representation of this literature within SIGLE using the input data of the last two years. Then the acquisition process, the data exchange, and the availability of the German social science literature are discussed. using two real examples the interdisciplinary usefulness of SIGLE is demonstrated: first in the field of time and society and secondly in the field of professionalisation of scientific information and documentation. There are shown several sample titles out of these fields. A statement on the usefulness of SIGLE for the social science research concludes the article.

Notes

(1) Auger 1989, p. 1

(2) cf. Artus 1992

(3) The databases SOLIS and FORIS are offered online at the hosts STN International (Karlsruhe), DIMDI (Cologne), GBI (German Business Information, Munich). The database SOLIS is part of a CD-ROM called WISO (containing German literature on social sciences and economics) which is distributed by GBI.

(4) A part of the delivered documents of the IZ did not appear in the database (about a third). The reasons should be investigated. At this time no new input is done by the IZ. There should be started a political attempt to assure the future input in a regular manner.

(5) At this point I have to express my thanks to STN and FIZ Karlsruhe because of sponsoring the STN Training Centre at the University of Potsdam. Especially I would like to thank Mr. Lankenau who has supported our work at the STN Training Centre with enthusiasm.

(6) In a few cases the subject classification had been misleading into an other then the supposed area. For example a title dealing with the analysis of 'micro-data' had been classified as 'information theory 'although the document is related to a core empirical method of social science and has no aspects concerning 'information theory'. This wrong classification may have the reason that the indexer is coming from science but not from social science.

During my search I found some duplicates. In any case the first document and the respective duplicate were coming from the same document supplier. Here should have been a duplicate check before starting the input into SIGLE.

(7) Nowotny 1992, p. 448

(8) Wendorff, p. 41 (translated by M.K.)

(9) Nowotny 1992, p. 423

(10) Fraser 1992, p. 159

(11) The quality of the presentation of the output is bad because of using the stripped ASCII-format. The hosts should develop methods to present the output in a well formatted, good readable form.

(12) This classification is an example for misleading classification codes. The two assigned classifications are both wrong!

(13) See Kluck/Seeger 1993a and 1993b.

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Charles Peter Auger: Information Sources in Grey Literature. London 1989 (2nd ed.) (= Guides to Information Sources)

Fraser 1992
J. T. Fraser: Temporality in a Nowless Universe. Time & Society, Vol. 1, 1992, No. 2. p.

Kluck/Seeger 1993a
Michael Kluck; Thomas Seeger: Information und Dokumentation als Ausbildung und Beruf. Eine Befragung von Absolventen der postgradualen Ausbildung zum Wissenschaftlichen Dokumentar über Ausbildung, Berufseinmündung und Berufsverlauf. [Information and Documentation as a Field of Professional Training and Occupation. A survey of postgraduates on the education, the career start and the professional career]. Potsdam: Universität Potsdam 1993 (Universität Potsdam, Informationswissenschaft, Modellversuch BETID, Bericht Nr. 1)

Kluck/Seeger 1993b
Michael Kluck; Thomas Seeger: Qualifikation und Bedarf im Berufsfeld der Informationsarbeit. Eine Befragung von Arbeitgebern aus den Berufsbereichen Dokumentation, Information, Informationsvermittlung und Informationswirtschaft. [Professional Qualifications and Manpower Requirement in the Occupational Field of the Information Work. A survey of employers in the occupational fields of documentation, information, information services, and the information industry.] Potsdam: Universität Potsdam 1993 (Universität Potsdam, Informationswissenschaft, Modellversuch BETID, Bericht Nr. 2)

Nowotny 1992
Helga Nowotny : Time and Social theory. Towards a social theory of time. Time & Society, Vol. 1, 1992, No. 3, p. 448

Wendorff 1986
Rudolf Wendorff: Zur Erfahrung und Erforschung von Zeitphänomenen im 20. Jahrhundert. [On the Knowledge and Research on Time Phenomena in the 20th Century]. In: Heinz Burger (ed.): Zeit, Natur und Mensch. Beiträge von Wisssenschaftlern zum Thema "Zeit". Berlin: Berlin Verlag 1986

Tables and Pictures

Table 1:

