# UNDERSTANDING PUBLIC LIBRARIES' CONVERSATIONS: PROMISES AND CHALLENGES OF MICROBLOGGING DATA (Paper)

**Abstract:**

This paper examines the concept of "conversation" on Twitter as expressed by both social media metrics and network analysis. This paper offers a methodology for studying library engagement on Twitter and reflexively critiques the method to probe different discursive styles and technical expressions of "engagement" by Canadian public libraries.

## 1. Introduction

We are interested in the relationship public libraries have with their communities -- exploring their interactions, how these interactions lead to relationships, and how these relationships can be characterized. One context in which public libraries interact with their communities is the social media environment through applications like Twitter. In the professional literature, libraries are encouraged to use Twitter for two main reasons: to engage their communities and to disseminate information (Vassilakaki & Garoufallou, 2015). With this in mind, we have embarked on a study to examine the kinds of conversations public libraries are having via Twitter. The guiding questions for our study are: What kinds of conversations are libraries trying to have? Who are they having conversations with? Who is not being seen in these networks?

There are discourses in the library context that say conversations between libraries and their followers are happening on Twitter and that retweets and likes indicate engagement with users. However, as our investigation has progressed, we have encountered a number of methodological concerns that challenge these discourses. In other words, we have found that there is a messiness to Twitter data that challenges and probes the seemingly straightforward answers that "big data" offers researchers. Baym (2013) argues that when using big data it is important to qualify our research conclusions and make explicit the limits of simplistic equivalencies about engagement expressed through traditional social media metrics. This paper seeks to work through these methodological challenges by examining the concept of "conversation" across the Twitter platform as expressed by both social media metrics and network analysis. This paper offers a methodology for studying library engagement on Twitter and reflexively critiques the method to probe different discursive styles and technical expressions of "engagement" by Canadian public libraries.

## 2. Microblogging as Information Sharing and Community Engagement

Early research on libraries and Twitter largely focused on how libraries were using Twitter, whether through case studies examining how an individual library implemented its Twitter strategy (Cahill, 2011) or examinations of library tweets (Aharony, 2010; Shiri & Rathi, 2013).

Aharony (2010) found that public library tweets fell into four categories: "Library in general," "information about," "general recommendations," and "technology." Shiri and Rathi (2013) expanded on Aharony's (2010) categorization scheme. Like Aharony (2010), Shiri and Rathi (2013) found public libraries tweeted to communicate traditional library interests, share information, and make recommendations; however, they also found that interactions with users, such as responding to twitter users about library-related services (advisory services) and discussions with users about films and other kinds of popular culture (informal conversation) were amongst the top five categories of tweets.

More recent examinations of library's Twitter use have focused on measuring user engagement levels with the library's Twitter account and analyzing Twitter networks. In their study of four academic libraries in Montréal, Winn, Rivosecchi, Bjerke, and Groenendyk (2017) found low user engagement with library tweets with an average of 3.15 likes or shares per tweet over a nine-month period. Similarly, in an analysis of the Twitter networks of two academic libraries, Yep, Brown, Fagliarone, and Shulman (2017) found that there were fewer interactions amongst libraries' the replies and mentions Twitter networks than their follower/followee networks. In addition, they found that the strongest relationships were between the libraries' twitter accounts and other institutional accounts, i.e., accounts related to the broader university community.


### 3. Theoretical Framework

As a social media application, Twitter supports various forms of communicative practices, from conversing with individuals, groups, and the public at large (boyd, Golder & Lotan, 2010). Boyd et al. argue that many of these practices contribute to a "conversational ecology" (p. 1) in which conversations take place using the syntactic conventions of Twitter, namely retweets, or the reposting of messages originally posted by another user. Although retweeting, and other measures of user engagement, often resemble information diffusion or sharing, boyd et al. argue that retweeting does "not simply get messages out to new audiences, [they also] validate and engage with others" (p. 1). Importantly, boyd et al. note that the structures of conversations on Twitter vary across groups, particularly when conversations are had across non-cohesive networks. This means that it is possible for people, and organizations, to participate in different conversational contexts at once.

