Peering through the Review Process: Towards Transparency in Grey Literature

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Abstract

Now that grey literature is readily catalogued, referenced, cited, and openly accessible to subject based communities as well as net users, the claims that grey literature is unpublished or non-published have sufficiently been put to rest. However, now that grey literature has met these former challenges and entered mainstream publishing, it requires in the spirit of science to have a system in place for the quality control of its content. This new challenge has recently been spurred by the IPCC affaire involving the use/misuse of grey literature and is now almost a daily topic in the world media. The purpose of this study will be to explore the degree to which grey literature is reviewed and to compare similarities and differences with formal peer review carried out in various degrees by commercial publishers. This study will further distinguish the review process implemented by grey publishers from that of mavericks and vanity press, where personal opinion and pure speculation run rampant. This study looks at the body of literature on peer review and its relatedness to grey literature. Key concepts and elements in peer review form the framework for a comparative analysis, and these are examined in light of guidelines on peer review submitted by publishers. In addition, alternative models for peer review found during the course of study are compared for their relevance to grey literature.

Keywords: Peer Review, Grey Literature, Publisher

1. Introduction

If you've already read the abstract, you're aware that I begin this study with a basic assumption - being that grey literature is readily catalogued, referenced, cited, and openly accessible to subject based communities as well as net users. And, that the claims that grey literature is unpublished or non-published have sufficiently been put to rest. With this aside, I proceed to the topic at hand, that being a look at peer review as it is applies to grey literature. I think that it should not go unsaid that I was somewhat hesitant to even use the term "peer review" at the start as seen in the very formulation of the title of my presentation, where I refer instead to the review process. Only during the course of the study, do I feel more inclined to use the term peer review.

The grey literature community has systematically addressed earlier challenges and in doing so has entered mainstream publishing. The grey literature community's response to a general survey [Boekhorst et al., 2005] reveals that a majority of the respondents are of the opinion that grey literature is always subject to a review process and that the content of commercially published literature is not superior to grey literature. However five years on, in the spirit of science, and faced with the recent challenge spurred by the IPCC affaire [Clover, 2010] in which the use/misuse of grey literature has become a daily topic in the world media it now becomes necessary to examine the grey literature community's position on peer review.

Peer review could be seen as the last citadel where commercial publishers have the opportunity to discredit grey literature instead of coming to terms with it. However from the media perspective, the battlefront appears not to be between grey and commercial publishers but from another affront – that being the black literature, what Carrington [2010] describes as the blogoshpere and what Cohen [2010] refers to as the 'know-nothings'. With the IPCC affair, the blogs and tweets of this world have turned their attacks from commercial to grey publishers. And over the past year of reading such comments and remarks, I view it simply as the lack in understanding what grey literature is and is not.

Carrington [2010, p. 2] and others have identified the beginning of a revolution in the way science is being done. For them, change must come or the trust that the public places in it will be jeopardized. The credibility of science then is at stake. And, this sentiment holds true as well in the field of grey literature. Hence, the premise that commercial and particularly journal articles are peer reviewed deserves a closer look. Bornmann and Daniel [2009, p. 11] state that "What constitutes a refereed journal, varies from journal to journal." For them, the peer review process itself is more or less a black box and much more research on the black box of peer review is needed. Following then this line of argument - that it is inaccurate to assume that a formal peer-review process is followed by all commercial publishers - is it then just as inaccurate to equate the corpus of grey literature as being non-peer reviewed?

2. Purpose of the Study

The purpose of this study is neither to argue nor defend any one position, but rather to draw comparisons from both the commercial and grey publishers and suggest guidelines for the latter. Guidelines that would be commensurate to the resources and knowledge based communities in which grey literature is produced and used. Now that grey literature has entered the wider, public media, net citizens must come to understand in clear terms what it is; and its value must be made transparent for its further uses and applications.

