Exploring connections of the biblioblogosphere

S. Craig Finlay*, Michael Johnson, Vincent Malic
Indiana University Bloomington
1320 E. 10th St. Bloomington, IN 47401
{scfinlay; mwjohnso}@indiana.edu
*corresponding author

Carolyn Hank
McGill University
Peel 3661, Montreal,
Quebec H3A 1X1
carolyn.hank@mcgill.ca

Xiaozhong Liu
Chaoqun Ni, Cassidy R. Sugimoto
Indiana University Bloomington
1320 E. 10th St. Bloomington, IN 47401
{liu237; chni; sugimoto}@indiana.edu

ABSTRACT
The neologism, the biblioblogsphere, has emerged in recent years to describe the institutional publication of blogs of libraries and the personal, typically professionally-oriented publication of blogs by librarians. Much literature on this trend has been anecdotal in nature, though a growing body of research literature has emerged in the past several years. This paper contributes to the latter development, reporting the findings from an exploratory study mapping connectivity in the biblioblogsphere, the first part of a planned, extended research study on scholarly communication in the biblioblogsphere. Patterns of interlinking within a sample of 1,606 library blogs were studied. The outgoing links of posts published to these blogs over one year were compared with the URLs of all blogs in the sample. It was found that the majority of the sampled blogs (80%) did not link to any other blog within the sample. Interlinked blogs (20%) tended to cluster according to library type, blog subject or geographical proximity. Approximately 1/3 of these were located within a single massive network consisting of 125 “nodes,” or blogs, while the rest were in dyads and triads, representing networks comprised of two or three blogs, respectively. Findings suggest that the biblioblogsphere conforms to the locally dense, globally sparse structure of blog networks established by previous studies. Personal blogs are more likely to be located within a network than institutional blogs. These findings suggest that individual bloggers are actively shaping the networked, hyper-linked structure of the library blogsphere, while institutional blogs having less overall impact.

Keywords
Libraries, librarians, weblogs, biblioblogsphere, webmetrics

INTRODUCTION
Publication patterns of scholars are often used to demarcate the boundaries of a discipline. Studies evaluate not only the shared content of the field, but whether the field has a coherent core of contributing authors and the associations of these authors. In an examination of Library and Information Science (LIS) journals, Wiberly, Hurd and Weller (2006) found a decrease in contributions from practitioners to the LIS literature. This does not necessarily reflect an overall decrease to the LIS literature as journals represent only one form of scholarly communication – and one that may not be the most efficient or appropriate genre for meeting the needs of either practitioner contributors or a practitioner audience. In the LIS literature, as with other fields that balance between academic and practitioner contributions, it is often important to evaluate evolved channels and units of scholarly contribution that may favor one type of contribution or contributor. The biblioblogsphere presents such opportunity. This neologism, introduced by Schneider (2004), as cited by Stephens (2008), has emerged in recent years to describe the institutional publication of blogs of libraries and the personal, typically professionally-oriented publication of blogs by librarians. Scholars have argued in favor of library blogs, noting the natural fit of blogs into the mission of libraries and librarianship (Clyde, 2004a; Clyde, 2004b; Laning, et al., 2005; Siess, 2006). Blogs provide a low barrier platform for the timely dissemination of ideas and research, and, as such, may provide an appropriate format for library practitioners.

While it was recently found that there has been a decline in the number of active blogs within the biblioblogsphere, publication via posting was found to remain stable (Torres-Salinas et al., 2011). Hence, the blogs of libraries and librarians remains a contemporary and engaging area of inquiry. Further compelling is that much of the evidence reported in the literature is anecdotal in nature. The objective of this study is to contribute to the empirical evidence exploring this particular community of practice. As reported anecdotally, blogging allows for libraries and librarians to communicate faster and with less of a barrier for participation than allowed by traditional modes of communication. However, communication requires interaction. Therefore, this study reports distinctions between the personal blogs of librarians, independent of their institutions, and the institutional blogs published by libraries, and how these two, broad blog types are explicitly...
connected through weblinks. This study informs future and present library practitioners and administrators and educator and researchers in LIS interested in the ways that Web 2.0 platforms facilitate the dissemination of ideas.

