OPEN TO INFLUENCE: WHAT COUNTS AS ACADEMIC INFLUENCE IN SCHOLARLY NETWORKED TWITTER PARTICIPATION

Bonnie Stewart

Stewart, B. (2015). Open to influence: What counts as academic influence in scholarly networked Twitter participation. *Learning, Media, and Technology,* 40(3), 1-23. doi: 10.1080/17439884.2015.1015547

Abstract

Within the academy, signals of a scholar's academic influence are made manifest in indices like the h-index, which rank output. In open scholarly networks, however, signals of influence are less codified, and the ways in which they are enacted and understood have yet to be articulated. Yet the influence scholars cultivate in open networked publics intersects with institutional academia in grant-required measures of "public impact," in media visibility, and in keynote and job opportunities. How do scholars within open networks judge whether another scholar's signals are credible, or worthy of engagement? What counts as academic influence on a platform like Twitter? This paper concludes that scholars employ complex logics of influence to assess the networked profiles and behaviours of peers and unknown entities. Significantly, these logics of influence depart from the codified terms of rank and bibliometric indexing on which conventional academic influence is judged. While some are numeric – participants recognized relatively large-scale accounts as a general signal of influence – recognizability and commonality are as or more important than quantifiable measures or credentials. The paper suggests that the impression of capacity for meaningful contribution is key to cultivating influence and the regard of actively networked peers.

Keywords: networked influence, open scholarship, networked scholarship, networked publics, scholarly reputation, academic influence

Open to Influence: What Counts as Academic Influence in Scholarly Networked Twitter Participation

Introduction

At the intersection of the Internet and education, the word "open" signals a broad, de-centralized constellation of practices that skirt the institutional structures and roles by which formal learning has been organized for generations. According to Daniel (2012), "Open education broke open the iron triangle of access, cost and quality that had constrained education throughout history and had created the insidious assumption, still prevalent today, that in education you cannot have quality without exclusivity" (UNESCO, para. 1). This paper focuses on that terrain of quality without exclusivity, and on the ways in which networked scholars understand and enact concepts of credibility and influence as they interact in the participatory academic sphere. Veletsianos and Kimmons (2012) suggest that open scholarship takes "three major forms: (1) open access and open publishing, (2) open education, including open educational resources and open teaching, and (3) networked participation" (para. 6). The study discussed in this paper focuses on that third form of open scholarship, the phenomenon of networked participation. In the paper, I examine how networked scholarship opens up concepts of academic influence, and the logics employed by open scholars in assessing network influence.

Regular surveys of American university faculty members have shown a continuing increase in the professional use of social media (Seaman & Tinti-Kane, 2013) and social networking services (SNS), and the products of scholarly work and collaboration are increasingly available on the open web to the widest possible audience

(Pearce, Weller, Scanlon, & Ashleigh, 2010). This availability can translate into increased visibility for scholars, and even into forms of academic recognition. Media exposure, increased research citations, keynote and plenary address offers, and jobs can all result from open scholarly practices. As Mewburn and Thompson (2013) note, “Blogging is now part of a complex online “attention economy” where social media like Twitter and Facebook are not merely dumb “echo chambers” but a massive global conversation which can help your work travel much further than you might initially think” (para. 11). Yet these benefits bear little relationship to the democratizing claims of the early open/free software movements from which open education initiatives originated (Veletsianos & Kimmons, 2012).

The paper builds on data and analysis from a participatory research study utilizing ethnographic methods. Working with scholars from diverse locales and academic status positions across the global English-speaking academic sphere, I examine the ways in which and terms on which influence is developed, circulated, and understood among scholars active in open networks. All participants in the study enact some form of open, digital, networked sharing in their scholarly practice, using Twitter, blogs, and other platforms.

The substantive goal of this research study is to offer an ethnographic portrait of open scholars’ academic influence practices, and to consider the implications of these for higher education. The study takes up Selwyn’s (2010) call to “develop “context-rich” accounts of the often compromised and constrained social realities of technology use “on the ground” in educational settings” (para. 6). This account of how openness manifests in the lives and practices of scholars attempts to address material as well as social realities;

the ways in which open networks enable scholars to develop both new and conventional forms of academic influence are explored using Haraway's (1988) concept of diffraction, which she frames as the effort to make a difference in the world.

Networked publics and the academy

Open networked scholarship does not require credentials, but demands the construction, performance and curation of intelligible, public, participatory identities. The core of this identity production occurs via profiles (boyd & Heer, 2006); on blogs and other personal web spaces, "bios" may provide identifying information or link to the individual's social network profiles. Within the complex, interconnected mesh of searchable discussion and knowledge artifacts that constitute scholarly networked publics, these identities and the artifacts associated with them circulate, creating reputations and differential positions. Weller (2011) notes, "in a digital, networked, open world people become less defined by the institution to which they belong and more by the network and online identity they establish" (Section What is Digital Scholarship? para. 3). Yet, few scholars inhabit a solely digital, networked, or open educational sphere; many engage in networked scholarship while simultaneously working towards institutional academic goals and careers. This means navigating multiple sets of expectations and legitimacy standards at the same time, as well as negotiating institutional relationships with peers, superiors, and students for whom the participatory set of terms may be invisible or devalued.

Just as "the academy" refers, imperfectly, to a broadly-understood confluence of practices, norms, and outlooks as well as to the historical public concept of the university, so the participatory subculture of "networked publics" (boyd, 2011) is invoked in this paper to identify both the complex techno-cultural context of open scholarship and the practices that distinguish it. Networked publics are “the space constructed through networked technologies, and the imagined collective that emerges as a result of the intersection of people, technology, and practice” (boyd, 2011, p. 39). Both material and conceptual, networked publics are enacted via networked blogs and, increasingly, through social networking platforms such as Twitter and Facebook. This study focuses primarily on Twitter as a site of observation due to its prominence in participatory scholarly networks. Lupton’s (2014) study of 711 academics using social media found that 90% reported using Twitter for professional purposes, while nearly 50% used Academia.edu, 40% Facebook, and over 30% personal blogs (pg. 14).

