Beyond the Word: the future of documents

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Abstract

This keynote presentation considers the definition/evolution of documents, and outlines the ramifications for those of us working in the library and information professions (LIS). Specifically, it sets out the need for *post-neodocumentation* theory, moving forward from *neo-documentation*.

We will start with some historical predictions for the future of documents, noting that despite the prescient suggestions of electronic representation and wireless transmission, the traditional formats such as books, newspapers and letters were seen as fundamental components in the imagined informational processes of future times.

This paper will then move to show that although these well known entities will undoubtedly remain central to 21st century LIS, drivers for change from at least three areas suggest that other types of document are already extant in contemporary practice. Convergence of the GLAM sector (**G**alleries, **L**ibraries, **A**rchives and **M**useums), digital scholarly communication and the emergence of immersive texts have each led to new document formats, and a consequent need to expand the ways in which we work throughout the information communication chain to accommodate them. We need to reconsider Buckland's question, "what is a document?" Then we need to reconsider our views on document authorship, dissemination, organisational processes and policies, description and classification, system architecture, and perhaps most importantly, undertake to understand new information behaviours associated with modern information communication.

History of the Future of Documents

There have been many accounts over the past hundred and fifty years of the perceived future of recorded information: fiction and non-fiction, serious and

satirical, perceptive and spurious; see, for example, Pennavaria (2002). However, most of these have focused on changes in the technology for accessing documents, assuming that the documents themselves will continue to take familiar forms.

Five examples will illustrate this point: two from the late nineteenth century, and three from the mid-twentieth century.

At a meeting of the American Library Association in 1883, the leading nineteenth century American librarian Charles Ammi Cutter presented a vision of a public library one hundred years in the future (Cutter, 1883). Cutter foresaw with surprising accuracy modern technological developments, such as electronic document transmission from central stores, automated book retrieval, distributed holdings of local newspapers accessed remotely, and sound recordings of what we would now term 'audiobooks'. But the documents with which he sees his century-hence library dealing are rather traditional: books, journals and newspapers.

Similarly, Octave Uzanne's 1894 article 'The end of books' foresaw handheld devices able to store numerous books, and also envisaged the reading of print superseded by listening to recorded voices; but imagined that these technologies would convey traditional books and newspaper articles.

H.G. Well's speculations on a 'World Brain' included universal access to documents via microforms and similar technologies, but the documents themselves were traditional in form: "any student, in any part of the world, would be able to sit with his projector in his own study at his or her convenience to examine *any* book, *any* document, in an exact replica (Wells, 1938, p.54 [authors' italics]).

Similarly, Vannevar Bush's seminal article 'As we may think' is well-known for its prediction of mechanized devices handling document in microformats, with automated retrieval, and an ability to create 'trails of association' between them (Bush, 1945). But Bush saw such document stores as containing rather familiar forms: books, periodicals, newspapers and business letters, photographs, and notes and memoranda.

More recently, the British science fiction writer and futurologist Sir Arthur C. Clarke, well-known as the originator of the idea of the communications satellite, has made numerous accurate predictions of advances in information technologies, including mobile phones with what we would now term GPS (global positioning systems). However, in his *Profiles of the Future* series of articles dating from the early 1960s, which sets out many of these predictions, he sees these new technologies being used to convey rather familiar forms of document: books, letters, newspapers and transport timetables.

Bibliography, Documentation, Information Science, Documentation

Early bibliographical works were referred to as *literary histories*, a phrase first used around the beginning of the 17th Century (Woledge, 1983). The selection, organization, classification and dissemination processes associated with recorded information were first formalized under the embracing definition *bibliography* in 18th Century France, and the interested reader is again referred to Woledge, (1983) for a detailed history and evolution of the term in several European languages, and the gradual change to the concept of *documentation* around the end of the 19th century.

Towards the end of the 19th century through the first half of the 20th century, the term '*documentation*' became popular, championed by Henri La Fountaine (1854-1943), Paul Otlet (1868-1944) and Suzanne Briet (1894-1989), in response to the concerns at the time around the increasing number of documents which required managing, especially within the scientific and technical fields. La Fountaine and Otlet regarded bibliography as only part of documentation, the latter also including authorship, printing technology, publication, book production, and the work of libraries. The attempt to establish a unified approach to the handling and management of documents raised the question of boundaries; what was a document, and what was not? These questions, and the associated literature comprised what may be called, the first documentation movement.

In his 1934 *Traité de Documentation*, Otlet put forward the idea that the concept of a document went beyond text on paper, to include images, maps, diagrams, models, educational games, works of art, sculptures, natural objects, artifacts and archaeological finds. He believed that objects themselves could be regarded as documents if the act of examining them was informing.

