

Knowledge utopias: An epistemological perspective on the convergence of museums, libraries and archives

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Abstract

Convergence of museums, libraries and archives is a trend that has manifested itself internationally within the last decade. Its incorporation into government cultural policies has led to significant investment and the formation of new institutions in a number of countries, while provoking discussion across the library, archives and museum sectors. Improved knowledge acquisition for users of collections is often cited as justification for convergence. However, while the creation of knowledge in museum, library or archive settings has been explored in a range of scholarship, the fundamental concept of 'knowledge' and its dissemination has not been comprehensively discussed in regard to convergence of these institutions. In response, this paper examines information, knowledge and epistemology in the context of convergence and challenges the legitimacy of the claim that convergence will deliver greater knowledge to collection users.

Keywords: convergence; museums; libraries; archives; epistemology

Introduction

Much of the academic literature and other commentaries on the convergence of museums, libraries and archives proposes that facilitating streamlined access to collection information, either by building integrated facilities¹ or creating joint digital pathways to information, will simultaneously deliver unprecedented access to knowledge for users. Within this discourse, physical access to collections correlates with intellectual access, and there is an implied equivalence between the possession of information and that of knowledge. Yet, the mechanics of knowledge production in the context of converged collections remains to be described. Does the availability of diverse types of collection information in a converged setting necessarily bring about greater knowledge? If knowledge gain is not an automatic benefit of convergence, does this fundamental justification for convergence still hold true? And, on what conceptual basis are substantial investments in converged collection databases and bricks-and-mortar converged institutions founded?

Addressing these questions, this paper investigates the prevalent understanding of the term 'knowledge' within the discourse around convergence, adopting an epistemological focus to examine the sources, structure and parameters of 'knowledge' in relation to various types of collections. Transcending a merely semantic debate, it explores the definitions, creation and flow of data, information and knowledge, in and across collecting domains. It considers whether dominant understandings and deployment of the term 'knowledge' in the context of convergence takes into account the full diversity of knowledge produced via experiences with different types of collections. In doing so, it encourages discussion between scholars, cultural policy-makers and collection practitioners toward the development of clearer, more conceptually solid foundations for the restructuring of collection environments around the convergence model.

The paper begins by examining the use of the term 'knowledge' in the context of convergence, exposing the problematic nature of its indiscriminate usage within this area. Considering relevant literature produced by scholars across the collections sector – in museology, archives theory, and library and information science – as well related fields such

as cultural studies and information technology, the paper takes an epistemological approach to delineate fundamental differences between concepts of data, information and knowledge across museums, libraries and archives. Rather than extensively examining the historical scope of epistemological thought as an abstract branch of philosophy, the paper focuses on recent cross-disciplinary and international contributions that consider the communication of meaning through collections, and their cultural impact, as part of epistemological inquiry.

Having established a framework for understanding the concept of knowledge, the paper then examines each collecting domain's engagement along the data-information-knowledge spectrum. Given that particular information and 'knowledge' contexts can be seen as characteristic of museums, libraries and archives, this part of the paper includes a general comparison the information(s) and knowledge(s) produced through the methodologies employed by museums, libraries and archives to describe, document and present their collections. A closer examination of the museum context is used to elaborate ways in which specific epistemological frameworks can develop around collections by interpreting them through the lens of a particular type of institution. Finally, the discussion reflects critically on whether the knowledge attributes characteristic to each collecting domain can be maintained and enhanced in a converged setting or, conversely, whether there is a risk of impoverishing knowledge around collections as a consequence of both digital and physical convergence.

This paper forms part of the conceptual framework for an ongoing research project examining case studies of converged institutions in Australia.

Converged collecting organizations as 'Knowledge Institutions'

Literature in support of both the physical and digital convergence of library, archive and museum collections is often predicated on the ideal of democratized and universal access to information and knowledge, fostering shared access to cultural heritage. Improved opportunities for knowledge acquisition are often linked to the novelty and appeal of contemporary models for integrated collecting institutions, and this correlation is readily apparent in the language used to describe such models. For example, in their paper considering the history of the convergence trend, Given and McTavish cited Ian Wilson, then the Librarian and Archivist of Canada, who described the 2004 integration of Libraries and Archives Canada as revolutionary because the organization represented 'a new kind of knowledge institution' (Given and McTavish, 2010: 7).² Similarly, as the title of their paper suggests, Kirchoff, Schweibenz and Sieglerschmidt describe the digital convergence of library, archive and museum collections in Germany, through the development of the joint BAM Internet portal, as motivated by 'the spell of ubiquitous knowledge' (Kirchoff et al., 2008).³ They cite extensively from Lorcan Dempsey's influential 2000 paper that emphasized the benefit of convergence in creating 'knowledge networks' (Dempsey, 2000: 3). Likewise, Waibel and Erway outline the potential of digital convergence to revive the ideal of a 'deeply interconnected LAM [Library, Archive and Museum] knowledgebase' (Waibel and Erway, 2009: 325). Within a similar context, libraries, archives and museums have been described interchangeably as 'physical knowledge exchanges' (Dempsey, 2000: 3), the 'knowledge industry' (Enser, 2001: 428), 'knowledge centres' (Macnaught, 2008), and 'knowledge domains' (CILIP, 2009), with a shared mission of 'knowledge transfer within society' (Enser, 2001: 424). As these examples show, much of the discourse in support of convergence is underscored by the assumption that more knowledge – presumably for users – will automatically be generated via integrated cross-domain access to collections.

