

Scholarly Blogging: A New Form of Publishing or Science Journalism 2.0?

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This paper examines scholarly blogging as an emergent phenomenon among academics of different disciplinary backgrounds, as well as science enthusiasts and practitioners wishing to communicate about topics related to a specific academic field with a broader public. We give a brief historical account of scholarly blogging, paired with a review of academic literature about the phenomenon. Results from a survey conducted among bloggers active on scilogs.de, a German-language science blogging platform, show that considerable differences exist between conceptualizations of scholarly blogging as “publishing 2.0,” i.e., a replacement for traditional venues of scholarly communication, and blogging as a new form of science journalism. Building on this differentiation, we ask what relevance scholarly blogs have today and in the future, both from the internal perspective of science and from the external vantage points of funders, lawmakers, and civil society.

Scholarly Blogs: Issues of Definition

Scholarly blogs are most commonly defined as blogs written by academic experts that are dedicated in large part to scientific content. This working definition is less straightforward than it may initially seem, since neither what an expert is (e.g., are graduate students or high school science teachers experts?) nor what constitutes scholarly content (do peer-reviewed articles,

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scholarly monographs, or a well-written Wikipedia entry all constitute scholarly content in one way or another?) cannot be defined unambiguously. Such issues notwithstanding, most researchers who have investigated science blogs seem to broadly follow one of two routes, defining scholarly blogs as blogs containing scholarly content or (more often) written by scholars with some kind of institutional academic affiliation (cf. Shema et al., 2012).

A brief look at the emergence of scholarly blogs in the early 2000s helps us to better understand them as an extremely heterogeneous phenomenon with a wide range of functions. An early contribution to research into scholarly blogging came from Mortensen and Walker (2002), who described blogs as tools for writing and knowledge management primarily used by PhD students. In a later publication, Walker (2006) discovered that her own usage had changed considerably over a longer period of time. While her blog had initially been an ideal place for trying out new ideas and discussing them with peers outside of strict academic hierarchies, it had turned to a public stage on which to present material that was ready for public (and peer) scrutiny. Similar observations come from Gregg (2009) in her critical assessment of the use of blogs by junior researchers. Building on Walker's typology, she characterized blogs as a subcultural form of expression favored by young academics as part of constructing a professional identity.

In contrast to the ethnographic approaches of Mortensen and Walker (2002; see also Walker, 2006), Davies and Merchant (2007), and Gregg (2009), a number of strongly content-driven studies exist. These approach science blogging less from the perspective of actors and more from the vantage point of information, text, and genre. Bar-Ilan (2005), who analyzed content-based statistics related to 15 academic blogs, came to the conclusion that their authors were interested primarily in distributing information and sparking discussion (rather than experimenting with new ideas). An equally data-centric approach was used by Luzón (2009) in her study of hyperlinks in academic blogs. She found that links are overproportionally used in academic blogs compared to private online journals.

Science blogs in the strict sense (i.e., scholarly blogs pertaining to the natural sciences, particularly physics, chemistry, and life sciences) are discussed by Bonetta (2007). Her short piece presented two popular blogs that have since been incorporated into the publisher-sponsored platforms PLoS Blogs and Nature Network. In Bonetta's characterization, the function of blogs is not to serve as a space for personal reflection and debate with peers, but as a tool to present science and scientific findings to a lay public in a comprehensible way. Similar arguments come from Wilkins (2008), who

assigned blogs (both written by scholars and by science journalists) the role of a mediator between academia and the general public:

Bloggging is also a way to demythologize science. Unlike laws and sausages, the public should see science during its manufacture, but the lay public is generally ill-equipped to interpret what they see, and science bloggers play a crucial role here. (p. 411)

Wilkins thus saw blogs as a modern means of conducting science communication, rather than for articulating thoughts in progress or communicating with peers. Much of the difference in these characterizations is owed to diverging disciplinary traditions. A content analysis of 11 academic blogs by Kouper (2010) showed that frequently the claim of addressing a lay audience in the mode of science journalism is not redeemed by scholarly bloggers. Both the choice of topics and the linguistic presentation of the material are rarely suitable to complete laypersons; at least intermediary knowledge of the issues presented is necessary. Instead, scholarly blogs appear often to be read by scholars or by people with a decided interest in academic information, whether they are affiliated with an institution of higher learning or not. Scholarly blogs appear to also serve a function comparable to a “virtual water cooler” (Kouper, 2010) around which experts share and debate context-specific information in a more or less informal manner. This seems hardly compatible with the assumption that blogs should follow the lead of science journalism in catering to the general public with the mission of educating it about science or providing a means of critical evaluation or public control of scientific work and practices. Yet for many bloggers, presenting and discussing the results of scholarly research with the public is of at least some significance (Colson, 2011).

