

Studying Social Media from an Ego-Centric Perspective

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Version 5/1/2020

Abstract

An overview of empirical findings, emerging theories, and challenges to the ego-centric perspective in the study of social media and digital technologies broadly. The relationship between social media use and network size and diversity has been discussed in relation to topics that include social capital, social support, political engagement, and mental health. We explore the role these technologies play in shaping networks, and how the ego-centric perspective can advance the study of social media. Two trends – persistent contact and pervasive awareness – are explored for their potential to counter transitory, segmented personal networks. The ego-centric perspective can play an important role in the study of social media, which has primarily focused on understanding how media works as an agent of change, while overlooking opportunities for research related to social influence and network flows. However, ego-centric researchers face methodological challenges, including the risk of overgeneralizing from social media platforms to personal networks more broadly, and the role of algorithmic personalization. We end with a discussion of how ever shifting social media platforms remain a barrier to advancing one of the most promising opportunities for the ego-centric approach: combining relational data from social media platforms with data from other sources, such as surveys.

Keywords:

core network, network size, network diversity, trace data, big data, communication research, name generator, media exposure, algorithms, internet

Introduction

Social networks have been intensively studied in relation to general Internet use, mobile phones, and related technologies. This body of literature has been an integral part on the debate of whether the Internet increases, decreases, or displaces social contact, and the relationship between the use of digital technologies and social capital. This chapter focuses on how the ego-centric perspective has been used in the study of social media. Our focus is primarily on those common, social media platforms referred to as social network sites (e.g., Facebook, Twitter, etc.). These platforms are typically defined by a bounded set of participants who articulate their connection to other users and then traverse relationships within the system, communicating, observing, and sharing content (boyd and Ellison 2007). Network scholars have focused on how these technologies are related to variation and change in the structure and composition of personal networks, including network size and diversity, as well as topics, such as social capital, social support, political engagement, mental health, and methods used in the study of ego-centric networks. This chapter provides an overview of some of the empirical findings, emerging theories of social media and personal networks, and developing trends and methodological challenges to the ego-centric perspective in the study of social network sites (SNS) and social media more broadly.

Core Networks

The ego-centric perspective within social media research emerged largely in response to the work of McPherson, Smith-Lovin, and Brashears (2006) on core networks, as well as broader claims that the Internet and other new communication technologies were responsible for a loss of contact with close, social ties (Turkle 2011). The core network, as the name suggests, is a subset of a person's broader personal network, often defined as "people's close, important, trustworthy, and socially supportive partners" (Small 2013). The size, composition, and structure of the core is generally enumerated through the use of one or more *name generators* and *interpreters* (Fischer 1982; Wellman 1979). Most often, but not ideally, the core network has been measured as the core discussion network through the "important matters" name generator from the U.S. General Social Survey (GSS) (Burt 1984; Marsden 1987). Respondents (the ego) are asked, "From time to time, most people discuss important matters with other people. Looking back over the last six months - who are the people with whom you discussed matters important to you?" Respondents can list up to five names (alters). A series of follow-up questions or name interpreters solicit information about each alter, their relationship to the ego, and to each other (for a discussion of the name generator approach, see Marin and Hampton 2007). A key question is whether the use of social media has augmented the size, structure or composition of core networks?

Comparing results from the important matters name generator collected through the GSS in 1985 and 2004, McPherson, Smith-Lovin, and Brashears (2006) identified a decline in the average size of the core discussion networks of Americans, from a mean of 2.94 to 2.08. Nearly triple the number of people replied that they had no core confidants, and they reported a substantive increase in network homogeneity; a decrease in the number of non-kin core ties. Given the positive relationship between the size and diversity of core networks and social support (Wellman and Wortley 1990) and political engagement (Huckfeldt, Mendez, and Osborn 2004; Ikeda and Boase 2011), the sharp decline in core network size and diversity was largely interpreted as detrimental for individuals and society. The 2004 GSS did not contain measures of Internet use. However, given the rise of these technologies since 1985, McPherson et al. suggested that use of the Internet and mobile phones may be replacing ties to core confidants and contributing to the decline they observed in core networks.

