Approaching the Anti-Collection

Betsy Van der Veer Martens

Abstract
This conceptual article explores similarities and differences among libraries, archives, and museums (LAMs) and significant sectors of what Atkinson termed "the anti-collection" in order to better understand the evolving universe of digital publication and its possibilities.

Introduction
The late Ross Atkinson (1994, p. 95) famously viewed the "universe of publication as bifurcated into the local collection and what we might call the anti-collection, i.e., the set of all publications not held in the local collection. Selection is . . . a continuous series of decisions about which items in the anti-collection should be moved into the collection." The inclusion of the digital "anti-collection" within this special issue of *Library Trends*, with its emphasis on involving the user in digital libraries, archives, and museums (LAM), may offer new insights regarding these possibilities.

Later mentions of Atkinson's anti-collection concept in the collection development and management literature have mostly centered on issues of cost and comprehensiveness in relation to user needs (e.g., Nisonger, 1997). More generally, Gorman (2000, p. 11) states that a library's collection includes tangible objects locally owned by the library, intangible objects locally owned by the library, tangible objects owned by other libraries but accessible to local patrons through cooperative agreements, and remote intangible objects not owned by the local library but to which the library gives access. He criticizes this implicit metaphor of the collection

as a widening ripple of concentric circles, gradually encompassing all the world's information and knowledge, pointing out that a given library's customers are generally local, and largely prefer local resources and access. Today, however, that preferred "local" access might mean via laptop or smartphone instead of particular library premises.

Libraries have long recognized the importance of collaboration, as no single library, however large, can indefinitely maintain a "universal collection" (Cruse & Sandore, 2009). Archives and museums too have such collaborative arrangements (Altman et al., 2009; Marty, 2008). Wortman's (1989, p. 16) definition of "collection" as "a selection from among a number of different materials, services, and arrangements" is broad enough to encompass libraries, archives, and museums. The digital environment for collections of all types presents a challenge as LAMs converge and cooperate (Zorich, Waibel, & Erway, 2008), a process that also involves the participation of various digital content providers: public, private, and individuals. Accordingly, the term *core collection* is used here to designate the aggregation of "local collections" represented by the digital interfaces of those academic, public, and special libraries, archives, and museums normally considered part of the LAM community, and the term *anti-collection* is used to designate the aggregation of digital interfaces of those content providers not normally considered members of the LAM community.

Boundaries between the core collection and the anti-collection have become more ambiguous within the digital universe of publication since Atkinson first described the complications of defining a collection's "control zone" when physical location of resources is no longer the deciding factor (Atkinson, 1996). The proliferation of electronic publication and the turn toward electronic licensing rather than ownership have accelerated progress and problems, raising questions about how far these boundaries may erode (Lee, 2005; Manoff, 2000).

Efforts to patrol them by establishing virtual control zones through policies (Payette & Lagoze, 2000) and technologies (Lagoze & Fielding, 1998) have largely treated the anti-collection either as a digital duplication of the "known" print universe or as an amorphous mass of digital objects from which to pick and choose. However, there are organized sectors that appear to be adjacent to the core collection in philosophy and purpose (e.g., Donaldson, 2008), while other sectors are much further away (e.g., Jenkins, 2001). Certain types of collections have emerged from within the anti-collection itself, with some significant implications for LAMs. Better understanding of the anti-collection will become increasingly important for archivists, librarians, and museum professionals involved in acquisition, management, and use of digital resources.

THE COLLECTION AS BOUNDARY OBJECT

The rise of digital libraries and their roles in supporting, supplementing, or supplanting traditional physical libraries has long been debated (e.g., Budd & Harloe, 1997). As noted above, Atkinson (1996) first pointed out the critical importance of boundaries in library collections, originally marked by physical location and later by privileged electronic access. Van House (2003) suggested that digital libraries can serve as "boundary objects" that bridge the differing social worlds of those who create, maintain, and use them. As defined by Star and Griesemer (1989), boundary objects consist of repositories, ideal types, coincident boundaries, and standardized forms. For all digital collections, the repository consists of one or more electronic databases; the ideal types relate to the specific content that is placed within them; the standardized forms shape the accompanying metadata and other information; and the coincident boundaries determine the various ways to access and use the collection.

Social worlds may both cooperate and conflict. For example, Fleischmann's study (2006) of the intersecting social worlds of biologists, biology teachers, and biology students showed that they contained directly opposed values that resulted in classroom "virtual dissection" becoming a common boundary object that allowed digital participation by members of all three worlds. Work by Martens (2001) on the role of citations as boundary objects indicates that their usage distinctly varies within the social worlds of law, science and technology. Albrechtsen and Jacob (1998) examined classification systems in libraries as boundary objects, showing that librarians and subject experts differ in perceptions of their utility, based on their respective practices.

Boundary issues appear even more contested in the archival and museum fields. For instance, the "blurring of boundaries" for them is different in that the digital and physical versions of an artifact or manuscript in such environments are not easily substitutable for each other, though the existence of both may offer fascinating new opportunities (Keene, 1998). Curating, interpreting, and documenting archival and museum collections within an evolving cyberinfrastructure offers challenges in terms of accessibility, accountability, and usability (Trant, 2008).

In his discussion of digital collections as boundary objects, Fleischmann (2007) provides a review of the science and technology studies literature to support his claim that values are deeply embedded within them. His rationale clearly applies also to the anti-collection, and his suggestion that detailed studies of specific collections are necessary is well taken. Given the limitations of an introductory overview, however, this article will not attempt a detailed examination but rather some preliminary investigations into the value systems of sectors within the core collection and the anti-collection.