Academia and networked publics are not dichotomous; both can be said to be “reputational economies” (Willinksy, 2010) in which communications are “the principal mechanism for creating knowledge and establishing reputation” (Hyland, 2003, p. 252). Terms of entry to the two spheres are not identical, however. In academia, scholarly communications are controlled and legitimated through credentialing and the academic publishing system; in networked publics, digital media’s capacities for free replication and networked conversation are harnessed to create a alternate public sphere. This sphere is utilized for multiple purposes, among them connection, establishment of networks, promotion of openness and sharing of information, development and publicizing of research, and support (Weller, 2011; Veletsianos, 2012; Lupton, 2014).

Academic influence and network influence

The traditional terms upon which academic influence is developed are relatively codified. Though they vary depending on a scholar’s discipline or area of specialization, there are a variety of indices and signals by which influence – also framed as reputation or academic impact – is judged: rank in the academic hiring hierarchy, grants obtained, prestige of school(s), supervisor(s) and collaborator(s). Primary among these signals and indices, though, is the ranking of peer-reviewed citations from within the commercial academic publishing industry. Bibliometric indexing systems quantify the value of publications and research artifacts hierarchically; the impact factor (IF) of particular scholarly journals is linked to the citation rates of the papers it publishes. The IF measure is often taken up as a proxy for paper quality (Lozano, Lariviere, & Gingras, 2012) in tenure and promotions contexts. Indices like the h-index (Hirsch, 2005) and databases such as Scopus and Web of Science propose to quantify and rank the research output of individual scientists. In all cases, these systems are predicated upon the peer-reviewed publication process, often referred to as the "gold standard" (Herron, 2012) or primary currency of scholarly quality.

Within open educational networks, however, there is no formalized system for judging quality or credibility. Since open publication often takes place outside or in advance of peer review, institutional cues of status and credibility may be neither available nor relevant to the ways given pieces of work are taken up. While many influential members of participatory scholarly networks are affiliated with universities, networked contributions to knowledge extend beyond formal peer review channels to public, collaborative communications (Morris & Stommel, 2014). Networked scholars may post ideas online long before they commit them to an academic format, opening their work to input and comment from peers in an informal, iterative fashion. Peer review still has a place of privilege within many networked scholars' vitae, but particularly in emerging and quick-changing fields, blog posts, videos, slidedecks, and more formal "gray literature" such as reports and policy documents are also heavily-circulated contributions. However, these forms of influence are rendered largely invisible when "scholarly work" is defined primarily in terms of formal academic publishing. The emerging phenomenon of altmetrics[1] does attempt to capture the ways in which scholarly impact operates within social networks, offering a complement to traditional indicators rather than a replacement (Bar-Ilan, Haustein, Peters, Priem, Shema, & Terleisner, 2012). But altmetrics focuses primarily on collating and counting contributions, rather than investigating the ways scholars make sense of each other in open networks.

This study is premised in the idea that open scholars utilize concepts of credibility and value in order to guide their engagement in networked publics. The idea that individuals learn how to read complex reputational cues has precedents both in academia and in networked research. Kling and McKim (1999) have shown that the trustworthiness of scholarship tends to be assessed based on a combination of institutionalized practices and readers' personal knowledge of writers' reputations. Willinsky (2010) asserts that scholars learn to read the status and reputational cues of peers, at least within their own disciplines:

> Those who work within the academy become very skilled at judging the stuff of reputations. Where has the person's work been published, what claims of priority in discovery have they established, how often have they been cited, how and where reviewed, what prizes won, what institutional ties earned, what organizations led? (p. 297).

Research into computer-based interactions has, for decades, suggested that online group members develop signals for status and credibility. Walther (1992) found "electronic communicators have developed a grammar for signaling hierarchical positions" (p. 78). More recently, Kozinets (2010) framed this status differentiation less in terms of hierarchy than

[1] Altmetrics are measures which assess the impact of online scholarly activities both within and beyond the realm of traditional academic publishing, including but not limited to the numeric reach and engagement of scholarly outputs.

"various strategies of visibility and identity expression" (p. 24). The work of both boyd (2010) and Kop (2012) has shown that within networks, reputation functions to allow particular individuals to act as hubs or information brokers, becoming powerful distributors and filters of knowledge within their particular publics. Donath and boyd (2004) suggest articulated or visible peer connections serve as identity markers for profile owners, and are selected in part for impression management purposes.

The conflation of quality scholarship with peer review serves as a barrier both to open access publishing (Edington, 2014) and to the expansion of concepts of academic influence. Neither the potential nor the challenges that open scholarship represents can be explored fully without a more explicit, researched-based understanding of how scholars in open networked publics make sense of each others' profiles, influence, and credibility. Whereas scholars are trained and mentored, implicitly and explicitly, in the process of learning Willinksy's (2010) "stuff of reputations" (ibid), the existence of influence channels that exceed, bypass, or even simply complement peer review are seldom made visible. That is the gap in research that this study aims to address.

Methodologies and Theoretical Perspectives

I chose to conduct a qualitative, ethnographic study in order to explore and detail scholars' perceptions of influence within the participatory cultures of open networks. Ethnography is described by Marcus (2012, in Boellstorff, Nardi, Pearce, and Taylor) as "the premier modality of qualitative research" (p. xiii), emphasizing detailed and situated accounts of specific cultures. I approach scholarly networked publics as a subdomain of what Jenkins (2006) calls participatory culture, in which members of a culture are not merely consumers but also producers, or what Ritzer (2010) calls prosumers.

This study makes no claims of neutral, generalizable knowledge – what Haraway (1988) called “the view from above, from nowhere” (p. 589) – but rather focuses on the ways in which open scholarly influence is experienced and understood by specifically-located individuals. These “situated knowledges” (Haraway, 1988) are perspectives shaped by particular social locations, material realities, and power relations. This emphasis on situated knowledges extends to my own locations and relationships to the research context. I approached the study from a position of long-term immersion within the open, participatory culture of scholarly networked publics, as an established blogger and longstanding Twitter user. I am, in the vein of Star’s (1991) ethnography of standards that Haraway (1998) details, a “cyborg” in the relationship between the standardized technologies of academic influence and local experience, who “falls between the categories, yet in relation to them” (Star, 1991, p. 39). This relationality and situatedness is, for me, a form of responsibility to the work I engage in and the multiple realities I engage with.