The conversational ecology identified by boyd et al. (2010) provides a framework for understanding how libraries use Twitter to not simply engage with their members, but converse with their membership. Traditional understandings of library membership tend to rely on membership registration, library use statistics, and geographical area to define to define membership; however, Cavanagh (2015) argues these understandings overlook the active nature of public library membership. For instance, a person does not have to hold a library card in order to follow a library on Twitter; however, that individual still creates a relationship with the library by choosing to follow the library's Twitter account. By overlaying boyd et al.'s (2010) understanding of the syntactic conversation conventions of Twitter on Cavanagh's (2015) understanding of public library membership, we hope to explore the different conversations and conversational contexts that public libraries participate in online.

**4. Community "Conversations"**

In our initial attempt to understand Canadian public libraries' online conversations and conversational contexts, we examined the content of libraries' tweets and how this content affected followers' public displays of interest and sharing behaviour. In other words, we sought to examine the type of content that motivated followers to retweet or like.

Using data from Social-Biblio.ca, an archive of Canadian public library Twitter data, we extracted tweets posted from September 10-23, 2017 from the five libraries with the highest number of followers: Toronto, Edmonton, Halifax, Vancouver, and Calgary municipal public libraries. These libraries were chosen because establishing an audience on Twitter takes time and we wanted to examine libraries whose Twitter service was active and robust.  A portion of the data was coded inductively by the authors to develop a codebook resulting in 13 individual codes clustered into 8 groups. After a norming process, a research assistant coded the remaining data.[1] After coding the tweets, the number of retweets and likes were gathered from the libraries' Twitter feeds.

Preliminary results indicate that most tweets are liked (85%) and many are retweeted (65%).[2] Programs was the largest category of library tweets. In addition, program tweets are most likely to be liked or retweeted by followers. In several categories, every tweet posted was liked and retweeted at least once: building, community event, partnerships, and humour. Although we cannot draw firm conclusions from this preliminary data, we did notice that follower reactions to humour and general interest tweets seem to generate disproportionate engagement from followers.

There is a major limitation to these results, however. While the results provide a perspective on the data, important questions remain about who the libraries' followers actually are. During our initial analysis, we relied on two assumptions: 1) Followers are representative of a subset of library users, an assumption shared by other studies of followers' retweets and likes; and 2) Following Cavanagh (2016), that 4% of followers were other libraries or librarians (p. 255). However, as our analysis progressed we began to question the subset of followers who liked and retweeted. For example, is the finding that 100% of tweets in the building category are retweeted valuable if one person is always responsible for the retweets? Analyzing followers was outside the scope of our study, but we realized that to answer our original research questions we needed to know more about who libraries are actually conversing with on Twitter.

**5. A Closer Examination of Who is Conversing**

In order to probe further on the nature of the engagement between each library and its followers, a second stage analysis is in progress and therefore findings cannot yet be reported. Using the social media research tool, Netlytic and a network analysis approach, we are exploring the structures of the individual libraries' social networks, and the follower identities of both their larger nodes and individual outlier followers. While not conclusive or exhaustive, this analysis

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[1] Interrater reliability statistics will be available for the final paper.

[2] Only preliminary data is available for this proposal; however, data analysis will be completed in February 2018.

will reveal more data regarding the Twitter profiles of library followers and the network structures that are present among the subject categories of tweets. Tweets suggesting the largest community engagement based on the previous analysis will also be reviewed through Netlytic to observe the diffusion patterns among these social media communities. By learning more about the types of followers participating in these conversations, more informed analysis and implications can be formed.

## 6. Conclusions

The easy availability and large quantity of data available from Twitter, and made accessible through Social-Biblio.ca, seemed an ideal opportunity for exploring libraries' conversations with users. Initially, we found interesting results that seemed to move us forward toward answering our research questions. However, as we questioned our data and our interpretations, we realized that the Twitter data are not as straightforward as we expected and as the literature led us to believe. Fortunately, there are tools to help us our new research questions and move us forward in our understanding of libraries' conversations and conversational contexts.

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