Evaluating Values

Values are not free-standing: they form part of specific value systems, or axiologies, held by individuals, groups, communities, organizations, nations, and even global entities. Such espoused values are normally expected to be found embedded in the relevant actions and even artifacts of those holding these values (Schein, 1985). As Gorman (2000) has stated that values for both physical and electronic instantiations of the core collection should be identical in order to reflect their underlying, enduring values, it seems logical to assume that one way of distinguishing the anti-collection from the core collection is to examine their respective values as shown in their value systems, or axiologies.

For instance, the value system of librarianship is stated in the American Library Association's "Core Values" statement as comprising beliefs in: access, confidentiality/privacy, democracy, diversity, education and lifelong learning, intellectual freedom, preservation, the public good, professionalism, service, and social responsibility (American Library Association, 2004). This value system may come into conflict with others held by various members of the communities served by specific libraries. Many library policies and procedures can be considered as standardized forms explicitly or implicitly designed to support the library value system along their coincident boundaries, such as routine methods for handling challenges to the collection.

Similarly, the stated value system of archives is to "select, preserve, and make available historical and documentary records of enduring value" (Society of American Archivists, 2005). Further statements specific to collections indicate that archivists are to preserve and protect the authenticity of records in their holdings by documenting their creation and use in hard copy and electronic formats; to preserve the intellectual and physical integrity of those records; to promote open and equitable access in accordance with legal requirements, cultural sensitivities, and institutional policies; and to protect the privacy rights of records donors, subjects, and users as necessary.

The value system of museums is stated in the American Association of Museums' Code of Ethics (American Association of Museums, 2000). The distinctive character of museum ethics derives from the ownership, care, and use of objects, specimens, and living collections representing the world's natural and cultural common wealth for the public trust. This value system for collections carries with it particular presumptions of ethical and lawful ownership, priorities in protection and permanence, proper care and custody, appropriate documentation and accountability, adequacy of accessibility, and responsibility in acquisition, loan, and disposal.

While these three value systems may emphasize particular values to varying extents, taken together, they represent the various facets of what Osburn (2009, p. 228–229) calls the "stewardship of the social transcript,"

and can be grouped into four primary categories that make up the overall
LAM axiology:

- Facilitating access to the collection and its contents (democratic principles
  involving equity of access, literacy and learning, privacy, and service)
- Protecting the autonomy of the collection and its contents (stewardship,
  with its connotations of preservation, promotion, and protection of the
  collection)
- Allowing ambiguity in the collection and its contents (promoting in-
  tellectual freedom and, more specifically, providing a responsible and
  responsive variety of voices and viewpoints that allows for differing in-
  terpretations)
- Maintaining accountability for the collection and its contents (authen-
  ticating, organizing, and documenting the status of each item in terms
  of intellectual, cultural, or legal property)

The axiology of the "core collection," therefore, involves facilitating ac-
cess to a well-organized, carefully selected, authenticated, and protected
collection that reflects a variety of voices and viewpoints. Table 1 displays
these four primary categories.

Table 1. Core collection value categories

Accessibility	Accountability	Ambiguity	Autonomy
Democracy	Authenticity	Creativity	Preservation
Learning	Documentation	Cultural	Stewardship
	Integrity	Awareness	
	Legality	Intellectual Freedom	
	Organization		

These values are congruent with the NISO Framework of Guidance for
Building Good Digital Collections, now in its third edition. This frame-
work, based on extensive discussions among NISO working group mem-
bers from the LAMs community, is intended to express "best practices"
rather than to determine specific technological standards, which would
be quickly outdated (Cole, 2002). Table 2 outlines the Framework and
the core value categories into which these principles can be placed.

The Framework outlines principles in three basic areas—collections,
objects, and metadata—and describes the indicators of "goodness" as in-
cluding those factors contributing to interoperability, reusability, persis-
tence, verification, and documentation. At the same time attention must
be focused on mechanisms for respecting intellectual property law (Na-
tional Information Standards Organization, 2007). As shown in table 2,
the emphasized values are indeed core collection access and accountabil-

Table 2. NISO framework principles and core value categories

NISO Framework Principles	Categories
COLLECTIONS	
A good digital collection is created according to an explicit collection development policy.	Accountability Autonomy
Collections should be described so that a user can discover characteristics of the collection, including scope, format, restrictions on access, ownership, and any information significant for determining the collection's authenticity, integrity, and interpretation.	Access Accountability Autonomy
A good collection is curated, which is to say, its resources are actively managed during their entire lifecycle.	Accountability Autonomy
A good collection is broadly available and avoids unnecessary impediments to use. Collections should be accessible to persons with disabilities, and usable effectively in conjunction with adaptive technologies.	Access
A good collection respects intellectual property rights.	Accountability
A good collection has mechanisms to supply usage data and other data that allow standardized measures of usefulness to be recorded.	Accountability
A good collection is interoperable.	Access
A good collection integrates into the users own workflow.	Access
A good collection is sustainable over time.	Autonomy
OBJECTS	
A good object exists in a format that supports its intended current and future use.	Access Autonomy
A good object is preservable.	Autonomy
A good object is meaningful and useful outside of its local context.	Access Ambiguity
A good object will be named with a persistent, globally unique identifier that can be resolved to the current address of the object.	Access Accountability
A good object can be authenticated.	Accountability Autonomy
A good object has associated metadata.	Access Accountability
METADATA	
Good metadata conforms to community standards in a way that is appropriate to the materials in the collection, users of the collection, and current and potential future uses of the collection.	Access Accountability Ambiguity
Good metadata supports interoperability.	Access
Good metadata uses authority control and content standards to describe objects and collocate related objects.	Access Accountability
Good metadata includes a clear statement of the conditions and terms of use for the digital object.	Access Accountability
Good metadata supports the long-term curation and preservation of objects in collections.	Autonomy
Good metadata records are objects themselves and therefore should have the qualities of good objects, including authority, authenticity, archivability, persistence, and unique identification	Access Accountability Autonomy

ity, with considerably lesser attention given to the value of autonomy, and even less given to that of ambiguity.