In exploring the situated knowledges of open scholars with regards to concepts of academic influence, I assume that scholarly networked publics are, in Geertz’s (1973) terms, “suspended in webs of significance” (p. 2) that may not be visible to non-members who perceive them through the lens of conventional academic practices and concepts. Haraway’s (1988) framework of situated knowledges emphasizes the gaze; from the gaze or perspective of the academy, or an individual acculturated to the practices of the academy, the ways in which influence and position are enacted and circulated within scholarly networked publics may be unaccustomed and even appear arbitrary as compared against institutionally-legitimated concept(s) of academic influence and reputation. Yet as Geertz (1973) noted, “(L)ooking at the ordinary in places where it takes unaccustomed forms brings out…the degree to which its meaning varies according to the pattern of life by, which it is informed" (p. 7). The premise of this study is that open, networked scholarly practices are informed by a different – if increasingly ordinary to many – pattern of life, one whose webs of significance have implications for higher education.

To explore this different pattern of life, I found Haraway's (1992, 1998) concept of diffraction, or "the production of difference patterns in the world" (1998, p. 268) useful, both as a methodological approach and an analytic tool. Haraway (1998) frames diffraction patterns as the effects of differences, and notes "Diffraction does not produce "the same" displaced, as reflection and refraction do. Diffraction is a mapping of interference, not of replication, reflection, or reproduction" (p. 273). I aimed to create a multiply-situated record of histories, perspectives, relationalities, and practices, both material and semiotic, to explore the effects of networked scholarship on concepts of influence. This meant approaching data with an eye to situated, located perspectives and relationships; to ways in which influence in network contexts might not match the familiar patterns of the academy.

Diffraction takes up knowing as a material practice (Barad, 2007, p. 89), and goes beyond reflexivity in actively attempting to create difference, rather than reflect or displace "the same elsewhere" (Haraway, 1994, p. 63). For me, this emphasis on difference spoke to my motivations in taking up the research project. It began from a desire to make visible the cyborg experience of falling between the categories of academia yet – as a graduate student – being nonetheless bound in relation to them. I expected the data to be a site for exploring open networked scholarship as the production of difference in the world of higher education and academic influence. In the research process, however, I have come to recognize that open networked practices also increasingly reflect “the same elsewhere,” privileging terms of influence valued by conventional higher education even within open practice.

Methods

The study utilized participant observation, semi-structured interviews, and document analysis as its primary ethnographic methods. I wanted to observe the ways participants interacted with others and managed their own self-presentations, in addition to learning how they thought about open participatory scholars and assessed the self-presentations of others on Twitter. My premise was that influence in scholarly networked publics cannot be understood without a more deeply-situated understanding of the open practices of those publics. As Haraway (1998) claims, “nothing comes without its world, so trying to know those worlds is crucial” (p. 37).

Selection

The study focused specifically on scholars whose networked participation is a central, sustained aspect of their scholarly work, identity, and influence development. I wanted at least twelve participants from a wide range of geopolitical and identity locations within the Anglo-academic world. In order to spread the call for participants as widely as possible, I published the details on my blog, and tweeted the link. The call was shared and re-tweeted on social media over 150 times, resulting in thirty-three formal responses expressing interest in participating. All responses were assessed against criteria for inclusion that required:

1. active institutional affiliation as a scholar
2. active use of Twitter within scholarly networks for at least two years, based in White & LeCornu's (2011) visitors and residents model for online participation, and

3. active sharing of own work and ideas and that of others in open networked publics, based in prosumption (Ritzer, 2010) or produsage (Bruns, 2007) models of production/consumption for participatory culture

As Baym (2010) and Stone (1995) have both noted, our cultural concepts surrounding the accountability and validity of actions are deeply tied to bodies. Since the research was designed to explore intersections of identity and academic influence, participant diversity in terms of geographic location, academic career stages, academic disciplines, gender, ethnicity, sexual orientation, class origins and other markers was sought. However, the focus was not on specific marginalized groups or Others, but on networked scholars within the mainstream of global English-speaking academia.

I selected 14 participants and eight “exemplar” identities from the volunteer pool. The exemplars were not participants in the research but allowed their Twitter profiles to be observed and assessed by the participants during the research process. Of the 14 participants, two were based in Canada, five in the United States, one in Mexico, one in Ireland, one in South Africa, one in Italy, and three in Australia. 10 were female; four male. Nine self-identified in the initial expression of interest either as “white” or effectively unmarked (ie. no disclosure of racial or ethnic heritage); the others identified respectively as black and US Southern, Malay, Latino, half-Indian, and Jewish. Four identified as gay or queer. One disclosed HIV-positive status during the course of the research. Another found out she had breast cancer the same week we began the research process. One participant withdrew before the completion of the study; only her participant observation data is utilized here.

Three participants were entirely unknown to me before they expressed interest in the research, four were loose ties, four were moderately familiar names, and three were individuals with whom I'd had ongoing direct networked interactions over the previous couple of years. Seven were Ph.D students or candidates at various stages of completion, two of whom also held longstanding administrative or teaching positions within their institution. Three were early career scholars, one on tenure-track. Three were senior professors or researchers within their institutions. Ages ranged from twenties through fifties. The scale of participants' Twitter accounts ranged from a few hundred followers to 15,000 followers; among the exemplar identities, the range of scale was even greater.

Participants all chose to be openly identified in the research by their public Twitter handle, with the exception of the one participant who withdrew. The Twitter accounts of identified participants are all public, as is the @BonResearch account created for the participant observation process; to an extent these serve as open data. Drafts of this research have both been blogged for public input and shared with participants, as an effort to keep the process open and participatory and in keeping with the ethos of open scholarship. Nonetheless, as Boellstorff et al (2012) note in discussion ethnographic feedback, I "do not want to assert that 'the people I studied agree with my interpretation, so no one can disagree with any aspect of my conclusion'" (p. 184). Rather, I conceive of research in the open as a constant iterative process. This contribution represents the most accurate and fair representation of a complex and fluid set of understandings that I am able to construct and offer at this point.

