

An International Journal on Grey Literature



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‘PUBLISH GREY OR PERISH’

GreyNet

The Grey Journal

An International Journal on Grey Literature

COLOPHON

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About TGJ

The Grey Journal is a flagship journal for the grey literature community. It crosses continents, disciplines, and sectors both public and private. The Grey Journal not only deals with the topic of grey literature but also is itself a document type that is classified as grey literature. It is akin to other grey serial publications, such as conference proceedings, reports, working papers, etcetera.

The Grey Journal is geared to Colleges and Schools of Library and Information Studies, as well as, information professionals, who produce, publish, process, manage, disseminate, and use grey literature e.g. researchers, editors, librarians, documentalists, archivists, journalists, intermediaries, etc.

Grey Literature is defined as "information produced on all levels of government, academics, business and industry in electronic and print formats not controlled by commercial publishing *i.e. where publishing is not the primary activity of the producing body.*" (Luxembourg 1997; expanded in New York, 2004)

About GreyNet

The Grey Literature Network Service was founded in 1993. The goal of GreyNet is to facilitate dialog, research, and communication between persons and organizations in the field of grey literature. GreyNet further seeks to identify and distribute information on and about grey literature in networked environments. Its main activities include the International Conference Series on Grey Literature, the creation and maintenance of web-based resources, a moderated Listserv, The Grey Journal, etc.

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"Publish Grey or Perish"

The launch of this new journal on grey literature is the result of two research projects carried out by GreyNet in 2004 together with colleagues from the University of Amsterdam (*Netherlands*) and INIST-CNRS (*France*). The Grey Journal (TGJ) is an international journal on grey literature. It features three issues annually, each issue focusing on a particular theme or area in the field of grey literature. Where once, grey literature was more a particular interest of special librarians, it has expanded early in the 21st Century to include researchers and instructors at colleges and schools of library and information studies. This development is reflected in the information policy and funding patterns of organizations in both public and private sectors. Grey literature has truly come of age. It is now the open currency in information and knowledge societies.

This first issue of TGJ focuses on grey literature and publishing. It consists of six feature articles covering central ideas, terminology, and problems facing grey literature. Using a variety of research methods, the authors offer solutions, results, and further recommendations. Asserson (*UiB, Norway*) and Jeffery (*CCLRC, United Kingdom*) examine among other things the peer review process and publications as a measure of research output. Artus (*IZ, Germany*) offers comparative data in his near full sample of 101 grey and white Internet journals in the social sciences from German speaking countries. De Blaaij (*Library of Zeeland, Netherlands*) analyses the legal and economic viability of publishing scientific information including grey literature based on an open source ideology. Dunn (*NYU, United States*) by way of a citation analysis of journal articles and grey literature examines changes in the past five years on Medicaid, a health care policy issue. Schöpfel and Stock (*INIST-CNRS, France*) et al., compile a citation database of 1374 records and then by further statistical analysis examine the value of the GL-Conference Proceedings for the field of grey literature and its impact on the work of contributing authors. Boekhorst (*UvA, Netherlands*) et al., via an online survey profile the 104 respondents and their further response to topics and issues dealing with grey literature on both document and content levels.

Other standard features of The Grey Journal include a section 'On the News Front', 'About the Authors', and 'Notes for Contributors'. On behalf of GreyNet and the Associate Journal Editors, I take pleasure in launching this flagship for the grey literature community and welcome you, ahoy.

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Research Output Publications and CRIS^{*}

Anne Asserson (Norway)
Keith G Jeffery (United Kingdom)

Abstract

Publications still are regarded as a major measure of R&D output. Debates rage over the relative quality of publications in journals, conference proceedings, book chapters, the media. Grey literature is emerging as an important component. Despite the move of journals and conference publications to electronic versions accessed online, rising prices and reducing library budgets are revolutionizing the market: eprints and self-archiving extended with e-annotated peer-review are preferred in some disciplines.

Introduction

Publication of research results has been a mainstay of the development of human technological culture for 5000 years. Early Hittite clay tablets representing inventories (early database) and the Phaistos wheel representing a prayer or poem lead to Trajan's column recording history (or at least his version of it) and The Book of Kells and onwards through the Domesday Book (another database) to the drawings and writing of Leonardo da Vinci (technical reports).

The availability of inexpensive printing provided an opportunity for explosive growth; some measure of quality was required. Learned societies criticized publications, often when in manuscript form and read to an audience, leading to the current peer-review process. Today a hyperlinked multimedia eprint with executable code and associated datasets may be reviewed by anyone adding an e-annotation.

The process of externalizing the concepts in the researcher's mind, of recording them and associated experimental results or observations, preserves the result of the work beyond the lifetime of the researcher and also makes it replicable and distributable. Some philosophers claim that this 'preserved external memory' is the major distinguishing feature of humans.

Kinds of Publications

Publications of interest to the R&D community are very varied. In a physical dimension there are ancient publications on stone, papyrus, vellum and other materials leading through paper to electronic digital material. In the subject dimension they vary through all the areas of R&D: arts and humanities, social and economic science, physical and natural sciences, engineering and technology, mathematics and philosophy. In the mechanism dimension there are book chapters and books, articles in journals, conference proceedings and workshop proceedings, technical reports (including instructions and methods extending to computer programs), popular media reports and multiple mechanisms considered outside of the R&D publications field such as publicity or marketing material. These latter groups of publications, outside conventional R&D publishing, are commonly referred to as grey literature (Jeffery 1999, Jeffery, Asserson and Revheim 2000). In the detail dimension there are abstracts, summary/review articles and full articles. Most publications reference previous related work by the author(s) or others and may also reference more detailed material such as datasets, computer programs, laboratory notebooks, museum collection artifacts and grey literature.

In addition there are project proposals submitted requesting funding; these usually contain much useful R&D information but usually are unavailable until a project is funded, at which time at least a summary becomes available. This is usually stored in the project entity in a CRIS (as title and abstract) rather than the publication entity although the full version of the application (and the referee reports) could be stored there in this CERIF extension proposal.

^{*} First published in the 7th International Conference on Current Research Information Systems, Leuven University Press, 2004

Peer Review Process

The need to record the step in the scientific process in which a hypothesis (a proposed idea based on observation or experiment) evolves to a theory (commonly accepted hypothesis) has led to the peer review process as we know it. However, the process varies greatly by discipline and in some cases by geographic region.

The basic process is as follows: the author submits the article for publication; the receiving organization appoints independent anonymous reviewers; the reviews are collected and discussed; the author is notified of the result which may be publication, rejection or various in-between states involving rewriting. As an aside, a similar process is used to review project proposals for funding.

Problems

Although this process, evolved over a long period of time, may be the 'least-worst available' it does have problems. The reviewers not uncommonly have strong views on the topic and may be unwelcoming to new and different ideas; the community of experts in a given area is small and competitive; the reviewers are likely to be more senior and therefore very busy people and thus may not devote sufficient time to the review. The cloak of anonymity allows the reviewer to express clearly and directly her view, but also leaves the review unchallenged. Many reviews are neutral indicating either that the reviewer does not really understand the subject or that she is being polite. On the other hand, some reviewers utilise the cloak of anonymity to attack rivals on dubious grounds.

Solutions

Various techniques have been tried to overcome the problems. Anonymous submission should make personality problems redundant; in fact an expert in any field knows the writing style and likely references of the submitting author. Non-anonymous refereeing should provide a basis for challenge and debate; in fact it results in anodyne reviews which do not advance the field of research at all.

A novel approach has been tried recently, only possible because of the emerging technology. An eprint article can have attached to it e-annotations by anyone who reads it and wishes to review it. The reviewers are identified and a lively discussion may take place involving the author and multiple reviewers. This approach is a modern, electronic distributed equivalent of the old learned society discussion over a read paper in the 19th century.

Peer Review Comparison

There is a serious problem facing those who would wish to compare the quality of published articles across (and in some cases within) scientific discipline. For example, how does one compare an abstract published in the proceedings of a medical conference with a full paper in a computer science conference? Is the full paper associated with the medical abstract and published in a journal 2 years later of higher or lower quality than a revised version of the computer science conference paper published in an edited collection of significant papers in a particular computer science subject area published as a book? This is discussed further below.

Recording of Publications

There is a well-defined need to record the existence of publications and to preserve the publication itself. The destruction of collections (notably the Alexandria library) has taught us the need for replication and cataloguing. The thesis is that preservation of the research output, and provision of easy access to it, will ensure researchers do not waste effort rediscovering knowledge already available. In fact since the mid 20th century it was probably more cost-effective to rediscover because of the lack of easy access to the publications. One is surprised continually by the lack of knowledge of 'the literature' in a subject area by young researchers. The digital revolution and the availability of digital versions of the full article – facilitated by WWW – is now rebalancing this situation.

Publications as a Measure of Research Output

There is competition for positions in universities and research institutions and one measure of the quality of a researcher is their publication output. Similarly, a university, a faculty, a department or group may well be quality classified by the publication output (possibly in addition to product and patent output and output of trained postgraduates and postdocs). It is thus critical that a scheme exists to

measure quantity and quality of publications such that comparisons can be made within discipline within country (is the bioinformatics group at Oslo as good as the bioinformatics group at Bergen), within discipline between country (is the bioinformatics group at Oslo as good as the bioinformatics group at Oxford) or across disciplines within and between countries.

Publication Ranking

Within each sub-discipline there is usually a community-accepted ranking of publications. For example, in Databases most would consider a VLDB conference publication to be more prestigious than one in EDBT and certainly more than one in BNCOD. This is based largely on the ratio of submitted to accepted papers observed over a period of time: VLDB is typically 15%, EDBT 20% and BNCOD 40%. However, comparing this with conference publications in, say, computer graphics is extremely difficult – although the acceptance ratio does provide a measure.

Journal publications in this same sub-discipline generally have a lower perceived importance (but maybe higher quality) because many publish revised, lengthened so providing fuller explanations and updated (reflecting later work) versions of conference papers. This is in contradistinction to many disciplines and sub-disciplines where journal publications are considered of higher quality than conference proceedings publications.

Comparison of a conference proceedings publication with a journal publication in the same sub-discipline is difficult. On the basis of acceptance ratio in the databases sub-discipline, conference publications are much more significant than journal publications. Comparison across disciplines or sub-disciplines is even more difficult because of the differing quality perceptions.

It should be noted that the rank of a publication depends not just on quality; importance is also a factor (usually only measurable years later) as is immediacy (timeliness), relevance (to pressing problems in the discipline), readability (easily understood) and accessibility (readily available).

Citations

One apparently neutral mechanism for assessing publications is citations. These purportedly indicate the number of authors of other publications referencing the publication being ranked. There are several problems with citations; the number of publication channels scanned for citations, the frequency of scanning, the quality of those channels and the kind of citation (positive or negative). The ISI Citation Index is widely used but for most modern disciplines (and non-natural-scientific disciplines) is very incomplete in coverage.

The WWW has provided a technological opportunity; it is possible to trace the number of hyperlinks to a given page. If the target page is the publication being ranked this provides a mechanism for ranking the page. As an aside, this is one of the bases for the success of Google as a search engine. This technique is independent of discipline. However, the major problem is that the databases of e-versions of journal and conference publications are inaccessible. The rise of the open archiving and self-archiving initiatives, coupled with the increasing use of eprint servers will progressively overcome this situation. Meantime, a 'mixed economy' of ISI for conventional publications and Google scores for eprints has yet to be accepted as a ranking basis by appropriate authorities.

Bibliographic Databases

Bibliographic databases are usually a catalogue of the holdings in a particular repository such as a library. The full publications are rarely available in the database; usually only metadata is provided. This provides a brief description of the work (associative descriptive metadata) and where to find the work (navigational metadata). Sometimes associative restrictive metadata (e.g. rights or price) is stored – for example in a bookshop catalogue. There is one problem with many such databases; they may record the physical 'stealable item' that exists on the shelves but it, itself, may be a collection of works (e.g. papers in a journal issue) and the papers themselves may well not be recorded in the bibliographic database. The rapidly increasing availability of e-journals, with searchable indexes, is overcoming this problem.

Metadata

Metadata is a key technology for handling research results as publications. Metadata has been classified generally (Jeffery 2000) and that classification has been mapped to CRIS (Jeffery, Lopatenko and Asserson 2002). The separation of schema metadata (to ensure integrity and quality of the referenced data) from navigational metadata (to access the referenced data) from associative metadata (to describe the referenced data, to restrict access to the referenced data and to provide supportive contextual data to utilize the referenced data) is of paramount importance for advanced electronic handling of bibliographic information.

The generation of the metadata for a publication is problematic; some automated methods exist but at best they assist the process and do not provide a complete solution.

In the world of scholarly publications, the best known metadata is that of the MARC standard (which has geographic variants) (MARC). However, there are other extended cataloguing metadata variants and a detailed model has been published by IFLA (IFLA) while in WWW publishing the recommended metadata is Dublin Core (DC). In fact DC is machine readable but not machine understandable and a formal model overcoming these problems and a compatible extension to CERIF was proposed in (Jeffery 1999).

Full Publication

The storage in electronic digital form of the full publication (text, multimedia) has become realisable with the decreasing cost of digital storage and processing. Access is becoming feasible with the improving internet and superposed technologies for portal access, indexing and hyperlinking. With full publications available, automated generation of metadata becomes easier. Furthermore, deep indexing (e.g. complete inverted list of all text words, characterisation of images or audio material) becomes possible. These technologies improve dramatically the precision and completeness (relevance and recall) of retrieval of publications of interest. However, these benefits are realized fully only if the publications are structured in such a way that the metadata can be identified clearly and unambiguously. The increasing use of XML (based on the earlier SGML) for document representation and as the form for document storage should ensure this.

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Old WWWine in New Bottles? Developments in electronic information and communication: structural change & and functional inertia^{*}

Helmut M. Artus (Germany)

Abstract

To understand the meaning of grey literature in the internet age, it could be helpful to have a look at the whole system of scientific information and communication and its changes at the time being, not only at its informal 'grey' sector. The first part of this article presents empirical data on electronic journals ('e-journals') in the Social Sciences in Germany and the differences between commercial and non-commercial publishers. Further information deals with different types of electronic publications – 'grey' and 'white' – and innovative developments in electronic information and communication via the Internet. A network of R&D projects in Germany under the general name Vascoda exemplifies this. The project's vision is an integration of searching information on literature in distributed sources and receiving the full texts immediately, preferably by download. The Social Sciences are represented by the Infoconnex Project, which includes grey literature. Infoconnex is part of the Vascoda-network. The second part draws some theoretical consequences for our understanding of grey literature and its future. As to technical facilities, things have widely changed although printed grey literature is not completely out of fashion, but with regard to the economic structures and social functions of grey literature we can confirm that only little has changed – if anything at all.

Introduction

It was in late 1994, that my institute offered its first page on the Internet and proudly presented a so-called *gopher*, which was the most advanced technical device of information technology at that time. A *gopher* is a kind of squirrel, i.e. a small red haired animal with a bushy tail climbing up and down trees, and that is why it gave its name to a structure of Internet files arranged like branches of a tree.

This advanced technology, however, was at the same time the reason for failure since hardly any of our customers – *social scientists in Germany, Austria, and Switzerland* – had an Internet connection at their disposal at that time. Most of them did not even know what the Internet was and what it was good for. It still took years until the social scientific community discovered the Internet, which in the meantime had switched over to the *World Wide Web* structure (WWW) as organizing principle or *hypertext transfer protocol (http)*. The situation in the Social Sciences was not much better when we made a relaunch of our Internet pages in *World Wide Web* in late 1996.

Now, only seven years later, the Internet is a self-evident tool for information and communication even in the Social Sciences.

The Internet provides all possibilities we have always been dreaming of. All we need is a computer, Internet access and a homepage with a URL – the *unified resource locator*, which is the Internet address of a site. Then, we can be all in one: the *author*, the *board of referees* deciding whether an article of ours is accepted for publication or refused, the *printer*, the *publisher* and the *book seller*. And it does not cost a penny more to distribute our articles worldwide.