Developing Otlet's work, Briet considered that bibliography and documentation were concerned with access to evidence. Her most famous example is perhaps that of the Antelope; whereas in the wild, such an animal would not be a document, if brought to a zoo and 'catalogued', then it would be, (Briet 1951, Briet 2006).

These early thoughts on the nature of documents can be regarded as the vanguard of the contemporary convergence within the GLAM sector, (Galleries, Libraries, Archives and Museums), where digital representations of many types of objects are all seen as documents.

The exact meaning of the term documentation fluctuated throughout the first half of the 20th century, across Europe and in the USA. The sometimes difficult relationship between librarianship and documentation was further complicated by the emergence of special librarianship and information science from the 1950s, and by the 1970s, *information science* largely replaced documentation as the name given to the processes of collecting, indexing and making available materials on a given subject. This development resulted from the technological advances in computing, which focused the scope of documentation on user centred retrieval. The goals of

relevance and recall echoed Otlet's original interest in the 'aboutness' of a document, but the overarching scope of his definition of documentation was lost. (Buckland, 2007; Lund and Skare, 2010).

The tension between the boundaries and definitions of the professions and activities associated with librarianship and information science has significant representation in the literature, but library and information science today are perhaps best viewed as different emphases within a single continuum of document-related activities, known as the information communication chain. (Robinson, 2009).

Creation->Dissemination->Management->Indexing/Retrieval->Use

Taking, for the purposes of our discipline, information as that which is instantiated in broadly defined documents, we can understand our professions as being concerned with all aspects of documents, from their creation to their use, such that the original meaning of documentation as expounded by Otlet, seems entirely apt for the 21st century.

This prompts us to revisit the question: 'what is a document?'

At the end of the 20th century, a renewed interested in documentation was spearheaded via a variety of impetuses.

In Norway, developments in digital technologies and the subsequent emergence of new media, led to changes to legal deposit in 1989, (Lund and Buckland 2008). The changes meant that not only all new printed publications should be deposited in the National Library, but that new publications in all media formats, including television and radio broadcasts, and movies should be deposited also. The need to preserve and provide access to these newer types of document, highlighted the need for further exploration of the nature of documents from the perspective of library and information science. Thus, in 1996, the Institute for Documentation Studies was established at the University of Tromso, headed by Niels Lund.

Around the same time, prompted by the increase in new digital media, Michael Buckland, at the University of California, Berkeley, revisited the need for library and information science to have an inclusive view of documents, one that included museum objects, as well as books, periodicals and databases, (Buckland 1997). United by the work of Suzanne Briet, Buckland, W. Boyd Rayward and Lund, after meeting at the CoLIS 2 meeting in 1996, and following a subsequent informal collaboration, organized a series of Document Academy conferences, starting in 2003, in order to promote a 'neo-documentalist' agenda. (Lund and Buckland, 2008).

The Document Academy (DOCAM) began as an informal, international network of professionals from various fields, with an interest in the nature of the document. Document Academy conferences are still running.

Both Buckland (2013) and Lund and Skare (2010) have subsequently written on the history and current status of document theory, suggesting similar three-fold angles from which to study the phenomena of documents:

Lund and Skare (2010):

- Professional document theory (physicality and aboutness)
- General document theory (mental interpretation of content)
- Social document theory (only a document if someone decides it is; social impact)

Buckland (2014):

- Information as thing
- Information as process
- Information as knowledge

Their ideas match those suggested by a variety of other authors. The concept of documents as social phenomena is considered by Hjorland (2000), who writes:

> "They only become documents once they are assigned an informative value by a collective or domain."

Both the above three point schemas can be viewed as echoing Popper's three worlds, which have been associated with a philosophy of information, (Robinson and Bawden , 2014, p122.).

Lund and Skare (2010, p 1633), write that Otlet

> 'developed a document theory for libraries, not for social life in general.'

Lund and Skare (2010) and Buckland (2014), conclude their analyses with the suggestion that library and information science needs to consider an holistic approach to document theory, connecting the physical interpretation of documents (physical and digital), with the socio-cultural aspects, throughout the processes of documentation. Here, there is an echo of the tension between the UK/US versus Franco/European origins of book history, see Finkelstein and McCleery (2013), and indeed the connection between book history and documentation warrants further analysis, although this is outside the scope of this paper.

At this point, the focus of contemporary library and information science was once again seen to be embracing the broader processes included in the original understanding of documentation. This was termed *neo-documentation*, as suggested by Buckland, as indeed, the new documentation required those of us working and

researching within the discipline to move to an even wider understanding of the nature of documents.

