Blogging by scientists: a rare and peripheral activity

Yin-Yueh Lo[1]
Freie Universität Berlin, Germany

Hans Peter Peters
Forschungszentrum Jülich, Germany

Introduction

For a long time, scientists appeared in the public sphere mainly as “media sources” quoted in stories written by journalists. However, the environment for public communication of science and technology (PCST) – as for public communication in general – has changed (Peters, Dunwoody, Allgaier, Lo & Brossard, 2014). The Internet has become a ubiquitous infrastructure for public communication; much journalistic content is available online and access to it is mediated by new channels such as Google or social networks. Furthermore, journalism has lost its former quasi-monopoly as gatekeeper of the public sphere because technical and economic barriers in public communication have diminished. The Internet provides professional and non-professional communicators cheap and convenient access to the public realm via websites, blogs, posts in social networks, and videos uploaded to YouTube, for example.

While the group of science bloggers has received some attention in previous research (e.g., Puschmann & Mahrt, 2012; Jarreau, 2015), the prevalence of scientists’ online activities to address a broader public remains largely unclear. Using a very extensive definition of blogging, a study based on a survey of the members of the American Association for the Advancement of Science (AAAS) concludes that "[s]ome 24% of these AAAS scientists blog about science and research." (Pew Research Center, 2015, p. 4).

In our paper we explore scientists’ participation in online communication with the broader public in three countries: Germany, Taiwan and the United States. We aim to answer three research questions: (1) How many scientists blog, use websites or social media to address the public? (2) How much effort do blogging scientists invest in blogging? (3) What are the attitudes of colleagues and organizational management towards blogging scientists? These questions are examined with a focus on international differences.

Method

The data for the analysis was collected in an online survey of scientists from Taiwan, Germany and the United States. 4,500 study participants were randomly selected from a list of authors of scientific articles in the fields of life sciences & biomedicine, physical sciences and technology according to a stratified sampling scheme (3 countries x 3 research fields). The questionnaire was created with SoSci Survey (Leiner, 2014) and made available to the participants on www.soscisurvey.com. After an email invitation to participate in the study, up to six reminders were sent during the field

[1] The paper is based on the first author’s Ph.D. thesis, available at http://www.diss.fu-berlin.de/diss/receive/FUDISS_thesis_000000102064. Email: yinyueh@gmail.com.

period January-March 2014. The survey resulted in 815 valid responses of eligible population members (i.e., active scientists). The effective response rate was 22.4% – excluding sample members from the calculation that could not successfully be contacted by email.

The online questionnaire included a general module on communication activities, beliefs, preferences and attitudes regarding public communication that was presented to all respondents, and a special module on blogging activities, target audiences, feedback and perceived impact that was presented only to the 44 scientists in our sample who reported that they actively blog. Details of the methodological approach, including the questionnaire, can be found in Lo (2016).

Results

Between 39% (Germany) and 57% (USA) of the responding scientists said that they had a personal website related to their research and expertise (Fig. 1). However, most of these websites mainly address other scientists or students. Only between 11% (Germany) and 17% (USA) of the responding researchers maintain websites that (also) target laypeople, i.e. "people who are not scientists or students." Very few personal websites of researchers address *mainly* laypeople but not peers or students, however. The answers indicate, that roughly one third of the scientists with a personal website address a hybrid target audience that is comprised of peers and students as well as of people outside the scientific realm. Yet, the majority of scientists address peers and students only, and only very few of them maintain a website that is particularly dedicated to communication with audiences outside science.

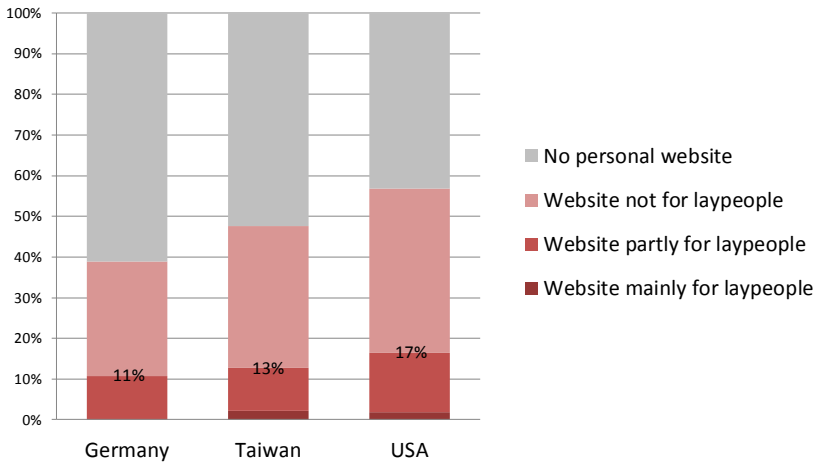

Fig. 1: Proportion of scientists having a personal website. The percentage figures denote the proportion of scientists in each country claiming that they have a website at least partly directed to "people who are not scientists or college/university students." (Question: "Do you have a personal website (other than blog) where you provide information about your research or your area of expertise?" Answers were differentiated by a follow-up question on groups of users targeted by the information on the website.)

