The Possibility of the Infinite Library:
Exploring the Conceptual Boundaries of Works and Texts of Bibliographic Description

Stacy Allison-Cassin
Music Cataloger
York University
Toronto, Ontario

Shortened title: The Possibility of the Infinite Library

Abstract

The frictions present in the philosophical underpinnings of bibliographic control in libraries are discussed by examining the treatment of the concepts of works and texts in the literature of bibliographic control against the theories of works and texts as developed by critical theorists such as Barthes, Deleuze and Guattari, and Hayles. A radical re-thinking of traditional conceptions of the work, text and information is required if we are to have a new vision of "the library," especially one that truly approaches a "universe of knowledge."

Publication Statement

This is an Author's Accepted Manuscript of an Article published in *The Journal of Library Metadata*, available online at: http://www.tandfonline.com/10.1080/19386389.2012.700606.

> In the hallway there is a mirror which faithfully duplicates all appearances. Men usually infer from this mirror that the Library is not infinite (if it really were, why this illusory duplication?); I prefer to dream that its polished surfaces represent and promise the infinite…" (Borges, 2007, p. 51)

Borges' short story "The Library of Babel," first published in 1941, is often cited as a prophetic vision of the seemingly information-rich yet wildly chaotic Internet. In the story a narrator recounts his life as a resident of a seemingly endless library of books. In the library the galleries, the staircases, the shelves, the number of books on the shelves in each gallery and even the design of the books are replicated seemingly endlessly. The inhabitants/librarians can glean no sense from the words contained in the books. They spend their lives attempting to find the key book, the catalog, in order to make sense of the library. It is never discovered. Borges' description of the universe in terms of a library of books resonates strongly with the term "bibliographic universe" as used in the professional and academic literature of library and information science. The International Federation of Library Association's (1998) influential report the *Functional Requirements of Bibliographic Records*, utilizes the term extensively but does not define it further than "…the totality of available information resources, within the published output of a particular country, within the holdings of a particular library or group of libraries, etc." (p. 16). In this definition "universe" implies an openness that is not fully illustrated or accounted for by the idea of "totality." The friction between the idea of a constantly expanding bibliographic universe and the need for fixedness as enforced

through the development and application of cataloguing codes and standards is an issue that has not been suitably addressed by current literature, codes and practices. Substantive change needs to be made in response to a perceived threat of obsolescence due to declining funding for cataloguing departments, library services and collections and the proliferation of online content. In an effort to affirm their position as a necessary institution in society, libraries are launching new online catalogs with slick interfaces, revising cataloguing rules with the intent of making them applicable to a wider community and offering new "user-centered" services. A number of influential recent reports such as: The Library of Congress Working Group on the Future of Bibliographic Control (2011, 2008), Calhoun (2006), University of California Libraries Bibliographic Services Task Force (2005) point to increasing pressure to change current practices of bibliographic control. These initiatives lack substantial and critical engagement with the foundations and principles of the library and librarianship, and perhaps most importantly, with the roots of Western epistemology. A radical re-thinking of traditional conceptions of the bibliographic universe, work, text and information is required if we are to truly have a new vision of "the library," one that truly approaches and approximates a "universe of knowledge."

This exploration will examine the conceptual frictions present in the underpinnings of bibliographic description in libraries with particular attention to the concept of "the work" versus the concrete object. The theories of works and texts as developed by critical theorists such as Barthes, Deleuze and Guattari, and Hayles will be used as a way to open up new pathways and demonstrate the need for play within our theories of bibliographic

control. The first section demonstrates the centrality of the concept of "the work" to libraries as shown through the development of cataloging codes and practices, as well as how the dichotomous nature of the texts collides with the material nature of library collections. The second section demonstrates how the standardization and enforcement of "root-tree" hierarchies and attributions have forced library information into closed systems and limited the ability of libraries to develop different models for their catalogs. The last section questions the long-held and perhaps sacred ideal of bringing order to chaos by suggesting we might better incorporate what could be termed "noise" into our cataloging processes, as well as raising questions for future discussions.