Whilst the forms traditionally understood as documents, such as books, journals, letters, are still of interest and importance, let us consider three aspects, which support the need for further development, beyond *neo-documentation.*

GLAM, Digital Scholarship and Immersive

GLAM

The first reason for us to consider the need for an extended approach to documentation comes from the convergence of the work of libraries, with that of galleries, archives and museums. Anticipated by both Otlet, (1934), and Buckland, (1997), (see also Latham 2012), in the consideration of images, sculptures and museum objects as documents, the convergence of the processes of collection management within the GLAM sector has been documented for some time, see for example, Given and McTavish, (2010), and Marty (2014).

Technological advances have led to mass digitization of traditional documents and artifacts across the collection disciplines. The surrogate, digital files are themselves documents, as too are the metadata used to describe them. In addition, many works of literature, art and music are now born digital. Even 3D depictions and worlds are usual. All require creation, indexing, storage, sharing, preserving and use processes, which are the mainstay of documentation. As a result, the scope of LIS now extends to:

- Original documents (in the broadest sense)
- Surrogate digital renderings
- Born digital documents
- Metadata files accompanying both physical and digital documents

Digital Scholarship

The second reason comes from the well-documented transition occurring within the field of scholarly communication, from the dissemination of traditional, physical documents, to digital scholarly practices within the sciences, arts and humanities, and social sciences. For a comprehensive analysis see Borgman 2007.

This transition is not just about the creation and sharing of books and papers in electronic formats, via institutional or subject repositories, but information communication processes throughout the entire lifecycle of the research process. Scholars create and work with datasets of all kinds, which as forms of document, demand storage, analysis, preservation, indexing and access. The task of research data management is gaining increasing importance in academic and research libraries, alongside the concept of data literacy. Tools for accessing, mining, combining, interpreting, displaying and communicating data are proliferating,

changing entirely the scope of what is meant by document 'use' and impacting on how we understand information behavior and needs.

Many scholars communicate via social media, introducing new yet more potential documentary items and pushing formally 'informal' communications into the realm of 'formal' published outputs. The understanding of what constitutes a scholarly output is changing, accompanied by the field of altmetrics. The ease with which social media allows peers to collaborate across time and space, also impacts upon the networking and sharing of documents.

Finally, we have the questions of open access, the moves towards the library as publisher, and the corresponding rights and access debates. These bring us again to a need to reassess how we understand documents and documentation.

Immersive

Developments in pervasive computing, multisensory network technologies and participatory human computer interfaces will allow new forms of 'immersive documents to emerge, where unreality can be perceived as reality (Robinson 2015a). Before we arrive at the availability of completely immersive documents, we will see a range of lesser, participatory experiences, such as interactive, transmedia narratives. In these narratives, the story reaches out beyond the imaginary world, into the reality of the reader, with texts, phone calls and connections, seemingly coming from characters within the plot. The way the narrative plays out can be influenced by the reader, as can the ending, (see for example, Portal Entertainment).

Immersive documents utilize the technologies of virtual reality and multisensory computing. Alongside fictional narratives, there are also examples in journalism, education and training. The blurring of the boundaries between theatre, films, gaming and texts is dually driven by technology, and the willingness on the part of the reader to participate in the unreality.

LIS is already familiar with regarding items such as videos, CDs and computer games as forms of document. Theatre archives deal with recording performance, but immersive documents, offering an experience to the user or reader, will bring issues not only of indexing, storage, retrieval and preservation, but also questions in regard to use. The ethics of engaging with a document which provides an experience close to reality, may be different to those of simply reading a traditional document. The need to investigate the nature and use of immersive documents, and the impact on human information behavior has been highlighted by Robinson, 2015b.

Conclusions: Implications for LIS

Predictions for the future of documents have imagined how technological wizardry would enhance our ability to access books, journals and papers. Whilst these forms undoubtedly retain their importance, several writers around the beginning of the

21st century suggested the need to reconsider the definition of the document, and established courses, conferences and new theoretical frameworks to enable a neodocumentation movement.

This paper suggests that the convergence of the GLAM sector, coupled with the transition within the academy to digital scholarship, and the emergence of immersive documents requires the LIS community to go beyond what has been proposed, to perhaps what can be termed post-neodocumentation. The new forms of document will require us to rethink all the processes associated with the information communication chain, but most importantly, we should pay attention to our users or readers. What do they expect and need from 21st century library and information services? If we do not understand this, it is likely that protagonists from other related disciplines and sectors will.

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