Participant Observation

Participant observation was conducted primarily via Twitter, over a three-month period from November 2013 through February 2014. Participants also made their blogs, Facebook accounts, and other sites of networked scholarly participation available and open to me for observation during this period. I created the @BonResearch Twitter account for observation purposes, as separate from the @bonstewart account I have used since June 2007 and continued to use during the research period. With the @BonResearch account, I followed only the research participants and exemplars, observing and noting the ways in which participants presented themselves, engaged with others, and shared their work and that of others. I tweeted minimally from the @BonResearch account, but sometimes shared public notes on my observations, particularly those regarding Twitter itself and emergent patterns. I also kept offline ethnographic notes about the ways in which participants engaged in conversations with others, paying particular attention to issues of influence and who people engaged with. I utilized the “favourites” button in Twitter to mark daily participant tweets that I saw as relating to perceptions of identity and self-presentation.

24-hour Reflection

Participants were asked to choose a representative 24-hour period for which their networked participation would be closely tracked and examined. They notified me of this period either during or shortly after it ended, so we could both examine the traces of their interactions. Eleven of fourteen participants submitted the requested short document with screen captures of specific actions and interactions and their reflections explaining each.

Profile Assessment

Participants were sent a document containing two questions about their perceptions of engagement norms, power relations, and identity positions on Twitter, and pictures of five different exemplar Twitter profiles. They were invited to respond in writing. They were asked how they interpreted a) the exemplars' influence and b) the exemplars' potential value to their networks. Twelve of fourteen participants completed and submitted this assessment. Results from this aspect of the research study are the particular focus of this paper.

Interviews

I conducted semi-structured interviews with 10 participants via Skype. In one case, I conducted a follow-up interview, also via Skype, some months later. Interviews were recorded. The research instrument for the interviews was a semi-structured series of questions related to the participant's networked practices, relationships, networks, reputation, and scholarly identity. Questions were individuated for each participant depending on the specifics of his or her 24-hour picture of networked engagement. Conversations were encouraged to emerge and diverge from the interview script.

Coding and Analysis

I transcribed the interviews via unfocused transcription technique, "without attempting to represent…detailed contextual or interactional characteristics" (Gibson & Brown, 2009, p. 116) and collated the transcripts with the written data participants had submitted, creating thirteen individual participant documents. In a few cases, relevant participant blog posts were also included in these documents. Drawing on the guiding literature and framework for the research, I then analyzed the situated knowledges represented by each participant document. I identified key emergent themes in the documents and hand-coded them in order to try to trace commonalities, distinctions, and relationships between them. I used open coding, creating categories as I examined influence and identity positioning references in the transcripts and checked them for patterns which might suggest webs of significance and difference patterns. Drawing specifically on the framework of diffraction and knowing as a material practice, I compared these themes and codes against the participant observation data and looked for patterns of difference and relationality.

Rigour

I then condensed each document using emerging themes and codes, and sent documents back to participants for approval or further clarification. Since my intention was for the study to be as open and participatory as possible, rigour in this context meant an overt commitment to accountability, credibility and confirmability to participants, as well as to the research's epistemological and ethical tenets (Guba & Lincoln, 2005). The goal of a qualitative study is believability, based on coherence, insight, and instrumental utility (Eisner, 1991) and trustworthiness (Lincoln & Guba, 1985), achieved through a process of verification rather than through conventionally-privileged quantitative validity measures. In this study, the verification process involved sharing themes, processes, and preliminary conclusions with participants and within scholarly networked publics via email and my blog, inviting discussion, input and critique before publication. All interviewees were sent their coded transcripts and invited to expand, clarify, and reframe them as they wished. Four added more to their reflections based on this invitation and two condensed or anonymized sections where they had identified others in their networks. All participants also approved the full findings section of this paper before it was submitted. Four of thirteen participants commented on my blog about the participant observation process (Stewart, 2014), adding their perspectives to the public record of my own reflections on the experience. Throughout the research process, participants' confirmation of both broad conclusions and statements attributed to them was sought and achieved.

Findings and Discussion

The central theme that ran through participant data was that scholars employ complex logics of influence which guide their perceptions of open networked behaviours, and by which they assess peers and unknown entities within scholarly networked publics. More specifically, all scholars interviewed articulated concepts of network influence that departed significantly from the codified terms of peer review publication and academic hiring hierarchies on which conventional academic influence is judged.

While these concepts diverged, and I've attempted to be responsible to those divergences and diffraction patterns by sharing some breadth of the "history of interaction, interference, reinforcement, and difference" (Haraway, 1998, p. 273) within the space available here, they nonetheless suggest webs of significance specific to open networks. These webs of significance are, of course, situated knowledges, related to the stated and enacted purposes for which specific, variously-embodied participants engaged in open networks and the value they reported finding in them. Yet a number of patterns or logics emerged vividly from the data, in spite of the fact that participants had little in common in terms of geopolitical location or academic status positions. This suggests that alternative concepts of academic influence circulate and are reinforced by the operations of open, scholarly networked publics, particularly via Twitter.

It is important to note that participants' stated reasons for engaging in open scholarly networks generally exceeded the instrumental "this will increase your dissemination and citation count" impact narrative. This may be in part because the study required that all participants had been active Twitter users for at least two years prior to the beginning of the study in November 2013; a review of higher education publications suggests the strategic narrative did not become prominent until after 2011. In any case, participant observation suggested that while some participants did primarily use Twitter in particular for broadcasting their own and others' work, all participants in the study appeared to be engaged in curating and contributing resources to a broader "conversation" in their field or area of interest rather than merely promoting themselves or their work.

Among the 10 participants interviewed and the 12 who completed the profile assessments of other scholars (nine did both), there was consistent indication of an individual logic of purpose and value served by networked participation. In cases where participants reflected on their own changing practices over time, I observed a pattern indicating that an emergent sense of their own capacity *to* contribute to this broader conversation was part of the value participants attributed to networks. Particularly for those marginalized by junior and adjunct status within increasingly rationalized institutions, and for those for whom the academic "role" does not cohere with a full sense of identity, reciprocal networked engagement can be a powerful way to extend beyond institutionally-sanctioned terms of circulation and value. In relation to the influence of others within open networks, participant responses suggested that they were able to perceive and "read" influence outside their own areas of interest or the corners of the "conversation" they perceived themselves contributing to, but were unlikely to follow people whom they perceived as disconnected from that particular part of the conversation, regardless of the apparent influence of those others.

Below are key emergent elements in these webs of significance, outlining what appears to count as a network version of academic influence in open scholarly networked publics. While both participants and exemplars gave permission for me to identify them by Twitter handle in all research publications resulting from the study, I have anonymized specific quotes from participants in relation to exemplars and identifiable others.