Disconnecting Connections

> "Hypertext is about connection—promiscuous, pervasive, and polymorphously perverse connection." (Moulthrop, 1991, p. 699)

Library collections are not promiscuous. They can only travel along approved paths, can only have approved relations and must keep to themselves. Library collections only travel along approved paths that are not random, indiscriminate or unsystematic (Oxford English Dictionary, 2012) and are constrained through numerous means such as selection methods, bibliographic control policies, catalog display systems and in the case of material collections, physical space. The catalog is the area most tightly controlled by traditional concepts of "the book" and consequently most affected by a shift away from physical mediation. As libraries move more and more of their collections away from accessible shelving and as digital collections grow, the role of catalogs, databases and so-called discovery layers only grows in importance as they become the only contact point

between library users and the bibliographic universe. In the quote opening this section theorist Stuart Moulthrop (1991) expresses the hope many felt the Internet promised, the unending possibilities and connections without bounds, when he wrote about the promiscuous and perverse nature of hypertext. Hypertext, as defined by the World Wide Web Consortium, is: "text which is not constrained to be linear. Hypertext is text which contains links to other texts." (n.d.) Hypertext has existed for more than twenty years; however, library systems, and in particular bibliographic databases, do not meet the basic functions and promise of hypertext due in part to an adherence to conceptual systems bound to linear connections that result in a lack of sufficient and varied connections. The question is how to respond to the promise and challenge of interacting in online environments and in an ever-expanding bibliographic universe. Adopting an interdisciplinary approach to bibliographic control should figure into a functional future. As Barthes (1977b) writes

> Interdisciplinarity is not the calm of an easy security; it begins *effectively*…when the solidarity of the old disciplines breaks down—perhaps even violently…in the interests of a new object and a new language neither of which has a place in the field of the sciences that were brought peacefully together, this unease in classification being precisely the point from which it is possible to diagnose a certain mutation." (p. 155)

Looking to other disciplines can inspire us to break out long-held ideals of knowledge representation and control, ideas we perhaps take as immovable.

The book is a representation of traditional binary logic of Western knowledge systems (Deleuze & Guattari, 1987) and the legacy of the library, built to house books, is this system on a meta-level. It is a system enforced through the physical arrangement of library collections, the virtual space of the library and the catalog. The overarching model of knowledge organization in library bibliographic systems is that of a tree. This model must be rethought as the need for a physical library dissolves and if we hope to leverage the powerful possibilities of the Internet. Deleuze and Guattari's (1987) model of the rhizome, a botanical term for plants able to sprout growth anywhere along its length, as developed in their *A Thousand Plateaus: Capitalism and Schizophrenia* as a means to break the hegemonic power of the root/tree hierarchies of Western knowledge systems, is a potentially rich approach to the entrenchment of traditional knowledge structures in bibliographic control. The root-tree has never reached a point of multiplicity and neither have libraries. Bibliographic control, like Deleuze and Guattari's (1987) criticism of linguistics, requires a "strong principal unity" (p. 5) in order to operate. Binary logic continues to dominate information science long after they first criticized information science, amongst other disciplines, in 1980. To assess the promise or peril of the future of bibliographic control we must closely examine the governing structure to see if binary logic, as a conceptual ordering structure, can be thrown off in favor of the multiplicity and promiscuity of online texts, to open up the library to performance and play, to embrace what Svenonius (2000) might term "the idiosyncratic."

From Chaos Into Order

Professional librarianship as is practiced in the Anglo-American world has its

roots in England and the United States in the Victorian period (Garrison, 2003) and is a product of a number of forces, the primary one being the Industrial Revolution. The profession is closely tied to the legislated beginnings of public education, public libraries, the education of women and the resulting entrance of women into the professional workforce, and the rise of the bureaucratized office. During this period library collections rapidly grew in size in keeping with the increased availability of printed materials and coupled with larger and more varied user populations. Pressure grew to enable better access to the expanded bibliographic universe over title lists. The development of "Panizzi's Rules" for the British Museum by Anthony Panizzi in the early 1830s marked the beginning of modern cataloging (Coyle, 2010). Before the nineteenth century library catalogs were title lists of what the library contained and did not seek to make connections between the names of authors, titles or editions. One of the earliest means to achieve improved access was to collate different editions of the same title. Grouping different editions of the same title requires one to agree that there is a concept called "the work" uniting all the objects together. The work is not something that can be seen physically or even in an online environment and is comprised of abstract, ideational content. The creation of relationships based on works in library catalogs also required the creation of links between authors. The shift from simply listing the objects collected by the library to the collation of works based on edition represented a major change in the way libraries were organized and understood—one we perhaps take for granted today.