BACKGROUND
The rapid growth and interlinked nature of the blogosphere has been well-documented (Kumar et al., 2005). Early studies used graphs to visualize the number of links and the growth of content (Cohen & Krishnamurthy, 2006). In these studies, a consistent pattern of globally sparse, locally dense communities were identified (Adamic & Glance, 2005; Etling et al., 2010; Uchida et al., 2009). This study seeks to identify whether this pattern would be observed in the library blogosphere.

Early studies examining library blogging focused on the public relations aspect, with authors arguing that avoidance of blogging could damage a libraries ability to connect with its patron base (Clyde, 2004a). Literature in this area focused on using blogging for improved customer service (Laning, et al., 2005) and marketing (Siess, 2006). From the perspective of readership, studies noted that the most successful blogs were those that linked to interesting news stories and developments in the field rather than simply using the blog as an online bulletin board for announcements (Bell, 2006). Although blogging has been hailed as a means to connect with particular users (e.g. undergraduates (Goss, 2006)), recent studies have demonstrated that the majority of library blog content receives little to no readership (Brantley, 2010).

Another strain of research has focused on how blogging is conducted and perceived by librarians (Caitriona & Bates, 2007). Studies have shown that librarians tend to write essay-like posts with hypertext links and that library blog tags fit into larger categorization systems, according to subject (Aharony, 2009a; Aharony, 2009b). These findings present an interesting possibility for inquiry into LIS. Wiberly, Hurd, & Weller (2006) found a 13% decline in the number of refereed articles written by academic librarians between 1998 and 2002. This is the same period during which library blogs experienced an initial burst in creation and productivity. More recently, Klobas & Clyde (2010) found that academic and college librarians were less confident than scholars in their ability to get articles accepted for publication. This raises the interesting possibility that practitioners have begun a publishing migration from peer-reviewed journal articles to blogging as a means of publishing and sharing ideas.

Gilman (2008) theorized that librarians are attracted to blogging because as an avoidance of the traditional peer-review process required for publishing. While the extent of such a migration is unknown, it appears to be causing rifts within practitioner groups; a divide has begun to develop among librarians as to whether blogging should be counted toward publishing or public service with tenure (Hendricks, 2010). Opinions on this are often divided by librarians of different ages (Hendricks, 2010). If indeed such a shift has occurred in authorship from journals to blogs, it represents an important opportunity for scientometric research. The foundation for this work is an initial mapping of the library blogosphere.

METHOD
Initial selection of the blogs to be included was done by searching the web for various “best of” lists of library blogs. This search led to aggregate lists of library blogs, including the Blogging Libraries Wiki that contains links to about 1,400 institutional blogs by category (academic libraries, public libraries, school libraries, special libraries, and internal library communication blogs). Snowball sampling was also employed, by following links from some of the identified blogs to other library blogs. Selection was done by four searchers, over a course of two weeks, until saturation had been reached.

This selection process introduces a number of biases into the study: the Blogging Libraries Wiki was initially begun by a personal library blogger who writes “Blog without a Library,” a blog within our sample. In addition, as the sample was selected via convenience and snowball procedures, generalizability cannot be claimed. The true population of this space is also unknown, so the representativeness of this sample is unknown. However, despite these limitations, this study was able to identify 1,606 library blogs of various types. This study provides an initial exploration of the types of blogs available for study into the bibloblogosphere and the interconnectivity of these blogs. Once the list had been selected, a crawler was made to extract all outgoing link. By analyzing the link host name, these links were then classified into three groups: self-link, library-link (i.e., one of the 1,606) and non-sample link (outside of the selection list). One limitation of this method is the potential for Type I error—non-library links were identified as those outside of the initial selection; however, these may be merely links to libraries that have not been identified. In future work, a more comprehensive link should eliminate this potential bias.

RESULTS
Blogs were initially examined for inlinks and outlinks from and to blogs within the sample set. Of the 1,606 blogs, only 326 (20%) were connected to at least one other blog in the sample. Of these, 90 blogs were in isolated dyads, 48 were in triads, 36 were in 4-node groups and 125 were in the single massive component. There were also one 5-node, one 6-node and two 8-node groups. The 2, 3 and 4-node were largely homogeneous. Of the 45 2-node couples, 39 were composed of a single blog type, as were all of the 3-node couples and 7 of the 9 4-node couples. As a whole,
of the 337 total links between library blogs, 221, or 65%, are to a blog of the same category.

