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Grey literature: format agnostic yet gaining recognition in library collections

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Abstract

Purpose – Grey literature, difficult to define, acquire and process, has recently entered into an age of enlightenment due to increasing electronic publishing opportunities and digitization efforts. Emerging technologies, including social media, that can be integrated with sound, film and collection practices in many kinds of special, academic, government, public and research libraries can point to new examples of grey literature that show great demand for its utility and thus importance placed by growing user communities. This paper seeks to address these issues.

Design/methodology/approach – Research was reviewed using examples from the social and applied sciences literature emphasizing management constructs to demonstrate directions that grey literature had assumed in generating new forms of information.

Findings – As libraries examine the merits of grey literature, they are attempting to be hybrid centers of print and digital content to handle data, visual resources, imagery, and all forms of media. Every source can be considered a potential reference tool, access barriers to materials are lowered, and items circulate more and are requested through electronic and mobile access. This revised lifecycle of information forces libraries to rethink the scope and value of collections.

Practical implications – The challenges facing libraries that want to bridge formats and truly embrace new technologies are complex, potentially expensive and difficult to navigate and administer. However, the experiences of those that have welcomed grey literature can demonstrate the great potential of making less used documents more visible through emerging technologies.

Originality/value – Examples of scientific, business/census data, news/media coverage, genealogical information and public/consumer health content, each of which has seen large increases in demand and debuted new information products, often as open source, suggest that libraries can respond to these challenges by creating hospitable access in innovative ways by acknowledging that the lessons learned through the last few decades with new forms of grey literature can be useful in the context of library planning. The authors demonstrate how these examples now form a central core of what once was grey literature and are transitioning from low use to greater value by user communities.

Keywords Emerging technologies, Scholarly communication, Research lifecycle, Grey literature, Communication, Research

Paper type Conceptual paper

Background

Regarding Grey Literature, we allude to the present as a time of enlightenment when newness is being rewarded and Grey Literature has a wider dispersion of hues. Enlightenment suggests a sense of illumination, instruction, insight and the historical period from the eighteenth century that fostered a philosophical and cultural movement that stressed human reasoning over blind faith and was in contrast to the religious and political temperament of the times while promoting scientific thinking cushioned the variations around the world and encouraged the promotion of new ideas with new methods of dissemination and products. The period became known as the Age of Reason that reformed society and advanced knowledge. Today's contemporary context has more breadth and depth, and eclipses a wider range of contributions due to diversity, assimilation, mobility, aggregation, and envisioning information in multiple strata.

Greyness when applied to information description, finding, acquiring and processing on the scale of 1-10 takes a "hardiness" test of being "more" grey and more traditional edging the colors to darker hues. Hardiness is analogized as being similar to many personality variables in the field of psychology, considered to measure a continuous dimension and show likenesses to personality constructs such as locus of control, sense of coherence, self-efficacy, or dispositional optimism (Maddi, 1997).

In an increasingly digital environment, one may conclude the opposite, because of the information's ability to be crawled, mitigated, resourced, outsourced, distributed and integrated in its many mediums and formats. The range of new content, suggests creativity and innovation in all products which are the centerpiece of the academic experience and are reflected in both camps of scholarship and research, teaching and learning.

With an emphasis on new knowledge generation, the research focus can direct scholars, scientists and researchers to increasingly become more concerned and aware about intellectual property and protecting one's work and wares, to develop products that have commercial vitality and force the issue of technology transfer that benefit an employer, institutional affiliation and reinforce authorship. Enlightenment can brighten the surface and discussion of these new arenas and introduce them to wider audiences.

Our thinking about the issues we raise has been influenced by our own professional experiences in academic libraries and observing the changes that are readily taking place. Living with ambiguity and constant change has been the stabilizing barometer of recent years. Doing more with less, extending access and staying abreast of our users' expectations contributes to the hazy, more complex and often stressful way of managing libraries today. Most of our conclusions can be documented in the literature however we share the more impressionistic, speculative or opinion based format in this presentation.