Collaborating with the Pew Research Center, Hampton, Sessions, Her, and Rainie (2009) replicated the GSS important matters name generator in a random digital dial (RDD) survey of American adults, with a focus on technology use. They did not find a spike in social isolation in comparison to the 1985 GSS (Marsden 1987), but they did find that the average size and diversity of core networks have declined (Hampton, Sessions, and Ja Her 2011).ⁱ This finding is consistent with other studies that have concluded that the finding of increased social isolation from the 2004 GSS was a methodological artifact (Brashears 2011; Fischer 2009; Paik and Sanchagrin). Mobile phone and Internet use, especially social media use, were found to have a positive and substantive relationship to core network size. The specific activity of online photo sharing was associated with greater awareness of political diversity within the core network.

With the rise of text-based, online communication, Hampton, Sessions, Her, and Rainie (2009) administered a second name generator to enumerate core ties that were "especially significant," to test the possibility that the word "discuss" in the important matters generator had restricted network size. The especially significant name generator had previously elicited a set of core ties that was similar to the important matters generator (Straits 2000). Hampton, Sessions, and Ja Her (2011) found relatively low overlap between the generators; 60% of participants listed especially significant social ties who were not discussion partners. This suggested that the use of the word "discuss" without clarification may bias

core network members to those who have in-person or voice- based conversations, contributing to an artificially smaller reported core network.

Hampton et al. (2009) found no relationship between the frequency of social media use and the frequency of in-person contact. This finding is consistent with a general trend in the study of communication technologies and core networks, which support the theory of media multiplexity (Haythornthwaite 2005), that new media have little effect on or supplement but do not displace other forms of contact with stronger social ties (Wellman, Quan-Haase, Boase, Chen, Hampton, de Diaz, and Miyata 2003).

In an effort to explore the generalizability of their findings across different social media platforms, Hampton, Goulet, Rainie, and Purcell (2011) and the Pew Research Center replicated their work in 2010 with a second RDD survey of American adults. Again, they found that Internet users in general had a larger, core discussion network, especially those who used instant messaging applications and Facebook more frequently. The same relationship was not found in the use of other SNS, including Twitter and LinkedIn, likely as a result of lower levels of adoption and self-selection (for a discussion, see Chen and Quan-Haase 2018; Hampton, Goulet, Rainie, and Purcell 2011; Hampton 2017). Expanding the focus beyond traditional SNS, Shen and Chen (2015) have also explored the core networks of online gamers. Using a large sample of players from *Chevaliers' Romance 3* (CR3), a popular Chinese massive multi-player online game, Shen and Chen (2015) found that co-playing patterns contributed significantly and positively to core discussion network size and diversity.

Subsequent studies have provided longitudinal evidence that supports the positive relationship between social media use and core network size. Using two waves of the Netherlands Life Course Survey (NELLS), a national probability survey of the Dutch population aged 15 to 45, Vriens and van Ingen (2017) examined social media use and change in core network size, the frequency of in-person communication, and tie dissolution and replacement (i.e., network churn). Based on the important matters name generator, they found that increased use of social media was associated with increased core network size. Although they found a positive relationship between frequent social media use and in-person contact, increased social media use was not related to an increase of in-person contact (possibly as a result of the already high, daily rate of face-to-face contact among core network ties). Again, this is consistent with broader observations of media multiplexity (Haythornthwaite 2005). Vriens and van Ingen's findings also align with the observations of Burke and Kraut (2014), who found that tie strength among close Facebook friends (but not kin) increased over time with the frequency of certain Facebook activities, such as broadcasting content and composing messages, but not click-based activities such as "liking" others' content. However, unlike studies that have found face-to-face, telephone, postal, e-mail, or contact by instant messenger to be unrelated to core network churn (Marin and Hampton 2019), Vriens and van Ingen (2017) found that the networks of social media users tend to be more dynamic. Increased social media use was associated with higher rates of named discussion confidants being replaced by different alters. (Chen (2013) notes a similar finding about tie churn for general Internet use and weaker social ties). Vriens and van Ingen suggest that higher rates of churn may be related to improved knowledge and visibility of resources within core networks, allowing for more efficient activation and mobilization of social support (Hampton 2016).

