# As scholars undertake a great migration to online publishing, altmetrics stands to provide an academic measurement of twitter and other online activity

by Blog Admin   November 21, 2011

The internet seems to have transformed all industries except one: scholarly communication.
Jason Priem has studied academics' use of Twitter and charts terrific interest among
academics in the social media tool as an aid to discuss literature, for teaching and to enrich
conferences among his results.
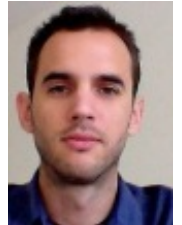
In 1990, Tim Berners-Lee created the Web as a tool for scholarly communication at CERN. In the two decades since, his creation has gone on to transform practically every enterprise imaginable, except somehow, scholarly communication. Here, instead, we lurch ponderously through the time-sanctified dance of dissemination, 17th-century style. The article reigns. Scholars continue to wad the vibrant, diverse results of their creativity and expertise – figures, datasets, programs, abstracts, annotations, claims, reviews, comments, collections, workflows, discussions, arguments and programs – into publishers' slow moulds to be cast into articles: static, leaden information ingots.

Growing numbers of scholars, though, are realizing that this approach is no longer the best we can do. We're defrosting our digital libraries, moving over a million personal reference collections online to services like Zotero and Mendeley (and in the process making the open reference list a new kind of publication). Scholars are flocking to scholarly blogs to post ideas, collaborate with colleagues, and discuss literature, often creating a sort of peer-review after publication. Emboldened by national mandates and notable successes, we're beginning to publish reusable datasets as first-class citizens in the scholarly conversation. We're sharing our software as publications and on the Web. The journal was the first revolution in scholarly communication; we're on the brink of a second, driven by the new diversity, speed, and accessibility of the Web.

The poster child for this Scholcomm Spring is Twitter. There's been terrific interest in scholars using Twitter to discuss and cite literature, for teaching, to enrich conferences, or less formally as a "global faculty lounge." We recently finished a large study to get better data on these uses.

Instead of asking for self-identified scholars on Twitter, we started out with a list of around 9,000 scholars from five US and UK universities and searched for their names on the Twitter API. After manually confirming all the matches, we downloaded all the tweets each scholar had made and coded the content of these. The graphic below has some details of our findings, but here's a summary:

1. Twitter adoption is broad-based: scholars from different fields and career stages are taking to Twitter at about the same rate.

2. Scholars are using Twitter as a scholarly medium, making announcements, linking to articles, even engaging in discussions about methods and literature. But the majority of most scholars' tweets are personal, underscoring Twitter as a space of context collapse, where users manage multiple identities.

3. Only about 1 in 40 scholars has an actively-updated Twitter account. This may seem small, but keep in mind that Twitter is only 5 years old; email was still a scholarly novelty 15 years after its creation. Taking the long view, the current count of scholars using Twitter is probably less important than its continued growth, which we see clearly.

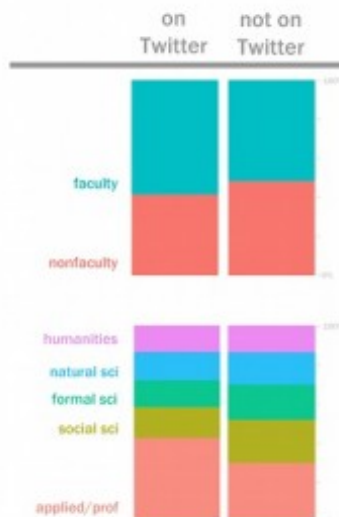# prevalence and use of Twitter among scholars
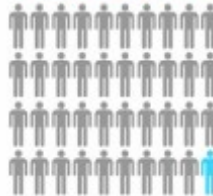
by @jasonpriem,
@k8lin,
@silent_d
from @uncsils

no one rank (χ^2=11.2, df=4, p=.12)
or discipline (χ^2=2.4, df= 1, p=.02)*
is significantly over-represented
on Twitter:

on Twitter	not on Twitter

faculty

nonfaculty

humanities
natural sci
formal sci
social sci

applied/prof

*We use .01 significance level due to the high n and large number of tests.