The most widely used set of descriptive cataloguing rules in the English-speaking world is the *Anglo-American Cataloguing Rules* (AACR). It was first published in 1967,

went through two major revisions in 1988 and 1998 as well as various smaller updates. AACR was undergoing a third revision, when a major shift in structure resulted in a change in title to *Resource Description and Access* (RDA). RDA (2010) has not yet been widely adopted. Both AACR and RDA are founded on the "Paris Principles" of 1966 that "…clearly embraced the importance of the work, explicitly identified components of a definition of "work" and began to classify components of what were considered to be related works" (Smiraglia, 2003, p. 25), codifying the primacy of the work in libraries. In the latest, and final, update of AACR (2004) the term "work" does not appear in the glossary, does not appear on its own in the index, and is not clarified or defined anywhere else in the volume despite the fact that the rules are peppered with the term. In the index the only reference to "Work" is listed as "Work (uniform title)" thus a "work," in AACR terms, is connected to the idea of a "conventional collective title" or a "particular title" that is needed in catalogs for the purpose of collocation, implying that there was an ideal abstract work in existence (American Library Association, 2004). The ubiquitous use of the term work and the glaring omission of definitions or clarification of this term reveals a serious disjunct between the creation of the physical description of the "item in hand" and the creation of "access points," the link between the abstract ideational content and the physical attributions of that content. This is particularly evident in the introduction to Part II of AACR where catalogers are instructed: "The rules in part II apply to works and not to physical manifestations of those works, though the characteristics of an individual item are taken into account in some instances." (American Library Association, 2004, p. 305) RDA attempts to address this problem.

Central to the organization to RDA is the *Functional Requirements for Bibliographic Records* (FRBR) and the *Functional Requirements for Authority Data* (FRAD). FRBR and FRAD are conceptual data models released in 1998 that define and exploit bibliographic relationships to aid information retrieval. As FRBR and FRAD begin to shape and affect the intellectual and technical systems underpinning the organization of library collections, it is important to acknowledge that embrace of the "work" as the central organizing function in library catalogs is significant. Previous models of bibliographic control were primarily concerned with the recording of the physical properties of objects, while RDA, with its emphasis on intellectual content over physical carrier, has the potential to shift the focus more fully to ideational abstract content, binding bibliographic description to a concrete conception of the mechanics of the bibliographic universe.

While there are a number of components of FRBR, what is most pertinent to this discussion are the Group One Entities, those of work, expression, manifestation and item. These four terms designate a hierarchy to be defined in a bibliographic database, the hierarchy at the heart of RDA. The top level is the work: "a distinct intellectual or artistic creation…" and is held in the abstract, while the item stands for an actual physical or virtual entity at the bottom of the hierarchy (IFLA Study Group on the Functional Requirements for Bibliographic Records, 1998, p. 13). The primacy of the work as a governing structure is without question. A further FRBR component that has been incorporated into RDA is the model for determining bibliographic relationships. These relationships forge the connections between works within the bibliographic database and

they are more tightly controlled than previous AACR models. In FRBR "… relationships serve as the vehicle for depicting the link between one entity and another, and thus as the means of assisting the user to navigate the universe that is represented in a bibliography, catalog, or bibliographic database" (IFLA 1998, p. 56). Although the FRBR model opens up the possibility of increasing the relationship linking between entities in the "bibliographic universe," many of the most intriguing possibilities, such as Section 10, "Recording relationships between concepts, objects, events & places," remain undefined within RDA at this time. Furthermore the Group One entities and bibliographic relationships continue to follow the traditional structure of a root/tree hierarchy, made explicit through the ordering of the entities in diagrams with "work" at the top through to "item" at the bottom. As the FRBR/RDA model becomes increasing visible in library cataloging systems, it is clear that the library community continues to attempt to define a universe of knowledge through the use of hierarchy and attribution. Hierarchical structures impose a system where certain kinds of data are privileged over others, increasing the need for vigilance to ensure aspects of the bibliographic universe do not become invisible.