However, the generalized use of the term 'knowledge' as a concept applied collectively to illustrate the advantages of library, archive and museum convergence trivializes and blurs the boundaries between the types of information and knowledge associated with each domain. This simplification establishes a paradigm in which the 'components' of cultural knowledge can supposedly be isolated from their original institutional source and allowed to flow unimpeded (together with other 'knowledge' parcels from a variety of collecting organizations) to the end user. Alternatively, within this vision, the collection knowledge-bundles can be assembled virtually (via portals such as BAM, Europeana, or Trove) or physically (through the activities of converged bricks-and-mortar institutions comprising archive, museum, library and gallery components) into new kinds of mega-repositories.⁴

The flurry of discussion around the convergence of collection resources over the last decade has largely been prompted by the realization that digital technologies and the internet offer unprecedented possibilities for integration between cultural heritage databases, along with the perception that collecting institutions now have an obligation to provide new forms of public access in the online environment (see Zorich et al., 2008: 13, also Coburn et al., 2010: 17–18). Archive and museum informatics consultant Jennifer Trant has noted that the utopian idea of developing seamlessly interconnected digital heritage resources is propelled by the notion of opening up new knowledge horizons to users. She writes: 'Drawing on the desire that all information be available to anyone, anywhere, the vision of an integrated cultural web is portrayed as a powerhouse, latent with the potential of unrealized knowledge' (Trant, 2009: 369). The implication is that the advent of digital technology and the Internet have finally opened up the possibility of releasing vast reserves of knowledge around collections that previously remained untapped by the majority of users before the arrival of the world wide web.

Similarly, a discussion forum at a 2009 meeting of CILIP (Chartered Institute of Library and Information Professionals) titled *Beyond the Silos of the LAMs: Unlocking the benefits of collaboration between libraries, archives and museums* and supported by the UK Society of Archivists, Museums Association and MLA,⁵ centred on the premise that users 'increasingly expect access to dispersed materials from within a single search environment' (CILIP, 2009), suggesting that users will readily construct intellectual connections between physically scattered collections, given the ability to do so.⁶ As early as 2000, Lorcan Dempsey, in a report for the European Commission's Information Society Directorate, emphasized that libraries, archives and museums were striving to emancipate their cultural heritage content via the new potential of digital networks, in recognition of 'their users' desire to refer to intellectual and cultural materials flexibly and transparently, without concern for institutional or national boundaries' (Dempsey, 2000: 3). In other words, the primary impediments to the free flow of knowledge from resources held by collecting organizations are understood to originate in the limitations posed by physical dispersion, for which technological advancements provide the ultimate solution. Such arguments present digital technologies as a panacea for the relative inefficiency of physical collection repositories in disseminating cultural knowledge, and as such, disciplinary distinctions between collecting domains appear obsolete.⁷

Importantly, it would seem that this ideal of digital convergence as a pathway towards universal access to cultural 'knowledge' is underpinned by a positivist assumption that all kinds of objects in cultural collections (books, documents, images, artefacts, etc.) are equal in their potential to be interpreted for meaning. The examples cited imply a perceived equivalence across the 'knowledge' content supplied by the various repositories, and correspondingly there is no questioning of the ability of users to traverse these knowledge resources seamlessly, once digital technology provides the means. From this perspective, the information surrounding various collection items – though crafted by specific repositories – is nevertheless regarded as structurally and epistemologically compatible across institutional boundaries. Like 'objective' scientific facts, individual collection components (objects, digitized documents, photographs, imagery, object records, catalogue entries, exhibition texts, etc.) retain their full information potential regardless of their de-contextualization from the body of a particular collection. They can be separated, exchanged and recombined based on the needs of the user and regardless of their original institutional source or provenance, creating the so-called 'Knowledge Commons' that aligns the content of libraries, archives and museums (Curry, 2010). The implication is that access to information equals access to knowledge, and enabling one will automatically result in possession of the other.

This point of view, perhaps influenced by information science, which has traditionally emphasized resource discovery and dissemination over interpretation of content,⁸ has given way to pragmatic initiatives to create consistency in collection description across sectors (see for example Johnston and Robinson, 2001), or generic cross-domain cataloguing tools and standardized vocabularies capable of 'harmonizing cultural metadata', such as those described by Coburn et al. in their article outlining the development of shared cataloguing protocols for the museum and library communities (Coburn et al., 2010).⁹

However, while the convergence of collecting institutions promises unprecedented access to abundant 'knowledge' reserves, there is a conspicuous absence of discussion

about exactly how libraries, archives and museums function as information or knowledge repositories. Precisely what kinds of 'knowledge' are produced by them? Does convergence of cultural collections, either in digital or physical form, necessarily result in greater attainment of knowledge by users? And, what does this discussion indicate about prevalent understandings of the significance of museums, libraries and archives in shaping knowledge around cultural collections? In order to address these questions, it is first necessary to establish a clear understanding of the definition of 'information' in comparison to 'knowledge', to articulate the relationship between the two concepts, and then to consider how these distinctions apply in relation to cultural collections.