If this happens – what is going to happen with grey literature? Grey literature can only be defined in its relation to formally published or 'white' literature. This white literature, however, we could expect, is going to perish in the long run – and grey literature with it. What remains, is only "literature" without any further classification as white or grey, formally or informally published and so on – just *literature*.

The Internet has changed all our information and communication habits. Why shouldn't it change our publishing habits as well?

^{*} First published in the GL5 Conference Proceedings, January 2004

Empirical Findings

In the following text, I try to test this assumption. Parts 1 and 2 are dedicated to empirical findings as well as to well-founded yet not quantifiable observations from different R&D projects.¹ Part 3 tries to give a theoretical explication of these findings.

The Case of Internet Journals

Let us start with scientific journals. My data refer to 101 Internet journals in the Social Sciences, mostly from the German speaking countries. As far as we know, this is nearly a full sample.² The brief information in the database was enhanced by further information found on the journals' homepages. From these 101 journals, 42 are commercial and 59 are not.

Table 1: e-Journals According to Type of Publisher

Type of Publisher	abs.
Commercial	42
Non-commercial.	59
Total:	101

The non-commercial publishers consist of scientific institutes (34) - mostly from universities -, public bodies or authorities (12) and others (13).

At first glance, it seems that this is a splendid corroboration of the assumption that grey literature is advancing and formally published white literature is on its retreat. Only forty percent of Internet journals, one could argue, still come from commercial publishers.

These 101 e-journals published electronically or at least having an electronic version represent nearly 30 percent of all the 350 titles regularly indexed by the *Information Centre*. So, this is also a considerable part of the total journal production, but this is much too simple. Before daring such a conclusion, we have to answer several other questions, e.g.:

- Are commercial publishers really liable to charge for their journals, while journals from non-commercial publishers are really free of charge? According to our assumption, there should be a considerable trend towards free distribution even among commercial publishers.
- Have there been transitions from commercial to non-commercial publishers and publishing?
- And eventually, is the distribution between commercial and non-commercial publishers really induced by the Internet – or is it just a 'projection' of an old situation already existing in times of print or photocopier?

Table 2: e-Journals Free or not free?

Publisher	Internet Version			
	free of charge		liable to charge	
	abs.	%	abs.	%
Commercial	6	14	36	86
Non-commercial	50	85	9	15

These data are quite nice because the percentages for commercial and non-commercial publishers are nearly exact mirror images. 14 percent of e-journals from commercial publisher are free – and 15 percent from non-commercial publishers are liable to charge. While, 86 percent from commercial publishers are liable to charge, and 85 percent from non-commercial publishers are free. The exact differences are less than 1 percentage point.

Fourteen percent of *free* e-journals from *commercial* publishers, however, could be regarded as a relatively high percentage indicating a trend towards a softening of commercial and professional standards. But I think this is not pertinent. All 6 of these e-journals are exclusively accessible via the Internet, i.e. they do not have a printed version.

In fact, none of these six e-journals are scientific journals in a strict sense. Rather, they are journals combining short articles with more or less relevant information concerning a scientific discipline or a subject matter.

So I think this is not a case of commercial publishers making concessions to a free and non-commercial internet; but it rather seems, that the commercial publishers did not let the opportunity slip to raise their attraction by expanding their free internet offer, particularly because digital publication is less expensive.

This interpretation is supported by the data concerning the print versions of the e-journals. Only one e-journal from a commercial publisher has no print version. All other 27 print versions are priced – and it is a real, commercially calculated price, not a symbolic one. For 14 e-journals from commercial publishers, no information was available.

This shows convincingly that the commercial publishers have by no means given up their claims, but have instead expanded to a new form of market, i.e. the digital market of the Internet. For them, the Internet is not a realm of freedom, but it is a big commercial market, which also allows a reduction of costs for production and distribution. This reduction of costs, I think, is the main reason for non-commercial publishers to offer their journals in most cases only in an electronic version.

Table 3: Print Versions of e-Journals: Free or not free?

Publisher	Print Version		
	NO	free of charge	liable to charge
Commercial	1	-	27
Non-commercial	22	9	11

In 14 commercial cases and in 17 non-commercial cases no clear or reliable information was available, be it on prices or be it on the existence of a print version. Before finishing the topic of e-journals, we should still inquire about transitions from commercial to non-commercial publishing (table 4). To be honest, my data only show *differences*, not *directions* or *transitions*. But if seen in the whole context, I think, an interpretation is admissible.

The column with the heading “No Difference between Internet and Print” is clearly predominant with results being 83 percent versus 17 percent. As to commercial publishers, in nearly all cases (24 out of 27) there is no difference – which means that in all of these cases you have to pay - no matter which version or medium you prefer.

Table 4: Differences Between Internet and Print Version*)

Type of Publisher	No Difference between Internet and Print		Difference between Internet and Print		Total
	Free of charge	liable to charge	Internet free of charge	Print version free of charge	
Commercial	-	24	3	-	27
Non-commercial	9	6	5	-	20
Total:	9	30	8	-	47
Total (aggregated)	39 (83%)		8 (17%)		

*) These are again all cases with clear information concerning prices and with different versions.

So, again we can state that commercial publishers do not give up any of their claims but make use of the new medium and market in the same way they have been using publishing by print. Above all, there is no visible trend to free access, although in three cases there is a free Internet version with an additional print version liable to charge.

With the non-commercial publishers, the tendency towards free Internet access is obvious. Under the heading “No Difference between Internet and Print”, *free of charge* and *liable to charge* they are not much apart from each other (9 versus 6 cases with a prevalence of the internet), but in 5 cases with a difference, the less expensive Internet version is the free one, not the traditional print version.

In a final word about journals, I have no quantitative data about print journals, which were completely suspended within the last few years, as a possible consequence of the Internet. My colleagues who are in charge of the observation and documentation of journals could not confirm that this was really the case, and if it were, it could only hold for single cases and cannot be seen as a trend.

So I think as far as journals are concerned, there is no considerable change between free and charged journals. By no means can we say that the border between white and grey literature is shifting or that there is a mentionable increase of grey journals, neither in print nor in digital form. For both groups – commercial and non-commercial publishers – the Internet is the ideal medium for the best possible realization of their purposes:

- On the side of commercial publishers, staking their claims on a new, growing and attractive market, and at the same time lowering costs of production and distribution
- On the side of the non-commercial publishers, distributing their information and ideas to a wider public – doing so much faster, much easier, and much cheaper.

Hypotheses concerning grey literature & the Internet

As to the rest of the publication system, I do not have such a comfortable basis as with the journals' database. But I have been involved in two research & development (R&D) projects for more than two years covering all sorts of scientific literature. This includes various parts of the system of scientific information, from commercial publishers via libraries and database producers on to research institutes. So I think that our experience is representative for the situation in the Social Sciences in Germany, though not quantifiable.

The first of these projects is called *Infoconnex*, the second *Vascoda*.³ Infoconnex is a German R&D project combining three leading information centres for the Social Sciences, Education and Psychology, as well as the three special libraries for these disciplines. The idea behind Infoconnex as an *information network* is rather simple.

- The databases of the information centres can be searched in one single process, i.e. with one single search question even though the databases are indexed in different ways with different controlled terms, classification codes and the like. Infoconnex automatically transforms the search terms from one database into the pertinent terms of the other two databases.
- The user makes his choice and can immediately either download a digitalized version of the publications or order a copy be it a file in pdf, a multiple page tiff format, or a hard copy, notably in the case of books.
- Infoconnex is a *one-stop shop*, i.e. the user has only to pay once and can make all his orders in one continuous session. And, he can pay either per view or subscribe for a certain time, which ranges from 24 hours to one year.

Infoconnex is just one of four information networks that were built simultaneously for *Engineering and Physical Sciences*, for *Life Sciences*, and for the *Humanities*. These four information networks were combined under one common 'roof' called *Vascoda*. Since then, a number of other institutes, projects, and networks have joined Vascoda.

The following part of this article examines information about white and grey literature and about the behaviour of the different 'actors' in the field of scientific information i.e. publishers, research institutes, scientific authors, data base producers, etc.

It is based on informal experience in the context of Infoconnex and Vascoda projects and The Information Centre for the Social Sciences (IZ) and its different databases concerning literature (SOLIS, Journals), research projects (FORIS) and research institutes (SOFO).

We are able to separate our general expectation concerning the future development of white and grey literature and their share in scientific information into a set of hypotheses:

- **Hypothesis 1:**
Digital publication of grey literature via the Internet is increasing.

This is undoubtedly true, but the only thing it proves is that the Internet is an accepted and attractive medium for dissemination of research findings. And this evidence has nothing to do with structural changes but only with a change of publication media.

- **Hypothesis 2:**

The total number of grey documents ('titles') is rapidly growing, notably digital grey documents ('titles').

At least in the Social Sciences, there is no hint that this could be true. IZ e.g. maintains a documentation of grey publication series published by research institutes. Some of them are published in a digital version; however, in some cases the printed version has already cancelled. But concerning the number of documents ('titles') there was no remarkable, *countable* change, yet. The documentation of white and grey literature does not indicate an unusual increase of grey documents.

- **Hypothesis 3:**

There is also no mentionable change in the quantitative relationship between formally and informally published literature - be it printed or digitalized.

Such a rather firm demarcation between white and grey literature is only partly a question of counting; however, it is also partly a question of attitude or preoccupation. A project like Infoconnex e.g. could be a very good basis for overcoming the obsolete distinction between different types of literature, but no one talks about such a possibility, not even about the idea.

Another R&D project called SozioNet (which is to be integrated into Infoconnex at a later date) manages a cooperative network of research institutes producing digital grey literature and indexes it according to the Dublin Core set of *metadata* (i.e. title, creator, subject, date, type, format etc.)⁴. This is very interesting since it confirms a general agreement of all parties:

- The *project SozioNet* requires the distinction between grey and white literature and its persistency.
- The *research institutes* do not only agree but also invest a lot of work in indexing their grey literature in accordance with the Dublin Core standard.
- The *Dublin Core* itself, which is the result of a *strong international movement*, is evidence for the general attitude that grey literature is something special and the expectation that grey literature is here to stay. By its activities, this movement even consolidates the difference between grey and white, which leads us directly to

- **Hypothesis 4:**

'Personal publication' by scientists themselves in the capacity of author, publisher, and distributor is rapidly increasing. And this increase is combined with a decline in formal, qualitative standards favouring wild growth. One could then say that grey literature is becoming even more greyish.

Again, this turns out to be not only false but also misleading. Quite to the contrary, we can rather confirm a control of digital grey literature, as we have seen with the Dublin Core initiative, which is imposing formal standards on grey literature without denying or even questioning its grey character.

But it is not only metadata, which have been taken over from the formal publication (and documentation) system. A mentionable number of research institutes have already developed internal refereeing systems for papers published in their grey institute serials or journals. And it appears, that this is a growing number, though growing slowly.

- **Hypothesis 5:**

Everything is free in the Internet!

This is more a general assumption about the Internet than a hypothesis. Otherwise stated, it is a general and widespread error. Maybe this was right in 'olden times' when digital freaks were the predominant species populating the newly discovered continent called Internet or for some time-defining ideology and style of thinking and behaviour. But these times are long gone, and only the ideology of total freedom still lingers on. Meanwhile, the Internet has become a huge market place with lots of small stalls and big warehouses.

Infoconnex itself is a typical example of the real situation. Its basic concern is that articles from commercially published journals - be it genuine e-journals or digitalized print journals be *sold* to users for a price determined by the publishers themselves. So

there is no bargaining between Infoconnex and the publishers or between Infoconnex and the users. The latter have to pay the price or they do not receive admission to the texts. Moreover, Infoconnex controls that existing contracts between publishers and universities remain unbreached. Nevertheless, the publishers hesitate to sign contracts. Maybe they are still under shock from the slogan, a free Internet.

Theoretical Explication

If we summarize the facts that have been presented on the previous pages, we must say that very little has changed. Above all, the enormous chances for free information and communication provided by the Internet are not used within the scientific system. It may be self-evident that commercial publishers have no interest in free publishing since it takes away the basis of their business. But why do scientific institutes not make use of the opportunities presented by the Internet? And why, for heaven's sake, do the scientists refuse to adopt the Internet, which could be the perfect medium for publishing without restrictions and conditions, reaching a near unlimited worldwide public?

What are the reasons for this inertia of science and the scientists? Is this only conservatism or is it hostility toward new technologies? Or, are there perhaps hidden disadvantages, which disqualify the Internet as a medium for scientific use?

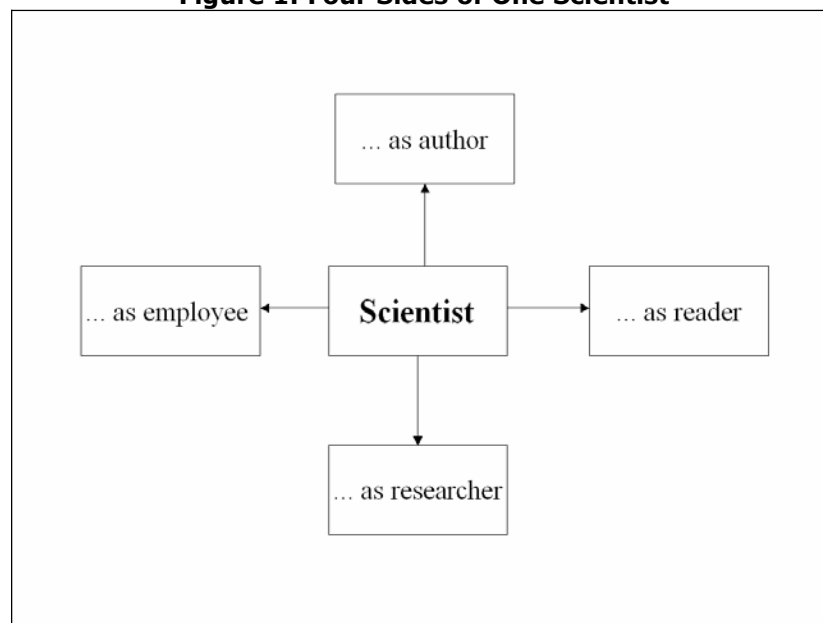
Perhaps, there is only something wrong with our perception. And maybe we are asking the wrong questions and making the wrong presuppositions.

The Scientist

Why, for example, should the scientist really be interested in barrier free access to publication media? And why should he be interested in barrier free access to all of his colleagues' publications worldwide?

Perhaps we can better understand these somewhat heretical, if not silly questions, by trying to understand the different aspects or sides of a scientist (see figure 1):

Figure 1: Four Sides of One Scientist



These different aspects are connected with different expectations and requirements. The scientist-as-author, e.g., should be interested in publication media, which are barrier free and that work fast so that he has his articles and other texts published without delay. He should be interested in an uncomplicated, barrier free - and that means - free of charge - worldwide access to his publications.

At first glance, however, these are only his supposed interests, as we shall see in a moment.

Let us now look at the scientist-as-reader or the scientist-as-researcher. As such, he is interested in free access to his colleagues' publications - but only to a certain extent. The total scientific production worldwide is too much to read, so he needs a mechanism for reduction of this overwhelming complexity of information. Granted this

must not be an arbitrary reduction but should guarantee that the remaining publications are *the most important ones*.

A publication system with free access to all authors, however, could never provide such an opportunity. Everyone can use the Internet for his publications, and so there is no pre-selection according to high or low quality, no distinction between important and trivial, and no control as to whether a text satisfies the standards of a discipline or not.

A decisive part of such a control of quality, thus systematic and rational reduction of complexity is performed by the formal publication system with refereeing. Only a certain percentage of papers are accepted for publication in a special journal (or edition), and publication in this medium is a proof of quality.

But this is not only a reduction of complexity. A severe refereeing process leading to a high rate of refusal raises the *attractiveness and reputation* of the journal on one side and of the happy few authors published on the other side.