Naming the Anti-Collection

The anti-collection environment is complex, and its social worlds as expressed by the digital collections that serve as boundary objects are varied. The areas of the anti-collection dealt with here define what might be considered the proximal anti-collection, because they may conceivably be linked electronically to the core collection, though they may also test its axiological limits. For instance, the core collection would not normally consider including any of the following: an information object whose existence clearly violated current copyright law, an information object whose existence is reported in order to be excluded, an information object whose inclusion is the occasion for continuous legal challenges, and an information object in the process of being changed by each user. And yet each of these things is a fairly common occurrence in the anti-collection. In this way, the digital collections within the anti-collection may provide useful insights about why and whether these limits exist for the core collection.

The four sectors of the anti-collection to be considered here include the *transformative*, in which creative information objects are continuously being reused and renewed; the *transgressive*, in which novel information objects are continuously sought and sorted; the *transactive*, in which communal information objects are continuously shared and stored; and the *transumptive*, in which traditional information objects are continuously reflected upon and respected (see fig. 1). All of these sectors routinely contribute material to the core collection as embodied in the local collections of libraries, archives, and museums, but they also have independent, increasingly important collection presences of their own, which often term themselves "libraries," "archives," or "museums" as well.

The *transformative sector* is that in which all original, derivatives of, and variations on works of art are created (Jenkins, 1992). Although creative transformations of information objects have always existed and often been applauded, in recent years the tensions between the constraints of increasing copyright protection to authors/owners and the allowances of increasing technological facilities to readers/others has made this sector increasingly contested (Lessig, 2008). Proponents of so-called "transformative works" protest that the spiraling growth of legal restrictions impedes the flow of creative communication and resistance to corporate commodization necessary to insure a free society (Cupitt, 2008). Public libraries and art museums rely on the creations of the transformative sector.

The *transgressive sector* is that in which the credibility or authority of the information object has not yet been established. The importance of trans-
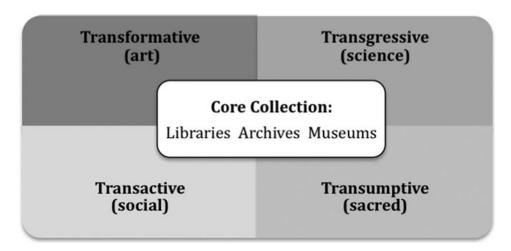
Figure 1. Sectors of the Anti-Collection

gression in the sciences is real, because the most valuable knowledge is to be found in the "research front" that pushes beyond current boundaries (Price, 1965). Such transgressive research is also risky to participants, as discredited scientific claims can result in loss of both respect and resources (Mukerji & Simon, 1998). The transgressive sector depends on internal community standards rather than external ones, as acceptance by peers usually precedes any more public disclosure (Ginsparg, 2006). Their views may determine whether an information object, for example, a paper on bacteria as the cause of gastric ulcers, is submitted for formal journal publication (which would then lead to inclusion in the core collection). Academic libraries normally rely on intermediaries such as journal publishers and scholarly societies in their use of the products of the transgressive sector.

The *transactive sector* is that communicative arena in which "transactive memory" (Wegner, 1986) takes place. Due to the limitations of human memory, oral and written recordkeeping systems have evolved over time to keep track of both casual and complicated transactions in society (Ketelaar, 2005). The almost universal acceptance of recorded transactions as facts is rooted in their enduring use as epistemological units by commercial and governmental entities (Poovey, 1998). Transactions, however, can be broadly construed, ranging from declarations of war to soccer scores. The records of society's "collective memory," therefore, encompass a much wider range than simply economic or legal transactions (Halbwachs, 1992). But formal recordkeeping has largely been the

domain of the organizations rather than the individuals involved in such transactions, and it is usually organizations that choose which records to create, maintain, and discard (Choksy, 2006). Increasingly, records are being used as evidence as well as information, which complicate their practical and theoretical implications for archives (Meehan, 2006).

Finally, the *transumptive sector* is that in which the knowledge carried by information objects is considered of a sacred nature and not easily or entirely understandable by the uninitiated (Nasr, 1981). While many religions have always limited some of their own sacred knowledge to initiates, much recent publicity has resulted from the efforts of First Nations cultures to retrieve their treasured symbols, including artifacts, images, language, and human remains from museums and elsewhere (Brown, 2003). Because of this, among the LAMs, museums tend to be more cognizant of the issues involved (Clavir, 2002).

Evaluating the Anti-Collection

This section explores the four sectors in more detail, focusing on specific examples from each to illustrate their values.

The Transformative Sector

This sector is exemplified by what are termed *fanfiction archives*. These operate in the outer reaches of copyright law, in that they often utilize copyrighted works in the production of derivative fictions. These archives operate under the understanding that they and their operators do not profit from the sale of these derivative works. Oddly, given that many fanfiction authors can be considered copyright violators, there is considerable concern among them that their own works not be plagiarized. However, proof of plagiarism is difficult when authors may be using multiple pen names, often interrupt their posting of a particular work-in-progress over time or fail to finish it, and may have very similar interpretations of how a well-known narrative should be continued.