The media panic that social media are replacing core ties and interpersonal contact is not supported by empirical research (Hampton and Wellman 2018). A trend toward smaller, less diverse core networks may be the outcome of living in a society that remains relatively economically stable over time, and that has institutionalized formal social support through government services and civic society (Hampton and Ling 2013). Higher rates of interaction through social media and other communication technologies may also amplify the existing trend of relational specialization that began with other large-scale technological

and social changes (Durkheim 1893 [1993]). We may not have a large network of core ties with whom we discuss “important matters” because we have nothing to discuss, but rather because important *matters* (emphasis on the plural) does not capture the specialized nature of the relationships that define those with whom we confide (Choi, Yang, and Chen 2018; Hampton, Sessions, and Ja Her 2011), which may increasingly include weaker social ties (Small 2017). Core ties may be as close as they were in the past, but the matters that we discuss may be more specialized, possibly as a result of the extra information that can be gleaned about network members through the use of social media.

Network Size and Diversity

Some have suggested that social media and other technologies are related to change in the structure of people’s broader personal networks, those that extend beyond the core (for a review, see Hampton and Wellman in press). This includes suggestions that social media are distracting, or pulling people away from traditional social milieus associated with having a large, diverse network (Dotson 2017; Turkle 2011), and that social media shapes networks to be closed and inward looking (Sunstein 2009). This debate is intertwined with broader debates about social capital (Putnam 2000), political discussion and polarization (Sunstein 2018), and access and exposure to diverse information. Counter to many concerns, empirical research – from an ego-centric perspective – suggests that social media are associated with networks that are more diverse than in the recent past. However, what remains unclear is whether this relationship is a result of increased size and diversity, or simply improved information flow and new opportunities for relational maintenance.

Network diversity refers to and is often measured by an individual’s access to network members of different socio-demographic and socio-economic backgrounds, such as class, culture, gender, education, occupation, language, generation, race/ethnicity, and geographic location (Chen 2015; Erickson 2000). A diverse network has the advantage of wider access to information and resources. Because kin and family members are more likely to have similar attitudes and behaviors than non-kin, the presence of non-kin ties has been used as an indicator of diversity within core networks (Marsden 1987). Ego-centric studies that look at diversity beyond the core often rely on measures such as the *position generator*. (For an additional approach to measuring network diversity, the *resource generator*, see the work of van der Gaag and Snijders (2005)). From a list of occupations that range from high to low occupational prestige, participants select occupations from which they know someone, typically at least on a first-name basis. The position generator captures network diversity through upper/lower reachability, the range of a respondent’s network, or the total number of occupations (extensity) that participants can access (Lin and Dumin 1986). Like the name generator, follow-up questions can be used to gather information about the characteristics of each network contact and relational characteristics between ego and alter (Chen and Tan 2009; Erickson 1996).

Hampton and colleagues have used the position generator to explore the relationship between various Internet-related media and the extensity of people’s personal networks. In a national RDD sample, they found that general Internet use, frequent Internet use at work, and the use of social networking websites are related directly to the diversity of a person’s social network (Hampton, Lee, and Her 2011). Also using a position generator, Shen and Gong (2019) found that WeChat (the most popular social media platform in China) users who maintained a larger number of relationships on WeChat and participated in more platform-based groups had more diverse networks. Similarly, in a study of location-based, social media services (platforms that allow one to check in at specific places as well as to communicate with a network of relations), Park and Han (2018) found that high intensity users of these services reported more diverse networks.

The mechanisms through which social media is associated with higher network diversity remains unclear. Hampton, Lee, and Her (2011) found that approximately half of the diversity associated with

the use of social media, mobile phones, and the Internet is attributed to indirect relationships between media use and participation in more traditional social settings. Social media activities, such as blogging and sharing photos, are related to higher rates of participation in offline activity associated with having a diverse network, such as participation in voluntary groups, using public spaces, visiting restaurants and cafés, and even attending religious institutions. Higher levels of participation in these traditional social milieu contribute indirectly in the relationship with social media to network diversity (Hampton, Lee, and Her 2011). Indeed, the chain of influence may be complex. Studying political engagement, Filipek (2019) found that Facebook use is associated with higher levels of network diversity, which in turn contributes to online political participation, which in turn predicts offline political activities. Social media's relationship to network diversity may be a result of self-selection; those who are already active in social milieus associated with diversity adopting technologies to support those activities (Tindall, Cormier, and Diani 2012); and a result of activities on social media that afford the expansion of networks on and offline.