So, upon second glance, the interest even of scientists-as-authors is not a free and uncontrolled opportunity of publication, but having their papers published in journals with high reputation (which unfortunately implies a high rate of refusals and a high risk of failure). Only in this case, the scientist-as-author can be sure to acquire a scientific reputation – being read by colleagues who are interested in pre-selected and quality-controlled articles.

So, the circle is closed. Where at first glance there seemed to be different interests, we now recognize an identity of interests.

Finally, there is still the scientist-as-employee. This is an aspect, which is usually completely ignored in Science Studies (or in the Sociology of Science). But in fact the scientist – like any other employee – depends on his job to earn his living. So it is important to have and keep his job as a scientist, and in many cases it is also important to receive funds in order to continue research i.e. working and earning a living.

Here as well, applies a simple relationship. If a scientist applies for a job, his future employer looks at his list of publications and puts special emphasis on famous journals (or editions), thus transferring their reputation to the scientist. And if a research institute applies for funding of a research project, the same takes place on another level. What is the reputation of the institute and the researchers? What is their reputation in former research projects? And so on.

Hence, reputation is the universally accepted currency in the scientific system.

The Scientific System

But I can assure you that reputation is not everything. That would mean that only formally published 'white' literature is valuable and that grey literature is nothing.

In fact, the different ways of publication do not depend on the technical devices of an institute or a scientist-as-author, but are based on different *functions* of document types and publication modes. Our findings here do not prove that scientists are old fashioned but that they are able and willing to preserve essential scientific standards.

I talk about the scientific system – as if there was only one. In fact, however, there are (at least) four different though highly interdependent ones:

- The *cognitive system* responsible for information and communication, which implies reducing information to a reasonable and manageable dimension;
- The *social system* constituting the importance and reputation not only of scientists, journals, and institutes but also scientific findings and theories as well;
- The *economic system*, which comprises commercial publishers and the (commercial) market for scientific information as well as science-as-a-job and scientists-as-employees; and
- The '*political*' system, which is responsible for research funding and support of research institutes and the like.

In the above, I have talked about processes and structures belonging to one of those systems. But as we have already seen in the analysis of the fourfold scientist, there are interrelations between the different systems. For instance, the relationship between the cognitive and social system of science is quite evident, where control of access to publication media by a system of referees is obviously a part of the *social* system. And, where reputation of journals as well as other publications and of scientists is a social factor. Nevertheless, this has decisive consequences for the *cognitive* system of science, because it allows a classification of publications and scientists according to their quality, dignity, and importance.

Concluding Remarks

In close, publishing in commercial journals with high reputation is important for both the social and cognitive system alike, but in a certain sense it collides with the requirements of the *political* system, which has to do with research funding. To give an account, it takes into consideration completely different ways of publication. At least a part of the papers must be submitted at certain times - in most cases annually - and must give account of the progress of the research project. In certain cases, even the number of recipients receiving copies is strictly limited, and further dissemination requires the permission of the funding institution. So, this special literature requires a special treatment and special ways of control and distribution, which are completely strange to the commercial system of publication. For these reasons, so-called grey literature was invented.

These and other examples spotlight only a few of the relations existing between the highly interdependent parts of the scientific system.

This extremely complex system of science is the result of a development that has taken centuries. And now, without a seeming rupture it was introduced to the Internet. The scientists and the commercial publishers, however, had enough creativity to explore and use new and additional opportunities brought on by this new medium for their special purposes, without endangering the whole system of science and its conditions of activity.

The *technical system* called 'the internet' is only a device, nothing more. What really happens depends on the structures and functions of the scientific system and its requirements, thus not on technical surroundings. So there is no reason for blaming scientists or publishers for being old fashion or hostile against technological progress, because they resist the temptations of a free and anarchic Internet. Quite in contrary, I think they have been doing a great job.

¹ In a certain sense, this is the empirical test of the prognosis I made some years ago:
Helmut M. Artus: SMAISMRMILMEPOETALEUMIBUNENUGTTAUIRAS. The internet & the socio-structural change of informal scientific communication, in: New Frontiers in Grey Literature. Fourth International Conference on Grey Literature, Washington D. C., 4-5 October 1999, p. 12-24

² The information is derived from the database "Zeitschriften" (= Journals) of the Information Centre for the Social Sciences. For information (IZ) on the database and its contents:
<http://www.gesis.org/Information/Zeitschriften/index.htm>; for information search in the database itself: <http://193.175.239.137/zsdb/servlet/zsdb.ZSFormular>. - All data as of October 2003.

³ <http://www.vascoda.de/>; <http://www.infoconnex.de/>

⁴ See e. g. <http://dublincore.org/documents/dces/> or the homepage <http://dublincore.org/>

Two Worlds: About Bars and Stars in Scientific Information Publishing, An Analysis of Open Source Ideology As a Means of Self-controlled Publishing*

Cees de Blaaij (Netherlands)

Abstract:

Scientific publishing has become very profitable for several publishing companies. Information in our age has become a first rate economic asset. Another consequence is that smaller publishing companies have gradually been taken over by bigger ones. Ergo there is less competition and more concentration of economic power in the publishing sector. At the same time it has become more important for the mammoths of the publishing industry to protect these interests and give it a sturdy legal basis. This approach has triggered significant changes in intellectual property laws on a global scale. Global diversity of intellectual property became a global standard because economic powers wanted to control distribution channels to reach customers. This development did not benefit large groups of authors in general. Especially those authors who had and still have contractually obligations to the bigger publishing companies cannot make their scientific information accessible to the larger public. The simple reason for this is that the price for consumers - like libraries - has become too high. Furthermore, authors have transferred their rights to the publisher. This has resulted in a Catch 22 situation: "you-can-check-out-any-time-you-like but-you never can leave". In less poetic words: this "for profit" approach has caused an access crisis in scientific information because the ideological and legal basis of the scientific information chain has been disturbed. This article reviews this situation and analyses the viability of present efforts for publishing scientific information (including grey literature) via other kinds of publishing modes based on "open source ideology". This approach benefits authors of scientific information in general, but especially the authors of grey literature because of the public nature of this type of information. An open source approach counterweights the present economic policies of big publishing houses. The sharing of knowledge is the primary goal based on public interest. Secondly the problem of public access is guaranteed and thirdly the author(s) have more self-determination. They have more control of their situation.

Introduction

The UK House of Commons Select Committee on Science and Technology published a report on science and technology on the 7th July this year¹. In this report the committee stated, "There is a mounting concern that the financial benefits from the Governments substantial investment in research is being diverted to an excessive degree into the pockets of publishers shareholders". Ian Gibson, the committee's chairman, even accused commercial publishers even of "ripping off the academic community".²

This statement characterizes for a large part the feelings that exist today about publishers in the intellectual public domain established by the activities of the scientific community. This domain can be considered as a global information pool with two sides fighting for a larger share of the knowledge pool.

The development of new digital technologies opened new ways of distributing and exploiting information. Scientific information became a mining area for commercial publishers: an "intellectual land-grab" was the outcome, which resulted in a battleground for the involved scientists and publishers, especially the commercial publishers in the scientific, technical and medical fields.³

* First published in the GL6 Conference Proceedings, January 2005

The actual setting resembles a Prisoners Dilemma game⁴: "Two men look out the same prison bars; one sees mud and the other stars".⁵ The first player represents the research community for the greater part dissatisfied with the practices of the scientific publishing industry due to control of intellectual property rights and consequential restrictions on the free circulation of scientific knowledge. The other player represents the publishing industry, trying to exploit the same resource at a maximum profit for his own benefit.

Game theory

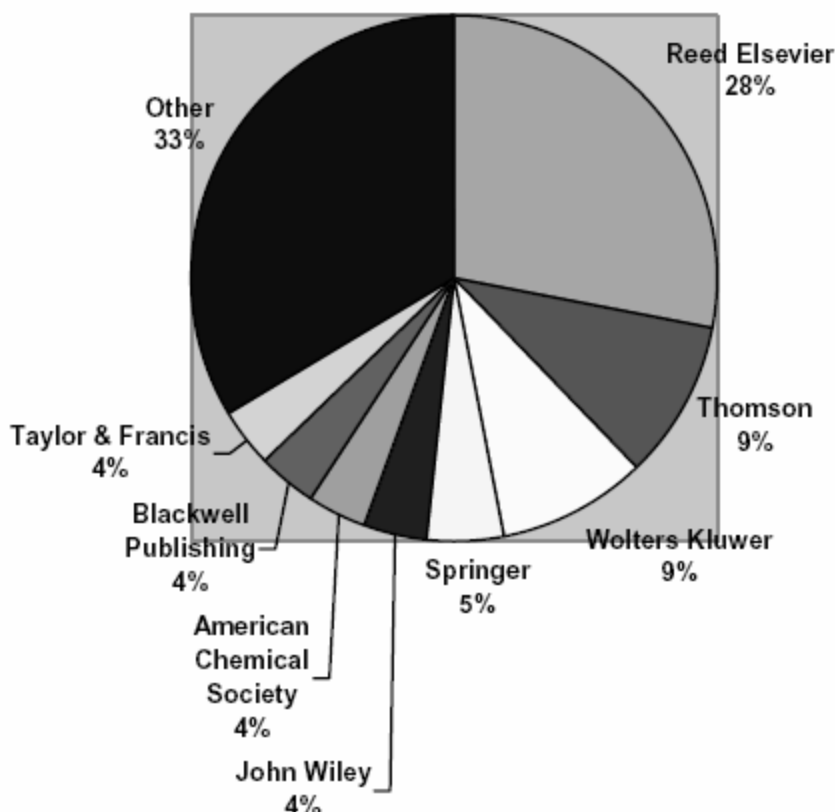
Each player is without concern for the well being of the other player. This doesn't lead to an optimum solution. According to the principles of game theory the best strategy for a given player is often one that increases the payoff to one's partner as well. It has also been shown that there is no single "best" strategy; how to maximize one's own payoff depends on the strategy adopted by one's partner. Only by cooperation the situation would improve, according to the pay-off matrix⁶. At this moment both players are not working together but a new kind of public-private publishing model is desirable if not vital to serve the needs of the scientific community.

To show this I will first evaluate the present subscriber-pays model of scientific publishing on its impact in respect to the academic community. Secondly I want to deal with the problem: Can a model of common property rights mean – based on what is called Open Access or more specific Open Source – as a model for scientific publishing.

In regard to Open Source we need to take two considerations into account. Besides free access to research, we also need a balanced control of intellectual property rights in the framework of open source ideology. The way grey literature has been handled so far on institutional and subject-specific levels can offer an experience for new ways in Open Access publishing.

Figure 1.

Global Market Shares of STM Publishers 2003



Market monopoly

The free market has to a certain degree monopolized the scientific information market. Reed-Elsevier is the leader in digging the gold mine. Estimates are that they control 20%-25% of sales of the STM market and publish about 1800 titles. This means that they set the tone in the serials marketplace. Behind Elsevier there is group of commercial publishers who resemble the leader in marketing strategy like Springer/Kluwer. Candover and Cinven engineered this merger; a venture capital firm specialized in exploiting acquisitions for profit.

Figure 2 Key figures Elsevier⁷

Year	1999	2000	2001	2002	2003
Net Revenues*	2,577	3,091	3,671	3,991	3,571
Net Profit*	-48	27	101	144	242
* in million(s) of Euro					
Dividends					
Fiscal Exercise	2003	2002	2001	2000	1999
Dividend Net (Euro)	0.22	0.21	0.21	0.19	0.15
					0.26319
Earnings per share					
Year	1999	2000	2001	2002	2003
Earnings per share (in Pence)	-0.07	0.04	0.13	0.18	0.31
Sales per activity					
Scientific and medial publications					
Legal, fiscal and regulatory publications					
Economic information					
Education					

As we can see scientific publishing is a very rewarding business. The margin of profits has gone up considerably the last four years as a result of ever increasing subscription prices and are as much as 34% for Reed-Elsevier. Elsevier is defending this by saying that such a margin is necessary to ensure the sustainability of STM journals and publishing more papers each year.⁸ This is not very satisfying if we compare these high profit margins to the general situation of faltering library budgets. In general academic library budgets simply cannot keep up with increased costs and new subscriptions.

Secondly the costs of print publications restrict the amount of information being published. Not many individuals would subscribe to costly journals. So only libraries will buy them as far as this is still possible.

In 2003 Cornell University⁹ paid \$ 1.7 million for 930 Elsevier subscriptions. This consumed 20% of the university's total periodical budget. That is only 2% of the total

number of serial titles to which Cornell subscribes. There was too much financial restraint. The result was massive cancellation of Elsevier titles. Cancellations by other universities like Harvard¹⁰ and MIT, Duke University, University of North Carolina, North Carolina State University¹¹ happened for the same reason.

One reason it came so far is that libraries kept on paying to serve the academic community and they relied on high-priced titles with a high esteem for the peer reviewed journals. Publishers believed that libraries would complain, but they would pay up in the end. Stockholders wanted to see rising profits so publishers will raise prices as much they can.

But with the cancellations a new step has been made towards a situation more favourable for Open Access. Cornell instigated after the cancellations they would support the development of Open Access journals as a viable alternative.

Intellectual property rights

The second problem is the control of intellectual property. There are several implications, which are a part of the subscriber-pays model but can be avoided in an open source model.

- Authors provide their article for free to scientific publishers. At the same time they have to transfer their copyright to publishers. They do not get paid, instead they must find acclaim within the academic community. In normal circumstances suppliers of economic goods get paid for commodities.
- Scientific information is becoming more and more centralized due to economic concentration of publishing companies by mergers. This means there is less competition and more restrictions to access related to high prices.
- Publishers limit the use of journals by using access control by IP address recognition, number of simultaneous users etc. Licensing conditions that do not reflect usage patterns and service requirements in many cases.
- Cancellation of printed journals by libraries can lead to access restrictions of digital back issues due to licensing regime
- The "fair use" principle might be at stake (case Felten vs. RIAA)

Influence of copyright law

A general objective of copyright law is to stimulate the creating of scientific works and make it possible that after a limited time these works become available to the public domain. The introduction of new copyright laws in the late 90's did exactly the opposite. The extension of the duration of copyright protection in Europe¹² in 1993 and the USA in 1998¹³ caused the effect that writings belonging to the cultural heritage will stay invisible like unpublished manuscripts needed for research. In the situation of the USA it means that no new works will enter the public domain until January 1, 2019¹⁴. Another example that hampers research is the introduction of new copyright law related to the use of digital technologies.

In the American situation creating excerpts from journal articles for academic purposes is considered to be fair use but the Digital Millennium Copyright Act (DMCA)¹⁵ makes it illegal to create such excerpts by circumventing copy protection on electronic media. Maintaining the "fair use" exception does not provide for enough protection.

The introduction of DCMA brought liability to the scientific world. I refer to the case Felten et. al vs. RIAA (Recording Industry Association of America) et. al.¹⁶.

This was a case in which Princeton academics were suing the recording industry over abuse of the DMCA to silence research that could impinge upon the entertainment industry's desires to protect its intellectual property at all costs.¹⁷

The recording industry threatened the researchers under the DMCA for their planned release of a research paper describing the defects in the proposed Secure Digital Music Initiative (SDMI) lock-down schemes for audio CDs. The original threats led the researchers to withdraw the paper from a planned conference. In response to the lawsuit, the recording industry promised not to sue the research team for presenting the research at a security conference in August 2001. Only after getting assurances from the government, the recording industry, and a federal court stated that the threats against his research team were ill conceived and would not be repeated. Felten and his team decided not to appeal. The question is if the current national or international copyright regimes are being efficient – whether it can reach an optimum between private incentives and social benefits. The case of Felten vs. RIAA shows that scientific research can be put in jeopardy. There are quite a number of law cases in which copyright law is supportive in protecting the interests of the entertainment

industry and not enough attention is being paid to the issues of freedom of access and of the public domain.