Introducing Grey

Grey Literature is format agnostic but reflected in different ways in collections and in libraries. Our examination of recent books that identified as textbooks for courses covering collection development and academic libraries shows a decline in highlighting grey literature which had been a hallmarked indexed term for the previous two decades. The current books if they mention or introduce grey literature at all, it is an insignificant reference. This paper will highlight the academic research library experience but threads can extend to the tapestries of other library environments. Collection development, once the domain of selection, acquisition, preservation, and de-selection procedures has proliferated into a steady stream of activities that now are best described as collection management where point of

use, point of care and evidence-based determinants are included due to the proliferation of new formats and hybrid situations where libraries have expanded from traditional formats to include a new range of content. Earlier work by Gelfand confirms over two decades how grey literature defies and is challenged by standard collection development and acquisitions development procedures and policies, is becoming more evidenced-based and has its own taxonomies (Gelfand, 1993), and in the era of ePublishing, what defines grey has evolved and changed.

Observing the growth of library collections that eclipse generations of technology:

- Incunabula – manuscripts in Special Collections.
- Print from tablets to paper.
- Microforms – card, film, fiche, scanned digital.
- Multimedia & Audio – 8 mm, 35 mm, sound recordings, tapes, VHS, CD-ROM, laser discs, CD, DVD, streaming.
- Online hybrids with multiple accompanying formats.
- Born digital with increasing optimization from a variety of communication and cellular technologies.
- Integration with evolving social media and emerging technologies.

Publishing sources are changing as fast as the formats with libraries embracing more self-published products rather than just acquiring or adding materials that come from commercial publishing sources, scholarly societies, government agencies and those vetted by the traditional suppliers. Libraries over the last few years have also been cataloging and processing content which is “free” where no purchase is associated with acquiring or subscribing to it. This trend reinforces the “Open Access” movement that libraries have endorsed as an alternative to the proliferating prices associated with scientific and business related information subscriptions. Surveys as recent as those conducted by Farace *et al.* (2006) show that access to grey literature should be free. Additional issues that libraries entertain as they determine the format to add include:

- Access issues – how to migrate use options as readers and printers change and the demand is for 24/7 access not requiring physical entrance to libraries.
- Preservation – digital preservation standards are now a serious factor when libraries consider formats and what they must do to protect the condition of the materials.
- Multiple sources of access through increasing aggregation of digital content licensed in various packages suggest that libraries often experience duplication and pay more than once for access – choice may be good but financially difficult to justify.
- User preferences vary depending on personal choices, proximity and affiliation to libraries.
- Ownership vs subscription vs buy as needed or “just in time” vs “just in case” scenarios.
- New acquisitions models introduce demand driven or patron initiated options.

Library landscapes – the good, bad and undefined 5 living with constant ambiguity

Technology, service and administrative structures in most library landscapes are rapidly changing. The economic forecast for libraries to afford the changes dictated by technology and information products is hazy at best. Staffing has been noticeably redefined as new service needs dictate new models. Education has also evolved into lifelong learning with a wider scope of institutions offering higher education with new forms of distance education, and blends of academic and vocational curriculum. Major concerns include:

- Whether changes are short or long term.
- How many traditional services will be maintained as well as launching and rolling out new services as needed.
- Promoting more services through remote access.
- Growing integration and overlap of services.
- Understanding the value of what libraries do – the ACRL Report on Library Values (2010) (Oakleaf, 2010) has generated worldwide discussion over the last two years and the follow-up assessment exercises conducted in the UK, known as Library Impact Data Projects (2012) demonstrate the seriousness libraries are taking concerning what services they offer, how they deliver them and how they are perceived.

Economic considerations direct many of these issues and the Report on Library Values Executive Summary identifies these conclusions:

- Government officials see higher education as a national resource.
- Employers view higher education institutions as producers of a commodity – student learning, producing next generation of leadership.
- Faculty tend to expect higher education to support and promote cutting-edge research.
- Parents and students want an enhanced collegiate experience, propelling career opportunities and earning potential (Oakleaf, 2010).

Common paradigm shifts

Library organizational charts demonstrate that one of the constant factors shifting is the roles and responsibilities associated with collection development. Having morphed into the broader scope of collection management and absorbing basic functions such as routine cataloging, preservation issues and archival responsibilities, now incorporating digital components, the access function of collections is greatly expanded. An example of this is how many Special Collections units have increasingly made their deposited non-circulating resources available as digital assets and those collections, once considered visibly grey become less grey. The encoded archivists' description tool kits provide resources for librarians and archivists to create user guides to such collections (California Digital Library, 2012).