Differentiating *data*, *information* and *knowledge* in the context of the collecting domains

The essential differences between 'data', 'information' and 'knowledge' have long been the subject of epistemological inquiry, as well as forming important themes within other fields such as the social sciences and information science. And yet, distinctions between these concepts seem not to have penetrated discussions in the academic and professional library, archive and museum sectors with regard to the idea of convergence, where their loose and interchangeable use points to a superficial understanding of what these terms signify. This section takes an opportunity to consider recent scholarship about the nature and creation of knowledge from across various disciplinary fields, discuss the relevance of these theories of knowledge to convergence, and outline a model of knowledge (and its creation) against which the supposed benefits of convergence can be evaluated.

A significant contribution to understanding the differences between information and knowledge was provided in 1991 by Michael K. Buckland, a scholar of Library and Information Science, in his influential article titled *Information as Thing*. Buckland examined ambiguities around common understandings of the term 'information', identifying conceptual distinctions between the process of becoming informed, information itself, and knowledge, and systematically demonstrating that 'information' is always tangible and physical – hence the title of the paper.¹⁰ Buckland emphasized that information is not the same as knowledge, which is only created when human beings encounter and interact with (passive) information and change what they believe or understand as a result (Buckland, 1991: 353). The presence of information on its own is no guarantee that knowledge will be produced.

In an article published in 2009 in the International Social Science Journal concerning the global distribution and dissemination of knowledge, authors Nico Stehr¹¹ and Ulrich Ufer¹² argue a similar point, proposing that the development of digital technologies has indeed allowed for the spread of *information* around the globe at an unprecedented rate, but that global *knowledge* 'remains a highly hypothetical aim' (Stehr and Ufer, 2009: 7). Likewise, in a paper presented at the Museums and the Web conference in 2004 titled *Searching for Meaning: Not Just Records*, Darren Peacock of the National Museum of Australia, together with software developers Derek Ellis and John Doolan, made an important distinction between the superficial availability of online digital collection records and the more complex notion of making these resources meaningful as knowledge to the end user (Peacock et al., 2004: 1–3). Therefore, the advent of converged collections, where large amounts of collection information from multiple repositories become jointly accessible, cannot on its own guarantee an automatic increase in knowledge of those collections.

The fields of Information Science (IS) and Personal Information Management (PIM), though normally associated with discussions about information technology, also intersect usefully with epistemological discussions about the differentiation of data, information and knowledge in library, archive and museum contexts. In a 2010 article intended for a PIM audience, William Jones¹³ offers interesting ideas about how differing approaches to the collection and recording of information might lead to a variety of knowledge outcomes from the same initial data sources. Like Buckland, Jones identifies information as a *thing*, as opposed to knowledge, which has no tangible characteristics (Jones, 2010: 2), and concurs with Stehr and Ufer in proposing that there is interdependency, but not equivalence, between information and knowledge. Of particular interest to this paper is Jones' discussion of *information* as

resulting from the synthesis of data via cognitive perception. From this perspective, *data* ('raw data') is anything available to observation or perception, while *information* is a tangible record of a perception event – the rendering of data into a communicable form. In this way, information can be made physically available, manipulated, stored and exchanged in various ways.¹⁴ However, information is not the same as facts, because its content is always already shaped by the process of perception that identified and recorded it. It follows that collection information originating in libraries, archives or museums already bears the unique imprint of the institution that authored it, being inescapably shaped by the processes and lenses of 'perception' applied through the practices of each organization. At this point, the subjective role of individual collecting institutions in embedding particular concepts of significance and value within the information created around collections comes to the fore.

So, if *information* is tangibly recorded perception of data, what is knowledge? Stehr and Ufer define knowledge as 'a capacity for action... Knowledge enables an actor ... to set something in motion and to structure reality. Knowledge is thus knowledge about processes' (Stehr and Ufer, 2009: 8-9). In other words, having knowledge is not just about the passive consumption of information (i.e. the fact that information is available cannot be equated with access to knowledge). Rather, knowledge results from the ability to make available information personally relevant and useful. Jones takes a similar view, arguing that knowledge comes about through an individual's internalization of information into the complex world of personal meaning. In this sense, knowledge is fugitive; it exists as an individual's internal and perpetually fluctuating response to the reception of information (Jones, 2010: 2). Because knowledge is a personal response to information, it cannot be frozen, recorded and passed on in the same physical ways as information. Knowledge, then, is created when an individual internalizes information in order to alter his or her reality in some meaningful way.