A further problematic with the centrality of "the work" as a means of imposing order on the bibliographic universe is its abstract nature. It has no material existence and is imaginary. "The work" is highly Platonic in that it assumes the existence of an ideal form with an essence that can be used to produce a stable representation in the catalog. Svenonius (2000) has pointed out that: "Critical as it is in organizing information, the concept of *work* has never been satisfactorily defined." (p. 35) Furthermore: "The concept of a work as an intellectual or artistic creation — a Platonic object consisting of disembodied information content — is intuitively satisfactory. However, it is less

satisfactory in actual practice, where the problem to be faced is how to determine what a work a given document represents." (p. 35) Thus fully operationalizing "the work" in bibliographic description may prove a slippery exercise. A radical, and perhaps unintuitive, idea is the materialist troubling of the existence of the ideal work. Hayles (2003) argues a theory of works is not useful in the digital age, suggesting: "There is no Platonic reality of texts. There are physical objects such as books and computers, foci of attention, and codes that entrain attention and organize material operations" (p. 270). For theorists such as Kittler (1999) the shift from concrete material objects to digital objects results in a total breakdown of the idea of a medium at all. He writes: "With numbers, anything goes. Modulation, transformation, synchronization, delay, storage, transposition, scanning, mapping—a total media link on a digital base will erase the very concept of medium. Instead of wiring people and technologies, absolute knowledge will run as an endless loop." (p. 2) The ones and zeros of binary code erase any real or material difference between objects. This view is completely at odds with the current direction of bibliographic control and the potential alternative views expressed by theorists such as Hayles and Kittler are worthy of further exploration. By enshrining the work as the central organizing principle of RDA we have subscribed to a view of texts and information that tightly follows a Western Platonic ideal and while this may aid retrieval in libraries built around this epistemological system it begs the question: What are we missing?

Bodies and Surfaces

Attempts to re-conceptualize bibliographic control and catalogs for the seemingly

boundless online environment have for the most part created an online version of a print card catalog of books, with all the restrictions of and trappings of physical text resulting in what Diane Hillman (2010) has termed the "tyranny of the record." Current practices of bibliographic control, including RDA, continue to be centered on the creation of closed linguistic surrogates. Hayles (2003), writing specifically about the translation of print media to online media, provides some interesting thoughts on what is neglected, ignored or even worse, taken for granted, in the migration process. She draws particular attention to how the neglect of certain aspects of the physical object, such as "…the lovely feeling of old leather" (p. 269), become so "naturalized" we fail to recognize the limiting nature of these choices. Hayles writes: "…*choices* have been made about which aspects of the book to encode, and these choices are heavily weighted toward the linguistic rather than the bibliographic." (Hayles, 2003, p. 270) We have come to expect bibliographic description to take linguistic form rather than for example visual or audio. Moulthorp (2003) claims: "textuality is our most powerful way of shaping information" in online environments (p. 697). This continues to be true of information systems, such as software code and modes of display and most certainly applies to the creation of bibliographic data. All media, not only print books, are forced through a bottleneck of linguistic representation in the act of bibliographic description. Moreover as we move further toward the acceptance of FRBR as the conceptual model of choice for bibliographic description with an idealized work at the top of a hierarchy, we will continue to replicate systems that ignore the importance of materiality. Despite the proliferation of other kinds of media on the Internet, most systems remain dependent on

linguistic representation and linguistic metadata. Linguistic representation has become naturalized and adherence to a text-based, book-based or index card-based vision of libraries restricts our ability to envision bibliographic data in a different way.

An additional challenge to expanding a future vision of library catalogs is the static nature of bibliographic data. Coyle (2010), writing a brief history of library metadata concludes: "It also was designed to basically stay the same throughout its existence, not to be recombined with other data." (p. 10) To aid the user in finding and identifying resources, the act of cataloging requires the creation of bibliographic surrogates. However, these surrogates, in essence, stop time. It is like taking a snapshot that fixes the object at a particular point. Svenonius (2000) uses the term "space-time embodiments of information" (p. 107) to refer to the concrete existence of documents. Bibliographic records also become a particular "space-time embodiment." Conceptual friction arises with current FRBR-based models of bibliographic description such as RDA, as "the work" must be recorded and fixed order to function. The "work" concept both fixes and stabilizes the whole of the bibliographic universe, thus creating objects that become a "signifying totality" (Deleuze & Guattari, 1987) with an essence that can be described and documented. Bibliographic description requires the practice of what some literary and cultural critics might refer to as clinical methods, meaning objects to be cataloged become like dead bodies that can be dissected and analyzed, dependent on ideas related to a Platonic reality of works. While it may indeed be true that the work concept is optimal for information retrieval (Hayles, 2003), it is at the same time restrictive and like certain aspects emphasized in the conversion of physical objects to

electronic objects, it is perhaps in danger of becoming a naturalized assumption regarding the organization of the bibliographic universe. The dominance of the work concept and need for a stabilized object within the practice of bibliographic control forms a normative matrix, making it challenging and perhaps even impossible to conceive of forming bibliographic data differently.

