New media, familiar dynamics: academic hierarchies influence academics' following behaviour on Twitter

For what reasons do academics follow one another on Twitter? **Robert Jäschke**, **Stephanie B. Linek** and **Christian P. Hoffmann** *analysed the Twitter activity of computer scientists and found that while the quality of information provided by a Twitter account is a key motive for following academic colleagues, there is also evidence of a career planning motive. As well as there being reciprocal following between users of the same academic status (except, remarkably, between PhD researchers), a form of strategic politeness can be observed whereby users follow those of higher academic status without necessarily being followed back. The emerging academic public sphere facilitated by Twitter is largely shaped by dynamics and hierarchies all too familiar to researchers struggling to plot their careers in academia.*

Twitter is a platform well-suited for disseminating and collecting information. Politicians, NGOs, and corporations eagerly employ Twitter for agenda-setting. The platform is a popular source of news and quotes for journalists. As a result, academics may be attracted to Twitter for public outreach and research dissemination. A recent study of computer scientists' activity on Twitter finds that information is indeed a key motive for following an account. At the same time, social networking does affect academic users' following behaviour – with academic hierarchies and career considerations leaving a mark.

Popularity of social media among academics

A 2014 survey of more than 3,000 scientists and engineers found that about half regularly use social media and that Twitter is the most popular general-purpose service, followed by Facebook. Another study found that key benefits perceived by academic users of social media include connecting and establishing networks with other academics, as well as non-academic audiences, promoting information dissemination, publicising and developing research, and giving and receiving support. The public nature of social media renders scholarly communication more accessible to diverse audiences. Consequently, social media could move scholarly cooperation and communication towards a more open, interconnected, and less hierarchical mode. On the other hand, established professional dynamics – such as steep hierarchies, the need for peer networking, and seniority benefits – may impact how academics employ Twitter.

Imbalanced following behaviour among professors and PhD students

One of the core features of Twitter is that users can establish connections with other users. Users, accordingly, receive status updates or messages from their network. In contrast to other services, on Twitter these connections are not reciprocal by default. Instead, a user can choose to "follow" an account without being followed back. As a result, some relationships maintained within communities of Twitter users are reciprocal while others are not. As a result, the community emerging based on platform interactions can be more or less interconnected, and more or less characterised by hierarchies.

We analysed the following behaviour of computer scientists based on a dataset of 1,481 Twitter users. It includes users with at least one publication in the field of computer science who have followed at least one computer science conference on Twitter. We could identify 570 professors and 911 PhD students by using self-descriptions from their Twitter profiles.

Our subsequent network analysis revealed that a PhD student is much more likely to follow a professor back than the other way around. When a professor follows a PhD student on Twitter, there is a 78% chance that the PhD student follows back. But when a PhD student follows a professor, the chance that the professor follows back is just 30%. This could be interpreted as strategic politeness on the part of PhD students. At the same time, professorial accounts may simply provide the more engaging or valuable information, and therefore attract relatively more followers.
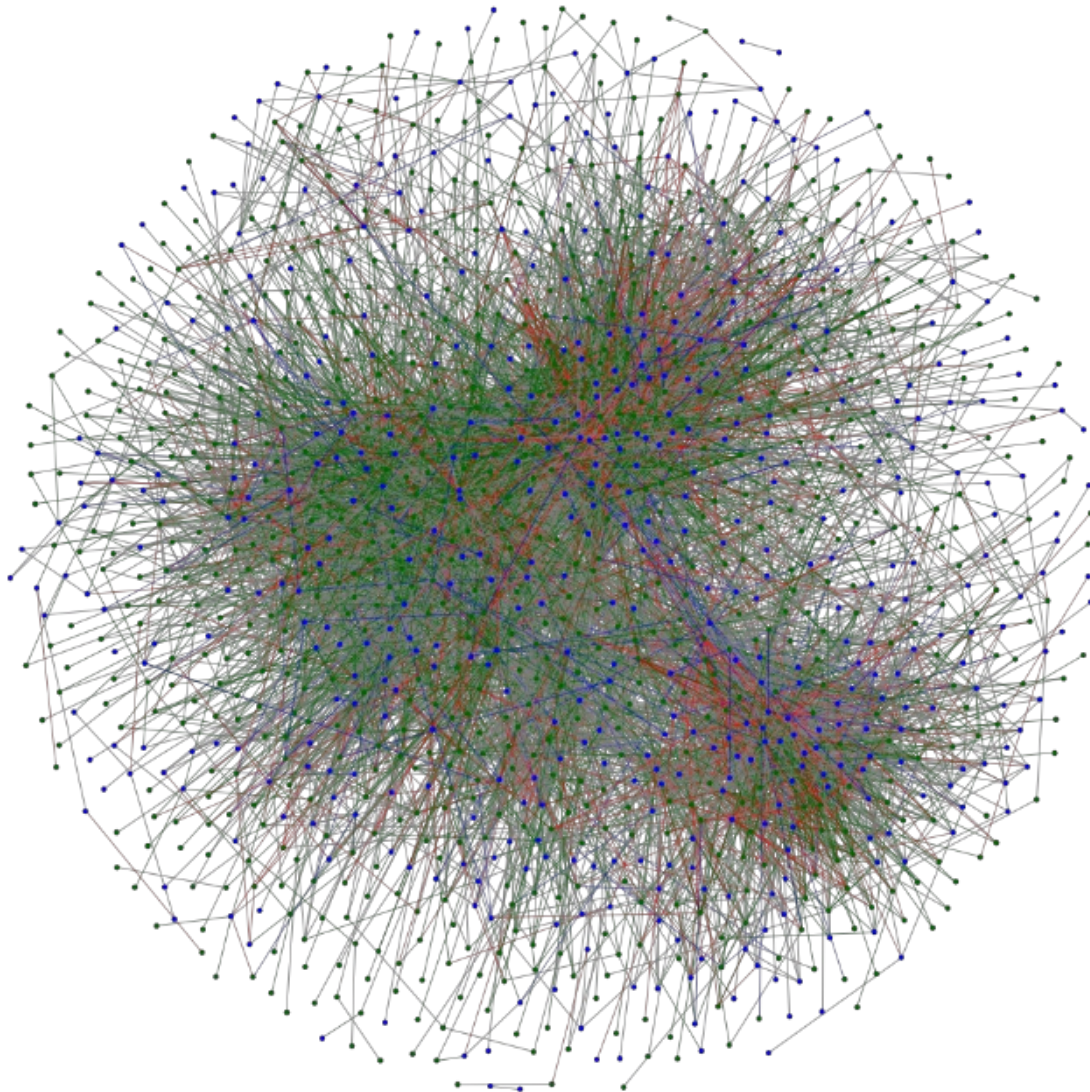
Figure 1: Visualisation of the following relationships between professors (blue nodes) and PhD students (green nodes). The edges between professors and PhD students are coloured: reciprocal edges are red, unilateral edges from PhD students to professors are green, and unilateral edges from professors to PhD students are blue. All other edges (between individuals of the same status) are grey. The visualisation shows an imbalance in the coloured relationships: the share of green edges (2,585) is larger than the share of red edges (1,088), which in turn is larger than the share of blue edges (298).