While fanfiction authors have considerable freedom in terms of posting, deleting, and editing their own texts (due to the password protection they have upon registering with an online archive, particularly the self-archiving ones), they do not have a similar freedom with regard to the works of other authors. Most archives, however, allow readers to leave signed or unsigned reviews of works in the archive and to contact authors privately (Pugh, 2005).

A leading exemplar is An Archive of Our Own, founded by the Organization for Transformative Works, a volunteer nonprofit association of writers and readers, headed by novelist Naomi Novik. Although fanfiction sites, both for single fandoms and for multiple fandoms, existed before the establishment of An Archive of Our Own, the immediate impetus for its creation was in reaction to the announcement of a "commercial" ar-

chive for fanfiction, which was viewed with distrust by the fan community as an attempt to profit from the so-called "gift culture" of fan creations and quickly disappeared (Scott, 2009).

An Archive of Our Own's collection values are displayed in the following ways:

- Facilitating access to the collection is done by permitting anyone over the age of thirteen to read the "public" stories posted there, while recommending (though not requiring) that archive authors use the appropriate standardized warnings for age-appropriate content, which appear as graphic symbols beside the titles of individual stories. One does not have to register with the collection to read this content.
- Maintaining accountability is done through the use of "hybrid" metadata, contributed by authors, readers, and archive maintainers, who serve as "tag wranglers" to insure an overall level of consistency for important identifiers such as the names of canonic characters (e.g., Harry Potter) or the titles of seminal works (e.g., Lord of the Rings), while allowing the generation of new tags as the need arises.
- Allowing for ambiguity is shown by allowing authors to join the archive under one or more pseudonyms of their choice, and to post their own works there as desired. Many of the stories stem from earlier originals and offer alternative episodes, plots, endings, and interpretations, as well as adding new characters and modifying existing ones.
- Protecting autonomy of the collection is done by a variety of policies that discourage legal challenges to the site, such as a strict "terms of service" to be signed by anyone registering as an author or reader.

    The most striking way in which the collection's autonomy is protected, however, is the fact that the putative "originals" of the works collected there are conspicuous by their absence, so there is little internal incentive to maintain faithfulness to the absent "canonical" original. For example, while there are currently many stories tagged as "Harry Potter" within the archive, none of them are by J. K. Rowling, who holds copyright to all Harry Potter books.

The primary value displayed by An Archive of Our Own appears to be "protecting autonomy," as shown by its focus on allowing its participants to explore and share the alternative ways of experience that are possible in imaginary worlds. Since the archive allows novice writers to practice within an existing story framework and experienced authors to find appreciative audiences for non-mainstream genres (such as so-called "slash" stories) without the constraints of the commercial publishing world, this part of the transformative sector can also be viewed as supporting the literacy and literary functions of the core collection, while removing the onus of carrying such risky items. It also challenges corporate copyright dominance in a way that the core collection has largely been unable and

unwilling to do, given that products of the commercial publishing world are crucial to its operations.

The Transgressive Sector
This sector is one in which scholarly communication and publication practices have changed dramatically, due to the growing number of scientific papers in various disciplines (Harnad, 1990) and the spiraling costs of journal publication (Baveye, 2010). One change has been the creation of open-access digital repositories in which scholars can archive their own unpublished work for comment and use by peers. Physicist Paul Ginsparg has been a leading advocate for reconfiguring the landscape of scientific communication (2006). He is the founder of the arXiv repository for specific fields of quantitatively oriented science.

Originating at the Los Alamos National Laboratory, arXiv operates in cooperation with Cornell University's CIS departments and its library. However, it can be considered an independent entity in many regards, both financial and intellectual. The information objects involved in arXiv are scientific preprints, always presented in a standard scientific format, though with varying changes in content as the contribution evolves (Ginsparg, 2004). The most vital of the arXiv communities, such as the one in high-energy physics, avoid the problems of lack of interest so cogently pointed out by Salo (2008) in her discussion of the difficulties of institutional repositories, because they have become integrated into the scientific community's normal workflow of tracking relevant work by others and preparing final reports on their own research. The values of arXiv's collection are displayed in the following ways:

- Facilitating access to the collection is done by permitting anyone to view (though not to contribute to) arXiv through a full text retrieval system. There is no detailed subject-heading list from which to select, as the expectation is clearly that providing the major categories will be enough to permit the authors to select an appropriate category in which to deposit their contribution. The collection is entirely in English, considered the international language of science.
- Maintaining accountability is done by date-stamping all submitted papers and making all previous versions of each submitted paper available. This assists in the work of peer review and verification of intellectual priority, both critical to scientific publication processes.
- Allowing for ambiguity is attained in that participants from recognized institutions (universities, national laboratories, corporate science centers) are permitted to contribute almost anything they wish within the boundaries of their own discipline (and sometimes outside them, given the nature of the specific contribution), in the expectation that the informal peer appraisal process will eventually succeed in separating contributions worthy of formal publication from those that are not.

- Protecting autonomy of the collection primarily involves self-policing, though some plagiarism problems within arXiv have been discussed (Sorokina, Gehrke, Warner, & Ginsparg, 2006). Participants are expected to be constrained by the peer-review norms of their discipline. These boundary rules are designed to increase the community's trust in the credibility of the unreviewed information objects (e-prints) by referring to the credibility of the authors as evidenced by their institutional affiliation or by those who sponsor them. This allows the archive to operate in an "under-review" environment in which not-yet-fully verified research can appear in successive "versions" over time until reaching its final culmination in formal publication.