The Tyranny of Attribution

As demonstrated, the centrality of the idea of the work and the (vital) need for attribution bind library systems to replicating traditional systems of control. Barthes (1977a) found the "…image of literature to be found in ordinary culture is tyrannically centred on the author…" (p. 143). The model of bibliographic control as developed in AACR and further amplified in RDA (2010), stresses attribution of authorship, or those considered "…responsible for the creation of, or contributing to the realization of, the intellectual or artistic content of a resource" (section 2.4.1.1). Barthes (1977a, 1977b), Deleuze and Guattari (1987) and Hayles (2003) all suggest an emphasis on determining attribution, to the exclusion of potential creators, places limits on creativity. Instead of "works" Barthes promotes and idea of "texts" and though this quote is lengthy, it is a particularly useful definition of the text. According to Barthes (1977b) the text is:

> …woven entirely with citations, references, echoes, cultural languages (what language is not?), antecedent or contemporary, which cut across it through and through in a vast stereophony. The intertextual in which every text is held, it itself being the text-between of another text, is not to be confused with some origin of the text: to try to find the 'sources', the 'influences' of a work,

> is to fall in with the myth of filiation; the citations which go to make up a text are anonymous, untraceable, and yet *already read*: they are quotations without inverted commas. (p. 160)

Deleuze and Guattari (1987) take this idea further, suggesting that multiplicity can only exist in the absence of attribution, writing a: "…book has neither object nor subject, it is made up of variously formed matters, and very different dates and speeds. To attribute the book to a subject is to overlook this working of matters, and to the exteriority of their relations" and further: "A book is an assemblage…and as such is unattributable" (p. 4). The act of attribution is a myth even in the simplest of cases, given objects in the bibliographic universe are never the result of completely original thought. Moreover Barthes (1977a) suggests:

> We know now that a text is not a line of words releasing a single 'theological' meaning (the 'message' of the Author-God) but a multi-dimensional space in which a variety of writings, none of them original, blend and clash. The text is a tissue of quotations drawn from innumerable centres of culture. (p. 146)

Thus, according to these theorists, a text, when taken out of the constraints of the need for attribution, can exist as multiplicity, as assemblage, as performance. Hayles (2003) offers: "…to bring the Work as Assemblage into sight at all—requires a fundamentally different view of authorship than that which undergirds the idea of the works as an immaterial verbal construction" (p. 279). How might allowing the text to operate affect bibliographic control? What kind of space might the text inhabit if the need is for a

"multi-dimensional space"? Does the online network offer the necessary multiplicity where the object as assemblage can operate? According to Barthes (1977b) the "text…decants the work…from its consumption and gathers it up as play, activity, production and practice. This means that the Text requires that one try to abolish (or at the very least to diminish) the distance between writing and reading, in no way by intensifying the projection of the reader into the work but by joining them in a single signifying practice" (p. 162). The distance between writer and reader has been abolished. Could libraries diminish the distance between writer and reader and open up a new space, one that could enable a shift from order and gatekeeping into a new relationship and understanding of information?

The Intolerability of Communication Problems

> When it was proclaimed that the Library contained all books, the first impression was one of extravagant happiness. All men felt themselves to be the masters of an intact and secret treasure. There was no personal or world problem whose eloquent solution did not exist in some hexagon. The universe was justified, the universe suddenly usurped the unlimited dimensions of hope. …As was natural, this inordinate hope was followed by an excessive depression. The certitude that some shelf in some hexagon held precious books and that these precious books were inaccessible, seemed almost intolerable. (Borges, 2007, p. 55)