"She sure has a following" – Metrics matter, but not that much

A primary finding of the research was that metrics – the visible numbers attached to social media profiles and blogs – are seldom taken up in isolation. Participants showed a nuanced and relatively consistent understanding of metrics; the higher the number of tweets, the longer a profile was assumed to have been active, and the higher the ratio of followers to following (Twitter does not require reciprocal "friending" in the way Facebook does), the more likely the person was to be perceived as influential. Yet equally consistent across the data were caveats of context, in which participants made clear they seldom interpret the metrics of public Twitter profiles as a final indicator of a scholar's influence or potential value to their own network.

@socworkpodcast: "Status does play into my decisions to follow someone, if I see someone with a huge following, whose bio suggests this is a thought leader or a person of influence online/offline. I will look through the feed to see if the most recent 100+ tweets seem like things I could benefit from professionally, or that my followers might value."

@antoesp: "I find it intriguing to discover how we all are able to provide a defined aspect of our multiple self through the micro-portrait in the personal twitter account. Usually I don't choose to follow someone only on the basis of this micro-portrait, but I follow the link to his/her blog/SN profile (if provided)."

Most participants reported scrolling through tweetstreams and looking at blog links before making decisions about following. A few noted that profiles without links to external sites “for ideas in more than 140 characters” are profiles they generally avoid following.

The exemplar profiles with the largest number of followers and ratios indicating a high scale of attention did tend to be assessed as more influential. High tweet numbers indicate longevity on Twitter and appeared to factor into many participants’ assessments of others. Some noted they were more likely to invest in following an established profile with many tweets because they could assume ongoing contribution rather than an account that might go dormant. This was particularly true among participants who appear to maintain a cap on the numbers of users they follow; this may indicate impression management regarding their own follower/following ratios, as well as efforts at signal/noise control. However, low tweet counts or relatively even follower/following ratios did not necessarily result in dismissal of influence. It was noted by participants that accounts with smaller followings can simply reflect relative newness within the Twittersphere. One participant noted, of small accounts, “Might just mean they haven’t done anything “viral” yet. But I’m more concerned with content and interests.” Profiles that had not been adapted or personalized at all, though, were commonly interpreted as signaling a lack of value.

@miken_bu: “I check their twitter profile, read some recent tweets and perhaps check out their blog or web site… I do try to follow folks who have differing views or from differing backgrounds to reduce the echo chamber. I rarely follow anyone who has an egg image and no profile info, though, unless I know them already.”

@KateMfD: “Sometimes…I’ll choose someone with twenty followers, because I come across something they’ve managed to say in 140 characters and I think… “oh, look at you crafting on a grain of rice.”

In terms of how participants amplify other voices in their own Twitter timelines, however, metrics appear to count to some extent. During participant observation, the majority of participants were more likely to re-tweet (RT) users whose scale of followers was higher than their own. Even where participants clearly made themselves available to engaging in discussions with users of all stripes and sizes, the tendency to amplify larger voices was consistent among all but the largest accounts in the study.

“A rolling stone gathering moss”- Identity at scale

While size or scale of account was not taken up as a direct indicator of influence or value, there did appear to be a critical mass at which those who are visible in open networks become ever more visible. A number of interviews – with participants of varying scale – noted that for large accounts identity and reputation can become “a thing,” and reciprocal communications become difficult to sustain.

@catherinecronin: “Large nodes in a social network have more visibility, their network activity gets amplified, and they become larger yet. In Twitter this happens in many ways – through RTs, through publication of “top educators to follow” lists, etc.”

@wishcrys: “I think when someone is a Twitter personality with a Twitter reputation, reputation comes to overshadow content. At that point you’re no longer a content producer, you’re probably just a Twitter personality…everything you say is Gospel Truth. Whereas when you’re lower down and trying to gain some form of connection, recognition, some sort of following, your archive and content are what leaves a mark.”

Participants who had reached significant scale with their own Twitter accounts, blogs, and digital identities tended not to speak about size of account as a benefit or goal, but more as an identity shift; one that involves challenges, adjustments, and responsibilities, as well as privileges.

@raulpacheco: "(January 2014) –I find when I have conversations on academic Twitter my brain starts absorbing information on data and learning, new ways of looking at things. I'm addicted to my mentions tab – I love hearing people react to what I say." (July 2014: Skype chat) – "I've reached peak tweetage. I can't answer every single @ reply as I used to (related to how much my follower count has grown)."

@readywriting: "I make sure that I amplify a lot of adjunct voices now. I think that's really important. POC, other marginalized people…I recognize my privilege and want to use it for some good, even if it is just amplification."

"Status baubles" – The intersection of network influence with academic prestige

The intersection of high network status with lower or unclear institutional academic status was a recurring topic in interviews, in reflections, and in public Twitter conversations. Participants indicated that the opportunities sometimes afforded junior scholars with network influence can create confusion and even discord within the highly-codified prestige arena of academia, because the hallmarks of network influence can't be "read" on institutional terms. Networked scholars were acutely aware both of network and academic terms of influence and appeared to codeswitch between the two even on Twitter and in other network environments. However, they noted that colleagues and supervisors tended to treat networked engagement as illegitimate, or a signal of "not knowing your place." Of the alternate prestige economies that intersect with academia, participants reported media exposure as the most coherent to their less-networked academic peers.

@tressiemcphd: "It's the *New York Times* and the *Chronicle of Higher Ed*…I get emails from my Dean when that happens, when I show up there. With the *Times* I get more from the broader discipline, like a sociologist from a small public school in Minnesota – people not so much in the mix prestige-wise, but they see someone thinking like them, they reach out. But the *Chronicle* gets me the institutional stuff. I've got a talk coming up at Duke, and the person who invited me mentioned that *Chronicle* article three times. It's a form of legitimacy. It shows up in their office and so they think it's important."

@thesiswhisperer: "I've grown this global network sitting on my ass and it offends people. And I'm really interested in that, in what's going on psychologically with that, they say "it's not scholarly" but it's really just not on their terms. It has success. But when you're the one getting keynotes people who've bought into older notions of success, they feel cheated."

