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E-special Issue Introduction

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Digitizing Sociology: Continuity and Change in the Internet Era

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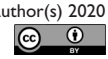
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Abstract

This article outlines and contextualizes the development of digital sociology as an introduction to this e-special issue, charting the development of the field through the pages of the journal, *Sociology*. In doing so, the article sketches key contours of this rich and varied terrain, accenting how technological innovation has permeated the domains of politics, culture and society. Of central concern has been the intellectual origins of 'digital sociology'. While first coined in 2009, the article highlights a longer history, noting the continued resonance of modernity's currents of categorization, ordering and rationality while recognizing the crucial shifts brought by digitally mediated life. The article then discusses landmark articles contributing to the development of digital sociology, beginning with interventions seeking to theorize digital society. We then turn to articles focusing on methodological questions before addressing the digital turn in selected areas of enduring sociological concern including: work and organizations; inequality; migration; activism; communities; emotions; and everyday life. The article concludes with a series of observations regarding potential futures of digital sociological analyses.

Keywords

affordances, algorithms, Big Data, datafication, digital divide, digital modernity, ethics, Internet of Things, social media, technological change

Introduction

While recent years have seen 'digital sociology' gain increasing form and attention, sociological analysis of all things digital engages the enduring concerns of the discipline,

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generating questions of social action, social order, social mobility and mobilization, social change and social inequalities. Digital forms of interaction are embedded in everyday life and every sector of society. Whereas early analyses separated 'cyberspace' from 'real' life, it is now recognized that the ubiquity of digital technology and the growing inseparability of online and offline interactions renders this bifurcation obsolete (if ever adequate).

But what do we mean when we talk about the 'digital'? The quickening pace of technological innovation makes exhaustive definitions difficult and, at best, ephemeral. Yet component features of the 'digital' are more recognizable. Here we include Information and Communication Technologies (ICT), computer mediated communication (CMC), the internet and the web (not to be confused!), social media, Big Data, artificial intelligence (AI), computational decision making and, increasingly, nanotechnologies. While there is an overlap between these different innovations, they are also distinct and vary in their affordances (Hutchby, 2001). Thus, we are talking about hardware, software and infrastructure, alongside the practices, outcomes and emergences relating to their use. Digital sociology analyses the affordances of technologies in various social spheres and how they shape and are shaped by social relations, social interaction and social structures.

Digital technologies penetrate every aspect of social life whether it is families and relationships (finding or betraying partners through dating websites or maintaining relationships through texts, phone calls, video-conference or social media), the workplace (which increasingly is transformed through ICT, as evinced by the rise of the gig economy), governance and political participation (e-governance, online mobilization of political parties and social movements). Digital technologies also generate new forms of community formation (including transnational or diaspora communities) and simultaneously brings new threats to well-being (such as surveillance and cyber-crime). Moreover, there is increasing awareness of how digital technologies perpetuate inequalities; analyses of the digital divide have become more sophisticated distinguishing different aspects of digital inequality; and, separately, attention has increasingly focused on the role of computational decision making in reinforcing disadvantage. Furthermore, debates around artificial intelligence take note of the oppressive and discriminatory consequences of biased algorithms (e.g. racial profiling).

Further digital paradoxes can be seen by the initial appreciation of the democratic potential of cyber-democracy becoming replaced by awareness of trolling, harassment and the targeted spread of fake news. Relatedly, digital technology has brought new possibilities for the microtargeting of political advertisements. Algorithmically focused – and operating outside the regulations for notional veracity governing more traditional forms of political marketing – these new campaigning tools have achieved the dual success of being personally tailored yet capable of reaching unprecedented audiences. While most readily associated with the dual Brexit–Trump electoral shocks of 2016, such practices have a long history and span political hues, with the hyper-mediatized political campaigns of the 2000s and, notably, Obama's 2008 presidential election campaign being particularly catalytic in this regard. Datafication (a term coined and defined by Mayer-Schönberger and Cukier (2013) as the increasing quantification of the everything), and digitization have thus reshaped elements of democratic participation.