The quote above could be taken as an allegory of the "famed information overload" (Coyle, 2010, p. 11) being faced by today's users. We in the cataloging

community have perhaps been guilty of an overemphasis on finding an "eloquent solution," rather like the librarians in Borges' story, to the perceived problem of information chaos. We seek to create a bibliographic universe where messages are received with perfect clarity, with the minimal amount of "noise." However to aim for a meeting of the FRBR (1998) user tasks of "find, select, identify, obtain" through absolute precision in the creation of bibliographic records is perhaps to miss out on the vital role serendipity plays in human activities. What limits are we placing on our data by only connecting users via the "approved" pathways as set out in our cataloging standards? For example Powers (2011) noted this issue in writing on a user study at Mississippi State University of the EBSCO Discovery Services (EDS). EDS is a federated search product and they had expected users to be overwhelmed by the number of unrelated search results. Instead

> The biggest surprise, however, came from doctoral students and faculty. Dissertation writers get increasingly familiar and focused with their research as they compile a literature review, and the tighter the focus, the better EDS served their needs. Serendipity returned as cross-disciplinary searches became a reality with extremely narrow topics. (para. 5)

Highly structured library metadata is often contrasted with the messy web and couched in terms of being preferable as it better aids users in refining their results (Coyle. 2010); however, Power's findings challenge this assumption. She (2011) found graduate students and faculty appreciated the interdisciplinary nature of the search results and felt it "stretched a professor's expertise." (para. 6) We think of one of the chief functions of

knowledge organization as bringing together like things, but what if there was value to bringing together *unlike* things? It is sometimes the unexpected encounter or the unexpected result that is the most productive. This is part of the pleasure of serendipity. How can we move towards the performative nature of the text and the spontaneous possibility of the rhizome within the practice of bibliographic control? Opening our catalogs up to the possibility of serendipity is perhaps even more important now that most of the initial work of searching is done online. We need our catalogs to expose the constellation of possible meanings, to recognize the possibility of the "object as assemblage" not just "people who borrowed this also borrowed" and vetted reviews.

The Technosocial Fabric of the Networked Text

One of the most attractive threads in Barthes' (1977b) writings on text is the idea that "…the metaphor of the Text is that of the *network*" (p. 161). And further, the text is "…that *social* space which leaves no language safe, outside, nor any subject of the enunciation in position as judge, master, analyst, confessor, decoder" (p. 164). The idea of a text within a networked social space (a social network?) most certainly aligns with current online environments. Here also are opportunities for libraries to expand thinking around collections and the control of those collections. Would it be possible to capture and expand the social network around online texts in an academic setting? Can the work-as-assemblage be exposed? Or would any attempt at fixing these relationships just be a return to the "work problem"? Thinking about the "building blocks of knowledge" may be a way to think about bringing in a more performative method of bibliographic control. One that recognizes not only the complete "products of knowledge," objects we expect to

find in the bibliographic universe, but also the in-between objects, the unknown unknowns. We must get beyond the idea of what we conceive as a standard and even desirable bibliographic record and attempt to surface the "stereographic weave of signifiers" (Barthes, 1977b, p. 159) at play within our collections.

One could think of this way of cataloging as weaving a part of the "technosocial fabric." I first noticed this term in a blog post on *Online Fandom*, written by social networking and popular culture theorist Nancy Baym. Baym (2008) recounted a story where she credited the "technosocial fabric" of her life with allowing her to find a band she liked through a recommendation of a friend she had reconnected with on Facebook. This recommendation had come in the form of a photo of the band, which prompted her to seek out more information and ultimately purchase the music. Thought-provoking aspects of this anecdote are the use of personal recommendation to find information, and in particular, the use of an image as a point for starting a search. While many current library discovery systems allow for social tagging, reviews and display cover images, these enhancements remain outside the bibliographic record and in most cases are not searchable. Byam (2008) admonishes those of us in the business of creating discovery systems to do better, writing

> …it is very important to remember the serendipitous ways that we stumble across music through our connections with friends and the need to enable that kind of discovery by making the kinds of things fans want to promote easy to pitch and find. Too often music discovery sites foreground the parts that can be done by machines forgetting that the most meaningful

> music recommendations emerge unpredictably when the technosocial fabric is woven well enough and across sites to let interpersonal surprises occur. (para 12)

A reminder perhaps that, like the users in Power's study, the idea of a perfectly constructed search retrieving a perfectly matched set of results may not be what generates the most useful results. In monitoring my own online activities I have realized that I do not think of online activities as being separate, but move from one site to another through the social links of applications like Facebook, blogs, chat, and social bookmarking. My online activities take place along the threads of my technosocial fabric and the image of this fabric is the rhizome. It is spontaneous and uninhibited by hierarchy. The idea of technosocial fabric also resonates in the context of Barthes' text in that he stresses the social aspect of the text and a breakdown between the perceived barriers between author and reader. The weave of online activities for many people is tight and loose, multitudinous and confined. The promise of the infinite library not in one particular system or website, or through the control of relationships, but in social connections and in the messy, serendipitous ways in which our everyday interactions with information build human culture. How can we develop a functional model of a more performative way of cataloging?

