Chapter 33
Unveiling Network Data Patterns in Social Media

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ABSTRACT

The present study focuses on the usefulness of social network analysis in unveiling network patterns in social media. Specifically, the propagation and consumption of information on Twitter through network analysis tools are investigated to discover the presence of specific conversational patterns in the derived online data. The choosing of Twitter is motivated by the fact that it induces the definition of relationships between users by following communication flows on specific topics of interest and identifying key profiles who influence debates in the digital space. Further lines of research are discussed regarding the tools for discovering the spread of fake news. Considerable disinformation can be generated on social networks, offering a complex picture of informational disorientation in the digital society.

INTRODUCTION

The development of the Internet and ICT have opened up new channels and contexts, such as social media, through which individuals express their actions, feelings, and information, for example writing status updates, commenting, liking content, and posting photos. In these spaces, our opinions and news develop dynamically, impacting everyday life activities, social relationships, and identities.

Particularly, social media during the spread of the pandemic further contributed to the generation of practices and rituals of socialization that allowed people to stay in touch due to the impossibility of realizing them in the typical physical contexts of everyday life (Addeo *et al.*, 2020).

During the COVID-19 pandemic, the sharing of information, emotions, and opinions through the multiplicity of languages and codes that characterize social media acted as important connectors and relational aggregators, with strong emotional and informative connotations. In other words, social media played a fundamental role as a social glue, as people from all over the world stayed in touch by sharing news about a dynamic and changing emergency situation, developed a common feeling and solidarity using *#stayathome* hashtags and participating in flashmobs, and reinvented some social rituals, for example, through video calls (Addeo *et al.*, 2020). Conversely, another important consequence generated by social media during the COVID-19 pandemic concerns information overload, which has contributed to the creating and spreading of fake news, causing uncertainty and confusion about the credibility and truthfulness of the information in an unprecedented and emergency situation.

Within this context, this study deals with the articulate issue of unveiling network data patterns and detecting information/disinformation propagation in social media, i.e., an important knowledge and methodological challenge in the analysis of the so-called digital society; specifically, the study concerns the use of network analysis tools to identify the patterns underpinning social media interactions and the forms of misinformation that can be generated.

The first and second sections, adopting a distinction provided by Marres (2017) on the concept of digital society, provide a theoretical overview of the impact of the digitalization process and social media on everyday life; conversely, it introduces some characteristics of social research in the digital age also due to the vast amount of social big data available on the web, provided by the development of digital technologies. These aspects are further deepened in the third section, which focuses on the features of Social Network Analysis (SNA) as a useful methodological approach capable of identifying the conversational patterns in social media data. Starting from a description of different social structures and shapes for social media crowds and conversations on Twitter, the authors present the main findings of a network analysis conducted on Twitter posts related to the Covid-19 vaccine debate. Finally, the last section discusses further research lines connected to the potentials of network analysis in the study of fake news and information/disinformation propagation on social media.

CHALLENGES AND OPPORTUNITIES OF DIGITAL SOCIETY

The extensive process of digitalization that reshapes the activities we usually conduct, the environments in which we are embedded, and the objects we use are among the most significant characteristics of contemporary society. There are many examples of how digital technologies are integrated into multiple dimensions of everyday life, such as in credit card transactions, the geolocation of our movements, the images captured by video surveillance cameras, and the smartphones and tablets we carry around with us.

Specifically, the Internet and ICT have contributed to the creation of a "complex and multifaceted arena" (Roberts *et al.*, 2016, p. 3) in which different environments, tools, and infrastructures dynamically converge and has deeply impacted the reconfiguration of daily habits regarding time, space, activities, social relations, and identity representations.

These issues are among the so-called "digital society" which, according to Marres (2017), has different and interconnected meanings. One definition focuses on how the digitization process affects

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