SIGLE Database:
1. Documents per year
2. Social science documents

GL '93
Amsterdam
14 Dec 1993

publication year	documents (total)		social science documents	
	number	percentage (of all documents)	number	percentage (of the year)
1984	24 090	6%	8 641	36%
1985	26 345	6%	9 517	36%
1986	30 906	7%	10 466	34%
1987	30 742	7%	9 983	32%
1988	29 896	7%	9 728	33%
1989	30 938	7%	9 068	29%
1990	31 599	8%	9 736	31%
1991	26 495	6%	9 625	36%
1992	21 312	5%	8 928	42%
1993	5 731	1%	1 467	26%
all years	412 576	100%	121 334	29%

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Table 2:

SIGLE Database:
Input countries

GL '93
Amsterdam
14 Dec 1993

country of publication	documents		social science documents	
	(total)			
	number	percentage (of all documents)	number	percentage (of the country)
Belgium	2 897	1%	115	4%
European Comm.	7 729	2%	2481	32%
France	44 644	11%	3 806	9%
Great Britain	173 078	42%	84 046	49%
Germany	87 377	21%	24 958	29%
Ireland	97	0%	97	100%
Italy	6 895	2%	570	8%
Luxembourg	33	0%	27	82%
Netherlands	14 143	3%	5 189	37%
Spain	126	0%	45	36%
Sweden	14	0%	0	0%
without entry	75 543	18%	-	-
all countries	412 576	100%	121 334	29%

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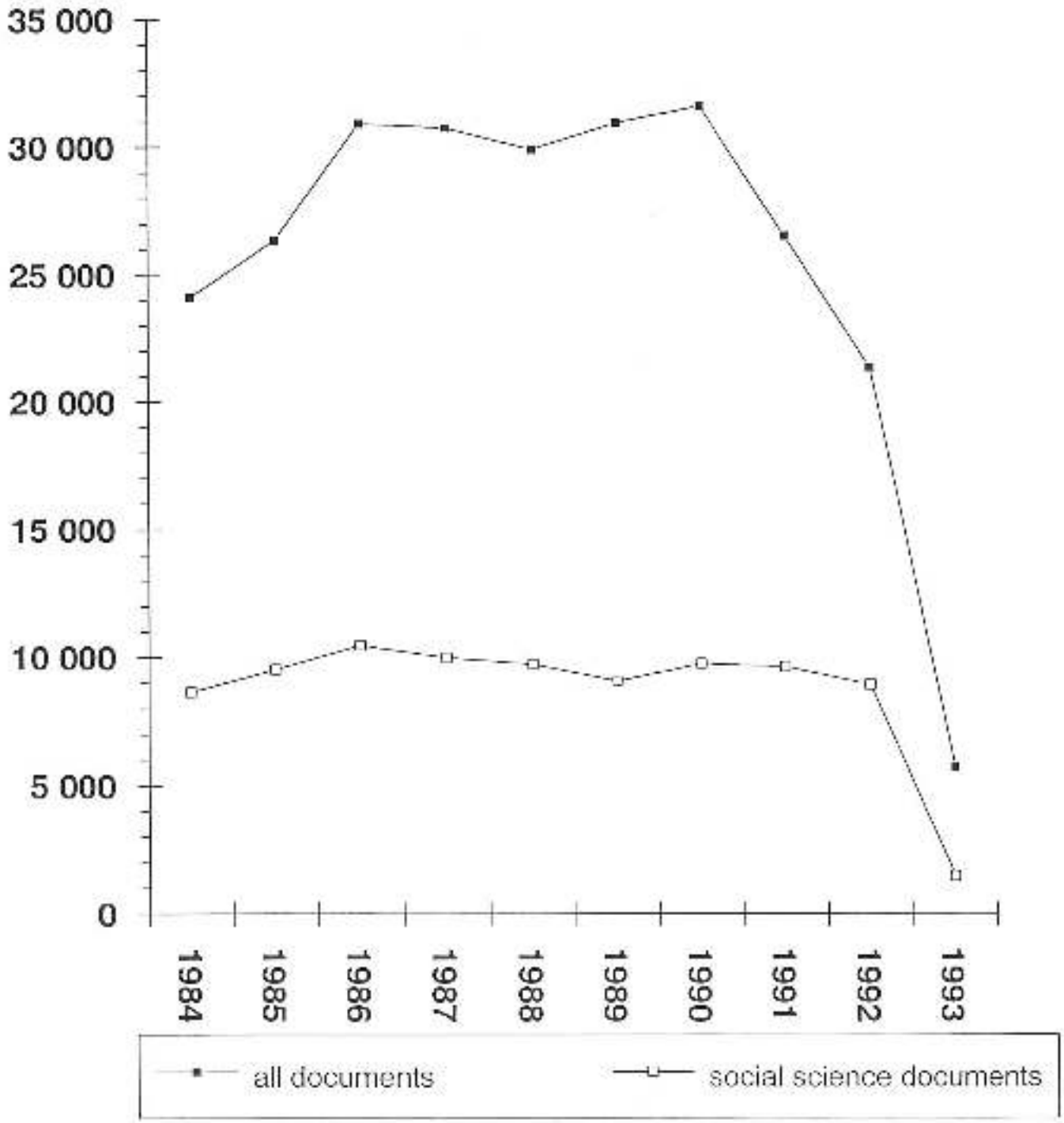
Picture 1.1 SIGLE database Documents per year GL '93 Amsterdam 14 Dec 1993