The Functional Future

Hope for the functional future of bibliographic control most certainly lies with the adoption of a Linked Data model, the most likely candidate being Resource Description Framework (RDF) with eXtensible Mark-up Language (XML) as the encoding

mechanism (Library of Congress Working Group of the Future of Bibliographic Control, 2011). Linked Data would allow bibliographic data to move beyond the confines of a single space, and it is the method through which other conceptual models could be in play alongside models such as FRBR. Linked bibliographic data is rhizomatic in the extreme. Many of the reports and papers cited at the beginning of this article have focused on increasing the ease of bibliographic data exchange, making bibliographic data more accessible to outside web services and systems and on making better use of existing structured data such as that offered by publishers. This would result in cost savings for libraries, optimistically freeing catalogers to concentrate on areas such as special collections and as a means for greater community involvement in integrating library bibliographic data with the data from other cultural institutions such as museums and archives (Library of Congress, 2008, 2011). In the context of this paper a Linked Data future for bibliographic description follows the model of the network and the rhizome, exploding the confines of the hierarchical limitations of the relational database and any particular set of cataloging rules or conceptual models. It would become "of the web" rather than "on the web" (Singer as cited by Knight, 2011). Library data must shift to a fully networked environment, one that allows for the multiplicity of human social interaction to take place and become part of the weave of the "technosocial fabric" of people's lives. With actionable and dynamic linked data, connections could be made anywhere, in and outside the perceived confines of the library, and unlike current forms of bibliographic control, it is not static. Links are not confined to preset hyperlinks. Barthes (1977b) writes "The Text is not a co-existence of meanings but a passage, an

overcrossing; thus it answers not to an interpretation, even a liberal one, but to an explosion, a dissemination" (p. 159). Bibliographic data in the Linked Data environment exemplifies this model. Data would not just exist in different bibliographic containers, but a more open, machine-readable format would enable this "overcrossing" and, hopefully, disseminate library data in the widest possible way, scattering it to not only the most fertile ground, but also to places not normally cultivated by libraries.

Additionally a Linked Data environment could possibly also allow catalogers greater freedom to add what might be perceived of as subjective data or data that resides outside the prevue of current rules in ways that is useful beyond local systems. This could be the most valuable means to increasing the visibility of neglected names, subjects and physical aspects of objects within our collections. As Baym (2008) reminds us, it is the aspects of information retrieval not solved by machine intervention that require the most attention. A model of cataloguing could also be developed that could be less concerned with creating records deemed either "brief" or "full" but rather always in progress, always on the way to becoming, and never complete. An example from my particular area of music cataloging could be the adding of individual performer names for larger ensemble recordings when we do not have a complete list of names. In such an environment, if bibliographic data could exist within a Linked Data cloud, it might be hoped that other community members could add additional names and information, building a network of connections.

Conclusion

Does the seemingly infinite flow of information represented by the Internet bring

the promise of the "Universal library" or does the seeming lack of boundaries mean it is the "Library of Babel," a place where there are infinite amounts of information but no understanding? We need a new conception of "library," one that has nothing to do with branches, or genres of libraries, or physical spaces at all. It is everything and nothing. In online environments there is only the constant flow of information, which occasionally takes the form of a work container, or a text container, and is only bound at any one time by the conception of the user. As the Age of the Card Catalog begins to wind down, nuanced analysis of the implications of this shift may aid us in finding the future of bibliographic control. The truth remains that effective information retrieval does depend on highly organized data, making the continued use of the work-ideal and attribution likely and even desirable. My aim is not to suggest that all previous work on bibliographic control need be thrown away, or that RDA and FRBR are not enormous steps forward in improving the functionality of bibliographic databases, but rather to demonstrate how the work-based underpinnings of bibliographic control may reinforce a particular view of the bibliographic universe. The question is not whether we should be concerned only with the material nature of library collections or with the abstract concepts of works, or even how to perfectly reconcile the two, but whether we can recognize the philosophical issues that arise out of the friction between the two and how these inform future directions. The future might well lie with a more performative mode of bibliographic description, one concerned less with creating "surrogates" and more with the weave of the network and the play of the text. The question for the future may be what kind of organism are we cultivating? Root or rhizome?