The main value of arXiv is "allowing for ambiguity," a finding congruent with what Merton (1979) famously identified as the "norms of science" (communalism, universalism, disinterestedness, and organized skepticism). However, the increased attention to restrictions on who is allowed to add content suggests that universalism (the value placed on the scientific work itself, not influenced by factors relating to its authorship) occupies a slightly lower place in its axiological framework.

The Transactive Sector
This sector is dominant within the Internet environment, as organizations of all kinds promote both internal and external participation in a wide variety of the communicative transactions that define their networks. The transactive sector encompasses more than market-driven transactions.

Questions of who should and should not have access to communicative transactions at various points of time have become endemic, as it becomes easier to use and abuse the information these may convey, and legal concerns and constraints become more stringent (Cox, 2006). Most of these transactions will not be permanently stored, and much of what is stored by organizations will never be retrieved for later use (Kirsch, 2009). Archival work was originally envisioned as managing the storage of non-current records with recognized informational or evidential value, and gradually archival organizations became the recognized custodians of the records of other organizations (Ridener, 2009). This process has never been without controversy: individuals may claim both ownership and privacy rights for the records that concern them, different organizations may have competing interpretations of or needs for particular records, and archives themselves may experience conflict in both precustodial and post-custodial contexts.

One of the most controversial collections within the transactive sector is WikiLeaks, an archival website founded by Australian hacker Julian Assange and maintained by an international nonprofit organization. It has attained considerable notoriety by providing a facility for anonymous

posters to make public previously unavailable documents that are thought to be of political, diplomatic, ethical or historical significance and that have been classified, labeled confidential, censored or, otherwise withheld from the public. Its values are:

- Facilitating access to the collection by permitting free access to WikiLeaks, even offering additional anonymity by providing a proxy server to hide the user's IP address if desired.
- Maintaining accountability by first following forensic document appraisal procedures regarding authenticity, and then by posting the original documents in their entirety for public comment and review. WikiLeaks states that such transparency helps establish the legitimacy of leaked documents.
- Allowing for ambiguity by soliciting documents meeting the stated criteria from anonymous donors, and also by posting the original documents in their entirety, so readers do not have to rely only on a précis or article for interpretation, as is traditionally done by news media revealing leaked documents. Protecting autonomy of the collection is accomplished largely by legal and technical means. WikiLeaks has withstood legal challenges from a variety of organizations whose documents appears on the site, and has a highly sophisticated technological approach to maintaining site security, which allows it an extremely controversial "activist" approach to archiving.

The central value exhibited here is that of facilitating access, specifically to revelations about the powerful role of documented transactions in the social construction of reality (Ketelaar, 2002). While critical theorists in archives are well aware of this role (Eastwood, 2010), the fact that most archivists work within institutional settings that focus on immediate institutional goals (Koltun, 1999) has precluded much consideration of what Jimerson (2009) has termed "archives power" in general. The existence of WikiLeaks as a publicly available archive of contemporary documented transactions that are outside both the so-called "records lifecycle" and the "records continuum" (Dingwall, 2010) highlights this power in a way that is not normally recognized or practiced by LAMs.

The Transumptive Sector
This sector is, arguably, marked more by what it makes invisible than by what it makes visible, as "true" sacred knowledge is not widely made available on the Web. A key point of conflict between the Westernized perspective and those of the First Nations is that the objective, reductionist approach to information promulgated by modern scientific practices often does not allow for the holistic integration of time, place, nature, and people characteristic of the First Nations, and therefore there are great disparities in what is perceived as "sacred" by the two (Nabokov, 2002).

Another point of conflict is that indigenous narratives often serve different functions from those in more Westernized societies (e.g., Bernardini, 2005). Traditional songs, stories, and other symbols may be owned by certain individuals, families, or clans, and their appropriate audiences may be socially restricted by age, gender, or other criteria. These groups may restrict access to particular areas or activities, allow access to certain artifacts to a very restricted subset of outsiders, or demand the return of certain symbolic items from cultural institutions to protect or dispose of them correctly (Gulliford, 1992). Many museums are actively working with these source communities in order to promote more culturally sensitive relationships with them and their knowledge (Peers & Brown, 2003).

The existence of the NAGPRA (Native American Graves Protection and Repatriation Act) databases is perhaps the most prominent marker of the importance of the transumptive to First Nations, as it was their efforts that brought these into being in an attempt to locate sacred items eligible to be removed from public perusal. Museums or similar institutions receiving any federal funding must actively cooperate in this endeavor by identifying and inventorying cultural items (human remains, funerary objects, sacred objects, or objects of cultural patrimony) under their control or in their collection, and making that information available to lineal descendants and culturally affiliated Indian tribes and Native Hawaiian organizations for possible repatriation of those items (Brown & Bruchac, 2006). The NAGPRA databases are under the purview of the National Parks Service, and currently hold about 4,700 records accounting for 41,577 Native American human remains and 1,022,440 associated funerary objects inventoried by 442 museums and federal agencies.