To advance to a more fruitful situation for science and the public domain several requirements have to met:

- Existing copyright law should not be seen as a dogma, but should be used as an instrument to encourage scientific research.
- Placing a low limit on the scope and duration of copyright protection to make sure that scientific information becomes widely available. Scientific information is a strong social asset so it needs to be legally treated as such.
- Revisions to copyright law should not take vested interests or particular interests in question. For a system of property rights to function the cost of establishing and enforcing the regime must not exceed the benefits.
- Too many restrictions on access can ultimately harm the foundations of a democratic society that needs to be well informed.

Subscriber-pays model under review?

What will be the result of all this? Clearly the present subscriber pays model is in crisis. The UK House of Commons' Science and Technology Committee stated that the current model for scientific publishing is unsatisfactory and called on the UK government to support Open Access journals: that is digital, online, free of charge, and free of most copyright and licensing restrictions.¹⁸ The committee concluded however that the attitude of the government was disappointing and noticed that the British government had "given little thought to the issues so far". The committee hopes that the Report will prove to be a catalyst not only on a national scale but also internationally because of general interest.¹⁹

This hope was not too far fetched as other governmental institutions and universities in the world tackled the same problems.

Just before the UK report was published, the U.S. House of Representatives Committee of Appropriations approved a provision in a bill that backs Open Access to material published by the National Institutes of Health.²⁰ The committee expressed its concern about the lack of

Public access to research findings and the rising price of journals.

Leading research associations in Germany, France and Switzerland signed the so-called Berlin Declaration – a call for free access to research findings.²¹

The European Commission has also started an investigation into the publication of academic journals across Europe. The commission is seeking measures to improve access to research. It will look at the trend towards Open Access publishing where researchers pay to publish articles.²² Also the OECD Committee for Scientific and Technological Policy on a ministerial level decided to "work towards the establishment of access regimes for digital research data from public funding"²³

Towards an Electronic Open Access Paradigm

A different approach that could fulfil the needs for sharing scientific knowledge and at the same time has a balanced approach towards intellectual property rights is needed. The field of computer science offers comparative solutions. Already in the beginning of the 1980's some computer programmers²⁴ dissatisfied with restrictions to release their programming codes and to build on code of others, started new projects where they had the right to share their work. In 1984 the 'copyleft mechanism' was introduced. Copyleft works under the GNU General Public License²⁵, is a free software license, and gives the right to all users the freedom to redistribute and change software or any program derivate but only if the distribution terms are unchanged. In this way the code and the freedoms become legally inseparable. Copyleft itself is a method of licensing to achieve its goals: to create the most favourable conditions for a wide range of people to feel invited to contribute improvements and/or elaborations to this work, in a continuing process.

In the world of computer science there is a discussion going on which regime of license provides a larger degree of freedom. Basically this is the same discussion as in the scientific community how to provide for Open Access and to promote a freer exchange of information.

The system of scientific publishing requires the attributes of peer review and adequate access control. This working method resembles a model used by software developers known as Open Source.

The Open Source system depends on a developer who is willing to make software code available to the public and uses a system of peer review to test and refine the application.

This leads to debugging and a more stable code.

The Open Source model provides a developmental model because it also operates on basis of collaboration and peer review. Feller and Fitzgerald stated that the Open Source Model

- Is parallel, rather than linear
- Involves mutual collaboration between communities of developers all over the world
- Uses independent peer review
- Provides feedback to user and developer contributions
- Includes participation of motivated developers
- Includes increased levels of user involvement
- Make use of extremely rapid release schedules²⁶

The Open Source community's use of copyright provides a strong model for the academic community but also from a process perspective. Science as a social phenomenon often used the practice of sharing and reviewing of information. In the Middle Ages literature in the format of theses were nailed to the wall for review. So the academic research model complies with this Open Source ideology.

Another interesting development is also the use of Creative Commons: a legal method which enables copyright holders to transfer some of their rights to the public while keeping others through a mixture of licensing and contract schemes. The target is public domain or open content licensing terms and gives copyright much more flexibility. Present international copyright law does not provide such flexibility for sharing information. The intention is to avoid problems such as I mentioned in the case Felten c.s. Creative Commons was launched in 2001. Movies, books, songs and images are being placed under this umbrella of flexible copyright. Recently in November 2004 Science Commons was launched project to apply the philosophies and activities of Creative Commons in the realm of science. Public Library of Science (PLOS), which has agreed to adopt CC attribution license as its standard license.

Creative Commons underpins also the thought of the 1st US Copyright Act of recreating the balance of copyright and keep copyright duration limited by voluntarily releasing that right after a shorter period.

Another important development is the fact that World Intellectual Property Organization has adopted a development agenda²⁷ that acknowledges the need for balance in the worldwide policy on trademark, copyright and patents. This means attention for open source and the Creative Commons project. The interests of the public had never been represented before at WIPO meetings. With the pressure of non-governmental organisations and adoption of the development agenda the interests of the non-profit are taken more seriously. This is hopeful for the future.²⁸

Involvement of Grey Literature

Building collections of grey literature offers good examples of the way it has been made available to the public. Digitalisation and using the Internet for free distributing of information like government information helped the public domain. As the main characteristic of grey literature is its non-commercial nature and supports the idea of Open Access.

It would be interesting to make some cost-benefit analyses in comparing the use of four channels for availability: electronic journals, institutional repositories, subject-specific repositories and self-posting on authors' home pages. These analyses would give us more insight in respect to the viability of the Open Access system.

Subject specific repositories are the oldest. It should be noted that before the coming of the Internet there already existed some tradition in exchanging preprints in research areas where speedy publication was required. Subject repositories allow early and efficient dissemination if contributors involved upload their manuscripts and conference papers in timely manner. Relatively low maintenance costs are involved. Institutional repositories started when universities began to realize that there was a digital information overload syndrome and there was a need to guarantee that research material like theses and working papers would be available for the years to come and systematically maintained.

These repositories also offer an opportunity to avoid the temptation of self-posting. It's important for institutional repositories to make use of common Web standards like the Open Archives protocol.

Self-posting is perhaps the most used method to disseminate information but it is not effective because of a lack of adequate indexing. Using general search engines could be helpful but they hardly can make enough distinction between what is relevant and what is not.

In close, costs will do it

If Open Access will be a big success depends for a large part on costs and recognition inside the scientific community of the peer reviewed quality of Open Access journals.

On June 17, Credit Suisse First Boston released a report "analysing the effect of the new European inquiry on Reed-Elsevier. From Elsevier's point of view, the good news is that the inquiry is part of a larger plan to double EU spending on scientific research (from 5 to 10 billion Euros/year), which will result in many more research articles. Increasing the number of articles published is a venerable justification for journal price increases. The bad news is that the EU already seems to accept that libraries face a pricing crisis, that academics face an access crisis, and that OA is part of the solution. If so, this could endanger Elsevier's 35% profit margins on STM journals. While the EU may not have the power to change the structure of journal publishing in the member countries, the reports from the UK and EU inquiries may stimulate policy changes in the way research is funded in the US, which comprises more than 50% of the STM journal market."²⁹

The UK-based Wellcome Trust has released a report stating that Open Access could reduce publishing costs by as much as 30 percent. The trust, an independent research-funded charity, estimated publishing costs based on "discussions with individuals in senior positions" at various publishing operations, as well as existing literature on STM publishing.

For a "good- to high-quality journal," the report found, "first copy" costs--the cost of getting an article finalized for publication--would likely be about \$1500 per article under an Open Access model. Overall, the report concluded, the total cost of access to research would add just an additional one percent to the costs of research. Reed-Elsevier believes the Open Access system is flawed for two reasons: first, it is not covering its costs, and second, it transfers the cost from consumer to producer. Authors and research institutions must pay to be published on Open Access, between \$ 500 to \$ 1,500 a time, but Elsevier believes that the cost of maintaining the scientific system - which requires pieces to be reviewed by the authors' peers in journals - is actually \$ 3,000 to \$ 5,000 a paper.³⁰ Other publishers have put the costs of article production at £1250, closer to \$2000 per article. Despite the hassle about costs Elsevier has permitted that as of June 3rd authors of papers can post the final text of their articles on the authors' personal or their institutions websites or repositories³¹ Also Springer will start from January 2005 to put all back issues of it's 1.250 scientific journals online.

So things are moving in the right direction concerning Open Access. Unfortunately a new study³² by the Association of Learned and Professional Society Publishers (APLSP) shows that 82% of senior researchers (4,000 thousand in 97 countries) knew "nothing" or just "a little" about OA. It makes it clear it will take some time to get scholars acquainted with Open Access.

¹ UK Science and Technology Committee, Tenth Report, Scientific Publications: Free for all?, dd. July 7th 2004; HC 399-I, HC 399-II, source: <http://www.parliament.the-stationery-office.co.uk/pa/cm/cmsctech.htm>

² The Times (London), August 6, 2004.

³ The humanities and social sciences are not considered here.

⁴ A good introduction to Prisoners' Dilemma, including studies of strategies and discussion of the game's significance is Robert Axelrod's **The Evolution of Cooperation** (Basic Books, NY, 1984).

⁵ The Oxford Dictionary of Quotations is the source of this quotation by Frederick Landbridge (1843-1923) from his book, A Cluster of Quiet Thoughts, Religious Tract Society, 1896.

⁶ A **payoff matrix** or **payoff function** is a concept in game theory, which shows what payoff each player, will receive at the outcome of the game. The payoff for each player will of course depend on the combined actions of all players. For the situation regarding Open Access it resembles a scenario of two

states engaged in an arms race. The Open Access Movement and the commercial publishers will reason that they have two options either to use or don't use or come to an agreement. Neither side can be certain that the other one will keep to such an agreement. They both incline towards their own model:

	Cooperate Com. publishers	Defect Com. Publishers
Cooperate OA movement	win-win	lose much-win much
Defect OA movement	win much-lose much	lose-lose

⁷ Source: Yahoo Finance <http://uk.biz.yahoo.com/p/e/elsn.as.html#2> (consulted 18th Oct. 2004)

⁸ The Economist, August 5th 2004

⁹ Cornell Faculty Senate Resolution. Resolution regarding the Universities Library Policies on Serial Acquisition, with Special Reference to Negotiations with Elsevier. Source: <http://www.library.cornell.edu/scholarlycomm/resolution.html>

¹⁰ Source: <http://www.news.harvard.edu/gazette/2004/02.05/10-libraries.html>

¹¹ Source: <http://libraries.mit.edu/about/journals/cancellations.html#access2>

¹² EU Directive on harmonising the term of Copyright Protection, 1993

¹³ Sonny Bono Copyright Term Extension Act, October 7th, 1998. The change in the law allows corporations to have exclusive rights for a total of 95 years, instead of 75 years. For individuals, such as authors and songwriters, it extends copyrights to a total of 70 years after death, up from 50 years.

¹⁴ No copyrighted works will enter into public domain due to term expiration in the United States until January 1, 2019,

¹⁵ For an overview see: Digital Millennium Copyright Act: Status and Analysis, source: <http://www.arl.org/info/frn/copy/dmca.html>.

¹⁶ Plaintiffs' Brief in Opposition to RIAA, SMDI And Verance's Motion To Dismissing *Felten v. RIAA* (Aug. 13, 2001), see:

http://cyber.law.harvard.edu/openlaw/DVD/cases/Felten/20010813_eff_felten_brief.html.

¹⁷ Electronic Frontier Foundation Complaint, *Felten vs. RIAA* (June 6, 2001), see:

http://cyber.law.harvard.edu/openlaw/DVD/cases/Felten/20010606_eff_complaint.html. Also other documents at: http://www.eff.org/IP/DMCA/Felten_v_RIAA/ and

<http://www.riaa.com/news/newsletter/press2001/042501.asp>

¹⁸ For an introduction to Open Access use the Open Access Overview, source: <http://www.earlham.edu/~peters/fos/overview.htm>

¹⁹ Ibid.

²⁰ NIH Open Access Plan – Frequently Asked Questions available at <http://www.earlham.edu/~peters/fos/nihfaq.htm>

²¹ Source: <http://www.zim.mpg.de/openaccess-berlin/berlindeclaration.html>

²² The Guardian, City Pages, June 18, 2004, p. 30

²³ Science, Technology and Innovation for the 21st Century. Meeting of the OECD Committee for Scientific and Technological Policy at Ministerial Level, 29-30 January 2004 – Final Communiqué

²⁴ Richard Stallman launched the GNU project in 1983 with the objective of creating a complete free operating system. He is the founder of the Free Software Foundation. To promote GNU, Stallman published the GNU Manifesto in Dobb's Journal of Software Tools Vol. 10, Number 3, March, 1985, to bring back the cooperative spirit that prevailed in the computing community in earlier days..."

²⁵ GNU is a recursive acronym for "GNU's Not UNIX"; it is pronounced "guh-noo." For more information: <http://www.gnu.org>

²⁶ Joseph Feller, Brian Fitzgerald, Understanding Open Source Software Development, London : Addison-Wesley.

²⁷ WIPO General Assembly, Thirty-First (15th Extraordinary) Session Geneva, September 27 to October 5, 2004. Proposal by Argentina and Brazil for the Establishment of a Developmental Agenda. See:

http://www.wipo.int/documents/en/document/govbody/wo_gb_ga/pdf/wo_ga_31_11.pdf

²⁸ Future of the World Intellectual Property Organization, see:

<http://www.cptech.org/ip/wipo/futureofwipo.html>

²⁹ SPARC Open Access Newsletter, issue #75, source:

<http://www.earlham.edu/~peters/fos/newsletter/07-02-04.htm>

³⁰ The Independent, February 20, 2004

³¹ See: http://www.elsevier.com/wps/find/authored_newsitem.cws_home/companynews05_00145 and http://authors.elsevier.com/getting_published.html?dc=PRP

³² ALPSP response to the report of UK Parliamentary Inquiry (1/10/04), source: <http://www.alpssp.org>

Impact of the Inclusion of Grey Literature on the Scholarly Communication Patterns of an Interdisciplinary Specialty*

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Abstract

Researchers who more routinely use traditional scholarly literature published in peer-reviewed journals are especially disadvantaged in understanding, accessing and obtaining grey literature in their fields of research. (Lasker, 1998) For example, researchers in health policy find that their research depends on both the well organized and relatively easily accessible journal literature used by scientists and clinicians; the researchers also need to find reports literature published by think tanks and independent research organizations. The purpose of this research is to identify the interconnectedness – or not – of health care policy research through a citation analysis of journal literature and grey literature.

Introduction

This research is a citation analysis study of health care policy, expanding the literature studied to include not only the journal literature used by researchers but also the grey literature produced by think tanks and independent research organizations. The working hypothesis of this paper is that the evidence will bear out anecdotal comments that there is a division or separateness between the two types of literatures; and also, that the literatures are seemingly inaccessible to the researchers and users of the different groups. That is, that the literature most used and identified with Group A is difficult to locate and less likely to be used by Group B and vice versa. The study will analyze the references/citations of journal articles to both journal articles and grey literature and the references/citations of grey literature to journal articles and grey literature published in the last five years on changes in Medicaid, a health care policy issue. The purpose of the study is to assess the impact that the inclusion of grey literature has in a citation analysis of a particular field.

Inclusion of grey literature may have no impact on the citation-generated network of a particular field, serving only to strengthen the already existing network or image. Or, inclusion of grey literature may have a strong impact on a network, revealing parts previously invisible when using only the journal literature. The revealed, or more complete network picture, may indicate that both literatures are well integrated, each citing the other to a high degree. Or, the complete network picture of a field may indicate that the literatures instead exist in parallel, each communicating on the same topic, but seemingly – as indicated by the citation analysis – not communicating to, or for, each other. If the literatures exist side by side, and are not well integrated – as indicated by citations – this raises a series of questions for health policy researchers. Is the lack of shared citations a sign that one of the literatures does not cite? Or does the lack of shared citations mean that the literatures do not have significance for each other? It is anticipated that the journal literature will have more references, more references to journal literature and fewer references to grey literature (specifically reports literature). Grey – reports – literature will have fewer references than journal literature and when the grey literature does cite it will more frequently cite non-journal literature.