1 in 40
scholars active on Twitter

5 tweets per week

percent of tweets that are scholarly:
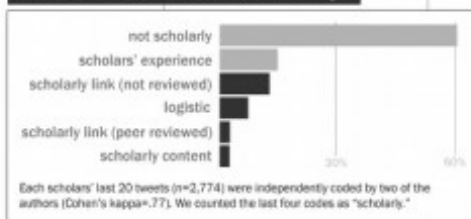
nonfaculty: **15%**

faculty: **30%**

method

We selected five diverse, representative US and UK universities. Using manual searches of department web pages, we compiled a list of all the scholars (defined as fulltime faculty, postdocs, or doctoral students) at each one, yeilding a sample of 8,826.

We then used the Twitter user/search API to find Twitter user profiles that matched our scholars' names. 3,019 scholars returned more that 20 potential name matches; this "common-name group" was removed from the sample. The remaining scholars returned 17,177 Twitter accounts; around half of these had no identifying information and were discarded. For the remaining 8,038 accounts, we we used a combination of automatic scripts and manual inspection to make positive matches between scholars and accounts, considering evidence from departmental webpages and the Twitter profile fields for name, location, description, URL, username, and picture.

This gave us a list of 230 scholars with confirmed Twitter accounts; this number is certainly an undercount, since many accounts did not have enough information for a positive ID. We then returned to the Twitter API to gather all the public tweets for these users.
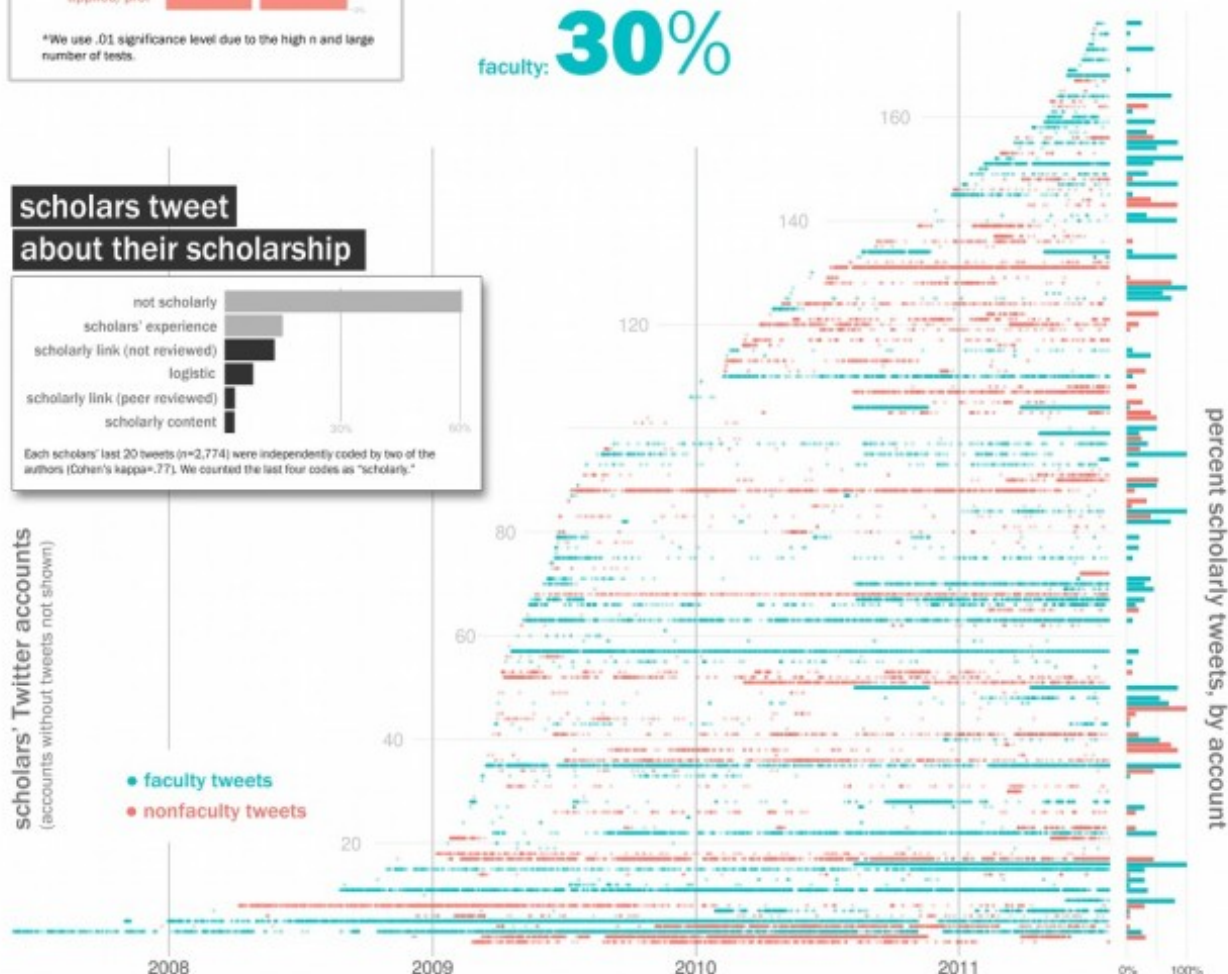
scholarly Twitter use is growing