The core collection values for the NAGPRA databases are displayed as follows:

- Facilitating access to the collection by permitting anyone to view the NAGPRA databases via the Web, but not to view the actual objects.
- Maintaining accountability by requiring regular inventories and audits from those institutions covered by NAGPRA, and seeking additional verification from relevant tribal entities regarding items in the collection.
- Allowing for ambiguity by making the information about these materials available to all interested tribal claimants, particularly as some of the older items may be part of the heritage of more than one tribal entity.
- Protecting autonomy of the collection by having the NAGPRA databases appear under the auspices of the U.S. government rather than those of the museums or tribal entities themselves. This separates the collection from the individual museums or tribes.

The unique values within the transumptive sector appear to be those of identifying items considered to be sacred and developing cooperative ways of controlling access to them.

CONCLUSIONS

Both the core collection and the anti-collection are now contiguous in many mental maps of the Internet. However, the preceding sections show that some similarities and differences continue to be apparent between the anti-collection and the core collection as boundary objects in terms of their repositories, ideal types, standardized forms, and coincident boundaries.

Most of the anti-collection is not technologically very distinct from the core collection in terms of their repositories. For example, the arXiv repository is housed on a Cornell library server and could easily be mistaken for a part of that core collection, except that all of the content is managed by scientists, not librarians.

The ideal types of content are often similar, at least in format: the HTML displaying a fanfiction story about elves in An Archive of Our Own is not different from the HTML displaying a folktale about trolls within the core collection. The function of the content, too, is often the same for the audience; fiction is fiction, regardless of copyright status.

The standardized forms, however, are distinctive: there is much more metadata describing content of the core collection than in the anti-collection. Whatever metadata appears within the anti-collection is often supplied by authors or readers rather than by the collection maintainers, while metadata for the core collection is normally supplied by collection maintainers (catalogers, vendors, etc.) rather than by authors or readers. The use of metadata is one of the primary differences between the core collection and the anti-collection.

As for coincident boundaries, many of the anti-collection representatives facilitate access to their collections far more widely than do many LAM institutions. This is in contrast to, for example, most academic library collections.

The four primary core collection value categories as displayed by these examples from the anti-collection are summarized in table 3.

Table 3. Core collections values in the anti-collection

Value	Anti-Collection
Access	Higher than Core Collection
Accountability	Lower than Core Collection
Ambiguity	Higher than Core Collection
Autonomy	Similar to Core Collection

Most striking is to view the anti-collection and core collection together; they then seem to appear along an axiological continuum rather than as complete contrasts. Table 4 shows the continuities among values for the various sectors.

Table 4. The axiological continuum for collections

Sector	Anti-Collection Values	Core Collection Values
Transactive	Utilize present knowledge	Analyze past knowledge
Transformative	Expand creative knowledge	Protect creative knowledge
Transgressive	Explore new knowledge	Promulgate existing knowledge
Transumptive	Restrict some knowledge	Disseminate all knowledge

Though arXiv can be viewed as promulgating existing scientific knowledge through its policy of archiving all previous submissions, its primary value is to develop and share novel discovery claims at the scientific research front. While An Archive of Our Own can be seen as protecting creativity by carefully delineating all its contents as strictly not-for-profit amateur writing, its primary value is to promote wider acceptance of the creative reuse of existing fictional works into new fictions. Although WikiLeaks can be considered a repository of illegally obtained documents about a variety of confidential organizational transactions, its stated value is to spark citizen interest and involvement in collective problem solving through participatory knowledge practices at the national and global level. And, last, while the NAGPRA databases can be seen as disseminating a more culturally sensitive approach to sacred knowledge currently in the public domain, its key value can be perceived as facilitating the removal of that knowledge.

This also provides provocative contrasts to the way many LAMs view the prospect of their users co-constructing knowledge. While subject specialists in academic libraries discourage the use of non-peer-reviewed material, arXiv users routinely access it in their scientific work. While public libraries may be uncomfortable with the idea of users adding so-called "tags" directly to library catalog data, An Archive of Our Own not only encourages such tagging but allows much more interaction with the collection, including freely adding, commenting on, deleting, and editing content in accordance with their community norms. Similarly, while historical archives are not eager to see their collected deposits as the subject of contemporary controversy, WikiLeaks takes a much more aggressive approach, thereby illuminating issues currently being raised by critical theorists in archives. Finally, while museums in general would be dismayed by

users being able to demand the removal of, or place limitations on others' access to, museum content, the NAGPRA databases take this approach as appropriate to deciding the fate of certain content.

The "axiological continuum of collections" is especially interesting in terms of potential anti-collection alternatives, both positive and negative, to standard treatments of the "user" by core collections. The use of such terms as *user, customer, client,* or *patron* has been shown to have broad implications for expectations and values regarding the activities of non-librarians within the library setting (Tuominen, 1997). Without resorting to neologisms such as *conducer* (Reuveni, 2007), we can predict that as the anti-collection continues to expand, its user-centered values may become more commonplace in the core collection as well.

In a thoughtful essay about theorizing digital collections, Manoff writes about the importance of considering the contexts in which digital objects are created and used. She comments, "Finally, we need to educate future librarians to understand their role in transformations that are inseparable from the history of technological and cultural development" (2006, p. 323). The role of the anti-collection, the variety and uses of the digital objects within it, the embedded and espoused values of the different sectors that create and contain those digital objects, and especially their increasing influence upon all of these cultural and technological transformations, are also well worth understanding.

REFERENCES

Albrechtsen, H., & Jacob, E. K. (1998). The dynamics of classification systems as boundary objects for cooperation in the electronic library: Systems should work in tandem with users. *Library Trends, 47*(2), 293–312.

Altman, M., et al. (2009). Digital preservation through archival collaboration: The data preservation alliance for the social sciences. *American Archivist, 72*(1), 170–184.