Donald Hislop, writing on knowledge management and sharing for the *Journal of Information Technology* (2002),¹⁵ has persuasively argued against the idea that knowledge can be effectively transmitted via digital technologies, pointing out that knowledge cannot be reduced to one-way messages transferred via digital networks from a source to a recipient. Hislop builds his critique of the role of information technology in knowledge management by examining philosophies related to the fundamental character of knowledge. He argues that the 'optimism' surrounding information technology as a tool in knowledge-sharing is based on an objectivist epistemology¹⁶ that artificially separates a holistic concept of knowledge into two discrete components. That is, 'explicit' knowledge, which 'can be codified in a tangible form, for example, scientific theories published in documentation', and 'tacit' knowledge, which exists within the individual but cannot be expressed verbally, incorporating 'both physical skills and cognitive frameworks' that are embodied and culturally or socially framed (Hislop, 2002: 166-167).¹⁷ Because this bipartite view assumes that there is no subjective interference in the communication of 'explicit' knowledge, digital technologies become an ideal conduit for the unimpeded flow of this 'knowledge' between senders and recipients – a concept implicit, for example, in Lorcan Dempsey's reference to the 'knowledge networks' formed through the digital convergence of libraries, archives and museums (Dempsey, 2000: 2).

What emerges from Buckland's characterization of information as 'thing', Hislop's critique of the objectivist 'explicit' versus 'tacit' model of knowledge, Stehr and Ufer's delineation of knowledge as bound to individual context and practice, as well as Jones' model that foregrounds the intangible, personal characteristics of knowledge (as opposed to information, which is a tangible record of interpreted data), is that 'knowledge' cannot be 'transmitted' by, or between, information repositories (such as libraries, archives and museums), either in physical or digital form. If we accept this approach, it follows that libraries, archives and museums should not be understood as repositories of knowledge at all, but rather only of information – or as Buckland has written, as a 'species of information retrieval system' (Buckland, 1991: 359).

This perspective negates the idealized notion that, for example, digital convergence of diverse collection records will achieve a universal diffusion of cultural knowledge on the basis of simply facilitating more streamlined access to collection resources. Likewise, it complicates the idea that convergence of bricks-and-mortar institutions can automatically deliver improved knowledge gain for the users of such facilities. Instead, the rationale for convergence needs to do more than simply invoke promises of knowledge and articulate the actual strategies,

collaborations and processes that will promote meaningful engagements with collections among staff and users. The realization of converged collecting organizations as 'knowledge institutions' becomes contingent on the capacity of those organizations to provide a suitable environment for users to interact with and internalize the available collection information. To justify convergence on epistemological grounds, these engagements with information need to be comparable with, or exceed, the possibilities already provided by distinct libraries, archives or museums.

The next part of this paper applies the ideas of these authors regarding data, information and knowledge to the context of collecting institutions, revealing ways in which various processes of capturing, prioritizing and recording information relevant to collections – as demonstrated, for example, by the different classification and cataloguing practices of libraries, archives or museums (i.e. each institution's modes of 'cognitive perception') – can give rise to particular characteristics in their informational content. In turn, these characteristics influence the scope of users' interactions with the collections to produce meaning.

Museum methods for contextualizing information

Over time, each domain has developed its own language for describing collections, and techniques for collection management, preservation, and presentation, that create diverse potentials for interacting with information. Museums provide a useful case study for demonstrating how the practices of one type of collecting institution embody various 'ways of seeing' collections – their cultural significance and their utility to the end user – that, in turn, shape the content and structure of collection information and therefore the kinds of knowledge that can eventually be produced around it. This section takes a more detailed look at the ways in which museums function to contextualize their collections, not because these methodologies offer a superior model to that of libraries or archives, but rather to illustrate the complexities involved in interpreting the content of collections from the standpoint of just one domain. Because analogous considerations exist for the contextualizing processes and physical settings provided by libraries and archives – each producing their own frameworks for understanding content – it becomes possible to glimpse the constellation of engagements possible with collections by encountering them through the 'lens' of various institutional settings. The same considerations complicate the notion that the streamlining (or indeed the obsolescence) of some of these environments through convergence can lead to improved knowledge outcomes.

Within what is referred to broadly as the 'museum' domain, variation in the ways in which objects are acquired, researched, and presented exists at the level of each individual museum. In other words, museums do not adhere to one definitive or standard approach for documentation, management and curation of collections, and each museum constructs encounters with its collections that are replete with both implicit and explicit judgements about the significance of the artefacts. The understanding that the meaning that develops around collections is not objective or fixed, but rather 'situated and contextual' (Macdonald, 2006: 2) becomes clear when one considers the plethora of methodologies that exist for interpreting museum artefacts. Erwin Panofsky's systematic approach to 'decoding' the symbolic content of art works, first published in 1939 in his *Studies in Iconology* (see Chapter 1, Panofsky, 1970), is an early example of a method for interpreting the meaning of artefacts within the art historical tradition. Some decades later, Thomas Schlereth (1982) and Susan Pearce (1994) produced edited anthologies detailing numerous models for the study of museum objects, each offering different philosophical, disciplinary, and practical approaches for interpreting the meaning of artefacts.¹⁸ More recently, in their publication of *Significance 2.0* – a methodology for interpreting the different meanings of material culture that is used widely by Australian collecting institutions – authors Roslyn Russell and Kylie Winkworth have emphasized that Australian collections owe their diversity to the heterogeneity that characterizes the nation's collecting institutions, each with its own history, policies and priorities that have helped to construct the meanings of items in their care (2009: 2).