In each country, the vast majority (70-80%) of scientists are members of a social network – the questionnaire named Facebook, Google+, Twitter, ResearchGate, or LinkedIn as specific examples. Most often, scientists use these networks in private communication or for professional communication. Only few percent of the members of social networks use these networks "*frequently"* to communicate about their "research or area of expertise with interested laypeople", but a larger share (25-43%) answered that they use social networks at least "*occasionally"* to communicate with laypeople (Fig. 2). Again, the overall proportion of social network users as well as the proportion of those using the networks for communication with the public is lowest in Germany.

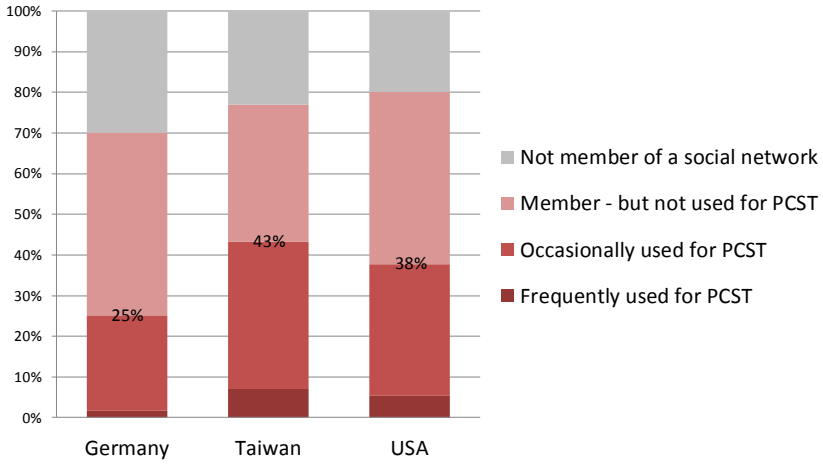

Fig. 2: Proportion of scientists being member of a social network. The percentage figures denote the proportion of scientists in each country claiming that they use social networks at least occasionally "to communicate about my research or area of expertise with interested laypeople." (Question: "Are you a member of a social online network such as Facebook, Google+, Twitter, ResearchGate, or LinkedIn?" Answers were further differentiated by a follow-up question "How often do you use social networks for the following purposes?")

Between 23% (Germany) and 36% (USA) of the respondents indicated that they use blogs; about three quarter of blog users use them only passively, i.e. regularly read them but do not post or comment, however. The proportion of scientists reporting active science blogging (i.e. respondents who say that they occasionally or frequently write blog posts related to science) ranged from 4% in Germany and Taiwan to 8% in the United States. Narrowing down the figures to those blogging scientists who aim to address the "general public" (among other target groups) with their blog posts, the figures are only 3% in Germany, 4% in Taiwan and 5% in the United States (Fig. 3). Even when considering the statistical error of these figures, we have to conclude that in each of the three countries only marginal proportions of scientists blog for the general public.

Almost 80% of the blogging scientists publish new posts only every few weeks or less often. Still, the belief that "blogging wastes time that would better be used for research" is prevalent in all three countries and one of the main concerns regarding blogging.

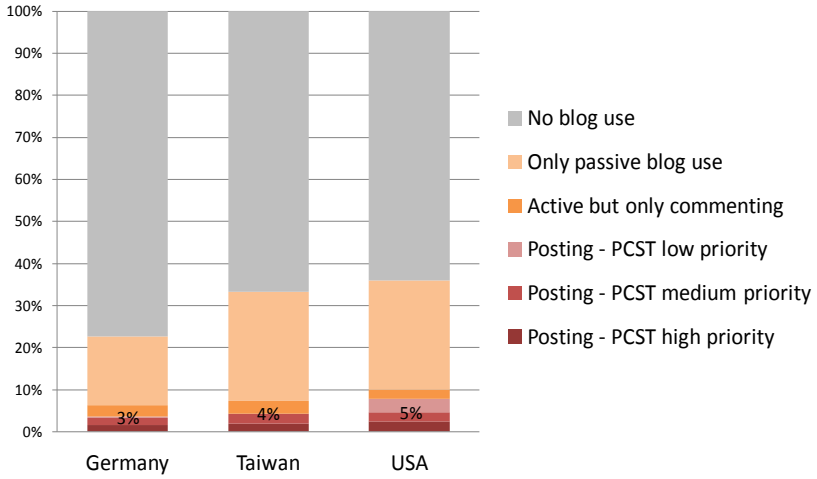

Fig. 3: Proportion of scientists using blogs in different ways. The percentage figures in the bars denote the proportion of blogging scientists in each country who assigned "members of the general public" medium or high priority as target audience. The six groups shown in the graph were defined by the answers to four questions about frequency of passive use of blogs, frequency of active use, type of active use (commenting only or also posting) and priority of "general public" as target group.