Collection management

The role of selection and acquisition has become less central and often outsourced to commercial suppliers through academic profiling of collection policies. The administration of this can be a bit convoluted due to specific library practices and local culture however, the role of bibliographer and selector has changed significantly as new roles are being incorporated among traditional ones. They include liaison librarian, subject specialist, outreach librarian, and many other duties depending on organizational structure and staff size.

Scholarly communication: new library frontier

In response to the unsustainable economic responsibilities associated with content provision best practices in scholarly communication were introduced nearly two decades ago. Many librarians in North America have adopted the Association of College and Research Libraries' (ACRL) definition of scholarly communication as "the system through which research and other scholarly writings are created, evaluated for quality, disseminated to the scholarly community, and preserved for future use. The system includes both formal means of communication, such as publication in peer-reviewed journals, and information channels, such as electronic listservs" (ACRL, 2012). Most academic research libraries have created a means in how to inform faculty and students about best practices associated with the core content areas of scholarly communication that include:

- Author's rights & intellectual property.
- Copyright & fair use.
- Open access.
- Publishing opportunities & options.

Publishing challenges

Commercial publishers, university presses and scholarly societies have devoted the last few years to launch eBooks. There are multiple ways of accomplishing this and it can be assumed that new products and methods will be released as reading habits continue evolving, new technologies at both the institutional and personal levels emerge. One major difference that determines level of greyness is the potential for resource sharing of eResources. For academic collections and in higher education realms, there are three significant products and issues that beg for description in the grey spectrum.

- (1) Scholarly monographs have come under scrutiny. The hallmark of publishing in the humanities and many other key fields, with library collections not as growing as rapidly in the book arena it is difficult for publishers to see as bright a financial outcome and they are gaming the stakes.
- (2) Textbooks are going through serious reviews – in the spirit that "every book, a potential textbook" the effort to incorporate different study techniques in new packaging invites multimedia, illustrative examples, study questions and answers, listservs to support student study and participation and often incorporation with online courseware. The example of the recent California legislation that mandates that publishers inform students of the extent of revised content dictating the need for new editions and more expensive purchases is a response to challenges in the financial quandary publishers are

in. It is premature to conclude that eTextbooks are appropriate for every subject and course. Student preferences will determine the marketplace success of these products in coming years (Digital Textbooks, 2012).

- (3) How quickly institutions are developing and unveiling distance education curriculum for both credit and lifelong learning opportunities, or as massive open online courses (MOOCs) has been a target of interest in recent months as institutional boards of oversight consider distance education a lucrative financial investment even though faculty are cautious and measured in how they are responding. The current case of the President of the renowned University of Virginia who lost her position before being reinstated over a perceived slow uptake on rolling out a more active distance education program is an example of how great the interest is in developing these programs. New

start-up companies, such as Coursera (2012) and EdX (2012) are accelerating their pace offering content management and software alternatives to mount courseware accommodating mammoth enrollments and are among investments campuses are deliberating over (DeSantis, 2012).

Emphasis on eScience/eResearch

Many libraries have adopted responsibilities for data management as federal or government research funding has announced mandates and calls for handling and treating research data by making it findable, sharable, citable, and able to be repurposed. Data management is handled in many different ways but once declared very grey, today it has metadata associated with it and is parked in either institutional or subject repositories with finding aids, associated papers and publications, and a new body of information byproducts that have been created. This is almost like how movies/films have merchandise that accompanies the release generating new revenue streams to supplement ticket sales and at home viewing options. In order to manage data, new toolkits (Data Management Toolkit, 2012) have been introduced so libraries have the resources to handle the following functions (Humphrey, 2012):

The range of literacies

Academic Libraries had as part of their mission educational outreach. It was often actualized by offering different forms of library instruction which developed into more sophisticated program delivery and became known as information literacy taking place both in and out of the classroom and supporting distance education. This was the culmination of teaching how to find, evaluate, apply, cite and recall information. Such methods matured to where standards were defined, translated into many languages and are now being revised that offered librarians ways to offer users relevant methods of information literacy.