As a case in point, one of the most basic steps that museums (and indeed libraries and archives) perform in order to create information around collections is the process of naming objects, or classification. Yet, even this apparently straightforward act establishes parameters

for interpreting the meaning of a collection item and is characterized by the institution in which the collection is housed. The variety of potential outcomes in the process of identification highlights the multiple perspectives from which objects can be understood and associated with one another. This idea is illustrated well by literary theorist Maria Esther Maciel in an article interrogating the idea of the 'unclassifiable' object (Maciel, 2006). Here she defines as 'unclassifiable' not only any concept or thing that exists outside of language, but also any object that can be classified into several conceptual groupings simultaneously, while not being fully contained by any single one – much as museologist Eileen Hooper Greenhill has identified the potential for a silver teaspoon to be classified as "Industrial Art" in Birmingham City Museum, "Decorative Art" at Stoke-on-Trent, "Silver" at the Victoria and Albert Museum, and "Industry" at Kelham Island Museum in Sheffield' (Hooper-Greenhill, 1992: 7). The capacity of objects to move between various typologies highlights that the perceived meaning of objects is dependent upon the classification schemes of the institutions in which they are housed, opening up the possibility for multiple interpretations of meaning.

Similarly, in reference to the museum as a site for interpretation, the relationships between collection objects, and the use of artefacts in exhibitions, Sheldon Annis has highlighted the symbolic nature of museum objects, and therefore their capacity to be understood in a multitude of ways. He notes that, like any symbol, objects in the museum context have no singular, fixed meaning. Rather, he describes them as "multivocal" and "polyvalent" – that is, they speak with many meanings and in many combinations' (Annis, 1994: 21).

The polysemy of objects is particularly poignant in the context of convergence, as the museum domain has traditionally eschewed universal naming standards, making it problematic to identify common holdings across institutions. The diversity in museum naming conventions also highlights that the meaning of objects is not fixed within their physical fabric, but rather, attributed to them by their institution. Taken together, the diversity between standards of nomenclature across libraries, archives and museums, but also individual organizations within these broad institutional divisions, provides just one example of how a rich, multidimensional information environment for knowledge-creation can be produced via the existence of diverse collecting institutions and disciplinary approaches.

The particular techniques that museums employ for contextualizing objects, including processes for accessioning, cataloguing, collection management and representation, have been recognized by a number of museology scholars as a distinct epistemological genre (Findlen, 2004, Paris, 2006). However, experiences with objects and information in a museum setting have the potential to influence knowledge creation on a number of levels. Scott G. Paris argues that museum visitors develop knowledge via their interactions with collection objects, but that this knowledge transcends the objects and is internalized in novel ways by each individual – much as the meaning of any text is a transaction between the intention of the author and the ability of the reader to make the text personally meaningful (Paris, 2006: 258). The social context of the museum space allows visitors to interact with one another as well as the objects, creating an exchange of ideas and helping to form communities of understanding (Paris, 2006: 259–261). In this way, the conversion of information into knowledge in museum settings is a layered process. First, objects (including artefacts, documents, images, audio-visual materials, etc.) are inducted into the museum context through accessioning and documentation procedures. Second, museums stage user encounters with collections by putting forward a selection of information, in particular formats, for visitors to interact with. Third, visitors engage with exhibits and other collection-based programs to develop personal understandings of the ideas and narratives presented. Visitors exchange and work through their understandings within a social context, leading to the communal generation of shared cultural knowledge and meaning.

The complex ways in which information experiences are constructed within the museum environment underscore the advantage of having a large number of diverse institutions – irrespective of whether they are libraries, archives or museums – that can each provide unique engagements with information for the creation of knowledge. Herein lies the value of recognizing the subjectivity inherent on the construction of information in collecting institutions. Each collecting domain, and every individual organization that broadly describes itself as a museum, library or archive, performs certain processes that transform data into particular kinds of information, producing institutionally-determined information ecosystems and, therefore,

offering diverse contexts through which users can building understanding. In this way, fostering an organic, heterogeneous array of collecting institutions – rather than what might be termed 'mega-repositories' – could well be vital to maintaining the richness and diversity of cultural knowledge, the significance of which is outlined below.

Museum, archive and library information frameworks as models of 'cognitive order'

A number of important scholars have proposed that the information structured by museums not only influences the kinds of knowledge acquired by users of collections, but also that museum processes are significant in demonstrating how a variety of apparently incongruent information sources can be rendered comprehensible. For example, museologist Gaynor Kavanagh has observed that the narrative structures that museums build around objects through collection development and documentation give tangible form to broader cultural understandings and debates within society (Kavanagh, 1994: 5).