Picture 1.1: Input in SIGLE, documents per year

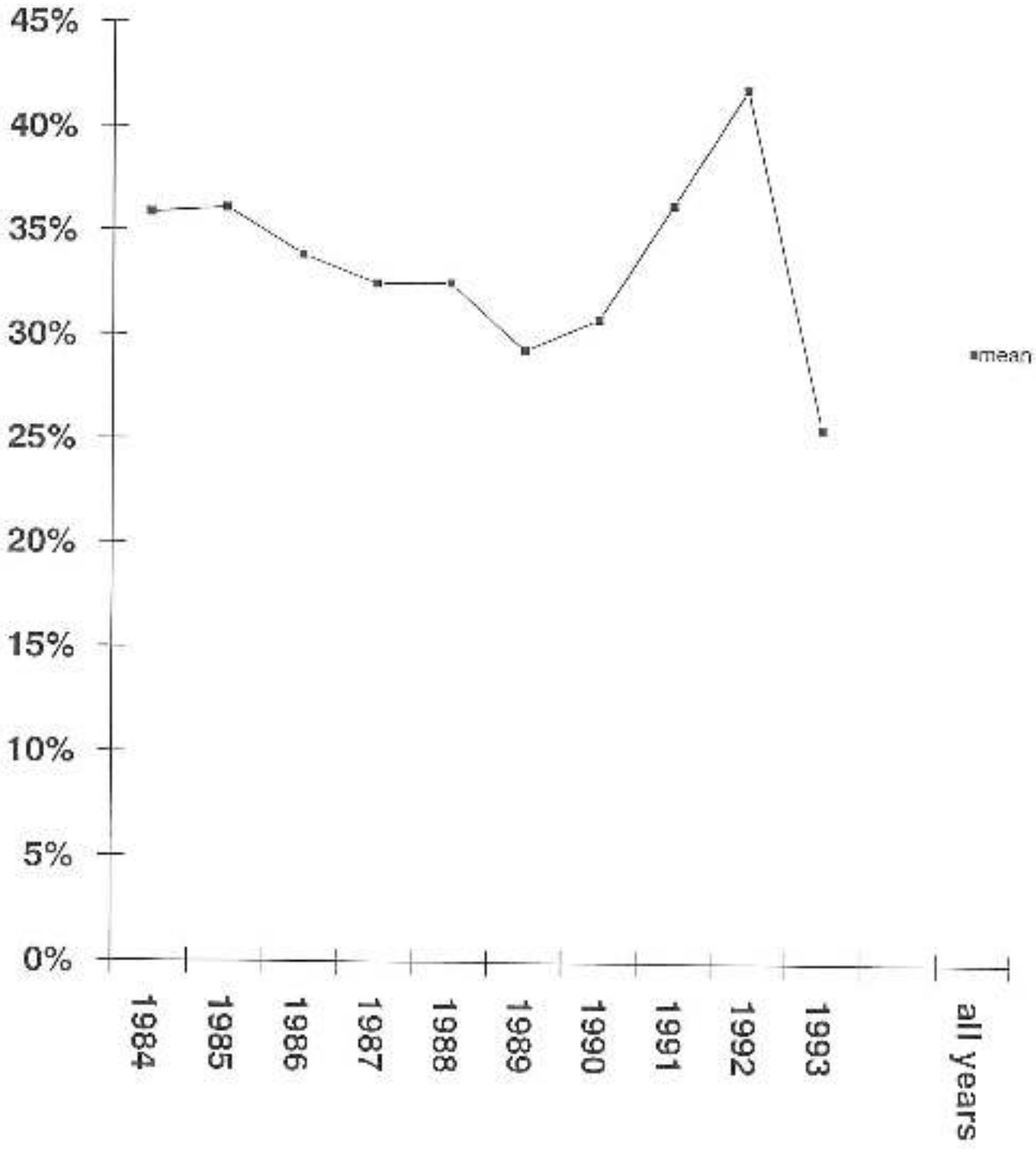


Picture 1.2

SIGLE database
Social science documents

GL '93
Amsterdam
14 Dec 1993

Picture 1.2: Input in SIGLE, percentage of social science documents