Significant strides over the past two decades dealing with the challenges of bibliographic control, collection development, archiving, preservation, and open access have contributed to the increased use and application of grey literature. However today, the new challenge is to

address its quality control, which is the purpose of this study. One may or may not agree with Carrington when he says that mainstream journalism took the climate change report out of perspective; however, in so doing it brought grey literature into the mainstream press – something that the grey literature community itself could not have done in such a warp tempo and to which we as an S&T community are forever grateful.

3. Method of Approach

The method applied here perhaps best fits the term explorative study, one that relies on a mix of methods involving literature review and comparative analysis. Metaphorically speaking, in an explorative study, a researcher anticipates being at the top of a stairwell at the close of ones study; however more than often, during the course of the study the researcher begins to take steps up as well as downward and by the study's close, the step on which the research ends forms the baseline for the beginning of a more formal research. This metaphor is characteristic of my expedition into the review process carried out by grey publishers.

4. Literature Review - Sourcing and Referencing

Some 15 references on peer review were found in GreyNet's Collection of Conference Papers in the OpenSIGLE Repository. Only three of which went beyond mention of the term in relation to grey literature. This was research carried out by Bertrum MacDonald [2004], where in his GL5 conference paper he recommends that an outline of the peer review process appear in each published report; in the GL7 conference paper by Marcus Banks [2006] where he touches on the waning primacy of peer review; and in the GL7 conference paper by Markus Weber [2006] in which he discusses a specific quality assessment system carried out at the Swiss Federal Office of Public Health - an area to which he returns in a chapter published in 2010.
In my literature search, I even came across GreyNet's early use of the PEER Module - Public Enterprise in Editing and Review - [Farace, 1994] implemented from 1993-2000. However this module was specifically used in compiling and editing publications and did not actually address the review process - different from the aim of this current study.

Further, a number of search engines and alert services were used to gain access to the available body of literature on peer review, which is staggering. Content from some 30 referenced sources were in various degrees used. Half of which were significantly relied upon. Early in the literature review it became evident that the term peer review itself had many different uses. While this study is specific to publishing, the term is also applied to grant reviews, hospital review for cardiac procedures, drug tests, etc. In its narrowest context related to publishing and dating back to the 17th Century, peer review dealt with journal and journal articles. However, it also became clear in this study involving grey literature that a multitude of document types and a wide range of stakeholders would have to be considered in order to achieve transparency in the review process. Nevertheless, journal and journal articles

provide a tangent in the comparison of peer review carried out by commercial and grey publishers. This is in part based on the results of a citation analysis carried out by Schöpfel et al. [2004], establishing that journal and journal articles are not only types of grey literature, but that these document types are increasing in use and application compared to reports, and other traditional grey literature documents.

In every literature review, a researcher hopes to find that one star publication, which provides a state of the art on the topic under investigation. Fortunately, that first star publication came early in my study – the title of which is "Peer Review and the Acceptance of New Scientific Ideas: A Discussion paper from a Working Party on equipping the public with an understanding of peer review" published by Sense about Science [2004]. Interesting enough, this fifty page paper completely circumvents the term 'grey literature', perhaps due to the fact that the study was heavily sponsored by commercial publishers such as Elsevier and Blackwell? Or, because the term grey literature had not yet appeared in Miriam Webster's Dictionary [2005] http://www.merriam-webster.com/dictionary/gray%20literature, Wikipedia http://en.wikipedia.org/wiki/Gray_literature, or in the Encyclopedia of Library and Information Sciences [2009] http://www.informaworld.com/smpp/title~content=t917508581.

Later on in the literature search, two other articles proved of special interest to this study because of their consideration of alternative models for peer review. These will be discussed later on in this paper.