Similarly, David Carr (2006: 13) has argued that museums impose 'cognitive order' on our view of reality via the mechanism of placing collection items and information in particular contexts. According to Carr, such museum representations provide audiences with a tool and template for understanding their world – for making sense of information. This aspect of the museum offering may be considered particularly valuable in a world where access to information (and data) is constantly increasing and where, more than ever, individuals require the cognitive tools to organize information and make it relevant.

While museum practices of acquisition, collection management, curation and representation give rise to particular information content (as well as providing a tangible illustration of how large quantities of disparate information sources can be organized and meaningfully associated with one another), libraries and archives represent alternative, equally complex systems, for shaping information. In the context of archives, theorist Terry Cook (2009) has persuasively argued against the idea that archives are passive, neutral repositories of information, pointing to archival arrangement and description techniques, along with collection management and even simple administrative activities such as the implementation of destruction schedules and the prioritization of conservation resources, as active historiographic processes that play an important role in determining the narratives that are eventually produced by historians and others who consult archival materials. Likewise, Elizabeth Yakel has highlighted the subjective, socially constructed nature of archival arrangement practices, noting that archivists often structure archives to reflect an idealized intellectual order rather than the state in which records existed in their original context (Yakel, 2003: 1–2, 10). She argues that the organizing principles employed by archivists are not only culturally formed, reflecting and supporting prevalent epistemological frameworks, but also create a feedback loop by constructing the parameters of future thought and historical analysis (Yakel, 2003: 6). Hence, access and interpretation of original records in archives is pre-determined by the ways in which they are combined and stored with other documents, as well as through the indexes and other finding aids that provide pathways into the material. In these ways, archives privilege certain encounters with records and can influence the ways in which their significance is understood.

Libraries can also be seen to promote particular understandings of collections via the selection of collection content as well as the controlled vocabularies used to classify individual items into thematic groups. For example, in her influential paper titled *The Power to Name: Representation in Library Catalogues*, Hope Olson (2001) has provided a rigorous analysis of the biases inherent in controlled vocabulary¹⁹ systems such as the widely adopted Library of Congress Subject Headings (LCSH) and Dewey Decimal Classification (DDC). Such systems provide a limited scope for the interpretation of library holdings and force users to conform to rigid terminologies in order to access the collection.²⁰ Olson argues that the quest for a universal (homogenous) descriptive language for naming information in library collections comes at the expense of allowing diverse attribution of subject matter for collection items, which might superficially inhibit efficiency in search and retrieval (especially across different collections or institutions), but which highlights the plural interpretive possibilities of the materials in the collection.²¹

By comparing the information processing strategies of archives and libraries to those of

museums, it is possible to envisage not just museums, but all three domains as 'epistemological genres'. Each type of collecting institution, not to mention the variety of approaches that exist at the level of individual organizations, plays an influential formative role on how collection items and the wider groupings into which they are organized are interpreted, named, described and associated with one another, offering a rich tableau of information resources available to the end users of collections. The multiple pathways into collections available via the diversity across and within domains creates the interface for a constellation of encounters between users and collection objects, giving rise to a multitude of possible 'knowledge' outcomes. The question then becomes whether this rich and valuable informational diversity is acknowledged, and can be effectively nurtured, in the design and management of converged collection environments, from cultural policy decisions down to collection practices at the institutional level.

Reframing convergence around epistemology

So far, we have explored important conceptual differences in the definitions of data, information and knowledge, as well as considering how the collection practices particular to museums, but also archives and libraries, illustrate the close relationship between the information available around collection objects and the institution in which those records were created. By recognizing that museums, libraries and archives offer equally subjective and domain-specific approaches to the arrangement and presentation of information, several questions about the assumed benefits of convergence of the domains become apparent.

First of all, by understanding that the availability of information, either in the digital realm or in a physically integrated setting, does not automatically translate to the acquisition of knowledge, the basic premise upon which many arguments in favour of convergence rest becomes complicated. As authors Stehr and Ufer conclude in their discussion about knowledge, it is possible that 'one individual has more information than another. It is much more difficult to conclude that one individual commands more knowledge than another' (Stehr and Ufer, 2009: 9). So too, it may be inferred that while a converged collecting institution, either as a digital or physical entity, may contain a larger quantity of tangible information than a discreet library, archive or museum, it cannot be assumed that users will automatically come away with more knowledge, or better knowledge, than if they had engaged with the collections before convergence. Instead, a shift in attention to the quality, scope and relevance of those engagements for users is called for.

Second, museums, archives and libraries are not only differentiated by the physical typological distinctions between their collection holdings. Each domain represents a particular epistemological framework, employing specific methodologies for interpreting collections, and producing information that reflects subjective concepts about the identity, value and meaning of objects. However, the ways in which *converged* organizations can acknowledge and leverage existing disciplinary approaches to the arrangement of collection information and the interpretation of collection objects – thereby retaining diverse contexts for users to make meaning around the collections – has yet to be established.