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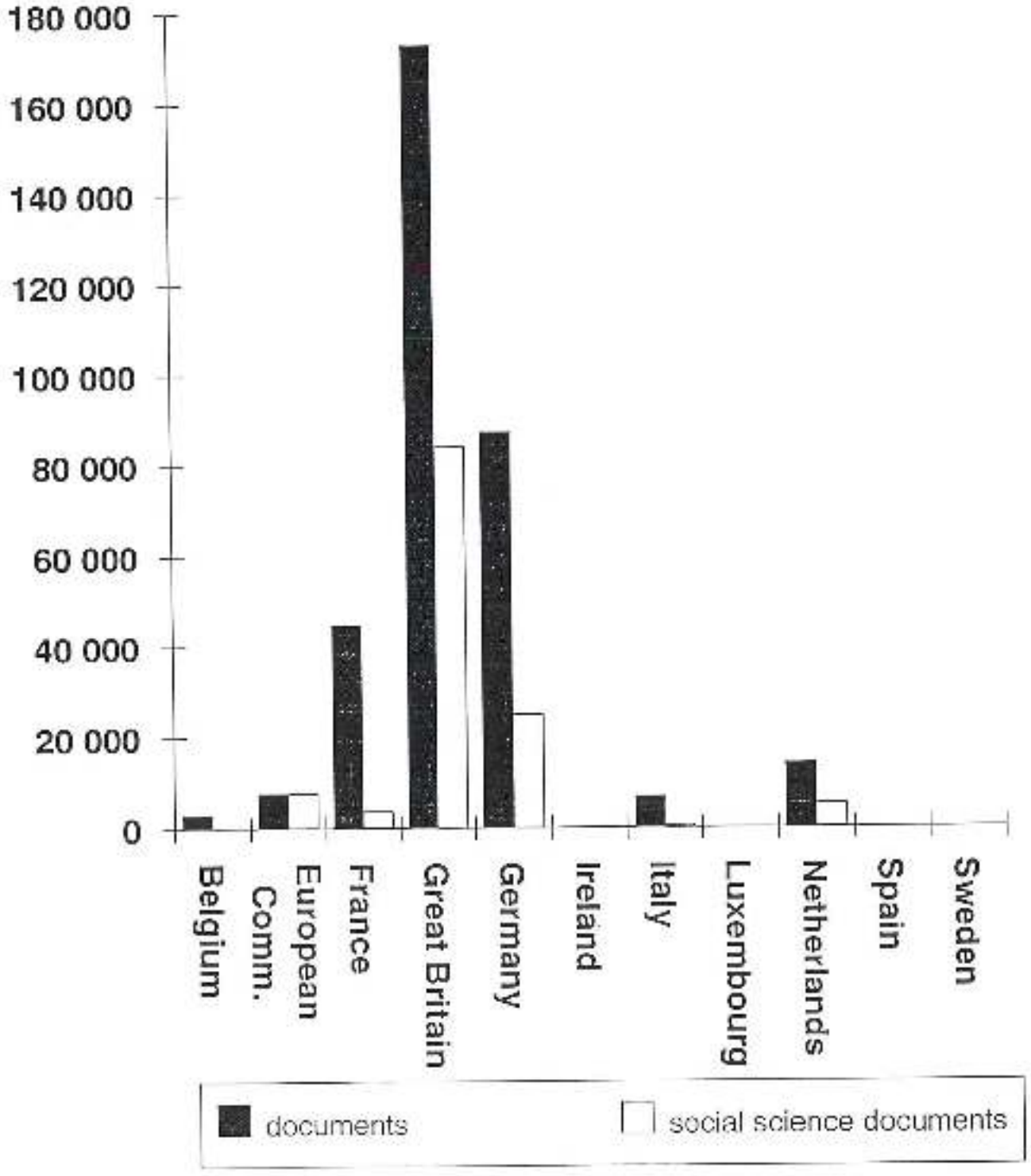
Picture 2: SIGLE Database GL '93 Amsterdam 14 Dec 1993

Picture 2: Input countries



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