Politics also recruits notions of datafication and digitization in other, diverse, ways. In particular, politicians have long sought to align themselves with digital innovation as a means to enhance credibility, intimate a pioneering spirit and to instrumentalize the idea of technology for aggrandizing various policy declarations. During the early 2000s such approaches commonly manifested through technologically deterministic claims over the internet's capacity to drive social mobility. More recently, the UK's December 2019 General Election saw spurious associations between unevidenced Brexit dividends and datafication. As claimed in the Conservative and Unionist Party Manifesto, 'it is only by getting Brexit done that we can start the necessary task of restoring public trust in government and politics: . . . we will improve the use of data, data science and evidence in the process of government' (Conservative and Unionist Party, 2019: 48). Leaving aside the obvious non sequitur, these allusions to (data) science and technology operate as a valorizing agent for myriad politicized claims. Moreover, such 'digitalwashing' rhetoric can be observed performing other functions in political discourse. For example, the same manifesto commits to create a '*new national cyber crime force* and empower the police to *safely use new technologies* like biometrics and artificial intelligence' (Conservative and Unionist Party, 2019: 19, emphases in original), thus bolstering self-professed 'law and order' credentials while simultaneously softening the vocabulary of surveillance.

Analogous digital influences translate from the political to the personal: considerable synergy exists between the realms of digitized political discourse and that of digital commerce, with affiliation to issues and causes being computationally deciphered via techniques that also reveal consumers' brand loyalties. In doing so, another core sociological concern – that of identity – becomes engaged. Here, a confluence of high consumerism with digital living have unquestionably brought new complexities and temporalities to expressions of identity formation. Such forms of expression through consumption are, paradoxically, both ephemeral and enduring; styles are transitory and fleeting, yet the project of reinvention is persistent. For Bauman (1997), life became a cultural project, one that is unending and in a state of continual curation. 'Everyone tries to make his (*sic*) life a work of art', as Camus (1953 [1971]) famously put it. Continual and durable demand for short-lived forms of cultural expression thus expose identity formation to a universe of ideal marketing opportunities. In the digital age such opportunities are ruthlessly exploited through tools that provide unprecedented access to intimate private worlds of desire.

The transformative influence of digital technology on society has led scholars to reach for epochal terms. In trying to make sense of the dizzying pace of technological innovation, Rouvray and Berns (2013), for example, separate data-driven knowledge production from a time of archival organization and the exploitation to a current era of knowledge production through 'Big Data'. For Rouvray and Berns, technological innovation – particularly in the form of ubiquitous computation, machine learning and the 'Internet of Things' – has brought a crucial shift in the way we make sense of the world: knowledge is no longer created *about* data but *from* data (see also Kitchin, 2014). Building on his novel ideas of categorization and 'social sorting', Lyon (2017) has similarly marked an epochal shift, designating the scale, scope and ubiquity of computational ordering as an era of 'digital modernity'. Both framings represent valuable intellectual tools for understanding the complex and accelerated transformations brought by digital innovation;

both in terms of the new digital realities that are created (Rouvray and Berns) and a remembrance of their links to modernity's currents of categorization, ordering and rationality (Lyon). Yet the complexity of digital society also challenges attempts to capture it in periodizing, heuristic, terms. After all, a central theme of modernity involved the use of human logic to interpret, order and govern the world. Yet advances in machine learning such as artificial intelligence mean the ways digital technology categorize the world and render it legible may no longer be intelligible to humans. Computational black boxes are not easily opened, nor are their workings necessarily decipherable.

