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Researching Social Networks: Opportunities and Challenges

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New technologies have brought a number of new social phenomena, visible in peer production and open collaboration amongst others (Benkler and Nissenbaum, 2006; Levine and Prietula, 2013). The natural tendency to cooperate with others, typical for our species, has been amplified by new communication channels and platforms, resulting in the rapid growth of "collaborative society" (Jemielniak and Przegalinska, 2020).

The new social organization relies on novel kinds of structures: a-hierarchical or heterarchical large networks with little formal leadership. They are visible e.g., in the social organization of Wikipedia, the largest collaborative movement of humankind, openly rejecting traditional forms of organizing while relying on different, emergent communication, and decision-making patterns (Jemielniak, 2014; Shaw and Hargittai, 2018), as well as in other Free and Open Source (FOSS) initiatives (Lakhani and Von Hippel, 2003; Ciesielska, 2010; Chełkowski et al., 2016). It is worth mentioning that the new organizations, based on radically different social networks and division of work, can be very successful: Wikipedia is beyond any doubt the most popular encyclopedia in the world, Linux is the leading server operating system, Android is the dominant mobile phones operating system, etc.

Another example of new movements enabled by technology and new social networks is "citizen science": self-organized activists cooperate to make scientific discoveries or perform applied science in ways that would typically not be accepted or done at traditional knowledge institutions (Lis and Stasik, 2017; Strasser et al., 2019). They successfully lead to independent actual innovations, as well as support the scientific community in its discoveries and exert social pressure on governments and municipalities, e.g., by monitoring smog or radiation and informing the larger public about the problem (Brown et al., 2016; Constant, 2018).

Similarly, new social movements online based on a remix culture result in a redefinition of creator-consumer boundaries (Hill and Monroy-Hernández, 2013; Milner, 2013). Even the communities formed around contemporary graphic meme consumption form specific ways of identity enactment, social bonding, gatekeeping and inclusion, often with a significant socio-political impact besides ironic entertainment (Silvestri, 2015; Huntington, 2016). In a much different, and yet somewhat similar area, blockchain technology and its network of participants are redefining how we deal with finance, contract validation, and data validity assurance, to name just a few (De Filippi, 2018).

Some more disturbing manifestations of new technologies and social networks are visible in the rise of anti-intellectual sentiments and the erosion of trust in social institutions in general and in science in particular (Pechar et al., 2018). We are facing an epistemic crisis (Dahlgren, 2018). Misinformation initiatives are able to spread through modern types of social networks and have a real impact (consider anti-vaxxers, human-induced climate change deniers and flat-Earthers) (Dahlstrom and Rosenthal, 2018; Samantray and Pin, 2019).

The new technologies bring major changes also to other key social phenomena: enactment of trust in society (Latusek and Vlaar, 2018), perception of ownership and commons (Kostakis, 2018; Hergueux and Jemielniak, 2019), expression of emotions and intimacy (Das and Hodkinson, 2019), or politics (Benkler et al., 2018; Chmielewska-Szlajfer, 2018), to mention just a few. Even the very

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primal rituals of how people choose life or sex partners have been radically affected by online dating networks (Alhabash et al., 2014; Rosenfeld, 2018). The landscape of social networks is getting more and more complicated also due to the rapid emergence of bots, as well as avatars increasingly differentiated from human representations (Przegalinska, 2015; Przegalinska et al., 2019).

These evolving phenomena, behaviors, and social structures already pose a significant challenge to social sciences. Yet, an even greater one comes from the fact that social networks and interactions online bring on absolute information and data overflow. As social scientists we are facing a paradox: never before in history have we had access to this much information about human behavior, and yet dealing with the oversupply is a problem in itself.

Naturally, access to troves of available data can also be a great opportunity (Conte et al., 2012; McCarthy, 2016; Lazer and Radford, 2017). It is not a coincidence that social sciences become datified (Millington and Millington, 2015), and that data scientists, or even physicists and software engineers make bold forays into the territory formerly reserved for sociologists, basically because of the data access.

The challenge, however, is that the data never speak for themselves (Dourish and Cruz, 2018). In fact, it is quite safe to assume that just relying on Big Data, especially without some deeper social network understanding may be very misleading. This is so not only because of the spurious correlations (Vigen, 2015) which may make even projects with such great promise as Google Flu fail miserably (Harford, 2014). Making sense of and from Big Data is simply very difficult (Hartung, 2018).

To mitigate these issues, some researchers propose to combine Big Data usage in social networks analysis with qualitative approaches (Halavais, 2015). Indeed, relying on qualitative insight allows adding context to quantitative datasets, which becomes particularly important when the datasets' raw power is overwhelming (Babones, 2016). This is why Thick Big Data, that is deeply quantitative analysis conducted in parallel with deeply interpretive one, is so attractive (Jemielniak, 2020). Yet, due to silosing and bunkerization typical for academia, most scientists specializing in Big Data are not proficient in ethnographic approaches and vice versa.

It is time to address these ambiguities. Our goal is addressing the new phenomena related to social networks, by relying on new forms of collecting and analyzing data, and by experimenting with novel and combined methodologies. We welcome a wide array of topics, challenging the current understanding of social science, bringing new knowledge about human behavior, both online and offline, in social networks of old and new types so that we discover new ways of conducting research on social networks, both in a quantitative and qualitative way.

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