In addition to information literacy, the academic community introduced other forms of literacy that have become central to student independence and success, measured by different outcomes and among the thirty listed (Kinds of Literacy, 2012) the ones most relevant to the focus of librarians concerned with instruction and resources include:

- Digital literacy.
- Financial literacy.
- Visual literacy.
- Data literacy.
- Graphicacy.
- Geographic literacy.
- Cultural literacy.
- Numeracy.
- Scientific literacy.
- Creative literacy.

Reincarnated library collections

This idea of reincarnating the library and thus its collections indicates a repositioning/repurposing content that confirms the growing role of Grey Literature in collections. Perhaps still on the fringe and not always articulated in collection policies, Grey Literature due to a more mainstreamed approach from both corporate and individual authors, a range of publishing sources and enterprises, the sheer variety of its composition and the role each format has in libraries suggests that not one method dictates collection policy.

There are many examples of Grey Literature that are actively collected in

libraries and for which historical as well as current content compliment holdings. The mindmap, "Current Grey Literature Document Typology," (Pejsova and Vaska, 2010) is a product of a current research team trying to define typology in grey literature as the hues change, confirming Hitson's famous statement, "grey is global [...] grew is growing [...] grey is good" (Hitson and Johnson, 2008). However, it is still incumbent on libraries to be flexible in adding not only traditional but content in emerging mediums and formats. Libraries, once reluctant to collect and host materials that required original processing are now welcoming what is considered on the grey spectrum as they experience paradigm shifts into treating digital artifacts and providing access to global users. Articulated by a recognized grey literature steward, Joachim Schopfel states, "However diverse, these documents all have one point in common: they contain unique and significant [...] information that is often never published [or available] elsewhere" (Schopfel, 2006).

Libraries are deliberating how to treat print as it is perceived that readers/users prefer 24/7 access to content that does not require a library visit. Libraries began to experiment with digital content by bundling online resources packaged with print. The popularity of online products through the critical mass of library users convinced librarians that such products eventually would replace print. Libraries were assured by publishers that the online content was sufficiently archived and protected, thus libraries shifted to the online environment entirely and canceled print copies.

Libraries are now hedging bets on how to protect print. Usage statistics indicate a sharp increase in the reference for online-accessed journals vs print. The trend indicates that books will follow the same path as journals will follow the same path as journals to transition to a more online presence. Librarians are starting to demand from publishers that there should be a simultaneous release of formats and are prepared to pay a premium for online access signaling clear departures from previous practices. The threat of subscription models vs ownership is pervading decision-making in collection development departments worldwide.

Regarding grey literature, some examples of disciplines and products that have pushed the boundaries forcing libraries to adopt ways to incorporate products that offer new methods of use may be the general directions of the open access movement and specifics in the following examples.

Government and business information – census products

One example of the reincarnation of grey literature in the government that is shifting from print publications to electronic is the strident move of government publications to the internet. A prime example of this is the US Government's effort to transition from GPO Access to FDsys as the main portal of government information (Hyde and Orlando, 2011). As the US currently experiences a deep and longer lasting recession than anticipated, and the need to reduce expenses, save money, promote partnerships with the private sector, the government has transitioned to a mostly born-digital, electronic format in order to cut costs and share information. Concerns about this harken because of inconsistent efforts to archive all versions and libraries and the consortia to which they belong have had to take the initiative in developing confidence that this is being correctly and fastidiously done. Many of these moves are on the surface to reduce duplication, but the real motivating factor is to economize in the face of certain budgetary constraints. The impact on research requiring comparative data from year to year, decade to decade has been challenged by this move causing data dependent users to quell about how records would be maintained going forward with these inconsistencies of data reporting.