In this e-special, we chart the development of digital sociology. While the issue ostensibly showcases important contributions to the journal, *Sociology*, this introduction seeks to situate these advances amid the wider field. We first highlight some origins of the field before discussing articles that theorize digital society. We then turn to articles that focus on methodological questions – and we show that questions of theory and methodology are deeply intertwined. In the remaining sections, we highlight the role of digital sociology in the context of work, inequality, political action, migration, communities and everyday life. We note that – perhaps unexpectedly – a number of articles address the role of emotions in the context of digital communication. At the end of our conclusion, we point to the implications for future digital sociological analyses.

Continuity and Change: Sociology in the Digital Age

Digital sociology has increasingly come to grips with new technological developments and how they shape and are shaped by core processes of societies. Digital sociology also has long antecedents. In *Sociology*, one of the first articles addressing artificial intelligence (AI) and computing was published at the end of the 1980s. Appearing during the very same year that Tim Berners-Lee invented the 'World Wide Web', Bloomfield (1989) (included in this e-special) employed a social constructivist perspective and focused on the role of language in understanding computers and their use. Notably, he specifically referred to the conventions of the English language and in that way seems to predict the dominating role of English as the language of the web. Moreover, he ends the article by highlighting the language of computing as gendered. His reflections assess the risks of reifying computers and computer programs, note the fact that (computer) jargon contributes to social bonding yet, paradoxically, can be exclusionary. The article articulates further concerns, including discussion of seemingly insignificant and external 'bugs' (rather than inherent problems) of computer programs, power relations and inequality, the blurring between genres, thinking about generations and the transformation of work and organizations. Bloomfield's intervention thus prefigures many debates that are further developed in the following decades. About 10 years later, Golding (2000) discussed the social impact of ICT, both extending and transforming existing processes with a particular focus on the examination of identity, inequality and power. More articles that address digital sociology started to appear around 2008, and thus reflect the introduction of several online platforms, including Facebook (established in 2004) and Twitter (established in 2006) (Lupton, 2015: 2). Twenty years after Bloomfield's article, the phrase 'digital sociology' becomes coined (Wynn, 2009) and begins its accelerated journey into the sociological lexicon. The emergence of 'Big

Data' and the accompanying 'data revolution' (Kitchin, 2014) also inspired the sociological imagination and, since the second decade of the 21st century, the contributions engaging with digital sociology and digital society are steadily increasing.

Sociological Theory and Digital Sociology: Analytical Challenges and Opportunities

A central concept for the understanding of the interplay and relations of the technological and the social is the notion of *affordances* which Hutchby (2001) (included in this e-special), in an innovative adaptation of Gibson's (1977) formulation of the idea, defines as possibilities that *enable and constrain action*. While the concept of 'affordances' now asserts a consistent presence across vernaculars of social science and the humanities, our habituation to the concept should not mask its significance and definitive contribution. Understanding the significance of affordances necessitates brief reflection on how developments in science and technology studies through the 1980s and 1990s had challenged technologically deterministic readings of scientific innovation. However, these theoretical advances were also argued to bring new challenges. While these developments addressed problems of technological *determinism*, renewed contestations arose over the role of technological *essentialism*. Principally associated with Grint and Woolgar's (1997) criticism of Actor Network Theory, this debate pivoted on an argument over whether objects were believed to hold any (essential) properties outside of these relationships. Radical constructivists such as Grint and Woolgar (1997) denied such 'external' properties exist; all technological form, meaning and outcome were cultivated by and within these techno-social relationships. Affordances, as formulated by Hutchby (2001) and, later, by others (such as MacKenzie et al., 2017), provided resolution to this debate by emphasizing how objects invite certain actions and shape conditions of possibility. This understanding thus acknowledges both the materiality and influence of things but avoids technological determinism.