American Association of Museums. (2000). *Code of ethics for museums.* Retrieved July 20, 2010, from http://www.aam-us.org/museumresources/ethics/coe.cfm

American Library Association. (2004). *Core values of librarianship.* Retrieved July 20, 2010, from http://www.ala.org/ala/aboutala/offices/oif/statementspols/corevalues statement/corevalues.cfm

Atkinson, R. (1994). Access, ownership, and the future of collection development. In P. Johnson & B. MacEwan (Eds.), *Collection management and development: Issues in an electronic era* (pp. 92–104). Chicago: American Library Association.

Atkinson, R. (1996). Library functions, scholarly communication, and the foundation of the digital library: Laying claim to the control zone. *Library Quarterly, 66*(3), 239–265.

Baveye, P. C. (2010). Sticker shock and looming tsumani. *Journal of Scholarly Publishing, 41*(2), 191–215.

Bernardini, W. (2005). *Hopi oral tradition and the archaeology of identity.* Tucson: University of Arizona Press.

Brown, M. F. (2003). *Who owns native culture?* Cambridge, MA: Harvard University Press.

Brown, M. F., & Bruchac, M. M. (2006). NAGPRA from the middle distance: Legal puzzles and unintended consequences. In J. H. Merryman (Ed.), *Imperialism, art & restitution* (pp. 193–217). New York: Cambridge University Press.

Budd, J. M., & Harloe, B. M. (1997). Collection development and scholarly communication in the 21st century: From collection management to content management. In G. E. Gorman & R. H. Miller (Eds.), *Collection management for the 21st century: A handbook for librarians* (pp. 3–25). Westport, CT: Greenwood Press.

Choksy, C. E. B. (2006). *Domesticating information: Managing documents inside the organization.* Lanham, MD: Rowman & Littlefield.

Clavir, M. (2002). *Preserving what is valued: Museums, conservation, and First Nations.* Vancouver, Canada: UBC Press.

Cole, T. (2002). Creating a framework of guidance for building good collections. *First Monday, 7*(5). Retrieved July 24, 2010, from http://firstmonday.org/htbin/cgiwrap/bin/ojs/index.php/fm/article/view/955

Cox, R. J. (2006). *Ethics, accountability, and recordkeeping in a dangerous world.* London, England: Facet Publishing.

Cruse, P., & Sandore, B. (2009). Introduction: The Library of Congress National Digital Information Infrastructure & Preservation Program. *Library Trends, 57*(3), 301–314.

Cupitt, C. (2008). Nothing but Net: When cultures collide. *Transformative Works and Cultures, 1.* Retrieved July 24, 2010, from http://journal.transformativeworks.org/index.php/twc/article/view/55

Dingwall, G. (2010). Life cycle and continuum: A view of recordkeeping models from the postwar era. In T. Eastwood & H. MacNeil (Eds.), *Currents of Archival Thinking* (pp. 139–161). Santa Barbara, CA: Libraries Unlimited.

Donaldson, P. (2008). The Shakespeare electronic archive: Collections and multimedia tools for teaching and research, 1992–2008. *Shakespeare, 4*(3), 250–260.

Eastwood, T. (2010). A contested realm: The nature of archives and the orientation of archival science. In T. Eastwood & H. MacNeil (Eds.), *Currents of Archival Thinking* (pp. 3–21). Santa Barbara, CA: Libraries Unlimited.

Fleischmann, K. R. (2006). Boundary objects with agency: A method for studying the design-use interface. *The Information Society, 22,* 77–87.

Fleischmann, K. R. (2007). Digital libraries with embedded values; Combining insights from LIS and science and technology studies. *Library Quarterly, 77*(4), 409–427.

Ginsparg, P. (2004). Can peer review be better focused? *Science & Technology Libraries, 22*(3), 5–17.

Ginsparg, P. (2006). As we may read. *The Journal of Neuroscience, 26*(38), 9606–9608.

Gorman, M. (2000). *Our enduring values: Librarianship in the 21st century.* Chicago: American Library Association.

Gulliford, A. (1992). Curation and repatriation of sacred and tribal objects. *The Public Historian, 14*(3), 23–38.

Halbwachs, M. (1992). *On collective memory.* Chicago: University of Chicago Press.

Harnad, S. (1990). Scholarly skywriting and the prepublication continuum of scientific inquiry. *Psychological Science, 1,* 342–343.

Jenkins, H. (1992). *Textual poachers: Television fans and participatory culture.* New York: Routledge.

Jenkins, P. (2001). *Beyond tolerance: Child pornography on the Internet.* New York: New York University Press.

Jimerson, R. C. (2009). *Archives power: Memory, accountability, and social justice.* Chicago: Society of American Archivists.

Keene, S. (1998). *Digital collections: Museums and the information age.* Oxford, England: Butterworth Heinemann.

Ketelaar, E (2002). Archival temples, archival prisons: Modes of power and protection. *Archival Science, 2,* 221–238.

Ketelaar, E. (2005). Sharing: Collected memories in communities of records. *Archives and Manuscripts, 33,* 44–61.

Kirsch, D. A. (2009). The record of business and the future of business history: Establishing a public interest in private business records. *Library Trends, 57*(3), 352–370

Koltun, L. (1999). The promise and threat of digital options in an archival age. *Archivaria, 74,* 114–135.

Lagoze, C., & Fielding, D. (1998, November). Defining collections in distributed digital libraries. *D-Lib Magazine.* Retrieved July 24, 2010, from http://www.dlib.org/dlib/november98/lagoze/11lagoze.html

Lee, H. (2005). The concept of collection from the user's perspective. *Library Quarterly, 75*(1), 67–85.