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interconnectedness – or not – of health care policy research through a citation analysis of journal literature and grey literature.

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Research in the area of specialties and in the related areas of invisible colleges, research fronts, epistemic communities, etc has focused on first identifying and documenting the existence of a specialty. A subsequent line of research worked at characterizing the nature of the specialty and its interactions: whether its members are composed of the geographically close or distant; whether its members are socially connected or institutionally connected and the extent to which its members related to each other and each others' work. In most instances, analysis of specialties' written record of research used the traditional scholarly mediums of books and journals (journal articles). Books and journals were used in citation analysis, one of the most common methodologies in scholarly communication research available to outline, define and discover specialties. Journal literature was a natural choice for study as journals were a clear well-organized communication medium of scholars and researchers. Journal literature is highly visible, and easily counted whether through library-use studies or through a bibliographic or citation database.

The explication of specialties has often used specialties that focus on one area, that bring a natural coherence to their subject domain. Examining an interdisciplinary field brings another set of challenges with it. Where one field may communicate to each other by way of meetings, conference abstracts and preprints, another may depend on the journal article. When each of these fields meet – or don't – around an issue, communication represents a particular challenge. Individual scholars may make deliberate choices to publish outside their field to make their ideas and scholarship known to other researchers, but that method presupposes in part that the choice of communication tool is a valid one within that other field. The specialty of health care policy is an interdisciplinary field of, at the least, researchers in medicine, administrators and policy makers at the local, state and federal levels of government. Where researchers in medicine most often communicate to each other through the journal article, researchers in policy depend on a broader set of communication medium including think tank publications (grey literature), government reports (grey literature) and the media.

Where grey literature in academe may have a history of being considered "draft-like", waiting its day as a peer-reviewed publication, for policy researchers grey literature is usable as is; in fact its final form as a report requires no other public peer-review. When researchers who publish in journals write on the same topic as researchers who publish in think tank or independent research organizations, how do these two sets of literatures interact, if at all?

Grey literature on the other hand has less frequently been included in analyzing specialties, and in particular in citation analyses that define and chart a specialty. There are a number of reasons for this: grey literature is elusive, it lacks a clear definition (and thus a clearly operationalized variable), and it is not the formal medium of communication of the academic establishment, and thus perhaps not as visible a medium for study. The lack of inclusion of grey literature in studies was perhaps influenced by the focus of scholarly communication on the peer-reviewed journal literature and by extension the users' use of it.

Literature Review

In both public and private statements, researchers and policy makers indicate that knowing or finding the literature they need for their work is difficult. This suggests a number of possibilities. It could be that the available literature – in whatever form – is not well-represented in channels where they can be found: in bibliographic databases or abstracting services or by other means made clearly accessible to its audience. It could be that the literature desired by one group (academic researchers) is written by

another group (think tank researchers) for another group entirely (policymakers). Or, a literature written by academic researchers is not easily accessible to another group (policymakers or think tank researchers) who may wish to make use of it. Similar research in a given research field may take different forms – journal article, think tank report, etc – depending upon the intended audience.

There is at least some anecdotal evidence to suggest that specialties exist but that researchers' work is published in isolation or if the researchers are known to each other socially (informally), the formal tools available may not make the work visible.

The conveners of one conference on the challenges of accessing information in public health and health policy cite the need for grey literature, particularly in the fields of health policy and public health: "This conference, *Accessing Using Information: Challenges in Health Policy and Public Health*, grew from the sense of the organizers that the bibliographic resources available to researchers and practitioners in the fields of public health and health policy may not meet the needs of the users as well as they might and do not match the resources available to biomedical researchers and practitioners" (Gray, 1998). In one small study presented at the conference, researchers examined the literature needed for public health / health policy researchers. They found that while the coverage for biomedical literature is well-known and available in databases, the (grey) literature necessary for public health and health policy researchers is not as well-covered by health and policy databases. Other researchers have held their own conferences that focus on their frustration in locating literature (most often grey) that they see as vital to their own work (Cookson, Archard, & McDaid, 1999; Gray, 1998; Lasker, 1998).

From the policy makers' side of the question, it appears that the journal literature is not satisfying. In an October 2003 interview in the New York Times magazine on his plans to create a think tank to generate liberal, Democratic policy ideas, John Podesta, former Chief of Staff in the Clinton White House, discussed the need for a "project to address long-term challenges facing public education, relying on academics who may have innovative solutions. 'I'm sure there are journals filled with that stuff, that test and analyze and explain it,' Podesta said excitedly, "but no one comes forward to put that into the policy arena'" (Bai, 2003).

And in a *Health Affairs* (journal) article, Saul Feldman laments, "Like strangers in the night, dimly aware of each other's presence, health services researchers and managed mental health organizations have been exchanging glances but not much more. As a result, research findings have had only a negligible effect on managed mental health care". He continues, "And so the funded studies, meticulously done by well-respected researchers and methodologically correct, qualify for publication in journals that, by and large, are read by other researchers, not by those with power over who gets what kind of mental health services" (Feldman, 1999).

The purpose of this proposal is to examine the specialty of health care policy in Medicaid and expand the literature studied to include not only the journal literature used by university-based academicians but also the grey literature produced by think tanks and independent research organizations. The working hypothesis of this paper is that the evidence will bear out the anecdotal comments that there is a division or separateness between the two types of literatures; and also, that the literatures are seemingly inaccessible to the researchers and users of the different groups. That is, that the literature most used and identified with Group A is difficult to locate and less likely to be used by Group B and vice versa.

A note on grey literature

One type of grey literature is reports literature. Reports literature pre-dates grey literature. Reports are documents published by think tanks or independent research organizations. Unlike preprints, conference proceedings or dissertations and theses, reports are usually not published again in another format. The question with reports literature, given that it is written outside the traditional scholarly communication channels, and shows no sign of movement from its grey form to another non-grey form, is how to understand its role and importance to academe, beyond anecdotal reports and complaints.

In some fields of study, more than university-based academicians are involved in a research field. Government, independent research and think tanks all are involved in a variety of policy issues that impact and influence research in education, health and transportation. Government, independent research and think tanks often publish not in

the traditional peer-reviewed journal literature but in independent, self-published (non-commercially published) reports. These reports are grey literature.

Citation analysis and the development of scientific specialties

Early work in citation analysis identified networks, groups, research fronts (Mulkay, Gilbert, & Woolgar, 1975; Mullins, Hargens, Hecht, & Kick, 1977; Price, 1965; Price & Beaver, 1966). The citation analysis was usually conducted in a field with only one type of publication: the journal article. Journal articles had become eminently countable through the use of citation databases from the Institute of Scientific Information, and this then became a fruitful tool in scholarly communication research. The methodology was frequently picked up and used by researchers outside the field of information and library science and used by those in the subject areas themselves, almost like a professional novelty act. What the studies were good at identifying were publications by like individuals with similar purposes. Such studies provided a pictorial depiction – through citation maps – of the activities of scholars. They might, for example, show how a field developed and matured, and point toward future trends. The studies also could identify who was working in a field and distantly connected researchers and work.

Citations in a particular field also charted the growth and development of a particular field (development of scientific specialties): its emergence, full development and its breaking off into other fields or specialties.

Any citation analysis of a field such as health policy that does not include grey literature is by its nature incomplete. Certainly a citation analysis of journal articles in health policy can identify a research group, chart the emergence, growth and further specializations in the field but the picture it draws will inevitably be incomplete. The picture painted by journal citation analysis in health policy that includes only the peer-review journal-writing academicians excludes the work of think tanks, independent research and government organizations.

Methodology

A search for journal articles was conducted in the ISI database Web of Science on "Medicaid" and "reform". The database covers three indexes, Science, Social Science and Arts & Humanities Citation. In total the database fully indexes 8,700 journals and selectively indexes an additional 10,100 journals. The search was limited to journal articles published since 2000.

The search for reports literature was conducted by reviewing the web sites of grey literature producing organizations ("think tanks"), known to research and publish in the field of health and health policy. For the purposes of this study, the list of grey literature producing organizations were culled from a list of grey literature "publishers" obtained from a group of health policy/public health researchers who had previously expressed an interest in identifying grey literature in health, health policy and public health. The researchers were given a short list of known grey literature publishers and asked to expand on that list suggesting other institutes, associations and government organizations that produce grey literature and would be used in their own work. The think tank web sites were either searched for the word "medicaid" or their publication lists were browsed. Publications from 2000 on were included.

Results

The search for journal articles returned 73 citations from 47 unique journal titles. The most articles on Medicaid reform were in the journal, *Health Affairs*. The top 13 journals by articles on the topic "Medicaid reform" are listed in Table 1.

Table 1. Top Journals, with articles on Medicaid reform

No.	Journal	Articles	% Of Total
1	Health Affairs	10	13%
2	Journal Of Health Politics Policy And Law	7	9%
3	Gerontologist	4	5%
4	Health Care Financing Review	4	5%
5	Academic Medicine	3	4%
6	Journal Of Economic Perspectives	3	4%
7	Educational Gerontology	2	3%
8	Health Services Research	2	3%
9	Inquiry-The Journal Of Health Care Organization Provision And Financing	2	3%
10	Jama-Journal Of The American Medical Association	2	3%
11	Journal Of General Internal Medicine	2	3%
12	Journal Of Health Economics	2	3%
13	Oncology-New York	2	3%

The search for grey literature – reports – produced 79 reports from 17 think tanks or consultant groups. Because the consultant groups would conduct research and publish for a think tank, and because of the multiplicity of connections between and among the organizations, the organizations are listed in alphabetical order only in Table 2, with no assigned number of reports for each one. For the purposes of this study, the grey literature reports included research reports, survey reports and literature reviews. Where possible, reports that were opinion pieces or published in serial format (and thus could be considered a journal or periodical) were excluded.

The journal articles had a total of 2,690 citations, with an average of 37 citations per article. The reports literature had a total of 1,163 citations, with an average of 15 citations per report. Each citation was examined and then categorized by format: journal article, grey literature report, government document, book or other (non-categorized). Journal articles cited other journal articles more than any other format type; think tank reports cited think tank reports more than any other format type.

Table 2. Citations by format type

	Journal articles	%	Think Tank reports	%
Journal articles	1536	57%	249	21%
Think Tank reports	495	18%	578	50%
Government documents	305	11%	264	23%
Books	257	10%	13	1%
Other	97	4%	59	5%
References (total)	2690		1163	

Discussion

Alberani et al. found in their study that 67% of articles representative journals in the health sciences cite grey literature (1990). In this study, 84% of the journal *articles* cite grey literature. In contrast, 61% of the think tank *reports* cite journal articles. Journal articles about Medicaid reform show a marked awareness of think tank reports (grey literature). While these reports may not be found in traditional abstracting and indexing databases, the researchers and policymakers in Medicaid reform can and do locate them.

It appears that at least through a citation analysis, that there is a cohesive network of authors and researchers in the field of Medicaid reform. Though researchers complain of a lack of suitable tools to access grey literature and other resources outside of the biomedical world, it seems that grey literature is available to them. More striking, however, is the little use of journal articles by reports authors. It appears that the comment that good ideas are "locked up" in journals may be true, especially in an open-access web environment, where many of the grey literature reports are freely

available for reading, printing and downloading and the journal articles require subscription access.

There are limits to citation analysis. Author intent, self-citation, time constraints, are all factors that might confound the data. This study does suggest, though, that grey literature (reports literature) has become much more accessible to its users and implies that journal literature, while still heavily cited, is less used by policy advocates and policy makers. The interdisciplinary specialty of Medicaid reform is weighed towards the think tank authors of reports literature.

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Citation Analysis and Grey Literature: Stakeholders in the Grey Circuit*

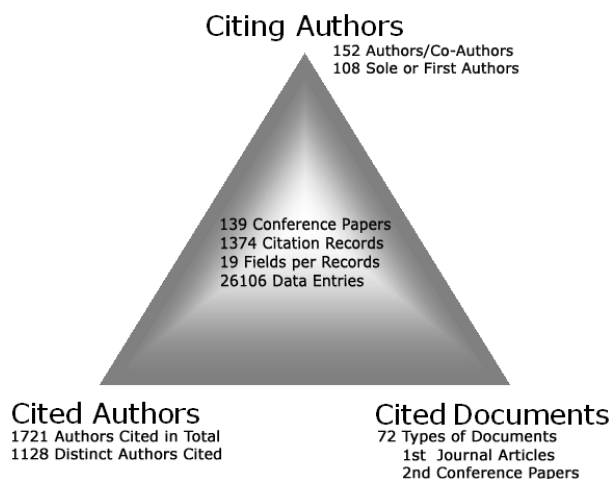
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Abstract

The goal of this research project is to learn more about the expanding field of information known as 'grey literature'. Citation analysis allows one the possibility to follow the work of the authors in the GL-Conference series, as well as authors whom they have cited both in grey and commercial publishing. A further goal of this paper is to examine the value of the GL- Conference Proceedings for research in the field of grey literature by examining among other things, its impact on the work of contributing authors. This study was sparked by a general interest in citation analysis as an instrument used in various sciences including information science. And, in particular by a paper presented at GL5 in which grey literature as a main channel for publication by an International Marine Scientific Advisory Body was investigated (MacDonald et al., 2004). The stakeholders in this study are not first and foremost the authors who produce a document type, which falls within the category of grey literature. Instead this study is directed to those authors who focus their research and writing on the topic of grey literature, these are referred to as the meta-authors on grey literature. They have entered the field of information studies and focussed on a particular area, they entered in small numbers and in the past decade they have become contending stakeholders.

Introduction

The printed and published volumes of the GL proceedings served as the primary source for our data collection. Since there was no electronic version of the earlier volumes available, the data input had to be done manually. The fact that there was no standard applied to citations from the onset of this series meant that a manual input would have been required even if the e-papers were available. MS Access was the most used database software among the four project workers; therefore this was the most suitable choice. The definition and description of the fields in the database, which would constitute a record was the next task ahead. The final number of fields was 19 and the final number of records was 1374, which brought the total number of possible data entries to 26106. This is also counting the number of fields left blank. For example up to four fields were available for Cited Sources i.e. 1st through 4th author. When there was only one Cited Source the other three fields were left blank. When the comparative analysis was carried out using the index from the Annotated Bibliography on the topic of Grey Literature (4th ed., 2000) the possible number of entries in the Citation Database increased to 31602. The table below provides an overview of the record fields and a description of each field. The description was important for the data input since four project workers were entering data simultaneously on multiple locations. This however did not detract from the fact that fields would later have to be expanded and data entry corrected and standardized.



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Record Format and Field Descriptions

Field Name	Description of the Field
Record Number	Record Numbers were assigned after the final record input starting with 1001 ranked in the order of (1 st) Date of Publication, (2 nd) Sourced by, and (3 rd) Citation Number
Series Number	Number of the Proceedings in the GL-Conference Series from 1 to 5
Date of Publication	Date the Proceedings were published not the date of the conference
Sourced by	The author(s) of the paper in the conference proceedings (E.g. Carroll, B.C.; Cotter, G.A.)
Type of Citation	Endnote, Footnote, Non-Numbered (Reference) * Later expanded to include No Citations
Citation Numbering	Yes, No, Non-Applicable * This field was later added to all of the records
Citation Number	If numbered, the number as it appears in the paper, whether endnote or footnote
Format of Citation	Standard (i.e. bibliographic) or Hyperlinked * Later expanded to include Explanative Notes as well as Names & Addresses of Organisations cited
Citation Date	Date of the cited work
Serial Citation	Does the citation refer to another paper in the GL-Series * Later expanded to include other GreyNet publications (Yes/No)
Type of Publication	Examples: Book/Monograph, Proceedings, Report, Web-paper, etc. * Later changes were made to achieve uniformity (e.g. article to journal article, website to Webpage, etc.)
Kind of Publication	Commercial Publication, Grey Literature, Uncertain * Later, as a result of the first team meeting, the number of 'Uncertain' entries was significantly reduced
Language	Language of cited work (English, French, Italian, etc.)
Cited Source	Person or Non-Person
Self Citation	Does it refer to one of the Authors/Co-authors of the conference paper: Yes, No, Non-Applicable (i.e. when a non-person is cited) * Later expanded to include publications by ones own organization.
Name of 1 st Cited Source	If a person (e.g. Gelfand, J.) Otherwise use the title of the journal/work * Later expanded to include the Acronym of a Corporate Author (E.g. CEC, CERN, etc.)
Name of 2 nd Cited Source	Ibid, if applicable
Name of 3 rd Cited Source	Ibid, if applicable
Name of 4 th Cited Source	Ibid, if applicable

No doubt, the title of this conference 'Work on grey in Progress' best describes the work that was done on this paper. It allowed the four project workers leeway to implement and legitimate later additions, changes, and expansion of the record fields. In fact, 11 of the 19 fields resulted in this way. In June of 2004, when the team first met for a full day in Amsterdam, the final revisions were adapted. And in October of 2004, when the team met for a second time in Nancy, only textual changes were made in the Description of the fields. The 8 fields that remained unchanged from the outset of the research project are quite straightforward, and require no further explanation at this point. However, the fields that were altered or expanded are dealt with here explicitly. It might be assumed that these 11 fields identify more than the other 8 what unique is, or what sets a citation analysis of grey literature apart from other conventional citation analyses?