In all three countries, but particularly noticeable in Germany, large proportions of respondents (56-76%) did not know the attitude of their peers or management towards blogging scientists, perceived that peers and management did not care or considered the management's attitude as "neutral" (Fig 4-5). If they rated the attitude of their peers towards blogging scientists, respondents tended to describe these attitudes as mixed i.e. as "partly positive, partly critical." In Taiwan and in the US, but not in Germany, more scientists rated the attitude of peers as "mostly positive" than as "mostly critical" (Fig. 4). Similarly, scientists in Taiwan and the US felt more often an encouraging position of the organizational management towards blogging scientists than a cautioning position, while German scientists equally often perceived encouragement and cautioning by the management (Fig. 5).

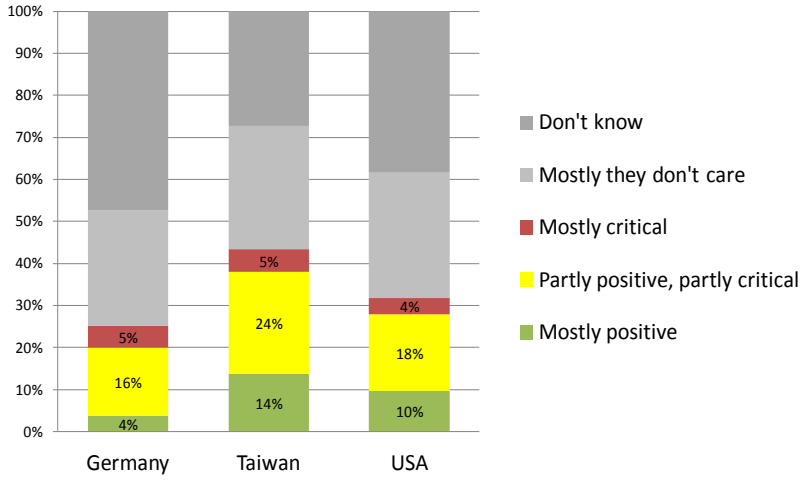

Fig. 4: Perceived attitude of peers towards blogging scientists. (Question: "How do scientists in your research field feel about colleagues who regularly blog about their research or expertise? Are scientists mostly positive or critical towards blogging colleagues, or do they not care?")

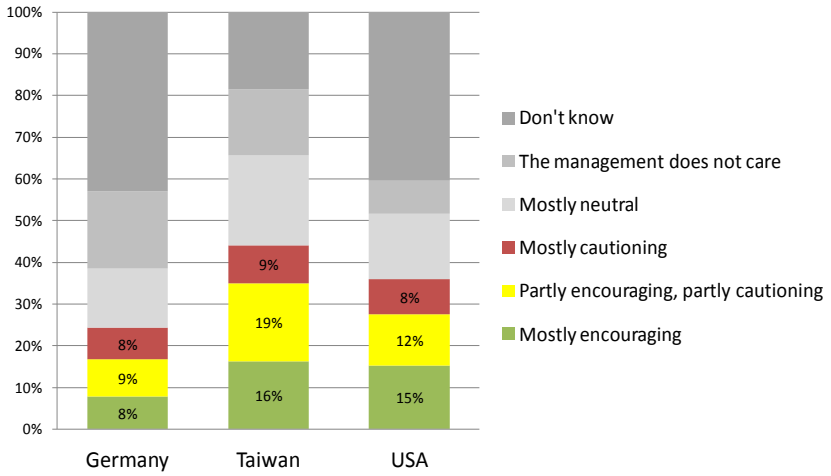

Fig. 5: Perceived attitude of organizational management towards blogging scientists. (Question: "How would you describe the general position of the management of your university or research institution towards scientists blogging about their research or expertise?")

Conclusions

While blogging scientists hardly blog specifically for the general public, they consider members of the public an important audience besides their peers and students. However, the prevalence of PCST-relevant blogging by scientists is low in Taiwan, Germany and the United States (3-5%) and for most blogging scientists is blogging a peripheral activity in terms of posting frequency.

In this study, a blogging scientist is defined as *someone who publishes blog posts related to science at least "occasionally or frequently"* – either in their own blog, in a blog shared by others or on invitation in some other's blog. The huge difference to the 24% blogging scientists claimed by the Pew/AAAS study cited in the introduction is mainly due to different definitions of the group of blogging scientists. Furthermore, the Pew/AAAS study does not distinguish between different target audiences of bloggers. We think that our definition better captures the common understanding of the term "blogging scientists" and find the reported figure of the PEW/AAAS study misleading.

A significant proportion of scientists (25-43%) claim that they communicate at least occasionally via social networks with interested laypeople, however. Websites are hardly used exclusively to address non-scientists, but 11-17% of the respondents said that they maintain personal websites which are *also* targeted to non-scientists.

The country comparisons shown in this paper as well as many other comparisons published in Lo (2016) show that German scientists participate less often in online communication with the general public and perceive less frequently encouragement for such activities from peers and management than scientists in Taiwan and the United States. Reasons may be the generally lower level of diffusion of social media use in Germany (Pew Research Center, 2016), a comparatively stable science journalism (Elmer, Badenschier & Wormer, 2008), and a different information behavior that still favors established media brands (Hasebrink & Hölig, 2013).

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