A key example of this is the *US Statistical Abstract*. This source is an annual compendium of government information that was previously compiled into one print volume and has been the bread and butter of libraries and many

households nationwide. The unfortunate result of the stagnating economy is the end of the Government's release of the *US Statistical Abstract*. Users will be redirected to the *State and Metropolitan Area Data Book* and the *County and City Data Book*, effective in 2013. According to the US Government, these two products duplicate the content of the *US Statistical Abstract* and will reduce operating expenses for the US Census. The *US Statistical Abstract* will be privately released by a joint effort of Proquest and Bernan, two established commercial publishers of government information. The library community was such an interruptive force, with librarians considering taking on the publishing effort, it was a great relief to learn a solution is in place for its continuity. Other important products such as the *Economic Census* and the *American Community Survey* are also on the brink of extinction by the Government Publication Office (GPO). According to messages about these changes, the positive opinion is that there is a future for these resources, but the flip side is that the electronic version will no longer be free, posing additional barriers on access and new costs for library holdings for what is perceived as a public good and a major source of information for the business and academic communities. With the government's shift towards electronic resources, the bigger question remains about a grave concern as to how these electronic resources will be archived and managed. For example, according to a report done by the US General Accounting Office (2002) roughly ten years ago, NASA had over 20 terabytes of data in its archives. One can imagine that today, the amount of information that has been generated is much larger than what it was a decade ago. In response to the growing amount of government information, the US National Archives and Records Administration created the Electronic Records Archive that currently contains roughly 121 terabytes of information (Rainie, 2012). Another troubling fact is that the NARA ERA system currently does not have preservation processing capability (Electronic Records Archives (ERA), 2012). Given the frequency of software updates, for example the popular Windows operating system, it is possible that terabytes of government information will become unreadable in the foreseeable future. On top of all of this, the government is going through budget cuts and operational challenges and investigating the utility of the cloud. It is alarming that a huge part of government information could be unusable due to a software update.

News and media

Market research indicates that over the past ten years, the rise of internet news has gone from about 24 percent of users getting news from online sources to roughly 34 percent of people in 2010 (Rainie, 2012). Assuming that this is part of a trend, we know that the ubiquity and options in communication devices dictate the methods people employ for getting current news.

The new media that the general population worldwide now relies on reinforces how critical the immediacy and accuracy of information with visual clarity and imagery sharing celebratory as well as catastrophic headlines that inform our daily lives has become. The choices we have for television, radio, satellite, internet coverage that can be obtained via multiple communication devices suggests that global coverage is broader than international reach that tends to define the print distribution.

This compares with a steady decrease in radio and newspaper sources over the same time period and a stable trend in television news. The Gartner Hype Cycles for Consumer Devices, Emerging Technologies and Social Software illustrate these trends very explicitly (Gartner, 2012).

Earlier this year Gartner released a report, "Animate and Inanimate Objects Connected in the Internet of Everything," where it was suggested that a new way of looking at the Internet was to cross examine it in light of six areas or establish

the concept of multiple Internets: Information, Systems, People, Places, Things, Virtual Entities” (Mahoney and LeHong, 2012).

In addition, people tend to “graze” on news all day long craving information for a global reach as the financial and world markets influence local experience. The new chief at Time Inc., Laura Lang, whose background is in digital marketing and advertising, shares how her focus seems to be on “tailoring the company’s magazine properties around the digital consumer.” Corporate intelligence breaks down readers’ daily news cycle. The “Arc of the Day” study showed that in the morning readers want bite-size headlines and news flashes. In the afternoon they are often at a desktop computer and want to grab a slide show or video, and at night they have time to engage in a deeper article” (Choizik, 2012).

Today, as the Olympics take place in London, we can observe but one example of how media and the Internet transcend printed newspapers for current up to the minute status of the competitions and that we rely on print dailies and weeklies for a more lucid journalistic analysis of the events. The comparative examples from the 1948 Olympics held in London come from archived news reels, microfilm and now probably digital archives of those Games.