Those record fields that were added, revised, and/or expanded during the course of the data collection include:

- **Type of Citation:** Authors, who did not furnish notes or references in their papers, would still be entered in the citation database. And, in the field Type of Citation, the term "No Citations" was entered. In the field Citation Numbering, the term "Non-applicable" was used. The other fields in these records were then left blank. While this accounts for only 30 of the 1374 records (0.02%) in the database, it amounted to 30 of the 139 papers (21%) in the GL-Series
- **Citation Numbering:** The field Citation Numbering was later added bringing the total number of fields to 19 per record.
- **Format of Citation:** To the field Format of Citation were added the terms: "Explanative" to indicate an author's note that was given outside the body of the text and "Name & Address" to indicate a general reference source to a corporate body.
- **Serial Citation:** To the field Serial Citation, other GreyNet publications were likewise understood e.g. citations to the GreyNet Newsletter, Webpage, Notebook, etc.
- **Type of Publication:** Since there was no authority file linked to the field Type of Publication, post-standardization was applied. For example, when the term Website was first used, it was later replaced by the term Webpage. And when the term Article was initially entered the term Journal Article replaced it. In a recent paper by Helmut Artus (Artus, 2004), where he examines grey and commercial journals in the social sciences, the term journal article applies to both. Prior to this study, and in line with a policy maintained by EAGLE, journal articles were not included in the SIGLE database. This insinuated that journal articles were not a type of grey literature, when in fact we will see that today they are among the top five types of grey literature cited.
- **Kind of Publication:** In the field Kind of Publication, a significant number of "Uncertains" as to whether a cited document was grey or not, would later be resolved through literature search, team discussion, and further explanation of the term "commercial publishers", which is traced to the Luxembourg definition of grey literature, 1997. For our purposes here, publishers whose primary or sole activity is publishing for profit, are distinguished from "grey publishers", whose primary activity does not lie in the publishing industry and is not primarily commercial.
- **Self-Citation:** To the field Self Citation, citations not only to oneself but also to ones organisation were added.
- **Name of Cited Source (1st, 2nd, 3rd, 4th):** And finally, to the field(s) Name of (1st, 2nd, 3rd, 4th) Cited Source, if the data entry pertained to a non-person the ISBN rule of thumb was initially used, and the "Title of the work" was first entered. Later it was evident that for GL records, the "Acronym of the Corporate Author" should have taken precedence and was later implemented.

Project Log: Informal Documentation of the Research Project

Throughout all three stages of the research project and perhaps most importantly in the first stage of data collection and processing, the instrument of a project log was implemented. Since four project members would be working in separate offices in two different countries, maintaining a project log in which the questions, comments, and problems encountered could best be captured and recorded. One member of the team was responsible for maintaining the project log, and it was first utilized at the June meeting in Amsterdam where all four-project workers were present. In fact the project log served as an agenda for the daylong meeting as well as a means for the further division of labour among the team members during the remaining two stages of the research project. By the second and last meeting in October, the emphasis on the Project Log was replaced by attention to the Rough Draft of the paper.

Literature Search and Review

Selection and Identification of the Sources

The second stage in the research project was a literature search and review on citation analysis previously carried out in the field of grey literature and to some extent beyond. The references and sources cited at the end of this paper are divided under two headings, and as such enable the reader to understand their place and emphasis in this research project. Under the first heading are references dealing both with the topic of grey literature and the use of citation analysis. All but two of the twenty-four bibliographic references under this heading are found in the 4th edition of the

Annotated Bibliography on the Topic of Grey Literature. It is interesting to note that 10 of these 24 references are related to papers in the GL-Conference Series and that two of the remaining 14 references mention that the original text was written as a paper in the GL-Conference Series. Hence, half of the references under this heading are directly related to papers in the GL-Conference Series. Under the second heading, are the references that deal with citation analysis but which are not specific to the topic of grey literature.

Review of the findings from the literature

Examining the issues dealt with in our review of the literature, we find that the use of citation analysis in the study of grey literature has been applied in many disciplines, across disciplines, and in all of the branches of science i.e. the physical, the social, and the humanities. At least 14 specific fields of study are identified. The fields of agriculture and physics are dealt with in multiple studies, while the fields of transportation, social work, environmental protection, education, astronomy, aerospace are each dealt with in one study. When looking at the types of documents that were examined, we find that reports, grey journals, and conference proceedings are accounted for in most of the studies, while e-prints, preprints, and synopses were each the object of only one particular study. An interesting point is that some of the studies that were non-specific to grey literature, also dealt with specific types of grey literature such as theses, dissertations, and grey journals. The studies that were specific to grey literature were the ones most concerned with the fields in a citation record as well as the format of the citation. The type of grey literature cited, the producers of the document, language of the document, and the publication date were the fields most discussed. Language was the field, which preoccupied the researchers most. English language publications were by far in the majority and local languages such as Finnish were considered barriers to information transfer. Two studies dealing with the life of a citation showed that the highest percentage of citations was within 5 years for journals and up to 10 years for reports. Incomplete citations and errors in citations affect about 12% of the total citations in studies. The impact factor that grey and non-grey citations have on a field of study is of interest to researchers. One study refers to the law of scattering, where 80% of the citations are shown to come from 20% of the journals cited. Stated otherwise, the top 20% of journal titles generates 80% of use. Another study proposes a formula to arrive at (**x**) the intensity of grey literature citing by dividing (**z**) the frequency/proportion of GL references out of all the references cited by (**y**) the frequency/proportion of the articles with GL references out of all the articles examined. The formula would then read $z \div y = x$. And when applied to the results from our research, the intensity of grey literature citing is 59%.

A number of studies, most of which were not specifically dealing with grey literature call for convergence or aggregates of data, where not only citations are used to explain or demonstrate the impact factor but also a number of other empirical data are used. One such study calls for a web invocation portfolio (WIP), where web links (inlinks), standard citations (non-links), bibliographic references, log files, press cuttings, etc., have to be examined together in order to arrive at the true impact factor. It is the role of organisations such as library associations and grey literature producing bodies' i.e. corporate authors to promote and support this type of research in order to demonstrate its uses and applications. These could be to access trends, arrive at a representation/snapshot of a particular field of study, or to influence information policy. In particular, we have seen some studies carried out with grey literature, where citation analysis was used to determine and evaluate appropriate publication channels and others for purposes of collection development. A few studies looked at citation use in order to determine communication across various fields of study. And a couple of studies in particular examined grey literature's implications for scientific communication - differentiating between scientific and non-scientific grey. No doubt, abstracting and indexing services such as ISI Web of science are an invaluable means for carrying out citation analyses making use of automated technologies on an economics of scale. However, grey literature can only really profit from this when they have established a record format, one that is collectively applied. This can be done with the support of those library associations and grey literature producers mentioned earlier. Our review of the literature reveals a number of plans of action and specific recommendations for grey literature - the upshot of various researches. These range from the establishment of national and regional networks to the formulation of guidelines, and the development of course training.

Content and Data Analysis

Analysis of the Citation Data

The Citation database, which was compiled during this research project, contains 1374 records. 30 of these records (0.02%) are to papers in the GL-Series that do not include references. Each record contains 19 fields, which amounts to 26106 possible entries in the database. This includes fields left blank. The data was extracted from the 139 papers in the first five volumes of the GL-Conference Proceedings. When the 30 papers that did not include references (21%) is subtracted, our citation analysis is then to 109 conference papers. A total of 152 authors/co-authors were responsible for the 139 conference papers. Of these, 108 (71%) are sole or first authors of the papers.

In total 1721 authors/corporate authors (i.e. the sources) were cited in the 1344 records, which was compiled from those papers containing references. When multiple citing is accounted for (i.e. authors cited 1 > times), the number of distinct or unique authors cited in this study is then 1128. There were 72 different types of documents cited of which journal articles and conference papers accounted for the first and second most cited types of documents. There was an average of 12.3 cited references per conference paper. And, looking at the age of the citations, 58% are <4 years old. When standard bibliographic citations are compared with hyperlinked citations, we find that 51% of the standard citations are to grey literature, 48% to commercial publications, and 1% is uncertain. Persons accounted for 84% of the standard citations, while non-persons or corporate authors accounted for 16%. If we compare this with the hyperlinked citations, we find that 90% are to grey literature, 5% to commercial publications, and 5% is uncertain. Persons accounted for only 26% of the hyperlinked citations, while non-persons or corporate authors accounted for the other 74%.

If we look at self-citations, which in this study also include citations to one's own organization, this accounts for 10% of the citations. In this category, 26% is non-applicable, because the citations are to non-persons or corporate authors with no affiliation to the citing author. If we turn to serial citations, that is a citation to one of the earlier papers in the GL-Conference Proceedings or to one of GreyNet's other publications (e.g. Annotated Bibliography, Guidebook, Notebook, etc.), nearly 8% (0.0775) fall under this heading. Citations in the first volume in the Conference Series (GL'93) would then by our definition of serial be excluded here. The cited documents were in 13 different languages in which English accounted for 84.7% followed by Italian 5.59%, French 2.41%, Spanish 1.86%, German 1.32%, and Dutch 1.24%. The remaining 7 languages (Indian, Indonesian, Japanese, Korean, Polish, Portuguese, and Russian) each accounted for less than 1% of the cited documents. If we compare this with the language of the Citing Authors, we find that 65% of the GL Conference Papers are by non-native English speakers.

Of the 72 types of publications cited, an average of the top five over the conference series show Journal Articles at 47%, Conference Papers at 19%, Books/Monographs at 17%, Reports at 14%, and Conference Proceedings at 3%. These percentages are based on standard citations; however, when hyperlinked citations are included, then the Webpage ousts the Conference Proceedings from the fifth place. The last conference in the series (GL5) follows these averages almost entirely. There are only 17 types of commercial publications cited, while 72 types of grey literature publications are cited. Reports, which held second place at the first conference (GL93) dropped to third place by the second conference (GL95) and to fourth place by the third conference (GL97). These had traditionally been the mainstay of GL, but this research shows that conference papers have taken and hold second place.

A Comparison with Other Data

When we compare the authors cited in the conference proceedings with the authors cited in the index to the 4th edition (2000) of the Annotated Bibliography on the Topic of Grey Literature, we find an average match of 24.7%. Some 630 authors are indexed in this Annotated Bibliography, and it contains over 750 bibliographic references.

Cited Authors in the Proceedings compared with Authors indexed in the Bibliography

1 st Cited Source	2 nd Cited Source	3 rd Cited Source	4 th Cited Source
330/1344 = 24.6%	87/293 = 29.7%	21/89 = 23,6%	8/38 = 21%

The authors indexed in the Annotated Bibliography are authors who specifically deal with grey literature in their research and writing i.e. the GL meta-authors. It might then be safe to speculate that this quarter of the authors cited in the conference proceedings could be matched by another quarter that deals with grey literature, but does not explicitly adhere to the term. The remaining half of the authors cited in the proceedings may then have intended no reference to grey literature at all. In short, half of the citations in our primary analysis are directly or indirectly related to grey literature and the other half are non-related. If we were to rely on the type of documents cited as an indicator, then the ratio would not be 50-50 but instead would increase to nearly 60-40 with grey citations outnumbering commercial citations by 790 to 534 with still 20 uncertain. Either way, this is a very healthy position for grey literature within the entire field of information. It offers foundation and links grounded in broader theory and practice, while it demonstrates a clear and identifiable entity within the whole. If the meta-authors in grey literature would have remained predominately or solely within the research and findings of those with the same signature - then over the past quarter of a century, grey literature would have withered and become dormant. And, this is certainly not the case.

Findings of the Research

Results from our research project indicate that many of the problems encountered in the citation analysis of books and journal articles are also found in the citation analysis of grey literature e.g. typographical errors, omissions, and inconsistencies. These problems are augmented in a citation analysis of grey literature, because it is necessary to indicate the "type of publication" (i.e. report, conference paper, Webpage, etc.) as well as the "kind of publication" (grey or commercial). The more complete and accurate the citation, the easier it is to make these determinations. Hyperlink citations prove to be even more difficult for the project workers than standard bibliographic ones. Citation analysis of grey literature requires not only the name(s) of the individual author(s), but also the corporate author or organisation responsible for the publication.

Across disciplines, reports, grey journals, and conference proceedings are the main sources used in research and authorship. This finding supports the premise that the GL-conference proceedings are of significant importance to the field of grey literature. This field of information studies currently does not have a flagship journal. In 2000, this was attempted with the launch of IJGL (International Journal on Grey Literature). But, it only lasted one year with the publication of one volume containing four issues. Interestingly, a third of the articles in this volume first appeared as conference papers in the GL-Series. De facto, the GL Conference Proceedings has taken on a flagship role. And it is not an unlikely one, because as Buckley purports (Buckley, 1997), conference papers in proceedings are similar to articles in journals. Another attempt in the past was to bring together a selection of the GL papers for publication in a special issue of a journal, first published in PRQ (Publishing Research Quarterly volume 13, no.2, 1997). With the re-launch of the GL-Series in 2003, this has now led to a cooperative publishing agreement with PRQ, where annually an issue of this quarterly journal focuses on the topic of grey literature. Collection holdings of the GL conference proceedings and papers should be comprehensive and available from more than one centre or clearinghouse. Currently, the British Library Document Supply Centre in Boston Spa is to our knowledge the only dedicated centre for this purpose. And, this arrangement between the GL Proceedings publisher, TextRelease, and the British Library has been recently reaffirmed. Contacts with other national libraries and centre are likewise being pursued, for example with the Netherlands Depot and INIST in France.

Where once reports were the main type of grey literature, we see that grey journals and conference papers are the most heavily cited types of grey literature. Since the onset of the GL Conference Series, more than a decade ago, English has been the language of publication. This has enabled the authors' research findings to reach global communities. We see that only about 35% of the papers in the GL-Conference series are from authors from English Speaking countries, while non-native English speakers account for 65% of the content contributions. One of the drawbacks of the GL Proceedings brought out in this study indicates the lack of standardization applied to citations. This aspect is one in which both the authors and their works would most readily stand to gain were a standard applied. One which would capture and accommodate the various types of grey literature and which would be in line with

standards applied by existing abstracting and indexing services such as ISI, LISA/CSA, etc.

From our research findings, we have compiled the following guidelines for grey literature citations.

GUIDELINES FOR GREY LITERATURE CITATIONS

General

- i. All conference papers should contain references
- ii. Standardization should be maintained among the citations provided
- iii. The more complete and accurate a citation, the more guarantee of a paper's content and subsequent review.