Dunbar (2016) questions whether technology can overcome what he considers inherent biological limitations on the expansion of personal networks, particularly in relation to network size. Dunbar reports that the number of people listed on Facebook as "friends" closely matches the average, upper network size of 150, as predicted by the social brain hypothesis (Dunbar 1992; Humphrey 1976). As he has found for offline networks, Dunbar also finds that there are two inner layers of closeness or circles of Facebook friends that closely match the size of what he calls the support clique (mean of 4.1 ties) and the sympathy group (mean of 13.6 ties). He claims that this is evidence that social media do not allow people to expand the size of their networks.

Others suggest that Dunbar underestimates the size of people's personal networks, that the average personal network is considerably larger, likely several hundred close, supportive ties, and more than one thousand on the periphery (Bernard, Killworth, Johnsen, Shelley, McCarty, and Robinson 1989; Brashears and Brashears 2020). The number of Facebook friends may also depend on network externalities, such as adoption patterns in the general population and Facebook's algorithmic efforts to increase the size of users' friends' lists. For example, in 2011, when Facebook had been adopted by a smaller proportion of the population, the average number of Facebook friends was closer to 200 (Hampton, Goulet, Rainie, and Purcell 2011; Ugander, Karrer, Backstrom, and Marlow 2011). By 2014, as adoption increased, the average friend list exceeded 300 (Edison Research 2014; Smith 2014).

Hampton and colleagues used a version of the *scale-up approach* (Bernard and McCarty 2009) to estimate that the average personal network is closer to 576 people (Lu and Hampton 2017), a number that is comparable to estimates using similar approaches (McCormick, Salganik, and Zheng 2010). Hampton, Goulet, Rainie, and Purcell (2011) found that the number of Facebook friends was proportionately scaled down, based on the share of the population that were users of Facebook. Although a small proportion of users (11%) reported more Facebook friends than the number of people they knew, once demographics were controlled, Hampton, Goulet, Rainie, and Purcell (2011) found that frequent Facebook users did not have personal networks that were any larger or smaller than less frequent or non-Facebook users. Hofstra, Corten, and van Tubergen (2020) found a similar ratio of Facebook friends to overall network size as Hampton, Goulet, Rainie, and Purcell (2011), but also found that some individuals, i.e., girls, higher educated, early Facebook adopters, maintain a disproportionately larger number of personal network ties on Facebook.

Theoretical Perspectives on Ego-Centric Networks and Social Media

Perhaps the most prominent argument to suggest large-scale change to the structure of personal networks as a result of new communication technologies is the concept of *networked individualism* (Rainie and Wellman 2012; Wellman 2001; Wellman et al. 2003). Networked individualism extends the

argument that new technologies allow personal networks to overcome the boundaries of interaction imposed by the spatial organization of the traditional realm of community, what Castells (1996) called the “space of places.” Wellman and colleagues suggest that Internet technologies, especially mobile technologies like the cell phone, allow the individual to supersede the limits of “place-to-place” and “door-to-door” interactions, reorganizing relationships so that people are largely freed from the constraints of time and distance to connect “person-to-person.” The result is personal networks that are increasingly composed of relationships that are voluntary, specialized, transitory, and highly segmented.

Hampton (2016) suggests that as a model of network structure, networked individualism does not diverge from previous narratives about how personal networks respond to increased mobility – domination over the constraints of space and time – as a result of widespread urbanization and industrialization (Castells 1976). The trend toward personal networks that are voluntary, specialized, and heavily segmented is part of a long trend associated with a rural-to-urban transition, increased occupational specialization, and migration (Burgess 1925; Durkheim 1893 [1993]; Fischer 1975; Simmel 1903 [1950]; Tönnies 1887 [1957]). However, Hampton (2016) does suggest that the widespread use of social media and some other digital technologies introduces two trends – persistent contact and pervasive awareness – that provide some counter weight to the trend towards increased mobility.

Whereas previous technologies, such as mobile phones, afforded mobility, they generally lacked affordances for relational persistence and sustained awareness (Hampton 2016). As such, social ties were often lost at major life-course transitions, such as moving, graduating from high school, changing jobs, and getting married. Social media allow people to articulate their association and maintain contact over time. In the past, to prevent a social tie from becoming dormant, persistence required significant effort in the form of tie maintenance (often person-to-person contact). However, because of the ambient nature of much of the information that is shared through social media (e.g., social feeds of friend’s posts), contact can be maintained through broadcasts from “person-to-network” without substantively drawing from the time and resources required to maintain social ties through other forms of communication.