Highly influential and widely cited, Hutchby's (2001) intervention was critically evaluated in this journal by Rappert (2003) who contests its originality and criticizes Hutchby for misrepresenting Science and Technology Studies (STS). Moreover, Rappert (2003) considers the concept as limiting sociologists' analyses and explanations of the differential use of technology. In his reply to this assessment, Hutchby (2003: 586) clarifies his argument that prioritizes actions and interactions over technology and is interested in the uses of technology by ordinary members of society rather than sociological claims about technology. The debate around affordances is ongoing as the concept remains widely used. In another important intervention, Bloomfield, with colleagues (2010) develop the idea further by highlighting the historically situated modes of engagement with technological objects which cannot be reduced to their materiality.

As we have noted above, power and inequality have early on found the attention of sociologists concerned with digital technologies and much attention has been paid to the 'digital divide' (DiMaggio et al., 2001) which addresses how unequal access to digital communication reflects and perpetuates other inequalities. Others have argued that despite its associations with progress, technology does not necessarily address economic

disadvantage and, moreover, that 'technological inequalities tend to exacerbate other inequalities' (Roth and Luczak-Roesch, 2020: 555). Over time, different levels of digital inequality in addition, to the first-level digital divide concerning access, have been identified (Scheerder et al., 2017). Halford and Savage (2010) analyse the second-level divide which concerns practices of using technology, how affordances of digital technologies are employed and how this use affects and intersects with various forms of inequality. Access and practices inform the third-level digital divide, which tries to assess the outcomes of internet use (Scheerder et al., 2017).

Digital sociology theorizes the shift from face-to-face to mediated interaction. Rettie (2009) (included in this e-special) critically evaluates existing studies that apply Goffman's analysis of face-to-face interaction to mediated communication and develops interactional concepts for mediated interaction. Using multiple methods, the study investigated respondents' perception of the other person being 'there' which differed for phone calls and (instant) text messages which were further contrasted with emails. She describes a continuum of synchronous and asynchronous media – phone calls are most likened to face-to-face interactions, though it is easier to leave a social situation over the phone than face to face. Instant messaging suggests more co-presence than email. Rettie (2009) points out that mediated and face-to-face encounters can occur simultaneously and that complex interactional dynamics and participative frameworks need to be further analysed – with the help of adapting concepts developed by Goffman for face-to-face interaction. Moreover, Murthy (2012) draws on Goffman to theorize Twitter which is about self-presentation, self-production, self-affirmation and self-confirmation or identity maintenance.

In his investigation of internet memes and digital capital, Julien (2015) applies Bourdieu's sociological framework to online interaction. He defines internet memes or 'memes' as images that have text superimposed on the image which are created and shared by users. Memes have certain stylistic characteristics (using a particular font, placement of text on image), images are recurring and known by viewers (2015: 362). Julien (2015: 368) argues that internet memes are an expression of digital social capital that is an outcome of online interactions. He understands the internet as a field, in which users pursue distinction and recognition, and which gives rise to a 'new digitally oriented habitus'.

While some have drawn on Durkheim to analyse virtual communities (Cole, 2018), STS provides probably the most central framework and reference point for digital sociology. Furthermore, digital sociology has given rise to new theoretical developments which are inextricably interlinked with questions about data. Perhaps, digital sociology demonstrates more than earlier sociologies that theoretical and methodological approaches are inextricably linked.

Data, Methods, Epistemologies and Ethical Questions

Advancing digitization requires a radical rethinking of empirical approaches (Savage and Burrows, 2007, 2009). In the digital age, traditional methods such as surveys, participant observation and semi-structured interviews can be supplemented by a wide range of strategies to employ internet-based methods – whether as a source of existing

