

## Special Theme: Homophily in Social Networks

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### Abstract

Over the last thirty years, in parallel with the global uptake of the world wide web, social network analysis (SNA) has become a significant analytical approach within several disciplines and it currently holds a prominent position in academic discussions across a diverse range of topics. This special theme of *Connections*, the journal of the *International Network for Social Network Analysis*, adds to the rapidly growing body of network research with a focus on exploring the principle of homophily in social networks. It presents 5 studies from a selected number of participants to the symposium “Similarity, Selection and Influence: A Cross-Disciplinary Symposium on Homophily in Social Networks” (7-8 July, 2022, Groningen, the Netherlands). Taken together, the special theme provides an interdisciplinary understanding of homophily in social networks and outlines avenues for future research to keep investigating the subject.

### Introduction

In network terminology, the notion that similarity fosters connection is encapsulated by the concept of homophily (McPherson et al., 2001). This refers to the tendency of people to associate with others who share similarities, and it serves as a foundational pattern for interpreting human connections, also online (Esteve-Del-Valle, 2022). Thus, delving into the exploration of homophily can yield vital insights into the transmission of information and behaviors across various forms of societies or communities, both in the past and the present.

This special theme of *Connections* adds to the rapidly growing body of network science with a focus on exploring the principle of homophily in social networks. It features 4 articles presented at the 2022 symposium “Similarity, Selection and Influence: A Cross-Disciplinary Symposium on Homophily in Social Networks” (7-8 July, 2022, Groningen, the Netherlands) and one article from a co-editor of the special theme and co-organizer of the event. In addition to its theoretical and methodological diversity, the studies highlight that the investigation

into network homophily is interdisciplinary at heart. The authors involved in this special theme hail from philosophy, history, digital humanities, political science and communications. They are located and engaged in research around the globe, including Colombia, Finland, the Netherlands, and Spain.

The submitting authors were selected for the quality of their research and its relevance to the central theme. All manuscripts underwent a double peer-reviewed process by two or three reviewers. A common insight emerges from the 5 articles: the principle of homophily continues to play a central role in elucidating the formation of relationships, whether they involve philosophers, publishers, politicians or social media users.

The special issue starts with “Intelligencers, Cliques and Stars in the Spread of Seventeenth-Century Cartesianism” by Silvia Donker. The article examines the dissemination of Cartesianism through the networks of authors in the seventeenth century natural philosophy. Her bipartite, multiplex and diachronic social network analysis of the relationships among these authors reveals the existence of cliques of geographically connected authors and indicates

moderate homophilous connections among authors of the same philosophical tradition. Additionally, her investigation demonstrates that the expansion of Cartesianism was aided by the central roles that several proponents of Cartesian ideas held within the natural philosophy networks of the seventeenth century.

Similarly situated within the context of historical networks, Yann Ciarán and Mikko Sakari's article "Networks and Influence in Scottish Enlightenment Publishing" investigates whether the network of eighteenth-century London publishers integrated Scottish émigrés or was homophilous with respect to them. Making use of a large-scale library catalog data and employing Exponential Random Graph Models (ERGMs), their study shows that Scottish publishers in London "had a much higher likelihood than chance to be present in a book imprint". Nevertheless, as the century unfolded, these Scottish publishers became more integrated within the London publisher community.

Jose Alarcon's article, "Homophily Versus the Generalized Other", which scrutinizes the concept of homophily from the fields of philosophy of technology and enactive ethics, helps the reader transitioning from the realm of historical networks to the domain of online social networks. Building on the theory of social construction of reality (Berger & Luckman, 1991), Alarcon evaluates the evolution of *philia* in cyberspace. He argues that despite individuals' tendency to form homophilous relationships with similar others, digital spaces expose us to a greater range of unexpected voices, contradicting the literature's generalized depiction of individuals being enclosed in "echo chambers".

The next two articles in the special theme explore the concept of homophily in Twitter political networks. In the context of the last Colombian presidential election campaign, Elizabeth Pinilla's article "Framing Otherness on Twitter: Gender, Elections and Networks" indagates in the construction of the concept of Otherness by women and men when mentioning Francia Marquez —a Colombian human-rights and environmental-activist who currently is the vice-president of the country— on Twitter. To do so, Pinilla makes use of a combination of computational social science techniques (e.g. social network analysis and topic modeling). Contradicting preliminary expectations, her findings do not reveal any gender homophilous tendency among Twitter users. However, her research does suggest the presence of potential homophily based on political ideologies and race.

In the final entry, "Exploring Echo Chambers in Twitter Conversation during Two Spanish Regional Elections: An Analysis of Community Interactions", Raúl Broto, Cristina Pérez-Solà and Albert Batlle, examine Twitter conversations around two Spanish regional elections. Making use of a dataset of 5,5 million tweets, their study investigates the interactions among politically like-minded communities and between political communities with differentiated ideologies. The results show that in both elections conversations on Twitter remained enclosed in "echo chambers" within each political party community.

Collectively, this special theme highlights several unstated dimensions: Firstly, it demonstrates that the study of homophily does not need to be confined within specific academic domains. Secondly, it shows that, due to the methodological disparities in measuring homophily, making comparisons and generalizations becomes quite challenging. Thirdly, it points that theoretical deliberations concerning the homophily principle, especially within the context of cyberspace, constitute a fruitful direction for new research. Lastly, the consistent and complementary nature of the articles' findings regarding homophily's presence underscores its explanatory power in the formation, structure and development of (mediated) social relations.

We hope this special theme can serve as inspiration for future research, as an initial step to create a fuller understanding of the nature and implications of homophily in social networks.

Marc Esteve Del Valle and Silvia Donker  
Guest editors

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