Finally, to what extent does the value of collecting institutions lie not only in the individual objects and associated records, but also in the ways in which these collection items have been organized in relation to one another to reflect an institution's particular epistemological framework for understanding the world? In other words, is there a more holistic notion of the significance of collections at stake if organizations are restructured to fit a converged model?

A number of commentaries on the theme of digitizing collections, though not always directly addressing the idea of convergence, raise similar questions. To quote a participant in an online forum around collaborations between museums and libraries, the ability to offer huge quantities of collection information on the Internet (or in a physically converged environment) is not necessarily proportional to an improvement in content: "'access' isn't just putting stuff online, but rather providing context and meaning" (Wright, 2010). In a related discussion, Tom Scheinfeldt has questioned the utility of digitized collection information in the wake of worldwide attempts to make collection documentation available online. He argues for a greater recognition of the dual nature of 'access' to collections – database access as well as contextual access – referencing the important function of libraries and museums in providing

specialist knowledge and the contextual packaging necessary for information to become meaningful (Scheinfeldt, 2010). Here, the significance and knowledge potential of collection information is contingent upon how that information is organized and contextualized, which modes of presentation are used, and how audiences or visitors are able to make sense of, and use, the information. Neither scholarly nor professional commentaries on convergence have thus far articulated the processes through which this may be achieved or enhanced in an integrated collections context.

Moreover, merely converging the information resources of libraries, archives and museums in order to improve access does nothing to resolve the looming problem of volume of information threatening to overwhelm value (Peacock et al., 2004: 2). If convergence is just about creating one-stop-shop repositories then, according to the authors just cited, there will be no automatic increase or deepening in the knowledge-value of the information held. It may be easier to locate, but not automatically any easier to contextualize or connect with other information to generate meaning. As Peacock, Ellis and Doolan have stated, museums need to 're-examine the nature of our data and the interfaces that present it as systems for creating meaning, not just disseminating information' (2004: 3).

Conclusion

By considering the way in which information is created and transmitted, we see that libraries, archives and museums should not automatically be regarded as 'knowledge institutions' or described in similar terms alluding to their 'knowledge' content. They do not and cannot transmit knowledge. Rather, they offer particular opportunities and settings where users can encounter different forms of *information*, creating knowledge and personal meaning for themselves. By inference, any mechanical co-location or integration of collection resources from different domains, either in a digitally or physically 'converged' environment, will not automatically yield greater knowledge acquisition for end users.

In recognizing that the domain-specific and organizational context of objects and information is integral to their potential 'knowledge' content, the challenge in converging museums, libraries and archives becomes the preservation of that context, highlighting the polysemy of collection objects and offering a diverse menu of information choices and forms of engagement to the end user. However, based on current understandings evidenced in the language surrounding how convergence might advance 'knowledge', it is not clear whether prevalent approaches to convergence take full account of these complexities.

This paper can be seen as a first step in focussing greater attention on the problem of translating conceptual issues into policy and professional practice. Cultural institutions and funding bodies might consider the value of museums, libraries and archives as institutional contexts for interpretation; not merely the informational utility of the individual objects and associated documentation that make up their collections. By engaging in a discussion about the production of knowledge around cultural collections, scholars, collection professionals and policy-makers can build a deeper understanding of both the range of significances that can pertain to a single collection item and the role of institutional context in shaping collection information, thereby developing a theoretical rationale for practical decision-making around convergence. With this awareness, those with the capacity to influence convergence projects may indeed be able to identify and develop whatever opportunities are offered by the model for enhanced knowledge creation for end users, and perhaps a more critically and conceptually informed model for convergence can begin to take shape. Without it, we cannot take for granted that the extensive resources allocated to convergence will deliver promised improvements in knowledge acquisition and intellectual access to cultural heritage.