The most significant contribution on the motivations of blogging academics to date comes from Kjellberg (2010). In her qualitative assessment of Swedish, Danish, and Dutch researchers of different scholarly disciplines, she highlighted the complementary function of blogs for the distribution of content and personal knowledge management. According to Kjellberg’s subjects, an important feature of blogs is that they allow publishing spontaneously and without rigorous stylistic and formal constraints or the requirements of editors and publishers (see also Davies & Merchant, 2007). Bloggers (academics and non-academics alike) carefully consider their audience and make stylistic and thematic choices according to the assumed makeup of their readership. But because it is never truly possible to know who is in the audience, a degree of uncertainty remains about the appropriateness of these choices.

The level of acceptance of scholarly blogs varies significantly from one disciplinary and cultural context to another. The French platform *hypotheses.org* is an example of a successful attempt to establish blogs as an institutionally recognized element of scholarly communication. It hosts over 200 *carnets de recherches* (research notebooks), which undergo formal peer review before being admitted to the platform. In contrast to the alternative conceptualization of scholarly writing implicit in many blogs—freer, less constrained by tradition and convention, less elitist than traditional publishing in journals and monographs—blogs are integrated into the entrenched ecosystem of scientific communication in this approach. They are, in other words, adapted to the needs of scholars, rather than being seen as instruments of change to overcome the status quo in academic communication.

Motives of Scholarly Blog Readers

Research on the readers of scholarly blogs is still emerging at this point. Identifying who regularly reads academic blogs is largely speculative. Representative data on the use of Web 2.0 material suggest that in the U.S., for instance, about a third of the population reads blogs (Pew Research Center, 2010), while in other countries, the proportion may be much smaller: for example, less than 10% in Germany (Busemann & Gscheidle, 2011). Results for the use of different genres of blogs are missing, and it is difficult to categorize blogs along the genre paradigm.

Internationally, there is exemplary research on the reach and impact of scholarly blogs. For China, existing studies of the academic blogosphere point to small networks with strong reciprocal relationships between bloggers (Wang et al., 2010). As in other countries, blogs in the context of scholarly information do not appear to be widely read, although some academic blogs figure among the so-called A-list blogs that garner a million visits or more per month (Batts et al., 2008). A non-representative survey of blog readers by Yu (2007) provided at least tentative indicators for the use of scholarly blogs. Science and education attract a medium level of interest, markedly below the level of interest for entertainment. A central motive of reading blogs, however, is seeking information. Following the uses and gratifications approach, Kaye (2005, 2010) analyzed the motives of blog readers systematically. Her research pointed in a similar direction: Easy access to a wide range of information is the central motivation of readers. Although her surveys likely included regular readers of scholarly blogs, their exact motives in relationship to other types of content published in blogs remain unclear.

Recently, Littek (2012) conducted a survey among readers of two German-language academic blogging platforms. She distinguished between readers with an academic background, science journalists, and laypersons. All three groups appreciate academic blogs as an informative, but also informal and sometimes entertaining, format. Laypersons also ascribe high quality to the information provided by bloggers. Science journalists are a little more critical of this aspect and do not see blogs as a replacement for journalistic coverage of research. Academic readers, on the other hand, think that blogs can provide more accuracy and higher quality than science journalism.

Access to specific information from a trustworthy source is thus an important motive for different kinds of readers of blogs. The diverging viewpoints about the strengths and weaknesses of blogs among different groups of readers have implications for the approach of bloggers, namely whether they knowingly or unknowingly follow certain demands or prioritize a given objective over others.

Motives of Scholarly Bloggers

While far from complete, more research has been carried out on the motives of scholarly bloggers than on those of readers. Following up on Kjellberg's qualitative approach, we conducted a web-based survey of scholarly bloggers active on the Germany platform *scilogs.de* from May 7 to June 3, 2012. SciLogs is run by commercial popular science publisher *Spektrum der Wissenschaft* and hosts over 60 blogs in total. Users were recruited via a call for participation from the platform management published in the platform's internal newsgroup and via e-mail. Reminders were sent two weeks after the start of the survey and three days before its end. We received responses from 44 authors, providing us with a fairly large sample of the platform's active bloggers. Bloggers answered mostly standardized questions on their blogging habits and histories, their academic backgrounds, and their opinions about academic blogging. Opinions were recorded through statements that respondents rated on a gradable scale (e.g., from *strongly agree* to *strongly disagree*). A few demographic variables were also obtained, but the questionnaire was carefully designed to assure anonymity to the greatest possible extent, even among such a small group of people.