While much of the relational maintenance associated with persistence is deliberate, it can also be unintentional in that social media allows people to navigate social ties through second and third degrees of visibility. In this way, past affiliations (e.g., through jobs or organizations) who are not directly articulated through social media often remain accessible through friends-of-friends. People may never truly lose contact with social ties, including those who are “unfriended” and those ties that previously would have gone dormant, because the tie remains persistent through mutual acquaintances. In addition, for relationships that are maintained online, there is a tendency toward balance and closure, for people to articulate relationships with others with whom they have relationships in common (Welles and Contractor 2015). This persistence serves as a counterforce to the transitory, segmented nature of relationships that has resulted from mobility and has the potential to link lives across generations and over the life course.

Pervasive awareness is also tied to the ambient nature of social media. Often resulting from short, asynchronous exchanges, social media provide heightened knowledge of the interests, location, and opinions of social ties. Although the short, asynchronous broadcasts associated with social media, often in the form of text messages or images, may appear trivial (e.g., a photograph of a meal or an event), they can convey subtle knowledge about social ties. This pervasive awareness can bring to light resources and activities that were always present but were previously unknown, possibly narrowing the gap between real and perceived attitudes. For example, social media users are more aware of the political opinions of their social ties (Barnidge 2017; Hampton, Shin, and Lu 2017), as well as positive and negative events in the lives of ties (Hampton, Lu, and Shin 2016). Awareness can lead to outcomes, such

as mimicking of psychological distress (i.e., anxiety and depression) of kinship relations on social media (Hampton 2019). The relationship between network diversity and social media use may be the result of improved awareness, rather than the addition of new resources through the addition of ties.

Awareness also has the potential to contribute to network closure. Closure, combined with awareness may contribute to conformity, self-censoring, and loss of control over novel information. This may open network members to influence from ties located in previously segmented contexts. This structure of relations, which, as a result of pervasive awareness, includes higher levels of informal watchfulness, may also renew constraints on individual actions, such as informal social control (e.g., public shaming, doxing, etc.), which had previously declined with the network segmentation and mobility that followed urbanization/industrialization. However, closure tends not to occur at random (Watts and Strogatz 1998). There is a strong trend toward people adopting different social media platforms to use with social ties from different contexts. Network closure as a result of persistent contact and pervasive awareness may be a local network phenomenon. Localized clustering centered on specific contexts may not affect the characteristics of the larger network structure, thus, not discarding all the affordances of overcoming constraints on time and space as described by networked individualism (Hampton and Wellman 2018).

Advancing the Ego-Network Perspective in the Study of Social Media

Scholars who take an ego-centric perspective face new challenges and opportunities as they study social media. These include, epistemological tensions related to the study of new communication technologies, the dynamic, evolving nature of social media, including algorithmic influence, and potential innovations in the combination of digital trace data with ego-centric network data.

The ego-centric perspective is one of several that have been used to study social media. Much of the earliest research on social media was split between network studies that took a whole network approach and studies that focused on psychometric scales of behavior and attitude. The study of social media has often been placed under the umbrella of big data and computational social science. To many, the whole network approach seems especially suited for the study of social media; conceptualizing the users of these platforms (e.g., Facebook, Instagram, Twitter, etc.) as members of a single, bounded network, which could be massive. Compared to the survey, interview, and diary methods that dominate the ego-centric perspective, digital trace data can overcome issues of respondent fatigue, interviewer bias, instrument effects, and response rate, which have an impact on the validity and reliability of ego-centric data. However, proponents of big data can be overly critical of traditional social science approaches, while ignoring their own limitations (Hampton 2017).