scholars tweet about their scholarship

not scholarly
scholars' experience
scholarly link (not reviewed)
logistic
scholarly link (peer reviewed)
scholarly content

Each scholars' last 20 tweets (n=2,774) were independently coded by two of the authors (Cohen's kappa=.77). We counted the last four codes as "scholarly."

scholars' Twitter accounts (accounts without tweets not shown)

160
140
120
80
60
40
20

• faculty tweets
• nonfaculty tweets

percent scholarly tweets, by account

2008   2009   2010   2011

0%   100%

Results like these are encouraging for those of us who see social media and related environments as the natural next frontier for communicating scholarship. It seems that scholars, without waiting for approval from the mandarins of the publishing industry, are beginning to explore and colonize the Web's wide-open spaces.

But perhaps the most exciting thing about this nascent scholarly great migration is that the new, online tools of scholarship begin to give public substance to the formally ephemeral roots of scholarship: the discussions never transcribed, the annotations never shared, the introductions never acknowledged, the manuscripts saved and reread but never cited. These backstage activities are now increasingly tagged, catalogued, and archived on blogs, Mendeley, Twitter, and elsewhere.

As more scholars move more of their workflows to the public Web, we are assembling a vast registry of intellectual transactions – a web of ideas and their uses whose timeliness, speed, and precision make the traditional citation network look primitive.

I've been involved in early efforts to understand and use these new data sources to inform alternative metrics of impact, or "altmetrics." Altmetrics could be used in evaluating scholars or institutions, complementing unidimensional citation counts with a rich array of indicators revealing diverse impacts on multiple populations. They could also inform new, real-time filters for scholars burdened by information overload: imagine a system that gathers and analyses the bookmarks, pageviews, tweets, and blog posts from your online networks, using your interactions with them to learn and display each day's most important articles or posts.

Even better, what if every scholar in the world had such a system? We might do away with journals entirely. The Web can disseminate and archive products for almost nothing. The slow, back-room machinations of closed peer review could be replaced by an open, accountable, distributed system that simply listens in to expert communities' natural reactions to new work – the same way Google efficiently ranks the Web by listening in to the crowdsourced 'review' of the hyperlink network.

Of course, this particular vision may not pan out. And although the current signs point toward more growth, scholars might get tired of Twitter. But to hang our hopes on a particular vision or tool is to miss what's truly revolutionary about this moment. The journal monoculture, long the only viable approach to scholarly communication, is beginning to yield at its fringes to a more diverse, vibrant, online ecosystem of scholarly expression. This new ecosystem promises to change not only the way we express scholarship, but the way we measure, assess, and consume it.

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4. From academic blog to academic job: using Scoop.it to showcase your work online shows others the value of digital communication skills
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