"I value their work, so value by association" – Commonality as credibility and value

When it came to indicating whether they would personally follow a given account, participants appeared to give less weight to metrics and perceived influence than to shared interests and perceived shared purpose. Most participants appeared to be actively attempting to avoid what Pariser (2011) calls a "filter bubble" in their networks. Rather, many reported seeing themselves as responsible to their own networks for some level of consistent and credible contribution, and so sought to follow people who would enrich their participation via relevant resources or discussion topics.

Where commonality appeared even more important to participants, however, was in peers or shared networks. When a logged-in Twitter user clicks on another user's profile, the number and names of followers they have in common is visible. This visibility serves to deploy shared networks as a signal of credibility in an environment where identity claims are seldom verifiable. Many participants spoke to the importance of shared peers over metrics or other influence factors in terms of whether they choose to follow. In assessing a full professor with more than 1,300 followers, one participant noted that the metrics did not sway him; "Looking at the number of followers and tweets, it would seem as if this person has some "gravitas" in the field. Just judging from his profile – I would not be particularly drawn to following him because his field is chemistry. I searched his profile online, and looked at his tweets, and he tweets mostly about non-academic issues e.g., coffee, football, etc." Whereas the same participant then indicated he would follow another profile with only 314 followers, due to shared networks; "she is followed by a number of people whom I respect and follow. So I will give her a try."

Participants tended to look for common interests on top of common peer networks, however. One mentioned, "I often follow people who others I follow also value – after "checking them out" via looking at some tweets, profile, etc." Another echoed, "I see that we share 65+ followers, so there are obviously many connections. (Her) interests match mine somewhat, she shares resources as well as engaging with many people…I also see that…(her) use of these particular hashtags tells me that (her) interests are closely linked with mine."

Commonality was also overtly valued where participants used networks as ways of connecting with other scholars for support, encouragement, and specialized information. One PhD candidate reflected on the value of another PhD student account, “As a PhD student, she is a colleague studying topics close to my interest. I am likely to follow her for a sort of…solidarity among peers, beyond the actual contribution she could bring.”

"“Being connected with Oxford adds to the reputation” – Recognizability as a way of making sense of signals

The value placed on shared peers reflects a broader pattern observed within the research; recognizable signals have a powerful impact on perceived influence and perceived credibility. In the same way that recognizable journal titles or schools or supervisors serve as signals of conventional academic influence, so do both conventional and network factors of recognizability carry weight in assessments of network influence. Thus, shared peer networks matter, as do visible acknowledgements such as mentions and retweets; additionally, familiar academic prestige structures such as rank and institution can add to impressions even of network influence.

One of the most vivid examples of this was the workplace listed on one exemplar’s profile; Oxford University. The vast majority of participants who were shown this exemplar noted the Oxford name, and there was an overwhelming tendency to rate the account as influential. However, as noted, influence did not carry as much weight as commonality when participants were asked whether they’d follow a user. One participant reflected, “Is based at the University of Oxford – signaling for me a possible gravitas/expertise in the field. Looking at his tweets, he does not tweet a lot about academic issues – so he is most probably not, in my opinion, a very “useful” person in my network.”

The Oxford exemplar also raised the issue of reciprocality and the ways in which its likelihood is minimized by scale of metrics and by prestige. One participant was frank; “This person seems like a very successful academic and is doing forward-thinking work at one of the oldest and most prestigious institutions in the world…(but) I have not followed him and couldn’t imagine he’d follow me.” Another was more overt about the ways in which influence is generally understood to affect engagement; “Clearly a more discerning twitter denizen (note the number of people following him vs. who he follows), which would tell me he might not be big on interaction.” Thus, imbalance of scale does not necessarily fit with the purposes of connection and tie-building that many participants asserted as the primary value they find in their networks.

Outside the Oxford example, institutional affiliations or lack thereof did not have much effect on participants’ responses to exemplars, presumably because few institutions in the world carry the recognizability and prestige that Oxford does. Still, institutional affiliations can operate as credibility signals even where prestige structures are not involved.

@exhaust_fumes: “I care a bit about institutional affiliation in profiles…less that the actual university matters or rank matters, but that people are willing to put *any* institutional info up makes me more inclined to follow because I find relative safety in people who are clearly on Twitter as themselves as academic-y types and therefore aren’t likely to be jerks without outing themselves as jerks who work in specific places.”

Willingness to openly signal one’s workplace can operate not only as a verifiability factor but as a promise of good behavior of sorts. However, signals of institutional academic influence were also read as indicators of identity and priority. In reference to a profile that opened with the word “Professor,” one participant commented, “When a profile leads with institutional affiliation, I assume that is his primary role on social media. The rest of the cutesy stuff is there to humanize but he is signaling who and what he is in the traditional power structure.” Scholars who emphasize their conventional academic influence signals may limit the level of network – or “born digital” – influence they are perceived to wield.

“A human who is a really boring bot” - Automated signals indicate low influence, especially in the absence of other signals

One indicator that was commonly read as suggesting limited network influence was automated engagement. Three exemplar identities had automated notifications in the screen-captured timelines that were shared with participants; one exemplar’s visible tweets were all paper.li links[2]. Responses to the paper.li were universally negative, even where the exemplar was otherwise deemed of interest. “Potential value to my network – she tweets relevant stuff so probably I should follow her! On second thought, she has a Paper.li, and by definition I unfollow anyone who uses that tool.” Other participants were equally direct; “The only negative for me was the link to a daily *paper.li*. I tend to find those annoying (almost never click them!)”

Storify was not interpreted to indicate the same level of low influence or awareness, but its automated tag feature was still a flag that participants mentioned; “This is on the fence for me since Storify takes some effort to be engaged with things and maybe she didn’t get that she can opt out of those tweets informing people that they’ve been “quoted.”

[2] Paper.li are collections of headlines and links that are created and published daily as personalized mini-newspapers. They are automatically curated from around the web and broadcast through users’ social media channels.

“My digital networks provide me with some sense of being someone who can contribute” - Identity positions and power relations

Participants’ nuanced sense of influence in networks was particularly visible when aspects of marginality and power were explored. While none perpetuated the narrative of open participation as truly or fully democratic, many identified open networked practices as ways of speaking from their own situated knowledges and contributing in ways their embodied or academic lives may not afford.

@raulpacheco: “In a very bizarre way, having a well-established academic and online reputation makes me feel pretty powerful, despite being queer and Latino…both elements which should make me feel handicapped. My thoughts are well received, generally, and my stuff gets retweeted frequently.”