All institutional blogs -- public libraries, academic libraries, special libraries and school (K-12) libraries, were less-connected that personal blogs, although school libraries were only marginally so. Academic libraries were least-likely to link to another blog in the list, with 87% existing in isolation. Public (85%) and special (81%) were similarly isolated from the rest of the sample. Library association and library director and internal communication blogs were unconnected 75, 76 and 68% of the time, respectively. Personal blogs were the most highly connected within the sample, with a majority linked to at least one other blog.

Among academic library blogs, for example, 42 of the 58 linked blogs were in 2, 3 or 4-node networks. Among public library blogs, 76 of 83 linked blogs were located in the smaller clusters. Among personal libraries, however, only 5 of 76 linked blogs were located outside of the 125 massive component. It is illustrative of the connectedness of personal blogs that the only category with more linked blogs is public libraries, with 83. However, there are 633 public library blogs in the sample size, nearly 4.5 times the number of sampled personal blogs. The 125 blog network was the most diverse, and contained at least one blog of every type. The majority (57 percent) of the blogs in the massive component are personal blogs. As shown, geographic commonality is one of the factors of network coherence in this dataset (Figure 1).

DISCUSSION
The majority of library blogs do not link to any other blog within our sample, and the library blogosphere’s nature is locally dense and globally sparse. When considered a mechanism of communication, the majority of library blogs within our sample have not sought to disseminate information published on other library blogs to their readers by way of linking. Similarly, few of the posts of these same blogs have been disseminated by means of linking to the readership of any other blog within our sample.

The majority of blogs that did link to another within the sample did so in confined, smaller networks. If level of participation in a blogosphere may be at least partially gauged by variety of blogs linked to, and the size of the network into which a linked blog is joined, then the interaction level of the majority of linked blogs must be considered low. Unless the blogs within these two, three and four node networks are linking to one another on a regular basis, which may well be the case, it seems intuitive that these smaller networks are not centers of communication but rather the products of one-time linkings. Of all blogs, personal blogs were also the most interconnected of all blog types, both in terms of total number linked, and the number of blogs located within the largest network. An individual driven to create an independent blog focusing on library issues will likely be more invested in the activity of blogging than a librarian who is assigned as a duty the upkeep of an official library blog. Whereas a library blog may exist as little more than a ready bulletin board, alerting patrons to library events and hours of operation, a lone blogger should have no such day-to-day obligations. This can only be answered through an in-depth content analysis. We can draw a preliminary conclusion that personal blogs are primarily responsible for determining the major link structures of the library blogosphere. Official institutional blogs, in regard to the structure of the blogosphere, may be regarded as comparatively less important in determining network structures.

CONCLUSION AND FUTURE WORK
We have identified a number of important aspects of the library blogosphere that warrant further study. First among
these is that library blogs are simply not taking advantage of the communicative possibilities of the blogosphere. Eighty percent of all blogs within the sample did not link to any other blog within the sample. While this is not a perfect indicator of whether the bloggers writing for these blogs are reading other blogs within the list, it is at least a partial one. It is a very good indicator of information sharing and dissemination, as links are the primary mechanism for this on the internet.

Second, we found that personal-professional blogs are the primary driving force behind the shaping of the structures within the library blogosphere. Despite being a minority of blogs by total number, the personal-professional blogs were not only the most likely to link to other blogs within the sample, they were also highly concentrated within the single massive component, connecting them to a greater number of blogs via secondary linkages. The clear majority, 71 out of 76 personal blogs, were located within the massive component. By comparison, over half of all academic library link connections were within 2- or 3-node isolates, effectively cutting them off from the rest of the blogosphere. While official institution library blogs appear to make up the bulk of the population of the library blogosphere, they appear to be largely irrelevant to determining its structure.

Our hypothesis that personal blogs are primarily responsible for the link structure of the library blogosphere requires further research for confirmation/refutation. The study requires a greater sample size, with the hope of identifying multiple clusters of library blogs. Furthermore, all outgoing links, not just those to other blogs within the sample, need to be analyzed for patterns of commonality. The resulting visualization would cluster nodes based on similarity of outlinks, allowing us to understand the subject interests of different library blog types.

REFERENCES
Hendricks, A. (2010). Bloggership, or is publishing a blog scholarship? A survey of academic librarians. Library Hi Tech, 28 (3) 470-4