data, tool for analysis or means to recruit participants. Murthy's (2008) (included in this e-special) survey of digital research starts with online questionnaires and e-mail interviews. He lists the multiple opportunities that social networking sites offer: recruiting participants; analysis of data posted on social networking sites; and the observation of social interaction. Furthermore, he discusses digital videos and blogs as sources. While Murthy (2008) is aware of digital inequality that shapes engagement with digital technologies, his discussion of ethical aspects is quite limited. The guidance of the analysis of social media is still ambiguous and the ethical guidelines of professional organizations such as the British Sociological Association (2017) a work in progress. For example, Twitter posts can be seen as being in the public domain, but users – even though they are aware of the terms of service – have concerns about the use of tweets for research and seeing them cited without giving consent (Williams et al., 2017) (included in this e-special). While professional associations tend to adopt the 'situational ethics' principle, users have concerns regarding the use of Twitter data, particularly those who belong to lesbian, gay and bisexual (LGB) or black and ethnic minority (BME) communities or are parents (Williams et al., 2017). Their concern is well founded given 'downstream' repurposing of data and the application of algorithms to classify users with negative consequences. Williams et al. (2017) therefore advocate conducting a risk assessment prior to citing Twitter posts verbatim and obtaining informed consent for sensitive information such as photos, videos and location data. But ethical issues – important as they are – are not the only concern. Halford et al. (2018: 3342) note that social scientists' understanding of Twitter data tends to be limited and that more attention is needed to understand data 'as the outcome of the activities of heterogeneous actors, from databases, interfaces and browsers to consumers, markets and legal regulations'. They therefore suggest 'a sociotechnical conceptualisation of the "data pipeline" that shapes the construction and circulation of Twitter and other social media data' (2018: 3343) in order to develop guidance for the use of Twitter in secondary research analysis. Moreover, Halford and her colleagues (2013: 174, emphasis in original), consider the 'emergent changes in the nature and structure of *Web-based data*', that is the linking of heterogeneous data which 'could constitute a step change in the global networking of information'. The emergent Semantic Web described by Halford et al. (2013: 175) is built on open data, ideally raw data in a non-proprietary format which are less restricted in use. Such data linking allows new connectivities, such as construction of interactive maps, for example of cycling accidents in central London. Yet the authors warn that building and understanding the emergent Semantic Web requires interdisciplinary collaboration to understand the protocols and standards underpinning the web and the social and political implications of this entity (2013: 185). Tinati et al. (2014: 666) (included in this e-special) note the limitation of analysing Twitter with small-scale content analysis or random or purposive samples of tweets because they cannot capture the scale and dynamic of Twitter flows and thus fail to capture 'how this content or these users are positioned within the broader Twitter stream'. Tinati et al. (2014) demonstrate the contribution of computational research by providing a dynamic visualization of Twitter information flows and social networks that emerge over time based on an analysis of tweets around the rise of student fees and a protest march against the fees in London in November 2011.

Furthermore, the sociological analyses of Big Data also demonstrate that theoretical and methodological questions inform each other. Big Data are customarily characterized by volume, variety, velocity, veracity, variability and value. The sheer mass of data that is produced either consciously through posts on social media or as a by-product of digital communication and transactions (e.g. the transmission of geo-data during the use of mobile devices) is volume. The heterogeneity of data of which 95 per cent are unstructured is its variety. The rate at which such data are generated is expressed as velocity, whereas the uncertainty and unreliability of such data is its veracity. Furthermore, the variation in data flow rates is expressed in variability and value is relative to volume (Gandoni and Haider, 2015). The lack of ontological clarity over definitions of Big Data has been criticized and different types of Big Data have been distinguished by Kitchin and McArdle (2016: 8) who argue that Big Data differ from small data with respect to velocity and exhaustivity. Sociologists are concerned with the political economy of Big Data or 'knowing capitalism' (Frade, 2016; Savage and Burrows, 2007). 'Knowing capitalism' or 'surveillance capitalism' (Zuboff, 2019) is based on the commodification of personal information, notably exhaust data, that is created by 'prosumers' (Frade, 2016) – producers and consumers who access and produce information in daily digital transactions. While private enterprises have always conducted market research and product development, the availability and analysis of personal information in surveillance capitalism is accelerated. Frade (2016: 872) (included in this e-special) argues that in the age of Big Data academic research might 'provide the corporate worlds and even the state, with research that has legitimacy'; though he is aware of the tension with 'the critical project of sociology' (2016: 873). Key for a sociological engagement with Big Data is the use of computational tools (and this collaboration with computer scientists) and the visualization of dynamic data (Halford and Savage, 2017). On the other hand, digital sociology also involves autoethnography (Hine, 2020) (included in this e-special).