5. Literature Review - Mining for Key Terms

Nearly 100 terms were derived from the literature on peer review. Some are very specific, others general, and others appear to have been newly coined. I refer to this phase in the review of the literature as mining for key terms. An endeavour which began simultaneous with the full-text reading. This approach seeks to establish a common vocabulary of terms in order to better understand the topic under investigation. The terms identified were then alphabetically indexed with scope notes when applicable, and page numbers and/or links to the actual sources. Well after this index had been drafted, I came across an article in Nature.com in which the IAC recommended that in order "to restore some of the IPCC's lost credibility, … consistent terminology be used, especially when taken from 'grey literature' that has not been peer reviewed." The dependent clause in this statement clearly insinuates that not all grey literature is peer reviewed, which then allows for the clause to be restated to read that the whole of grey literature cannot be treated as non-peer reviewed.

6. Literature Review - Classification of Terms

In the final phase of the literature review, the key terms entered in the index were then classified into five main categories. These categories deal with

1. The **criteria (functions)** of peer review, including such terms as Validity, Significance, Originality, etc.

2. The **roles (stakeholders)** in the peer review process, including such terms as Editor, Reviewer, Publisher, etc.

3. The **attributes (characteristics)** of peer review, including such terms as Anonymous, Formal, Evidence based, etc.

4. The **process (steps)** in the review of publications, including such terms as Pre-screening, Gate keeping, Rejection, etc.

5. And, the **results (impact)** that peer review has on publications, including such terms as Plagiarism, Tenure, Sales increase, etc.

This attempt at classification not only allowed for bringing order into the vocabulary surrounding peer review, but also enabled a selection of terms from the index that best serve in the comparative analysis, which follows.

7. Comparative Analysis across Publishing Channels

The claim [Sense about Science, 2005] that unpublished research is no help to anyone is certainly supported by grey publishers. Having compiled a vocabulary of terms from the literature on peer review and having classified the terms into categories, we can now begin to compare their intended use and relationship within and across commercial and grey publishing. It is not my purpose here to establish a one-on-one relationship of terms, but instead to gain a better understanding of peer review in these two channels of publishing by focussing on five basic categories of terms related to peer review.

Peer review is a procedure, which is applied by thousands of commercial publishers worldwide. It is safe to assume that the actual procedure applied in and among these publishers is not identical or consistent. Chang and Aernoundts [2010, p.4] state that "The actual peer review processes can differ in practice" … "some journals focus on the significance while others more on the methodology". It is perhaps even safe to assume that a comparison of peer review by journals would be spread on a continuum from strict to semi-controlled. Chang and Aernoundts [2010, p.4] go on to say that "Getting all the different journals to agree to apply the same standards and criteria is likely going to be difficult, if not impossible". All the more for grey publishers. Perhaps grey literature can be understood as publications that remain in the review process, where they have been ratified rather than validated. Peer review in commercial publishing is a stamp of approval; while in grey literature it is part of scholarly communication.

It is unacceptable to label grey literature as inferior without reservation and consideration to the organizations who produce, publish and thereby ratify it. In grey literature, while the

terms editor, reviewer, publisher, etc. may not always be expressly named as such their imprint on the publication is indelible.

For Cohen [2010, p.2] anonymity can help prevent personal bias, but it can also make reviewers less accountable. The reviewer or referee in grey literature need not be anonymous. They would be more willing to have their name published in the work they review. They like in journal publishing [Peer Review Survey 2009] consider their work of reviewing as a contribution to the community to which they belong. The 'review process' in grey literature is a broader more informal term, because of its coverage of numerous and diverse document types, where authors and corporate authors open their works-in-progress to subject based communities. Grey literature cannot be confused with untested opinions and speculation, but is based on empirical fact and findings and the producers are prepared to explain the standard of evidence on which they are based. In another peer review survey carried out by the Academy of Learned Societies for the Social Sciences [ALPSP 2000, p.3], when the respondent was asked "does your review process differ for different types of articles" the answers were 61 (32%) affirmative and 128 (68%) negative. I would venture to say that for grey literature this ratio would be just the opposite.