Also during this time period, the immediacy of news has shortened as more people were connected to the internet. Local, regional, national and global news merge into greater relevance for the population-at-large. An example of this is the US Airways Flight 1549 that occurred on January 25, 2009. This was a flight from New York La Guardia airport that took off and then ran into problems when geese flew into the engine disabling the aircraft. Captain Chesley Sullenberger safely navigated the plane to safety by landing on the Hudson River. As events started to unfold, the passengers on board used their handheld devices to capture the water landing on video and also micro-blogging on Twitter and other social networking sites (Sagan and Leighton, 2010). We only need to turn on the television today to view live footage from the Aurora, Colorado cinema tragedy, occupy movements across the world, the conflict in Syria, protests in Greece, Spain, and Italy against austerity legislation. Although the media and content produced by these events is content rich and useful for primary source materials and form another example of grey literature. The challenge remains to organize this new type of medium into a coherent and easily findable format for future researchers to retrieve the events when they happened. Much of the video footage, tweets, Facebook entries, and blog postings are scattered all over the internet and it is hard to corral everything into a coherent format to benefit future academic researchers and also into a system that can make retrieval of these events in an organized fashion. The real grey literature is found in the opinions and response to news increasingly found in blogs and social media sites. This trend has taken on a more significant role in public opinion and related forms of research and scholarship. The authoritative as well as the anonymous commentary are we observe equally cited and referenced in future discussions (Gelfand and Lin, 2011). This method of discourse forces us to conclude why and how the information enterprise is becoming more grey than not.

Genealogy

Genealogical information, such as a ship manifest or this census form is an example of data that continues to proliferate as citizens share information more widely through social media and the new software packages that one can utilize that allow for interviews, videos, photograph inclusion, maps, family trees and other visual

artifacts. Today, libraries, museums, nonprofit agencies, religious institutions and government sources contribute to resource development that continues to refine genealogical research with multimedia. New research findings are pieced together with family histories contributing to the social understanding of a diversified population weaving an even richer tapestry of previous generations.

Science and data

Also due to economic uncertainty, the scientific community has embraced more grey literature because it is responsive to the moment, generates new information, incorporates visual display as well as promotes data intensity. In this day and age of budget reductions, the importance of grey literature is becoming more critical as academic and research institutions are depending on a wider source of alternative, yet authoritative literature and information resources. In some cases in developing countries even with normalized pricing schemes for traditional resources, grey literature has been among the only sources of information as institutional subscriptions remain prohibitively expensive for those entities. This is in large part because much of the time grey literature is available for free, or perceived to be (Corlett, 2011).

An increasing amount of recent scientific publications are in the realm of grey literature as it is quickly publishable and also does not have to go through the traditional vetting process normally associated with academic publications. It can still have authority control, even undergo peer review and have value-added attributes commonly associated with commercial products. As an ecologist shares, “Most reports contain some useful information and the best are excellent. Most often it is the data that is of lasting scientific value, not the analysis and conclusions [.. .] and that which is commissioned by governments may have large impacts on policy irrespective of its quality” (Corlett, 2011). However, the challenge within the scientific community is determining a central location for grey literature publications as much of the literature is scattered about throughout cyberspace and also hidden in internal networks, personal computers and individual web sites that are not always discoverable by indexing agents or web crawlers.

Public and consumer health

Blending science with health maladies, diagnoses, interventions, treatments, procedures and concerns we see predominant themes on wellness, mental health, nutrition and eating disorders, and other physical conditions well explored in the media. With the changes in health care delivery, more telemedicine, challenges by insurance providers, and an emphasis on home health, the demand for health related information has never been greater. The ability to learn about the latest clinical trials, view a video of latest medical devices and medical procedures eases patients’ anxieties about their medical needs and situations. Being an informed citizen encourages one to have more meaningful relationships with one’s physicians and know where to go to seek relevant, authoritative and current information. Government research mandates direct current findings to be openly shared. Human subject confidentiality, electronic medical records, drug information, and other related issues influence the sourcing and distribution of health information.

Conclusions

Scanning the frontier of what will constitute grey literature in the future, a continuing period of enlightenment, we predict the following:

- (1) What was once really grey will diminish its greyness.
- (2) What is medium grey will shift, probably to less grey.
- (3) Much will become new grey.

These exciting times indicate that formats will not determine greyness. Instead how hospitable information is for discoverability and thus usability and referencing will define its future destiny. Format agnostic will continue to define grey literature; library print collections will not erode but will fade, be digitized or be centralized in library warehousing that can promote resource sharing. New methods to preserve and archive digitally produced content will force future roles for information generation and recognition in library collections. A new period of enlightenment will be in our shadows as we continue to use brightness and innovation to augment the grey.

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