The whole network approach to studying social media suffers from the same weaknesses of whole network studies more generally. For instance, while focusing on the use of a single platform (often Facebook or Twitter), there is a tendency to overgeneralize to the structure of a person's relationships more broadly. Finding, for example, that on Twitter, that people tend to interact with others who have similar political beliefs (Conover, Ratkiewicz, Francisco, Gonçalves, Menczer, and Flammini 2011), and concluding that this is evidence that social media are contributing to the formation of "echo chambers" in a person's broader social network (Sunstein 2009). Conclusions that are drawn from one social media platform and generalized to a person's broader social networks not only ignore the influence of diverse sources of media (Dubois and Blank 2018), but the role of social ties not on that platform and the communication that takes place outside a single medium. This is not unlike early concerns about the loss of community (Wellman 1979), that among other things documented extensive conformity among suburbanites (Seeley, Sim, and Loosely 1956), which did not hold from an ego-network perspective, when ties were examined in the context of a person's broader personal network (Fischer 1982).

Although the ego-centric perspective has made headway, the majority of research on social media remains a product of the dominant paradigms in communication research that grew out of, or in reaction to, the work of Katz and Lazarsfeld (1955). The ego-centric perspective played a prominent role in the origins of communication research, but was also considered to be very problematic (Gitlin 1978). Katz and Lazarsfeld, early pioneers of the name generator methodology (Coleman, Katz, and Manzel 1957; Katz and Lazarsfeld 1955; Lazarsfeld, Berelson, and Gaudet 1944), had found that social ties played a central role (literally) in the flow of information (i.e., opinion leaders, the two-step flow of communication) and largely superseded a direct influence of mass media. Their findings of “limited effects” upended an emerging field that was heavily technologically deterministic and overwhelmingly concerned with understanding how mass media worked as an agent of change (Rogers and Chaffee 1983). As such, communication as a field/discipline has moved closer to theories and methods of psychology and a corresponding preference for psychometric scales of abilities, attitudes, and personality traits (Katz 2009).ⁱⁱ Many of the psychometric scales that have been introduced lack convergent validity with ego-centric measures (Appel, Dadlani, Dwyer, Hampton, Kitzie, Matni, Moore, and Teodoro 2014; Jacoby 1974; Rogers and Cartano 1962). Scholars who adopt an ego-centric perspective provide a counter point to research that has predominately focused on the relationship between media exposure and individual attributes and traits.

To counter concerns of limited effects, communication researchers are increasingly concerned with more accurately quantifying the second-by-second details of media exposure (Reeves, Robinson, and Ram 2020). They do so with the expectation that their findings of limited effects are the result of a failure in media measurement, rather than their tendency to ignore the role of social influence, or the role that network members play in moderating the effects of media exposure. By focusing on individual behaviors and ignoring the role of personal networks, the study of social media often misattributes and overstates the effects of social media use. For example, in the study of social media and mental health. While some suggest that the frequency of social media use predicts mental health outcomes, such as stress, anxiety, and depression, empirical findings have been mixed and generally not substantive (Orben and Przybylski 2019). However, when viewed from an ego-centric perspective, that focuses not on frequency of media use, but on social exchange and flow of information, the relationship between social media use and mental health is much more substantive. Frequent social media use is related to higher knowledge of undesirable events in the lives of close and more distant social ties; this awareness, a form of social stress, is associated with higher psychological stress (Hampton, Lu, and Shin 2016). In a longitudinal study of ego-centric networks, the frequency of social media use was found not to increase psychological distress (i.e., depression and anxiety), although having extended kin on social media who experienced increased distress was associated with an increase in distress over time (Hampton 2019). (Change in the distress of extended kin not on social media had no effect.) This is not to say that specific social media activities may not have an impact on individual outcomes. For example, even after controlling for the size and diversity of core and more extensive social networks, Lu and Hampton (2017) found that Facebook status updates and private messaging were independently associated with a higher level of perceived social support. However, the minute differentiating of media use, in absence of a theoretical framework, risks overspecification, and the loss of meaningful variables in a forest of variables. To better understand what specific social media activities are associated with different outcomes, in addition to a meaningful focus on differentiating media use, greater attention needs to be paid to the role of social influence through an ego-centric perspective.