The role of information versus community development motives

Motivated by these initial insights, we aimed to understand the motives underlying following behaviour within our sample of academics. We applied uses and gratification theory as a theoretical framework on user motivations. Although originally developed for television viewing, UGT has been successfully applied to new interactive media including social media. UGT assumes an active media user who chooses from different available media for distinct purposes (motives).

In our study we focused on two key motives for following an academic's Twitter account: the *information motive* and the *community development motive*. The information motive is important since Twitter is often conceptualised as an information network. We took both the quantity (number of tweets) and quality of information (academic degree as an indicator of expertise) into consideration. The community development motive, which includes both peer networking (reciprocal following between users of the same academic status) and strategic politeness (following users of higher academic status), is a crucial motive to explore the effect of professional dynamics on the following behaviour of professors and PhD students.

Information is essential, but career planning leaves a mark

We found that the information motive does indeed emerge as the most important motive for following a colleague's account among academics. Twitter accounts with a higher number of tweets (high quantity of information) as well as Twitter accounts of professors (academic degree as indicator for high quality of information) had a higher number of academic followers. Thus, scholars are mainly interested in acquiring useful information through Twitter. At the same time, we found that career planning motivates following behaviour as well, particularly in the form of strategic politeness. Even in the case of low activity, accounts of professors had a relatively high number of academic followers – both PhD followers as well as professor followers. Besides, results provided support for peer networking among professors: professors are more likely to maintain reciprocal relationships among each other than PhD students. We found no evidence for peer networking among PhD students.

New media, familiar dynamics

These findings imply that academic hierarchies indeed influence academics' following behaviour on Twitter. The identified imbalances of following relationships cannot be solely explained by the (subjectively assumed) higher quality of information shared by professors. Rather, peer networking among established academics, the sharing of leveraging of professional capital, does seem to add to familiar seniority benefits. Academics on lower rungs of the professional ladder instead focus more on career planning in the form of strategic politeness. Accordingly, we did not identify a generally accepted norm of following back among academic Twitter users. While professors do tend to follow back their peers, they feel little need to do the same in the case of PhD student followers. PhD students, instead, eagerly follow back professorial followers. Social norms on Twitter, thereby, may vary by academic position. Remarkably, PhD students do not appear to consider Twitter a helpful tool for networking among peers. The emerging academic public sphere facilitated by Twitter is largely shaped by the dynamics and hierarchies all too familiar to researchers struggling to plot their career paths in academia.

This study is part of the Open Science project Netiquette and Profile in Science 2.0. Further studies on netiquette on Twitter and other academic social networks like ResearchGate are in progress, including investigations of the influence of sociodemographic variables like gender or age.

Featured image credit: FIGURE 13.9 Both network (for communication) and hierarchy (for authorization) by Jurgen Appelo (licensed under a CC BY 2.0 license).

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