Examples of Errors that were encountered and corrected

Hedlund, G. (GL97); Hedlung, G. (GL99) – (GL97 is correct)
 Hugenholtz, **B.P.** (GL95); Hugenholtz, **P.B.** (GL99) – (GL99 is correct)
 Rozkuszka, **W.** (GL95); Rozkuszka, **D.W.** (GL99) – (Rozkuszka, **W.D.** neither was complete or correct)

Specific

- iv. Endnotes are preferred and should be numbered
- v. Hyperlinks need the accompanying name of resource and date; a simple URL is not acceptable
- vi. If the citation is to a corporate author, the acronym takes precedence
- vii. If the document type is known, it should be stated at the close of a citation.
- viii. If a citation is revised and refers to an edited and/or abridged work, the original source should also be mentioned.

While these guidelines do as yet offer a citation style for grey literature; hopefully, this will be a spin-off from our research. Perhaps, starting with the 7th volume of the GL-Conference Proceedings, a standard or citation style will be in place. Likewise, a renewed contact with LISA, is underway that will hopefully lead to re-establishing and exchange agreement, where the abstracts of the GL Conference Proceedings would be given to LISA and in turn LISA would help facilitate the research and work carried out by GreyNet, Grey Literature Network Service. Clearly, we see that the impact of our study is leading GreyNet to establish and formalize a policy, which would have lasting benefit for authors and researchers both within and outside the GL-conference series. A policy which would enhance the published proceedings, bring excellence outside of the grey circuit through the cooperative publishing agreement with PRQ, guarantee document delivery and/or loan of the full-text of all of the conference papers in the series via an ongoing agreement with the British Library and hopefully other depots and clearinghouses of longstanding. Yet another impact that our citation analysis could have is on the advancement of grey literature as a field of information study in its own right. The core papers could be compiled and published as a reader(s) used by colleges and universities in course modules on grey literature. Also, Auger's first roadmap of GL systems and services, which reached its 4th and last edition in 1998 (Auger, 1998) could benefit by way of a thorough and comprehensive revision in light of the research and findings from the GL-Conference Proceedings.

Conclusions and Further Recommendations

The concern at the outset of this research project was to apply the instrument of citation analysis to the work of authors in the GL-Conference series, as well as authors whom they cited both in grey and commercial publishing. A further concern was to determine the value of the GL Conference Proceedings for research in the field of grey literature by treating it as a type of grey literature and comparing it with other types. Our findings indicate that an impact in one of the three areas is connected in some way to the other two. We find that the term "commercial" in the Luxembourg definition of grey literature needs to be further elaborated in order to better serve its purpose. The meta-authors should not underestimate the explicit use of the term grey literature in the title of their works. Further, based on this research, a set of guidelines has been compiled for citations used in grey literature. These will be implemented starting with the 7th volume of the GL-Conference Proceedings; however,

it should not yet be taken as a standard or citation style for grey literature. The authors of this paper would hope that by maintaining the Citation Database and making it available to researchers for secondary analysis, a follow-up study would be possible. Perhaps this could be combined with a research proposal to ISI/ASIS, who offers an annual grant for research dealing with citation analysis.

In close, GreyNet is interested in carrying out a survey among the authors and co-authors in the GL Conference Series, including the 40 new contributors to GL6. It is believed that this would provide evidence of a wider impact for research than can be shown by citation analysis alone. Finally, GreyNet would like to explore the possibility of launching a grey journal, where better coverage and exposure of research in the field of grey literature is achieved not just for the portion that crosses over to commercial journals. As this study indicates, journal articles and conference papers are the top two types of cited publications both in grey and commercial publishing. Would this then not be considered a mandate in itself?

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Grey Literature Survey 2004

A research project tracking developments in the field of grey literature*

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Abstract

At GL5 in Amsterdam, many of the authors and researchers reiterated the Luxembourg Convention on grey literature. Some questioned if it were not time to rethink the definition, some offered moderations, but not one called for its complete elimination or abolition. During the course of the authors' presentations, specific attributes of grey were brought to lively discussion and debate. However, time and circumstance being known limitations on this kind of interaction and communication, ensured that more issues and questions were raised than could be adequately addressed. At the close of GL5, the idea came to devise a research project capturing the main issues and questions raised and to systematically hold them up to the Luxembourg definition of grey literature to examine where redefinition if any is needed. The authors are well aware of crossovers, bypasses, and at times a Fata Morgana as to what is grey or commercial on the information highway, but then they poise the question, where would be today without definition?

Introduction

The dichotomy grey versus commercial is one found both in the definition following the York Seminar (Wood, 1984) "...not available through normal bookselling channels" and the definition redefined at the Luxembourg Conference (1997) "... not controlled by commercial publishing". Like any dichotomy, this one serves as a cognitive tool in the process of reduction, analysis, and understanding of information - from authorship and production to its further use and application. This dichotomy also allows for the simplification of widespread terminologies, where grey literature becomes an umbrella term for a host of expressions among which include the terms: secondary, unpublished, unconventional, fugitive, refugee, fringe, minor, open, and etcetera.

Further, this dichotomy has allowed information workers to group the types of documents such as reports, working papers, proceedings, and 100s of other document types that are grey literature; and, in so doing set them apart from what is commercial literature. In this same process of typology, grey literature distinguishes itself from yet another category of information, which includes ephemera, black literature, vanity press, web trash, classified information, etc. Thus, the dichotomy allows one to distinguish not only between that which is grey and commercial but also it excludes that which belongs to neither.

Like any tool or instrument, its purpose serves as a means to an end, and is not the end itself. The dichotomy grey versus commercial has allowed information professionals to continue their work in progress without becoming lost in the mass and gigabytes of information available in every conceived means of print and electronic format. Furthermore, if this definition continues to have meaning for information professionals, then should the average net-user also at least recognize the term grey literature?

Method and Procedure

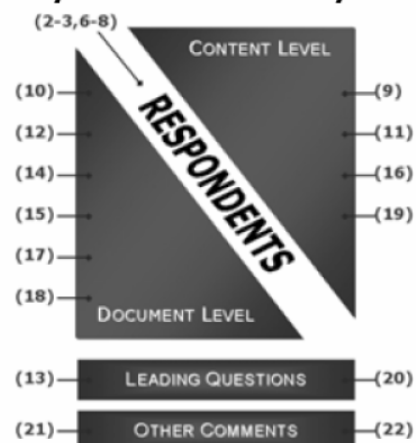
This survey was held in advance of the Sixth International Conference on Grey Literature (GL6). The instrument used is an open-ended questionnaire consisting of twenty-two questions or items designed to compile information for further analysis with the aid of SPSS software. It is not only important to know if a respondent agrees or disagrees with the questions, but also their comments stand central. While this questionnaire is not anonymous, the identity of an individual respondent will remain undisclosed. An estimated 10-12 minutes of the respondent's time is needed to complete the online questionnaire.

* First published in the GL6 Conference Proceedings, January 2005

Questionnaire

1. Your name and email address?
2. Country of residence?
3. Sector in which you are currently employed (government, academics, business, industry, or other)?
4. URL of your business or organisation?
5. Name of your department?
6. Title or position you hold within the department?
7. How many years ago did you first encounter the term 'grey literature'?
8. Way(s) you are involved in grey literature (production, processing, distribution, and/or other)?
9. Have you authored one or more publications (article, paper, report, etc.) on the topic of grey literature?
10. Does your business/organisation have a policy or position statement on grey literature?
11. Grey literature is always subject to a review process?
12. Grey literature is best described by the type of document it embodies (e.g. thesis, newsletter, report, website, database, etc.)?
13. The average net-user should at least recognize the term 'grey literature'?
14. Grey Literature collections are better managed by institutional (centralized) than disciplinary (decentralized) repositories?
15. Once grey literature is bibliographically controlled by means of indexing and referencing, it ceases to be grey?
16. The content of commercially published literature is superior to grey literature?
17. Grey Literature should be free to access?
18. Grey Literature should be free of charge?
19. Grey Literature itself constitutes a field in information studies?
20. The Luxembourg Convention on Grey literature (1997) reads, "Information produced on all levels of government, academics, business and industry in electronic and print formats not controlled by commercial publishing". Does this still hold?
21. In what way could GreyNet better serve the grey literature community?
22. Other comments?

Grey Literature Survey 2004



The questionnaire was mounted to a Webpage on GreyNet's website in late February 2004, where it remained online for 7 months - yielding 104 completed and valid forms. As the forms arrived via email, they were recorded by the project administrator and sent in batches of roughly 20 each to the data controller, where they were further entered and processed via SPSS (Statistical Package for the Social Sciences) software. The first online questionnaire was completed on February 25, 2004 and the last was completed on September 20, 2004. During this period, the project workers met on five occasions to examine preliminary results and address the responses in the open-ended questionnaire that needed to be further grouped and labelled. By the end of October, the final results of the questionnaire had been tabulated and were ready for further analysis and interpretation.

Data Analysis

In examining the response from the questionnaire and for purposes of presenting the results of this survey, the questions or items have been grouped and further paired. The 22 survey items now fall under three main headings: profile of the respondents, response to survey items on a document level, and response to survey items on a content level. The response to the leadings questions of definition and exposure to the term grey literature to net-users are then considered. The last two items on the questionnaire are placed under the general heading 'other comments' and can be observed in the final research results. The explorative character of the survey lent itself to open questions, since this offers the possibility of subtle distinctions in the answers. The respondents extensively made use of this. Many answers to the questions were not given in the form of a clear 'yes' or 'no', but had a narrative character. In order to facilitate the statistical analysis, the data were categorized in

groups at several steps during the course of the research project. And, in a final step, the answers were recoded into: 'Yes', 'No', 'Depends', 'No Answer', and 'Rhetorical Answer'. Ultimately, for the final analysis 'No Answer' and 'Rhetorical Answer' were combined under the heading 'NA'.

Profile of the Respondents

Variable 7: How many years ago did you first encounter the term 'grey literature'?

	<i>Frequency</i>	<i>Percent</i>
1 yr or less	6	5,8
2-5	22	21,2
6-10	25	24,0
11-15	20	19,2
16-20	17	16,3
21 and more	10	9,6
NA	4	3,8
Total	104	100,0

If we look at when the respondents first encountered the term 'grey literature' i.e. the length of time exposed to grey literature and the spread of the term over the years, a curve presents itself. On either end are fewer than 10% of the respondents and in each of the four periods in between there is an average of 20% of the response. The mean response lies between 6-10 years and a span of more than a quarter of a century exists among the respondents. Looking at this curve we might ask ourselves if 'grey' bridges the proverbial information gap? And, if so, to what extent is the Internet responsible for this?

When we view the respondents in relation to their first contact with GreyNet (Grey Literature Network Service) on whose website the questionnaire was mounted, we find a somewhat similar curve, where less than 20% of the respondents are on either end and the two categories in the middle account for equal numbers of respondents, just under 35% each.

Comparative data: Relationship of the Survey Respondents to GreyNet

17.3% had contacts with former Greynet <2000
34.6% had first contact with Greynet after its re-launch in 2003
34.6% had first contact with GreyNet via the Survey 2004
13.5% had first contact with GreyNet in 2004 and afterwards completed the Survey
100%

Variable 2: Country of residence?

	<i>Frequency</i>	<i>Percent</i>
North America	39	37,5
Europa	50	48,1
Other	15	14,4
Total	104	100,0

The 104 survey respondents were from twenty-six countries worldwide. However, those from Europe and North America accounted for more than 85% of the response. If we examine the countries of residence further, we find that 75% of the respondents came from six of the twenty-six countries and that two of those six countries accounted for a little over 50% of the total response, namely the USA (34.6%) and the Netherlands (19.2%). This could perhaps be explained by the fact that the Survey was in lieu of a conference that would be held in New York and the home office for the survey was in Amsterdam. In any event, the concern is not with the over representation of Europe and North America or with The States and The Netherlands, but rather with the under representation of Africa, Asia, and South America, which together accounted for less than 15% of the survey response.

Variable 3: Sector in which you are currently employed (government, academics, business, industry, or other)?

	Frequency	Percent
Academic	56	53,8
Government	31	29,8
Business	5	4,8
Other	12	11,5
Total	104	100,0

When we examine the sectors in which the respondents are currently employed, we find that Academics accounts for a little over 50% of the response with Government at about 30%. NGOs, IGOs, and Foundations, which together form the 'Other' category, amounted to 11.5% of the response, which is still twice as much as the response from the Business sector that ended with less than 5%. If we compare this with GreyNet statistics from six years ago, where 26% of its contacts were with Business and Industry (NewsBriefNews, vol. 7, no.3), than an alarming decrease among these stakeholders appears to have occurred. The concern here is then not with an over representation of Academics, but with a severe under representation of business and industry. Have the firewalls in networked environments become the new obstacles to acquiring and accessing business grey? And, on the other hand, has academics found its true home in grey?

Variable 6: Title or position you hold within the department?

	Frequency	Percent
Managerial	36	34,6
Technical/Operational	31	29,8
Teacher/Researcher	35	33,7
NA	2	1,9
Total	104	100,0

If we look at the titles or positions that the respondents hold in their respective departments, we find that just fewer than 30% are involved in technical and/or operational capacities, while nearly 35% are working on managerial levels, and almost 34% are in teaching and research.

Variable 8: Way(s) you are involved in grey literature (production, processing, distribution, and/or other)?

	Count	Pct of Responses	Pct of Cases
Production	33	19,6	32,0
Processing	63	37,5	61,2
Distribution	39	23,2	37,9
Other	33	19,6	32,0
Total responses	168	100	163,1

When we turn to the way the respondents are involved in grey literature, taking into consideration that their involvement can be in more than one way, we see that processing and distribution of grey literature, which are the traditional activities out of which grey literature arose, occupy roughly 60% of the respondents, while near 40% of the respondents' occupation with grey literature is in production, management, teaching, and research. Furthermore, an average of 60% of the survey respondents had multiple affinities with grey literature.

If we compare this with the results of a survey held by GreyNet a decade ago in which 142 respondents participated (NewsBriefNews, vol. 3, no.2), we find that 70% had a multiple affinity with grey literature and that roughly the same percentage were involved in traditional activities with grey literature, namely processing and distribution. Granted that it is very difficult to make comparisons with data gathered by two different means with a ten-year interval, still however, the response of the GL

Survey 2004, lead us to believe that more information professionals are occupied in the management, research, and teaching of grey literature than a decade ago. And that there is some increased levels of specialization. Multiple involvements with grey literature appear to remain at the same level; only the type of involvement has shifted.

On the Document Level

Variable 12: Grey literature is best described by the type of document it embodies (e.g. thesis, newsletter, report, website, database, etc.)?

	<i>Frequency</i>	<i>Percent</i>
No	22	21,2
Yes	69	66,3
Depends	6	5,8
NA	7	6,7
	104	100,0

If we look at the response to the survey items on a document level, we find that two-thirds of the respondents agree that the type of document it embodies best describes grey literature. In other words, a type of document does not define grey literature, but it does help to identify grey literature. For example, preprints, working papers, reports, etc. are in almost all cases identified as grey literature i.e. not controlled by commercial publishing.

Variable 15: Once grey literature is bibliographically controlled by means of indexing and referencing, it ceases to be grey?

	<i>Frequency</i>	<i>Percent</i>
No	70	67,3
Yes	16	15,4
Depends	9	8,7
NA	9	8,7
	104	100,0

When we compare the response to the above with the response to whether a document once bibliographically controlled ceases to be grey, we find a near 70%, who disagree. For these respondents, bibliographic control is not the determining factor whether a document is grey or not, which seems to support the notion that grey literature is first and foremost determined by the publishing or issuing body – be it a grey or commercial publisher. Roughly 15% agreed and the other 15% either chose not to respond or their response was such that it could not be taken as a simple yes or no.

Variable 17: Grey Literature should be free to access?

	<i>Frequency</i>	<i>Percent</i>
No	15	14,4
Yes	64	61,5
Depends	21	20,2
NA	4	3,8
Total	104	100,0

If we turn to the question as to whether grey literature should be free to access, we once again see a solid response of 60%, who agree. While another 20% agree to some extent and less than 15% who disagree. Today, with the OAi, Open Archive Initiative, it is not unlikely that the majority of respondents would be in favor of this.