Keeping the methodological and theoretical challenges and opportunities in mind, we now address the digital turn in selected fields of sociology, including work and organizations, migration and mobilization, and communities.

Work and Organizations

ICT have certainly transformed work and organizations and where the first industrial revolution was characterized by a (gendered) separation between the private and the public sphere, the latest (post-)industrial revolution has certainly contributed to the blurring between 'work' and 'life'. This creates opportunities for tele-commuting and juggling unpaid care work with paid employment, but expectations of being available around the clock and ever reachable can also be stressful. Rose (2015) (included in this e-special) critically evaluates to what extent personal mediated communication contributes to work–life balance. Her case study of engineers and managers working in the telecommunications industry in Australia demonstrates that restricted autonomy, roles and responsibility shape the use of ICT in the workplace. While ICT offer opportunities to attend to personal matters, ICT also impact on workflows for both employees in leadership roles as well as more junior staff. The technology also asserted significant influence on how the working day could be structured. Dyb and Halford (2009) explore the relationship between technology, place and globalization in their study of telemedicine in

Norway. The Broadband Born project provides an opportunity for sharing ultrasound and cardiograph (CTG) data via secure broadband between the remote Lofoten and the mainland. However, midwives' embodied knowledge and 'midwife feeling' of the labouring women played a crucial role. Dyb and Halford (2009: 246) thus highlight that technology does not 'free us from place', instead, information and communication technologies are embedded in local and trans-local interactions.

Such debates and complexities over embeddedness and, paradoxically, distance and dislocation are interrogated further in Wood et al.'s (2019) (included in this e-special) recent analysis of how digitally mediated remote gig economy labour has become increasingly pushed towards the global South, particularly regions where worker protections are likely to be limited. Simultaneously, the currency of worker reputation, quantified by user reviews, preferred by digital platforms draws labourers closer and into 'interpersonal networks based on trust' (2019: 932). Notwithstanding sociology's long-standing historical engagement with workers' alienation from their labour – stemming back to Marx and more recent emphasis on labour casualization – the digital gig economy remains under-researched and this represents an important intervention. Moreover, Wood et al.'s (2019) analysis supplements the overwhelming focus of extant research focusing conditions for gig economy workers in the global North. To address these twin lacunae the authors draw from Polanyi's intellectual canon and, in doing so, seek to address a long-standing apparent contradiction in his thought: the emphasis on disembedding economic activity from societal, legal, cultural constraints (and, as David Harvey (2014) argues, escaping these norms to enable self-regulation) and, Polanyi's insistence on the way economic activity is, seemingly paradoxically, networked through social and economic institutions (embeddedness). Yet, as the authors argue, the simultaneous centripetal pushes of extracting labour from the locations, protections and regulations and the centripetal pulls of labourers into networks of quantified trust demonstrate a non-exclusivity of these seemingly polar aspects of Polanyi's thought.

Focusing on the relationship between technology and occupational identity, MacKenzie et al. (2017) conducted qualitative interviews with telecommunications engineers whose careers had spanned a period of paradigmatic technological change, from the electromechanical to the digital. Hutchby's (2001) formulation of affordances is recruited to avoid technological determinism (e.g. that technology inscribes specific occupational identities), unite often disparate sociologies of technology and work, and to interrogate how working with new technologies invited highly specific employee responses. In doing so, the authors reveal an important tension among those working with rapidly advancing technology: a pride in technological advances accompanied by lamentation over the loss of former skills. In particular, while celebrated, the replacement of electromechanical switching in telephone exchanges with digital circuitry also replaced tactile and physically textured interactions with technology for more distanciated engagements. It also made redundant the deductive modes of detective work required for finding faults.