@KateMfD: “Networking online has enabled me to create a sustaining sense of my identity as a person, in which my employment in a university plays a part, but isn’t the defining thing…my networked practice is much more closely aligned to my personal values, and much more completely achieved.”

@14prinsp: “My identity intersects with a particular (South African) view of masculinity and patriarchy – there’s vulnerability here. I’m out as a scholar, and I’m also HIV positive and am out in my department...I was very sensitive when I started blogging that if I said something stupid it would be there til death do us part, but I’m very aware that I manage my identity, I make very critical choices. It’s reputation management, it’s brand management, not in a superficial way. There is definitely some authenticity in it but it is carefully chosen.”

Particularly among PhD students and early career scholars, the norms of open online participation helped minimize academia's hierarchies for participants.

@andreazellner: "I feel like Twitter is the Great Equalizer. Take a recent back and forth with the Dean my college…I am too intimidated to talk to him and he has no idea who I am, and yet on Twitter he posted about being at Microsoft Research and I started asking him questions. He ended up tweeting pictures of things I was asking about, etc., and we even traded a few jokes."

@tressiemcphd: "My position in the prestige structure didn't always match my ambitions and what I felt I could do, felt compelled to do. (Networks) allowed me to exist without permission; I was never going to get institutional permission, there was no space there."

@wishcrys: "I'm far more likely to tweet to my academic superheroes or superiors: I'm not very likely to walk up to them and go "hey, great book!" I definitely feel much more comfortable doing this on social media…people aren't going to remember my research five years down the road but they may remember that nice PhD student who sent out a nice tweet at 3am."

Finally, it was noted that the relational connections created in open networks nonetheless reproduce many of the power relations of institutions and society, even while challenging some of their hierarchies. Networks were reflected as an alternate status or influence structure that intersects with academia, rather than as truly open fields of democratic interaction.

@readywriting: "I've consciously worked to follow people outside the class/race/gender norm. One of the evaluative things I do when I encounter a new person on Twitter is ask myself "is this person a little outside of the norm? Great. I want to learn from him/her."

@catherinecronin: "Twitter is 'flatter' than some other networks/media, but power

relations exist on Twitter -- there is no doubt about that. The *online* very often reproduces and amplifies what occurs *offline*. However, open online platforms can also subvert the usual power dynamics. Those without access to conventional public communication channels can use social media to build networks and influence outside of institutional and cultural power structures."

Conclusions

Overall, results from the study suggest that open, networked scholarly practices do constitute webs of significance that depart or differ from the institutional, peer-review-based model of academic influence. Twitter influence signals are based in open, participatory norms of communications and publishing that build ties across hierarchies and value contribution and open sharing. At the same time, these influence signals also reflect digital platforms' capacity to track and quantify engagement into metrics, particularly of attention. This research study indicates that while open scholars value networked participation as a means of building ties, accessing resources, and contributing to broader conversations, circulation within networked publics such as Twitter may also cultivate and reinforce a nuanced understanding of scale and attention. This constitutes an alternate form of influence as compared to conventional academic models, but does not necessarily reflect the democratic ideals of the early open education movement. Participation in networked publics – and specifically Twitter, though all participants in this study also blog and are networked on other platforms – thus to an extent diffracts or departs from codified understandings of "what counts" within institutional academia, making a difference in the worlds of open scholars and their relational and material experiences of scholarship. At the same time, openness itself does not so much diffract academic influence on the broad scale, but only displaces it. It brings into being an alternate but intersecting prestige arena in which credibility is determined by recognizability and commonality rather than credentials, and hierarchies of influence relate to identities and attention, rather than role. In this sense, then, network influence can be seen as Haraway's (1994) "the same elsewhere," an extension of academic influence criteria to the world of openness, rather than a separate or entirely different scholarly sphere.

Acknowledgements

I want to thank the study's participants, who offered their time, their frankness, and their ongoing support, and the exemplar identities, who were willing to open themselves to others' public assessment, for walking down this road with me. Special thanks to Kate Bowles for offering me backchannel mentorship and care from halfway around the world from the very first days of the official study; to my dissertation committee, Sandy McAuley, Udo Krautwurst, and Alec Couros, for their guidance; to my own network, for providing half of these references; and to my partner Dave Cormier, for always having had a bigger Twitter account than me and thus sparking this curiosity way way back in 2007. Finally, thanks to the Social Sciences and Humanities Research Council of Canada for dissertation funding that enabled me to embark on this study.

References

Bar-Ilan, J., Haustein, S., Peters, I., Priem, J., Shema, H., & Terliesner, J. (2012). *Beyond citations: Scholars' visibility on the social Web*. Retrieved from http://arxiv.org/abs/1205.5611

Barad, K. (2007). *Meeting the universe halfway: quantum physics and the entanglement of matter and meaning*. Durham, NC: Duke University Press.

Baym, N. (2010). *Personal connections in the digital age.* Cambridge, UK: Polity Press.

Boellstorff, T., Nardi, B., Pearce, C., Taylor, T.L. (2012). *Ethnography and virtual worlds: A handbook of method*. Princeton, NJ: Princeton University Press.

boyd, d., & Heer, J. (2006). Profiles as conversation: Networked identity performance on Friendster. *Proceedings of the 39th Annual Hawaii International Conference on System Sciences*. doi:10.1109/HICSS.2006.394

boyd, d. (2010). Streams of content, limited attention: The flow of information through social media. *EDUCAUSE Review*, 45(5), 26–36.

boyd, d. (2011). Social network sites as networked publics: Affordances, dynamics, and implications. In Z. Papcharissi (Ed.), *A networked self* (pp. 39-58). New York, NY: Routledge.

Bruns, A. (2007). Produsage: Towards a broader framework for user-led content creation. *Creativity & Cognition*. Retrieved from http://produsage.org/articles

Daniel, J. (2012, June 18). The future of (open) education with Sir John Daniel. *ICT in Education: UNESCO Bangkok*. Retrieved from http://www.unescobkk.org/education/ict/online-resources/databases/ict-in-education-database/item/article/the-future-of-open-education-with-sir-john-daniel-1/

Donath, J., & boyd, d. (2004). Public displays of connection. *BT Technology Journal*, 22 (4), 71-82.