Grey literature has significantly contributed to the open access movement and as such has bolstered the public's trust in science. Grey literature lends itself to scientific and scholarly communities, because it's review process is self-correcting. In each stage along the way it is improved. Editorial 'pre-screening' does not only take place for journals but for much of grey literature. Peer review in commercial publishing takes place prior to publication; while in the grey circuit, it is seen as an integral part of the publishing process.

At times, commercial publishers are faced with the dilemma of disclosure or withholding Information, where they have to consider the damage of bad news or the promotional opportunities of good news. Grey publishers venture to publish negative results, which commercial publishing may consider necessary to screen. Grey publishers expose such results neither in a tabloid fashion nor in furore but in the spirit of science. Grey publishers would no doubt side with Rehmeyer [2010], when she writes that a negative answer would likely give a fundamentally deeper understanding of the nature of a subject area. In the discussion paper by the working party Sense about Science [2004, p. v] it is explicitly recommended that if companies are immediately obliged to report R&D results and cannot peer review their publications, they should at least produce a 'best practice guide'. Something that grey publishers would do well to consider.

8. Comparative Analysis - Publisher Guidelines

In June of 2010 the first contact was made with grey and commercial publishers requesting a copy of their "peer review guidelines". For Grey publishers, GreyNet's Distribution List was used and the Questia List http://www.questia.com/aboutQuestia/partnersPub.html was used in contacting commercial publishers. In September, after the summer holidays, a reminder was sent out.

It was expected that if grey publishers had a set of guidelines, they would be apt to respond. However, on the other hand, it was uncertain whether commercial publishers would respond to such a request. In order to adjudge the predisposition of commercial publishers to the request for their peer review guidelines, three were phoned in advance to inquire if they would be willing to do so? Two were willing and did so, and the third stated that peer review was clear and needed no further explanation for their reviewers.

The overall response from both the commercial as well as grey publishers was minimal. Three respondents from GreyNet's Distribution List of over 1000 email addresses and four responses from 30 out of 200 publishers on the Questia List were received. The guidelines that were received varied from extremely detailed to more or less a checklist of items incorporated in a standard form letter. Hence, results are inconclusive. Nevertheless, I would like to mention a few things that stood out in the brief analysis - namely, commercial publishers mention in their guidelines the amount they remunerate reviewers; there is always the question to reviewers as to the readership or market for the manuscript; and those commercial publishers, who submitted their guidelines voiced an express interest in receiving the results of this study. I would even venture to guess that without the initial phone calls, there may not have been a response from commercial publishers. A factor that would have reckoned with in a more formal research on peer review.

In mid-October, an IPCC Task Group published Notes on the Review of IPCC Processes and Procedures [Stocker, 2010], where the use of grey literature is clarified. Since the Intergovernmental Panel on Climate Change's guidelines for peer review is what spurred my study in the first place, I chose to include it in this section on Publisher Guidelines. Citing from the IPCC Task Group's Review, we read that "Much of science today relies on grey literature, and in fact some fields or areas of science must rely on grey literature; however, its [the IPCC] review process and rules on how grey literature is used should become more transparent". Interestingly enough, the Czech Delegation in the IPCC Task Group would rather ban all grey literature from IPCC publications, even when brought to their attention by other country delegates that among grey literature includes reports created at the government level sent through the legislative process, which is therefore "peer-reviewed" by individual

Parliaments. Sources that may often be more valuable than an article that is published in a journal on a commercial basis.

From my brief analysis, I came to understand that for an explorative research of this nature, a distinction should have been made between the request for guidelines as opposed to a check list issued to reviewers - where the latter should have taken precedence. In the ALPSP survey [2000, p. 6], when asked if referees are provided with a checklist with which to carry out their peer review, 153 (78%) responded affirmative and 44 (22%) negative.

9. Comparative Analysis - Models for Peer Review

During the course of study, a change in direction took place. Instead of including self-publishing alongside commercial and grey publishing in the comparative analysis, the focus of attention turned to alternative models of peer review in comparison with the traditional journal model. Two alternative models were discovered. The first, in an article by Patricia Cohen [2010] dealing with an Open Peer Review Model and the second in an article by Chang and Aernoudts [2010] discussing their proposed peer-to-peer review model. In both articles no explicit mention of the term grey literature appears.