Variable 18: Grey Literature should be free of charge?

	Frequency	Percent
No	19	18,3
Yes	51	49,0
Depends	25	24,0
NA	9	8,7
Total	104	100,0

When, we compare the results of the above with the question as to whether grey literature should be free of charge, we again see a majority of near 50% who agree and a near 20% who disagree, while a near 25% hinge their response on further clarification. It is the response of this quarter of the respondents that must be further examined. While grey literature by current definition is not commercially attractive to publishers, there are still costs involved in its production, processing, and distribution, which must be recovered. Perhaps the disparity can be further explained by the sector in which the grey literature originates. Government and Academics in all likelihood have a different policy than non-governmental agencies, and certainly business and industry. Since nearly 85% of the respondents to this survey come from government and academics, then this may explain the majority of response to the question.

Variable 10: Does your business/organisation have a policy or position statement on Grey literature?

	Frequency	Percent
No	72	69,2
Yes	28	26,9
NA	4	3,8
	104	100,0

If we look at the results as to whether or not a policy exists in ones organization, which addresses grey literature, then a near 70% do not have such a policy, while more than 25% do. This survey question was sparked by a recent study carried out at Portland State University (Siegel, 2004). Organizations producing, processing, and/or distributing grey literature need to formalize their policy towards their own grey literature and it should be recorded and made public.

Variable 14: Grey Literature collections are better managed by institutional (centralized) than disciplinary (decentralized) repositories?

	Frequency	Percent
No	33	31,7
Yes	35	33,7
Depends	25	24,0
NA	11	10,6
Total	104	100,0

When we examine the response as to the best home for grey literature collections, we see a relative split on whether institutional or disciplinary repositories are more suited. Both have more than 30% of the response and another near quarter of the respondents is less emphatic in their response by elaborating on the pros and cons of each. Another +10% chose not to respond. This issue is certainly not settled and while institutional repositories are in the current limelight, advocates of decentralized and disciplinary repositories remain outspoken.

On the Content Level

Variable 11: Grey literature is always subject to a review process?

	<i>Frequency</i>	<i>Percent</i>
No	41	39,4
Yes	46	44,2
Depends	10	9,6
NA	7	6,7
Total	104	100,0

Looking at the content level of grey, we find that almost 45% of the respondents agree that grey literature is always subject to a review process, while less than 40% disagree and a near 10% are caught in the middle and are less prepared to answer with a simple yes or no. In much the same way as an institution should formulate a policy on grey literature, so also should the author or corporate author be steadfast in identifying to the reader the review process under which their grey publications have passed. For some types of grey literature this may already be implicit e.g. a thesis has an academic committee, a grey journal has an editorial and advisory board, a conference paper has a program committee, etc. However, for other types of grey both in print and electronic formats, the review process is not transparent and should be stated explicitly.

Variable 16: The content of commercially published literature is superior to grey literature?

	<i>Frequency</i>	<i>Percent</i>
No	57	54,8
Yes	5	4,8
Depends	34	32,7
NA	8	7,7
Total	104	100,0

When we compare the response to the question as to whether commercially published literature is superior to grey, we see that less than 5% agree, while almost 55% disagree and a solid 30% choose to explain their answers further. It becomes clear that it is not the content, but the packaging, promotion, marketing, and other such value added services, which make commercial publications more attractive. And, in so doing making them more commercially viable. Following this further, it is not unthinkable that an author who first published a paper in a conference proceedings, which later crossed over to a journal article, would choose to cite the journal article instead of the original publication.

Variable 9: Have you authored one or more publications (article, paper, report, etc.) on the topic of grey literature?

	<i>Frequency</i>	<i>Percent</i>
No	52	50,0
Yes	50	48,1
NA	2	1,9
Total	104	100,0

In response to whether a respondent had authored one or more publications on the topic of grey literature, we find an even split in the response. Almost half of the survey respondents are in some way meta-authors of grey i.e. they have dealt with one or more aspects of grey literature in research and publication, and have recorded it for later use and application. If we view this in relation to the GL6 Conference, we find that 26% of the survey respondents are also authors or co-authors at this event. And, if we include the previous conferences in the GL-Series, then this increases to 31%.

Variable 19: Grey Literature itself constitutes a field in information studies?

	Frequency	Percent
No	16	15,4
Yes	72	69,2
Depends	8	7,7
NA	8	7,7
Total	104	100,0

While just a little over 15% of the survey respondents do not agree that grey literature constitutes a field in information studies, a near 70% of the respondents do, and almost 8% who were somewhat unsure clarified their position and appear to lean in favor of grey literature as a field of information studies. When we compare this three-quarter majority of response with the response to survey item 10 (i.e. the Title/Position of the Respondent, where 30% of the respondents are in teaching and research) then it is not unlikely to assume that their activities are already related to grey literature as a field of information.

Research Results

Variable 20: The Luxembourg Convention on Grey literature (1997) reads, "Information produced on all levels of government, academics, business and industry in electronic and print formats not controlled by commercial publishing". Does this still hold?

	Frequency	Percent
No	14	13,5
Yes	75	72,1
Yes, but need revision	5	4,8
NA	10	9,6
Total	104	100,0

When we finally arrive at the results from the two leading questions in the survey - one of definition and the other of terminology - we are not be surprised by the response. More than 70% of the survey respondents maintain the Luxembourg definition on grey literature and another 5% while holding to the definition offer some modification. Less than 15% of the respondents do not maintain the definition. This leading question rightfully had its place at the end of the questionnaire, i.e., once the respondent had already addressed a wide range of aspects and notions about grey literature. If there were doubt, then one might fairly assume that this leading question would not have scored the highest percentage of response (72.1%) than any of the other survey questions received.

Variable 13: The average net-user should at least recognize the term 'grey literature'?

	Frequency	Percent
No	37	35,6
Yes	52	50,0
Depends	7	6,7
NA	8	7,7
Total	104	100,0

When we examine the response to the second and final leading question as to whether the average net-user should recognize the term grey literature, exactly 50% thought that they should, while around 35% did not. It appears inevitable that the term will become widespread in use based on the premise that grey literature is now evolving into a field of information. And eventually, it will make its way from keyword lists and specialized glossaries to the Oxford and Webster Dictionaries somewhere between 'grey area' and 'grey matter'.

The last two items on the questionnaire, which were outside of the mainstream of the survey yielded considerably less response than the first twenty items on the questionnaire. To question 21: In what way could GreyNet better serve the grey

literature community? Only 87 of the 104 respondents (83.7%) made comments. Some of the respondents maintained that GreyNet, the Grey Literature Network Service, should

- Address its role in the Open Access Movement
- Assist in the best practices tailored to different information communities
- Increase public awareness of its presence and value
- Re-launch a Journal on Grey Literature
- Etcetera

And, finally to the catchall question 22: Other comments? Only 29 of the 104 respondents (27,9%) commented. Among the varied comments included statements such as:

- A Survey in advance of a conference is a great idea
- Studies on Grey Literature should receive strong research backing
- I found this online survey via Google
- Etcetera

Conclusions and Further Recommendations

In 1993-1994, GreyNet carried out its first survey on grey literature. However, within the past decade, due to Internet technology, grey literature has become a daily work experience in all sectors of society and constitutes a mainstream source of information. The main conclusions from the Grey Literature Survey 2004 indicate that the Luxembourg definition on Grey Literature should be maintained with or without modification, that grey publishers should in some way acknowledge the review process in which their print/electronic documents have undergone, and that colleges and schools of library and information studies should continue to develop curricula programs, modules, and courses on grey literature.

Further recommendations based on the findings indicate that ways should be found to correct the disproportion between geographical and sectoral involvement in Grey Literature, that organizations involved in this field of information should formulate and publicize a policy or position statement on grey literature, and that the raw survey data (i.e. without names, email addresses, and URLs) should be made available to researchers for secondary analysis.

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On the News Front

A REVIEW OF THE GL6 CONFERENCE IN NEW YORK*

Laurence Seidenberg (United States)

"Grey literature resources predate the invisible web"

The 6th International Conference on Grey Literature: Work on Grey in Progress took place on December 6-7, 2004 at the New York Academy of Medicine Conference Center. The GL6 Conference was host to participants from over a dozen countries as far as Japan, Russia, Norway and France and was held in the conference hall at the renowned New York Academy of Medicine (www.nyam.org) home of one of the world's largest medical libraries with 800,000 volumes and 1000 journal subscriptions.

Grey (or 'gray') literature has been defined as the 'information produced on all levels of government, academics, business and industry in electronic and print formats not controlled by commercial publishing' (Luxembourg Convention, 1997).

Gray literature encompasses a broad range of documents or resources that are likely to remain undocumented, un-indexed or non-cataloged by a spectrum of organizations, government agencies, research centers, or other ad hoc groups from across the globe. Grey literature is the forerunner of the 'invisible web' idea of untracked and un-indexed sources of information. It may, for example, include technical reports, agency handbooks, foreign patents, or geophysical and geological surveys and maps. A large proportion of government information from the U.S. Government Printing Office remains 'grey literature' as does the output of a variety of government agencies -state and federal, foreign and domestic.

Grey literature as a scholarly endeavor is a burgeoning area of research in the age of the Internet. By focusing on the grey periphery of indexed information, which seems to ever expand, the field continues to attract multidisciplinary scholars who offer up results and proposals for measuring, evaluating and applying discovered grey literature sources. The study of grey literature phenomenon as both process and product is also a valuable endeavor for students of library and information science to focus on and which adds as much emphasis on the information science portion of LIS curriculums. Theory, methods and resources to uncover and make use of the invisible web would benefit from a review of grey literature resources, which predate the 'invisible web'.

Also, at a special dinner on the first evening of the conference, the GreyNet Award 2004 was presented to Dr. Bertrum H. MacDonald, Associate Dean of Research in the Faculty of Management at Dalhousie University, Halifax, Canada.

A conference like the Grey Literature Conference provides opportunities to ask questions informally to esteemed international authors and speakers. For example, I had an opportunity to converse with the Keynote Speaker, James G. Neal, V.P. of Columbia University Information Services and University Librarian. Mr. Neal is also on the Pratt Institute SILS Board of Advisors. I also sat for much of the conference with Dr. MacDonald, (*above*) who was one of the few people I have met in months (or longer) who still regularly uses pay phones.

The opportunity for graduate library and information science students to attend and participate in the Grey Literature Conference Series is welcome. I personally thank Mrs. Althea Hickman Creel of Butler, Vines and Babb Law Offices in Knoxville, Tennessee for sponsoring my participation. Mrs. Creel maintains the firm's law library and online research resources. She was also co-author of one of the papers presented at GL6.

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SEVENTH INTERNATIONAL CONFERENCE ON GREY LITERATURE

Call for Papers

To: Authors, Publishers, Librarians, Web Editors, Researchers, Policy Makers, Information Managers, Brokers and Vendors, Information Specialists, Information Professionals, and Journalists

Open access to information is the key to knowledge, both in its generation and transfer. This is based on the principles of science, the economics of free enterprise, and the management of valued resources in a global environment. Recently, open access to grey resources has been mandated by the grey literature community. And, this mandate must be analysed and understood in its multiple aspects – thus enabling implementation in the information policies and activities of organizations in both public and private sectors. The Seventh International Conference on Grey Literature focuses on this theme and approaches it via the lines of communication and logistics.

Often, the elements of communication are so embedded and pervasive that they are taken for granted; however, GL7 must look at information systems and networks, partnering and OAI, as well as, curriculum development and current research. Likewise, the logistical components require rethinking and adaptation. Here, we must focus on repositories and collections, information retrieval and document delivery, as well as quality assessment issues. From now until the Opening Session, what lie ahead is the vision, know-how, research and findings of information professionals and specialists committed to grey literature. Your contribution to this conference program is genuinely welcome.

GUIDELINES FOR THE SUBMISSION OF ABSTRACTS

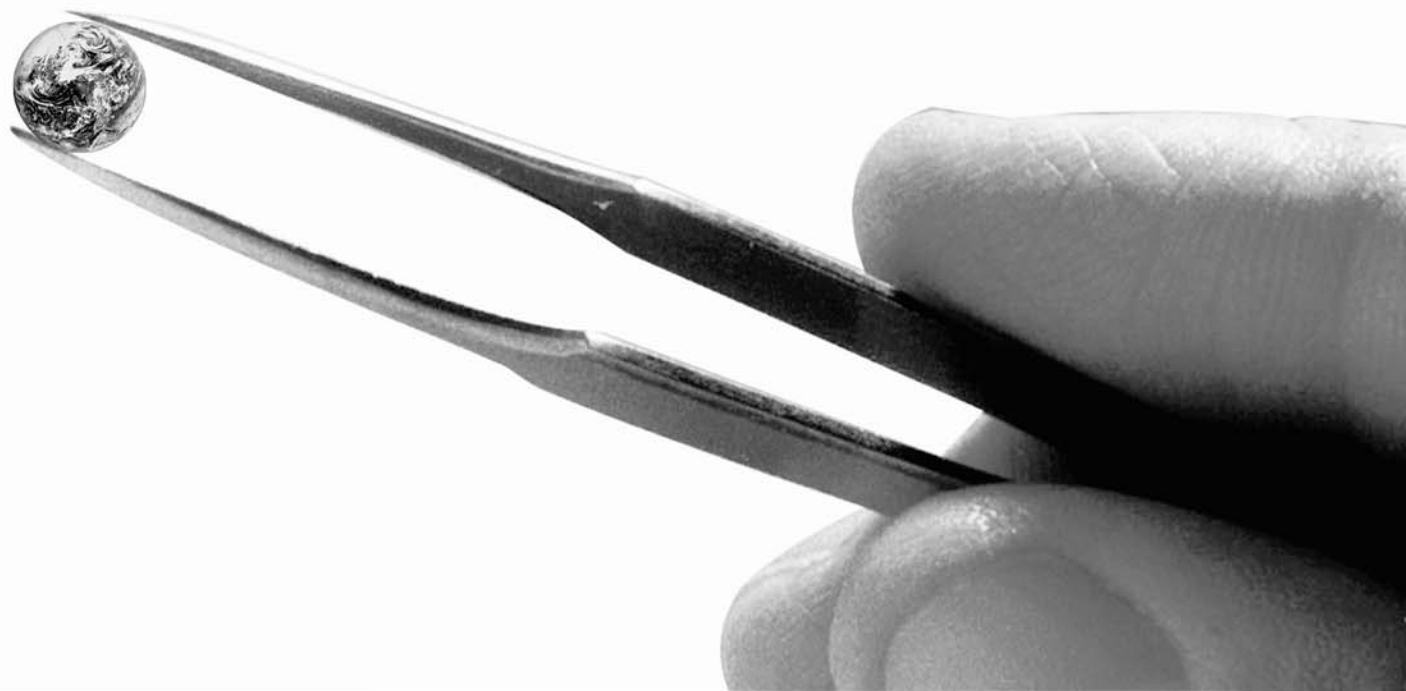
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The abstract must be emailed on or before May 17, 2005 in MS Word. The author will receive written verification upon receipt of the abstract. The GL7 Program Committee will use these abstracts in order to finalize the Conference Program.

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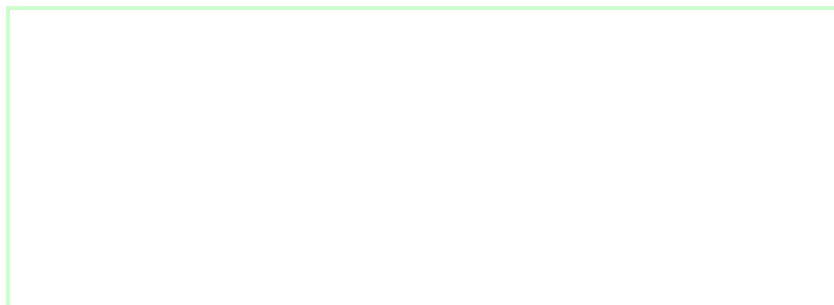
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