Edington, M. (2014, June 26). Luxury…and your next book. *Inside Higher Ed*. Retrieved from http://www.insidehighered.com/views/2014/06/26/essay-ideas-about-luxury-and-university-presses#ixzz35nLEYcUh

Eisner, E. W. (1991). *The enlightened eye: Qualitative inquiry and the advancement of educational practice.* New York: Macmillan.

Geertz, C. (1973). *The interpretation of culture*. New York, NY: Basic Books.

Gibson, W.J. & Brown, A. (2009). *Working with qualitative data*. London: SAGE.

Guba, E.G. & Lincoln, Y.S. (2005). Paradigmatic controversies, contradictions, and emerging confluences. In In N. K. Denzin & Y. S. Lincoln (Eds.), *The Sage Handbook of Qualitative Research* (3rd ed), (pp. 191-215). Thousand Oaks, CA: SAGE.

Haraway, D. (1988). Situated knowledges: The science question in feminism and the privilege of partial perspective. *Feminist Studies, 14*(3), 575-599.

Haraway, D. (1992). The promises of monsters: A regenerative politics for inappropriate/d others. In L. Grossberg, C. Nelson, & P. A. Treichler (Eds.) *Cultural Studies,* (pp. 295-337). New York, NY: Routledge.

Haraway, D. (1994). A game of cat's cradle: Science studies, feminist theory, cultural studies. *Configurations,* 2(1), 59-71.

Haraway, D. (1998). Modest_witness@second_millenium.Femaleman_meets_oncomouse. New York, NY: Routledge.

Herron, D. (2012). Is expert peer review obsolete? A model suggests that post-publication reader review may exceed the accuracy of traditional peer review. *Surgical Endoscopy*, 26(8), 2275-80.

Hirsch, J. E. (2005). *An Index to Quantify an Individual's Scientific Research Output*. Retrieved from http://arxiv.org/abs/physics/0508025

Hyland, K. (2003). Self-citation and self-reference: Credibility and promotion in academic publication. *Journal of the American Society for Information Science and Technology*, 54(3), 251-259.

Jenkins, H. (2006). *Convergence culture: Where old and new media collide*. Cambridge, MA: MIT Press.

Kling, R. and McKim, G. (1999) Scholarly communication and the continuum of electronic publishing. *Journal of the American Society for Information Science,* 50 (10), 890–906.

Kop, R. (2012). The unexpected connection: Serendipity and human mediation in networked learning. *Educational Technology & Society*, 15(2), 2-11.

Kozinets, R.V. (2010). *Netnography: Doing ethnographic research online*. London, UK: SAGE.

Lincoln, Y., & Guba, G. (1985). *Naturalistic inquiry*. Newbury Park, CA: SAGE.

Lozano, G. A., Lariviere, V., & Gingras, Y. (2012). The weakening relationship between the impact factor and papers' citations in the digital age. *Journal of the American Society for Information Science and Technology*, 63(11), 2140-2145.

Lupton, D.A. (2014). *'Feeling Better Connected': Academics' Use of Social Media*.

Canberra: News & Media Research Centre, University of Canberra. Retrieved from http://www.canberra.edu.au/faculties/arts-design/attachments/pdf/n-and-mrc/Feeling-Better-Connected-report-final.pdf

Mewburn, I. & Thompson, P. (2013, December 12). Academic blogging is part of a complex online academic attention economy, leading to unprecedented readership. *LSE Impact Blog*. Retrieved from http://blogs.lse.ac.uk/impactofsocialsciences/2013/12/12/academic-attention-economy/

Morris, S.M. & Stommel, J. (2014, April 29). Hybrid pedagogy, digital humanities, and the future of academic publishing. *Hybrid Pedagogy*. Retrieved from http://www.hybridpedagogy.com/journal/hybrid-pedagogy-digital-humanities-future-academic-publishing/

Pariser, E. (2011). *The filter bubble.* New York, NY: Penguin Press.

Pearce, N., Weller, M., Scanlon, E. & Ashleigh, M. (2010). Digital scholarship considered: How new technologies could transform academic work in education. *In Education,* 16 (1), 33-44.

Ritzer, G. (2010). Focusing on the prosumer: On correcting an error in the history of social theory. *Prosumer Revisited, 2010*(1), 61-79. doi: 10.1007/978-3-531-91998-03

Seaman, J., & Tinti-Kane, H. (2013, October). Social media for teaching and learning. Retrieved from http://www.pearsonlearningsolutions.com/higher-education/social-media-survey.php

Selwyn, N. (2010). Looking beyond learning: Notes towards the critical study of educational technology. *Journal of Computer-Assisted Learning,* 10(1), 65-73.

Star, S.L. (1991). Power, technology, and the phenomenology of conventions: On being allergic to onions. In J. Law (Ed.) *A sociology of monsters,* (pp. 26-56). Oxford, UK: Basil Blackwell.

Stewart, B. (2014, March 18). Notes to self, stage two: Being & becoming – profiles as identities. [Web log post]. Retrieved from http://theory.cribchronicles.com/2014/03/18/notes-to-self-stage-two-being-becoming-profiles-as-identities/

Stone, A.R. (1995). *The war of desire and technology at the close of the mechanical age.* Cambridge, MA: MIT Press.

Veletsianos, G. (2012). Higher education scholars' participation and practices on Twitter. *Journal of Computer Assisted Learning, 28*(4), 336-349.

Veletsianos, G. & Kimmons, R. (2012). Assumptions and challenges of open scholarship. *IRRODL, 13(4).*

Walther, J. B. (1992). Interpersonal effects in computer-mediated interaction: A relational perspective. *Communication Research*, 19(1), 52-90. doi: 10.1177/009365092019001003

Weller, M. (2011). *The digital scholar: How technology is transforming scholarly practice*. London, UK: Bloomsbury Academic. Retrieved from http://www.bloomsburyacademic.com/view/DigitalScholar_9781849666275/book-ba-9781849666275.xml

White, D. S., & LeCornu, A. (2011). Visitors and residents: A new typology for online engagement. *First Monday*, 16(9). doi:10.5210/fm.v16i9.3171

Willinsky, J. (2010). Open access and academic reputation. *Annals of Library and Information Studies*, 57, 296-302. Retrieved from http://nopr.niscair.res.in/bitstream/123456789/10242/4/ALIS%2057%283%29%20296-302.pdf