The majority of respondents were either between 30 and 39, or 40 and 49, and a large portion of participants were male (73%) while only few female bloggers were represented in our sample (23%, with 4% declining to specify gender). SciLogs has a marked bias toward the natural sciences, with 59% of respondents reporting to be from that area. Of the respondents, 20% came

from the humanities, while 7% hailed from the social sciences, and 5% associated themselves with life sciences, engineering, or a combination of fields. Sixty percent reported to have blogged for over two years, and 50% reported writing for another blog in addition to their SciLog, most often with a focus on similar scientific themes.

SciLogs, in contrast for instance to the French platform hypotheses.org, is not exclusively a site for full-time academics with permanent work contracts at publicly funded universities or research institutes. Forty-three percent of the participants reported being employed in an academic position, while smaller percentages associated themselves with journalism, PR, or described themselves as self-employed.

An equally diverse picture emerged with regard to the SciLoggers' academic career status. Forty-five percent of the respondents reported having a PhD, but only 2% hold the *Habilitation*, a postgraduate degree that was in the past formally required to be eligible for a tenured professorship in Germany and that is still widely regarded as the hallmark of an academic career. Forty-three percent say the highest position that they have achieved in their academic career is that of a *Mitarbeiter*, a usually non-tenured research or teaching position that is generally held prior to achieving the status of *Professor*. Fourteen percent of respondents have achieved a permanent position as *Mitarbeiter*, while 9% have achieved some level of professorship (assistant, associate, or full). Many SciLoggers either have not yet decided to pursue an exclusively academic career, have recently taken up this aim, or do not / no longer seek such a career.

The diversity of the SciLogs community is also reflected in the bloggers' aims and in the views they have of their readers. Over 60% of respondents see presenting their field of research to a general audience as an important goal of their blog, while about half see establishing a thematic presence online as important. Considerably fewer bloggers (35%) want to bring grievances or controversies to the public's attention or express themselves creatively (30%; multiple goals could be selected).

The respondents do not see their blogs as appropriate outlets for original research. Only a fourth of those surveyed want to present results of their work in their blog, while over 50% regard this aim as not relevant at all to their blogging. While over 60% see discussion and the exchange of ideas as pivotal to their blog, publishing texts or essays written in other contexts is a potential use of the blog to only 15% of users. The alternative communicative aims, differences in envisaged readership, and divergent genre associations of the bloggers in relationship to traditional scholarly communication play out in full force in relationship to the strategic goals of the respondents.

Over 80% state that advancing their own career inside the institutional academic system was not a relevant factor in their decision to take up blogging. Answering questions about science and research is a relevant motive for 30% of those polled, while repaying a debt to society plays a role for 35%. Interestingly, the responses concentrated on the respective ends of the scale—either bloggers see the societal function of blogs as fairly important or as not important at all, but very few respondents were undecided on this question. Thirty-five percent of the respondents blog because they enjoy controversies, highlighting the function of blogs as places of debate and opinion rather than neutrality and impartiality. Only a small portion is interested in documenting a specific phase of their research or project through their blog, a marked contrast to the approach to blogging taken by the scholars that Walker (2006), Kouper (2010), and Kjellberg (2010) described. Whereas these early scholarly blogs realized functions aimed at the author (learning to write, finding one's voice, reflecting problems, documenting research), the surveyed SciLoggers clearly see themselves as communicating with a wider audience. They aim to educate a general readership about broad scientific issues, not to use their blogs as a sort of virtual notebook, or to debate a specific aspect of their research with a small network of colleagues. For 80%, the public at large is the main audience, followed by people with an interest in the blogger's area of expertise. Colleagues are somewhat less important (44%), as are students (42%). Funding bodies and decision-makers at institutions and companies are considerably less relevant target audiences (9% and 13%, respectively; respondents could indicate multiple target groups), emphasizing the conceptualization of blogging as a public activity. For a majority (80%), the motives they have for blogging have not changed over time.

The strong emphasis on public communication in a privileged, yet alternative, communicative arena (outside the lecture hall, yet with a clear claim to authority and expert status), paired with the tendency to enjoy controversy, aligns itself with the socio-demographics of the bloggers, who are predominantly male, middle-aged, well-educated, and at least in part still in the process of establishing themselves academically. Our findings raise the question of whether a platform with more diversity in relationship to age, gender and academic seniority would produce different styles of scholarly blogging.

The surveyed SciLoggers see blogging as a strongly interactive phenomenon that transcends the much-lamented ivory tower of scholarship, and they value debate accordingly. Over 80% find that commentators seek informed debate in their comments. Seventy-five percent find that commentators ask questions, while very few of them point out mistakes or criticize the blogger in ways that he / she finds overwrought. Only a small percentage find com-

ments to frequently be very negative or aggressive, although many respondents indicate they have encountered some negative comments. Twenty percent indicate that they have never deleted a comment, while 36% do it very rarely. Only 5% say they frequently delete comments.

