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A Multidisciplinary Framework of Information Propagation Online



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Chapter 1

Introduction



Abstract As the use of social media platforms has increased, so have they become a new domain in information warfare. Before tackling the roots or spread of misinformation or disinformation, it is important to understand why people share any information on social media at all. This book presents a broad, multidisciplinary review and creation of a theoretical framework of the factors that have been shown to, or might, influence sharing information on social media, regardless of its veracity. The act of sharing information online is made up of several categories of factors: sources of messages, reactions to the original message and messenger, the motivation to share, the ability to share (and perception of the ability to share), and then, of course, actual sharing behavior. In addition, while genuine actors may have reactions to the original message and messenger, there also exist non-genuine actors that have pre-programmed or pre-planned reactions. We also qualitatively examined 20 fake news stories in two different languages as they appeared in social media in order to illustrate factors affecting information propagation and identify potential gaps in the literature.

Keywords Social media · Fake news · Misinformation · Disinformation · Multidisciplinary · Model · Qualitative research · Russia · Information warfare · Social media sharing

Social media are a relatively new channel by which people not only acquire, but also share information. Social media networks have also been used to spread misinformation, since at least 2010 on Twitter about the Democratic candidate Martha Coakley to the 2016 U.S. presidential election (Mustafaraj & Metaxas, 2017). The revelations of Russian disinformation campaigns on social media against the U.S. population during the 2016 election have identified a stark vulnerability in the security of the United States (e.g., Sydell, 2017; *United States of America v. Internet Research Agency LLC*, 2018; Waltzman, 2017; Woolley & Howard, 2017). Fake

news, as it is currently popularized,¹ is not new, nor is propaganda (e.g., Allcott & Gentzkow, 2017; Jowett & O'Donnell, 2015; Lazer et al., 2018; McKernon, 1928; Pratkanis & Aronson, 2001). However, there has been an increase in this kind of 'information war' by Russia against the United States and European countries at least since 2014 (e.g., Paul & Matthews, 2016; Prier, 2017; Woolley & Howard, 2017). Information warfare does not simply occur between nations: Both jihadi Islamic groups and right-wing extremists also recruit and spread propaganda online (e.g., Benigni, Joseph, & Carley, 2017; Bowman-Grieve, 2013; Caiani & Wagemann, 2009; Derrick, Sporer, Church, & Ligon, 2016; Prier, 2017; Vidino & Hughes, 2015).

Social media-based information conflict has sparked the interest of government, academia, and industry alike. Key research topics underlying the flood of online communication are *why* and *how* people share narratives and information online. Narratives, in this context, refer to coherent stories that are shared with multiple people rather than isolated pieces of information (Green & Brock, 2005; Hinck, Kluver, & Cooley, 2017). A narrative might describe an activity or conflict consisting of a storyline with a beginning, middle, and end, rather than a single fact, and it may imply or state a context, how, and why (van Krieken & Sanders, 2016). Readers of news stories can be more involved in narrative reporting, for instance, compared to more neutral, 'hard news' reporting (van Krieken & Sanders, 2016). This review examines studies of information propagation, and often focuses on narratives. Given its conceptual breadth, we also use the term "message" to include narratives. Although narrative propagation is not new, social media has made spreading stories, including false ones or ones with false elements, easier.

Before tackling the roots or spread of misinformation (incomplete, vague, ambiguous information) or disinformation (intentionally untrue information; Cooke, 2017), it is important to understand why people share any information on social media at all. The propagation of information has many antecedents, causes, and moderating factors, including amplifiers and suppressors. Information propagation has been studied for decades across a range of disciplines: psychology, marketing, sociology and social network analysis, political science and political communication, human-computer interaction (HCI), journalism, and information sciences. This book leverages existing knowledge about the spread of information in general, why people are convinced by information they see, the effects of different kinds of messages on human affect and cognition, and what might make someone go from interest to sharing, as well as some possible cross-cultural differences. Most individual articles focus on a small number of factors that might be useful,

¹Fake news historically has included yellow journalism and other information in news media that is deliberately inaccurate or misleading. For most of this book, we use the term 'fake news' to refer to "news articles that are intentionally and verifiably false, and could mislead readers" (Allcott & Gentzkow, 2017, p. 213). Note that intent is hard to prove, and propaganda can include a mix of falsehood and truth. Although we will refer to 'fake news,' particularly in reference to the corpus we analyze, we will often also refer to the more technical terms of misinformation and disinformation (Cooke, 2017). Fake news may include one or both types. While disinformation is intentionally untrue, misinformation may have elements of truth in it (Cooke, 2017).