References

Barthes, R. (1977a). The death of the author. In S. Heath (Ed.), *Image, music, text* (pp. 142-148). New York: Hill and Wang.

Barthes, R. (1977b). From work to text. In S. Heath (Ed.), *Image, music, text* (pp. 155-164). New York: Hill and Wang.

Baym, N. (2008, August 3). Online music discovery in action [Web log post]. Retrieved from http://www.onlinefandom.com/archives/online-music-discovery-in-action/

Borges, J. L. (2007; 1964). The library of Babel. In D. A. Yates, & J. E. Irby (Eds.), *Labyrinths: Selected stories & other writings* [Selections.] (pp. 51-58). New York: New Directions.

Calhoun, K. (2006). *The changing nature of the catalog and its integration with other discovery tools.* DC: Library of Congress.

Coyle, K. (2010). *Understanding the semantic web: Bibliographic data and metadata*. Chicago, IL: ALA TechSource.

Deleuze, G., & Guattari, F. (1987). *A thousand plateaus: Capitalism and schizophrenia* [Mille plateaux.]. Minneapolis: University of Minnesota Press.

Garrison, D. (2003; 1979). *Apostles of culture: The public librarian and American society, 1876-1920*. Madison: University of Wisconsin Press.

Hayles, N. K. (2003). Translating media: Why we should rethink textuality. *The Yale*

Journal of Criticism, 16(2), 263-290.

Hillmann, D. *RDA vocabularies in the semantic web: What the are, how they work.* Retrieved February 17, 2012, from http://www.slideshare.net/ALATechSource/diane-hillmann-rda-vocabularies-in-the-semantic-web

IFLA Study Group on the Functional Requirements for Bibliographic Records, & International Federation of Library Associations and Institutions. Section on Cataloguing. Standing Committee. (1998). *Functional requirements for bibliographic records*. München: K.G. Saur.

Joint Steering Committee for Development of RDA, & American Library Association. (2010). *RDA toolkit*. Chicago, IL: American Library Association.

Joint Steering Committee for Revision of AACR, American Library Association, & Canadian Library Association. (2004). *Anglo-American cataloguing rules: 2004 update* (2nd ed.). Chicago; Ottawa: American Library Association; Canadian Library Association.

Kittler, F. (1999). *Gramophone, film, typewriter* (G. Winthrop-Young Trans.). Stanford, Calif.: Stanford University Press.

Knight, F. T. (2011). Break on through to the other side: The library and linked data. *TALL Quarterly, 30*(1).

Library of Congress Working Group of the Future of Bibliographic Control. (2011). *A*

bibliographic framework for the digital age. DC: Library of Congress.

Library of Congress Working Group on the Future of Bibliographic Control. (2008). *On the record.* DC: Library of Congress.

Moulthrop, S. (2003). You say you want a revolution? Hypertext and the laws of media. In N. Wardrip-Fruin, & N. Montfort (Eds.), *New media reader* (pp. 691-704). Cambridge, Mass.: MIT Press.

Oxford English Dictionary. (2012) *"Promiscuous, adj. and adv.".* Retrieved February 29, 2012, from http://www.oed.com.ezproxy.library.yorku.ca/view/Entry/152429?redirectedFrom=promiscuous;

Powers, A. C. (2011, December 7). EBSCO's EDS: Relying on patron data to show the way. *Library Journal,* Retrieved from http://reviews.libraryjournal.com/2011/12/reference/discovering-what-works-librarians-compare-discovery-interface-experiences/

Smiraglia, R. P. (2003). The history of the work in the modern catalog. *Cataloging & Classification Quarterly, 35*(3-4), 553-567. doi:10.1300/J104v35n03_13

Svenonius, E. (2000) *The intellectual foundation of information organization*. Cambridge, Mass.: The MIT Press.

University of California Libraries Bibliographic Services Task Force. (2005). *Rethinking how we provide bibliographic services for the University of California.*

What is HyperText? Retrieved February 17, 2012, from http://www.w3.org/WhatIs