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Notes

- ¹ The concept of convergence, and what it means in practice, has, to date, evaded a singular definition, as evidenced by the variety of partnerships, collaborations, institutional models and staff structures which describe themselves, or are described, as converged. So too, it is difficult to pinpoint terms to accurately express every example of convergence. Accordingly, in this paper, convergence may also be referred to as the 'integration', 'joining', 'amalgamation', etc., of collecting institutions.
- ² Perhaps because it was seen as self-evident, an explanation for precisely how LAC functions as a 'knowledge institution' was not provided.
- ³ It should be noted that these authors, and others, consider contemporary convergence of the collecting domains as a 're-convergence' in fulfilment of a historical unity that existed as far back as the ancient Mouseion of Alexandria, the legendary 'institution of the muses', which included the great Library of Alexandria, functioned as a centre for scholarship, and from which the modern word 'museum' is derived. However, these authors examine neither the rapid expansion of collections since the nineteenth century nor the professionalization of archival, museum and library workforces in the twentieth century in considering the important distinctions between these collecting domains as we know them today.
- ⁴ See Kirchhoff, Schweibenz and Seiglerschmidt for a discussion of the historical precedents of the "dream of collecting all kinds of media in one repository of knowledge" (Kirchhoff et al., 2008: 252-255).
- ⁵ The British Museums, Libraries and Archives Council, launched in 2000 by the UK government to provide joint strategic direction, promote standards, and allocate funding across the collecting domains, as well as providing policy advice to Government. It was active until 2010, when funding was discontinued.
- ⁶ It should be noted that evidence for this supposed user demand was not cited in the preamble available on the website.
- ⁷ For example, Dempsey refers to individual documentary techniques applied by each domain as 'arbitrary historical practices' (Dempsey, 2000: 4), thereby trivialising the idea that the evolution of separate collecting domains was the result of gradual differentiation based on societal, cultural or collection needs. Furthermore, Michelle Doucet, writing in 2007 as Director General, Services, of the Library and Archives Canada, stated that contemporary collection users already regard disciplinary differences between libraries, archives and museums as obsolete. She writes: 'Library, museum, and archival professionals care about the distinctions between different kinds of collections and documents, but most users do not' (Doucet, 2007: 65).
- ⁸ See Birger Hjørland (Professor of Knowledge Organization, Royal School of Library and Information Science, Copenhagen) in his discussion outlining the conceptual basis of Information Science and, in his view, its flawed grounding in nineteenth century positivism (Hjørland, 2000).
- ⁹ Efforts to achieve integrated access to digital collection resources have been underway for over a decade. For example, in 2000, Judith Pearce and Warwick Cathro of the National Library of Australia, along with Tony Boston, described the challenges of creating a hybrid information environment where digital information resources from libraries, archives and museums would ideally be available via a single interface (Pearce et al., 2000).
- ¹⁰ Buckland views every kind of object as potentially informative. Therefore, under this broad definition, museum artefacts, written documents, audio-visual materials, images and even natural found objects all have information status (Buckland, 1991: 353-355). For further discussion of the physical form of information see Buckland, 1997.

- ¹¹ Karl Mannheim Professor of Cultural Studies at the Zeppelin University, Friedrichshafen, Germany.
- ¹² DAAD-Professor at the Canadian Centre for German and European Studies at the University of Montreal, Quebec.
- ¹³ William Jones, Research Associate Professor in the Information School at the University of Washington.
- ¹⁴ See also Hjørland's citation of the American Association of Information Science (ASIS) definition of information, which is similar (Hjørland, 2000: 32).
- ¹⁵ At the time the article was written, Hislop was a lecturer with the University of Sheffield Management School. He cites his specific interests as 'the nature of knowledge in organizations and the role of information technology systems in organizations'.
- ¹⁶ Birger Hjørland has also highlighted that the proposition that the interconnection of digital data files equates to the true interconnection of ideas is based on nineteenth century positivism, which does not acknowledge the contingency of information to its source (Hjørland, 2000: 32-33). Hence, the information(s) produced by libraries, archives and museums carry their own institutional legacy and cannot necessarily be transposed into a converged collections context without either obscuring their authorship or losing informational identity. Such considerations in turn raise questions about the ability to streamline information(s) from diverse sources, or indeed the possibility of a true flow of 'knowledge', in a converged collection environment.
- ¹⁷ Interestingly, the notion of 'explicit' knowledge can be paralleled with the definition of 'information' as described by Jones and Buckland. Correspondingly, 'tacit' knowledge bears a resemblance to Jones' concept of knowledge as personally embodied and embedded. However, Jones avoids compartmentalising knowledge into two types, understanding 'information' as a prerequisite and phase in the development of knowledge, but not encapsulating it in a particular and finite form.
- ¹⁸ For prominent examples, see those methodologies proposed by E. McClung Fleming (1982), Jules Prown (1994 – originally published 1982), Ray Batchelor (1994), R. Elliot et al. (1994), and Susan Pearce (1994).
- ¹⁹ Also termed 'bibliographic control'.
- ²⁰ In recognising the inflexibility of library naming systems, Sarah Anne Murphy (2005) has written about the vital role of the reference librarian in collaborating with users to facilitate successful retrieval of relevant reference materials. She identifies searching a reference collection as a narrative hermeneutic process, where the user and the librarian work together to re-interpret and re-frame the reference query until it becomes compatible with the allowable search limits, or language, of the library catalogue. Again, this underscores that libraries present information about their collections according to limited parameters, predisposing the way in which those resources are understood. Also crucial to Murphy's argument is the significance of the personal interaction between the reference librarian and the user; an aspect of the library experience that that seems largely omitted in the context of online access to library catalogues and therefore, with probably graver consequences, also to the context of joint access enabled by digital convergence of library, archival and museum collections.
- ²¹ Historian David McKitterick (2006) approaches a similar point in his account of the development of library collections in England and continental Europe from the 16th Century. His description of the slow and unsystematic crystallisation of formalised principles for the organisation of library collections, not to mention the gradual development of librarianship

as a profession, demonstrates that there is no intrinsic 'natural' order according to which books can be classified and, therefore, assigned meaning.

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