Another contrast to the primary conceptualization of the scholarly blog as a digital lab notebook becomes evident when polling bloggers about their main themes. Twelve percent say they blog primarily about their own work, while 36% blog about research from their own field but conducted by others. Thirty-four percent do both. Surprisingly, 18% indicate that they write about neither, allowing the assumption that they write about scientific issues, but not based on current research results. An equal number of respondents say that a topic for a post comes to their attention based on a scholarly publication (19%) rather than a story in the mainstream media (19%), indicating a split between these points of departure inside SciLogs. Fewer bloggers want to broadly comment on a topic of interest (15%), correct something they have read (14%), or discuss their current research (9%). The last point is the least important motive for writing a post, even less frequent than blogging because someone asked the blogger to discuss a particular issue.

Overall, the SciLog authors have a fairly critical view of mainstream (science) journalism. The number of respondents who have at some point criticized journalists in their blog compared to the number who has never done so is roughly equal. Few respondents feel that their own research is presented inaccurately by journalists, but over 60% feel that this is the case sometimes or frequently with the research of others from their field, and they feel that journalists report scientific issues in a sensationalist fashion (57%).

Unsurprisingly, SciLoggers are also avid blog readers, with 98% reporting that they also read other blogs, although their enthusiasm for other forms of informal science communication is low. Over 50% report reading either *scilogs.de* or *scienceblogs.de*, pointing to a considerable language bias toward German-language blog sources. The language split is noteworthy especially because scholarly publishing in the natural sciences is predominately conducted in English, creating a language barrier between the results of scientific research and the general population, in addition to the considerable background knowledge necessary to contextualize complex scientific problems.

The majority of respondents would like to see a wider uptake of open scholarly communication, along the lines of their own efforts. Over 50% strongly agree that scientists should communicate more with audiences outside institutional academia, and over 80% agree somewhat or fully with this statement. Seventy-five percent believe that tenure processes should take

public science communication more strongly into account. Interestingly, a majority does not see scholarly blogs as a replacement for science journalism. Twenty-three percent are undecided about this statement, while only 3% agree to it, highlighting the niche role of blogging—not a replacement for science journalism, but also not comparable to traditional academic publishing.

Conclusions: Waiting for the Big Picture to Emerge

Blogs are actively used in a variety of scholarly contexts by academic communities around the globe. They are used by individual academics to document their research, discuss ideas with peers, educate and communicate with a wider audience beyond their immediate work context, and promote their research and often themselves before a wider public. Blogs are also used by science organizations, journalists, and enthusiasts, who often have in-depth academic training, to communicate about scholarly issues.

The use of blogs by journalists, science organizations, and enthusiasts undoubtedly has great potential for furthering the public's understanding of science and for fostering excitement and support for scientific issues. What is unresolved is the question of which aspects of traditional scholarly publishing blogs will be able to replace. A number of problems have so far prevented blogs from achieving success, and it is unclear what role, if any, they should play in this area in the future.

Our survey of the SciLogs authors highlights the diversity of the scholarly blogging community and how the actors, norms, and conventions on one platform may differ from those on another. Whereas hypotheses.org aims to transplant traditional institutionalized scholarship into blogs, SciLogs strives to open up a new space in which scientific issues are presented and debated by an interested public. This is done without the elitism that underpins institutionalized academia, but such a “revolutionary” approach carries the consequence that this kind of scholarly blogging has little impact on the entrenched system of scientific communication. Unless they seek debate (and sometimes controversy) and enjoy educating (or, negatively put, lecturing) a lay audience, career scientists have little incentive to take up blogging.

From the vantage point of policy-makers, this may well be an issue worth addressing in the future, since science is under constant pressure from the emancipated public to become more transparent and accountable. Scientists themselves have very little reason to support change: Either they are too junior to experiment with new and untested formats of scholarly publishing, or they are senior and have a stake in the existing publishing ecology. Civil

society also has little leverage. While there is an increasing demand to change things, scholars have little reason to care, because the general public has very scarce immediate influence on how science publishing is done.

Platform such as SciLogs highlight the need for timely information about scientific issues, presented by experts, in a language, format, and discursive space that enable a lay audience to participate. Beyond merely presenting scientific issues, they are opened up by the SciLoggers for debate, making them (at least potentially) the subject of a broader social consensus that is politically significant in relationship to controversial issues such as climate change or the use of nuclear energy. Yet it is questionable whether institutionalized scholarship is willing or able to engage with the broader public in this fashion, given that its established genres of communication have a strong inward orientation; in other words, they contribute to discourse inside the academy, but not beyond it. Blogging as a paradigmatically new form of scholarly communication may well fail to penetrate the walls of the ivory tower, notwithstanding its partial success outside its confines.

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