Open Peer Review Model

For Cohen [2010] the traditional (peer review) process is not so much a gold standard but an effective accommodation to the needs of the field. It represents a settlement for the particular moment, not a perfect ideal." She continues in her discourse by saying that "the goal is not necessarily to replace peer review but to use other more open methods as well."
Cohen draws on the term open as opposed to insular, the latter meaning remote or inaccessible - what Bornmann and Daniel [2009] might refer to as part of that black box in commercial publishing. Cohen further introduces the term crowd sourcing related to new stakeholders in an open-peer review model. She also draws attention to the fact "many professors are wary of turning peer review into an American Idol-like competition … worrying that … know-nothings would predominate." And to offset such a suspicion, Cohen explains how open models could count toward academic tenure, and refers to one such case in the Shakespeare Quarterly experiment. Cohen further touches on other scholarly values in an open model besides quality control – these include generating discussion, improving works-in-progress, and sharing information rapidly.

Peer-to-Peer Review Model

Another alternative to traditional peer review is the peer-to-peer review model introduced by Chang and Aernoudts [2010]. Their study arises from the question whether 'raising the awareness of and archiving research' are key elements in journal publishing? Chang and

Aernoudts proceed to describe an automated peer reviewer selection system. This automated process begins with the reviewer, who in some capacity is seen as an editor.
In traditional journal publishing, editors do not make the reviewers comments accessible; however, in Chang and Aernoudts' peer-to-peer model such comments comprise the reviewer's impact factor. They then proceed to explain how the use of nicknames could assimilate blind peer review. For grey publishers it should not be the goal of mimicking every aspect of the journal peer review model, but instead to develop parameters that best serve grey literature communities and their review processes.

Chang and Aernoudts also introduce an added document type in their peer-to-peer review process called the Peer Review Report. This report is actually a peer review of the peer reviewer of a manuscript. By this time, it becomes clear that their focus of attention is on whether a peer reviewer is qualified, rather than the quality of the peer reviewed manuscript. In fine, Chang and Aernoudts see that in the traditional journal model the author is answerable to reviewers, reviewers are answerable to the editor, and editors in turn are answerable to their readership. Whereas, in their proposed peer-to-peer model, editors are third parties who facilitate an automated system in which reviewers answer to other reviewers, to the authors, to the editors, and all other stakeholders in the peer review process. As we are made aware of in the traditional journal model, in the next generation it may be difficult to attract sufficient numbers of reviewers [Sense about Science, 2009]. Would not this concern become even more augmented in Chang and Aernoudts' proposed peer-to-peer model?

10. Some Preliminary Findings

Based on the literature review and the somewhat limited analysis carried out in this explorative study, preliminary findings indicate that

- Grey literature document types far exceed journal articles and require alternative models for peer review;
- Community sourcing lends itself to the review of grey literature;
- Grey literature focuses more on the review process than the end product;
- Grey literature is more apt to include negative results in publications;
- Commercial and grey publishing share more in common with one another than with self publishing;
- The IPCC affaire exposed grey literature to the wider public and defends the further use of grey literature; and
- Guidelines for good practice would serve to enlighten net users of the value of grey literature.

11. Concluding Remarks

The IPCC Affair is in some ways similar to WikiLeaks. Grey literature is out there in sundry formats, distributed via diverse channels, available not only to subject based communities but worldwide to net users. As such, information contained in the grey literature now comes under further scrutiny. It becomes the obligation of the grey literature community to inform the wider public of the quality of its publications. This can be accomplished through further research on the peer review process, enhanced curricula on grey literature in schools and colleges of library and information science, as well as active steps taken by corporate authors and grey publishers in making the review process available in publication, hence more transparent to its readership.

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