Network researchers must also deal with the unfamiliar ground of algorithmic personalization and transparency (Rader, Cotter, and Cho 2018). It should not be assumed that all users of social media have an equal opportunity to interact with each other, or for exposure to content contributed by other users (Hamilton, Karahalios, Sandvig, and Eslami 2014). The algorithms embedded in social media bias

opportunities for exposure in ways that are largely invisible. Social media users are not only subject to the algorithmic decisions of platform creators, but individuals also develop ways to “game” the system to increase their exposure on social media and to influence members of their personal network (Cotter 2019). Algorithms contribute to what has been called the “audience problem,” the inability of social media users to determine who is receiving information that is shared through social media (Hampton 2016). The audience problem is specifically a result of the inability to gauge interest, attention, and exposure to information shared through the person-to-network broadcasts that typify social media sharing. This can make it difficult for people to determine audience size, let alone the attention of specific actors. Social media users deploy tactics to test who is receiving content. By monitoring online (e.g., reposting, commenting, and liking), and offline (e.g., phone calls, etc.) feedback in response to social media content, there is an awareness of awareness about how receptive social ties are to different content, which can serve as a cue to the readiness of ties to provide future social support (Hampton 2016). There is agency, there is structure, and there is the hidden hand of algorithms.

The variety of social media and the design of different platforms are in constant flux. This constant revision and updating of digital media platforms and their algorithms mean that trends observed today may not hold tomorrow. The ever shifting technology behind social media platforms has been a barrier to advancing one of the most promising opportunities for studies using an ego-network approach: the ability to combine relational data from social media platforms (Hogan 2016) with data from other sources, including surveys (Hampton, Goulet, Marlow, and Rainie 2012) and other trace data, such as mobile phone calling logs (Boase 2016). Some of the earliest studies of social media recognized the potential for data from Facebook to supplement, or possibly even replace, ego-centric data (Lewis, Kaufman, Gonzalez, Wimmer, and Christakis 2008). Trace data could potentially improve data quality, reduce resources for data collection, and improve data accuracy relative to traditional ego-centric approaches. However, access to such data can be technically and logistically challenging. It is dependent on the ability of researchers to automate methods to “scrape” data (Wesler, Smith, Fisher, and Gleave 2008), use a computer script to collect data from platforms and store that information in a database; data sharing partnerships between researchers and industry (Hampton, Goulet, Marlow, and Rainie 2012); having participants download data from their own accounts (Lewis et al. 2008; Thorson, Cotter, Medeiros, and Pak 2019); or using an API (application programming interface, which is a programming tool provided by a company to build software that interacts with its system). Although these approaches have generated a small number of successful studies that have integrated name generators (Hofstra, Corten, van Tubergen, and Ellison 2017), contact diaries (Chang and Fu 2019), and network data downloaded directly from SNS, they have generally not resulted in better data quality or a reduction in research resources. Data protection concerns from industry and ethical questions about privacy practices from researchers and users have resulted in more restrictive policies about what data can be downloaded from social media platforms (Chen and Quan-Haase 2020; Chen, Quan-Haase, and Park forthcoming). This has limited the samples that are available for study and, in some instances, derailed promising attempts to develop automated systems to access ego-centric network data through platforms, such as Facebook (Hogan 2018).

The evolving nature of social media poses unique challenges to all researchers, although some challenges are more specific to the ego-centric perspective. For example, the adoption of many social media technologies may never reach the level of widespread use of platforms such as Facebook, but they can be important players used intensively in different regions, among different generations, and by specific interest groups (Ling 2017). Social media users increasingly use a combination of niche platforms in an effort to segment their personal networks into different foci (Stutzman and Hartzog 2012). Thus, in the absence of strong contextual understanding of the population under study, there is a growing risk that important communication may go unnoticed in studies of ego-centric networks. As the many ways

that people interact online increase, the definition of social media that we have adopted will quickly seem too narrow. The design attributes that made social media unique are increasingly imbedded in a wide range of communication systems that allow users not only to maintain contacts, but also to entertain, work, and worship.

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ⁱ Name generators are highly susceptible to instrument effects (Eagle and Proeschold-Bell 2015; Yousefi-Nooraie, Marin, Hanneman, Pullenayegum, Lohfeld, and Dobbins 2019). The 2004 GSS placed the important matters name generator near the end of the survey (it was near the beginning in 1985). The GSS was administered primarily in person with some telephone-based interviews (Fischer 2009), whereas the studies by Hampton et al (2011; 2009) were conducted by cell phone and landline phone with the name generator near the start of the survey.

ⁱⁱ Some areas of psychology have seen an uptake in research from an ego-centric perspective (Neal 2020).