Lessig, L. (2008). *Remix: Making art and commerce thrive in the hybrid economy.* New York: Penguin.

Manoff, M. (2000). Hybridity, mutability, multiplicity: Theorizing electronic library collections. *Library Trends, 49*(1), 857–876.

Manoff, M. (2006). The materiality of digital collections: Theoretical and historical perspectives. *Portal: Libraries and the Academy, 6*(3), 311–325.

Martens, B. V. (2001). Do citation systems represent theories of truth? *Information Research, 6*(2). Retrieved July 24, 2010, from http://informationr.net/ir/6-2/paper92.html

Marty, P. F. (2008). Collections and consortia. In P. F. Marty & K. B. Jones (Eds.), *Museum informatics: People, information and technology in museums* (pp. 217–221). New York: Routledge.

Meehan, J. (2006) Towards an archival concept of evidence. *Archivaria, 61*, 127–146.

Merton, R. K. (1979). The normative structure of science. In N. W. Storer (Ed.), *The Sociology of science: Theoretical and empirical investigations* (pp. 267–278). Chicago: University of Chicago Press.

Mukerji, C., & Simon, B. (1998). Out of the limelight: Discredited communities and informal communication on the Internet. *Sociological Inquiry, 62*(2), 258–273.

Nabokov, P. (2002). *A forest of time: American Indian ways of doing history*. New York: Cambridge University Press.

Nasr, S. H. (1981). *Knowledge and the sacred*. New York: Crossroad Publishing.

National Information Standards Organization. (2007). *A framework of guidance for building good digital collections*. Retrieved July 24, 2010, from http://framework.niso.org

Nisonger, T. E (1997). The Internet and collection management. In G.E. Gorman & R. H. Miller (Eds.), *Collection management for the 21st century: A handbook for librarians* (pp. 29–57). Westport, CT: Greenwood Press.

Osburn, C. B. (2009). *The social transcript: Uncovering library philosophy*. Westport, CT: Libraries Unlimited.

Payette, S., & Lagoze, C. (2000). Value-added surrogates for distributed content: Establishing a virtual control zone. *D-Lib Magazine, 6*(6). Retrieved July 24, 2010, from http://www.dlib.org/dlib/june00/payette/06payette.html

Peers, L., & Brown, A. K. (2003). *Museums and source communities: A reader*. London, England: Routledge.

Poovey, M. (1998). *A history of the modern fact: Problems of knowledge in the sciences of wealth and society*. Chicago: University of Chicago Press.

Price, D. J. de S. (1965). Networks of scientific papers. *Science, 149* (3683), 510–515.

Pugh, S. (2005). *The democratic genre: Fan fiction in a literary context*. Brigend, Wales: Seren.

Reuveni, E. (2007). Authorship in the age of the conducer. *Journal of the Copyright Society of the USA, 54*(2/3), 285–344.

Ridener, J. (2009). *From polders to postmodernism: A concise history of archival theory*. Duluth, MN: Litwin Books.

Salo, D. (2008). Innkeeper at the roach motel. *Library Trends, 57*(2), 98–123.

Schein, E. (1985). *Organizational culture and leadership: A dynamic view*. San Francisco: Jossey-Bass.

Scott, S. (2009). Repackaging fan culture: The regifting economy of ancillary content models. *Transformative Works and Cultures, 3*. doi:10.3983/twc.2009.0150

Society of American Archivists. (2005). *Code of ethics for archivists*. Retrieved July 20, 2010, from http://www.archivists.org/governance/handbook/app_ethics.asp

Sorokina, D., Gehrke, J., Warner, S., & Ginsparg, P. (2006). Plagiarism detection in arXiv. *Proceedings of the Sixth International IEEE Conference on Data Mining, December 18–22, 2006, Hong Kong* (pp. 1070–1075).

Star, S. L., & Griesemer, J. R. (1989). Institutional ecology, 'translations' and boundary objects: Amateurs and professionals in Berkeley's museum of vertebrate zoology, 1907–1939. *Social Studies of Science, 19*(3), 387–420.

Trant, J. (2008). Curating collections knowledge. In P. F. Marty & K. B. Jones (Eds.), *Museum informatics: People, information and technology in museums* (pp. 275–291). New York: Routledge.

Tuominen, K. (1997). User-centered discourse: An analysis of the subject positions of the user and the librarian. *Library Quarterly, 67*(4), 350–371.

Van House, N. (2003). Digital libraries and collaborative knowledge construction. In A. Bishop, N. Van House & B. Buttenfield (Eds.), *Digital library use: Social practice in design and evaluation* (pp. 271–295). Cambridge, MA: MIT Press.

Wegner, D. M. (1986). Transactive memory: A contemporary analysis of the group mind. In

B. Mullen & G. R. Goethals (Eds.), *Theories of group behavior* (pp. 185–208). New York: Springer-Verlag.

Wortman, W. A. (1989). *Collection management: Background and principles.* Chicago: American Library Association.

Zorich, D., Waibel, G., & Erway, R. (2008). *Beyond the siloes of the LAMs: Collaboration among libraries, archives, and museums.* OCLC report. Retrieved July 24, 2010, from http://www .oclc.org/programs/publications/reports/2008-05.pdf

Betsy Van der Veer Martens is an assistant professor at the School of Library and Information Studies at the University of Oklahoma, where she teaches digital collection design and development.