Technology Adoption and Inequality

Much has been made of the potential for digital technology to catalyse social mobility and address inequality, an idea regularly repeated in government policies since the turn

of the millennium. Writing at a time when internet use was more heavily concentrated in wealthier households, and prior to the tipping point of ubiquitous smartphone adoption, Lee's (2008) (included in this e-special) analysis of the 'impact of young people's internet use on class boundaries and life trajectories' came at a critical moment. Countering these often technologically determinist policy proclamations Lee's qualitative interviews with pupils attending private and state schools revealed the stubborn influence of social location on social mobility during the internet age. That these restrictions may be observed 11 years later following near ubiquitous adoption of internet enabled smartphones demonstrates the durability of this argument. However, as other contributions to *Sociology* have argued, the digital divide manifests and asserts itself in myriad ways.

Reflecting on this wider theme, Burrows and Gane (2006) interrogated the software-based classification and rendering of social and geographical space. Building on conceptual advances gained during human geography's 'digital turn' of the early 2000s (such as Graham's (2005) highly influential 'Software sorted geographies'), Burrows and Gane analysed the social character of software categorized spaces and the ways digital classification shapes the lived experiences, identities and opportunities of those inhabiting such environments. Regarding the latter, and drawing from Lyon's (2003) concept of surveillance 'social sorting', the article extends the idea of the 'digital divide' beyond issues of service access to, presciently, explore the ways in which such digital categorizations inhibit admittance to opportunities, welfare and other entitlements. Attention to growing power of non-state (corporate) actors in asserting the 'social *ascriptions* of identity' (Burrows and Gane, 2006: 808, emphasis in original) constitutes another important contribution of the article. Moreover, it sounds a prescient forward echo of current debates focusing on the wide-ranging influencing of social media platforms in areas such as identity construction and democratic participation. These analyses also demonstrate the fruitfulness of dialogue between sociology and human geography. Indeed, recent developments in the latter discipline invite reinterpretation of these ideas at a time when digital classification is increasingly accelerated, fine-grained and pervasive. As Amoore (2013: 17) points out, such advances have allowed digitally derived norms and the boundaries of categorizations to become 'hyper-mobile'. The speed and dynamism of digital categorization not only generates problems concerning the fidelity and fairness of these classifications but also affects their decipherability and, hence, accountability (see Murray and Fussey, 2019).

Mobilization and Migration

Building on a growing literature examining the role of social media in activist movements (e.g. Tufekci, 2017), Mercea et al. (2018) (included in this e-special) examine how social media relates to sustained engagement with the ultimately successful Occupy Gezi movement of 2013. Different from other analyses of 'hashtag activism', which tend to focus on messaging and mobilization, a particular concern here is how Twitter activity influenced the durability of engagements with a movement. Using multi-method approaches (survey data longitudinal analysis of Twitter data and qualitative interviewing) the authors reveal the multifaceted ways the microblogging platform was deployed for the Occupy Gezi movement, including its utility for documenting and memorializing

the protest, as a vehicle for remote activism among distant protesters and, by accessing the emotive imagery of police violence, as a means to validate participants' involvement in the movement. Aside from such myriad utility, however, is the central finding of the article: that Twitter activism was amplificatory, rather than transformative, of existing activist processes. While social media enables faster and easier access to activist communities, sustained and durable engagement with the movement was predicated on factors that were non-digital in character. Principal among these were existence of extant ties, the decisive role of enduring opposition to authoritarianism and the degree of physical 'asphalt activism' activity.

Mobilization of distanced political participation through social media is also addressed in Gray's (2019) research on citizen mobility and electoral eligibility during the 2015 Irish Marriage Equality Referendum. Ireland's requirement that non-resident citizens return to vote in person, and within 18 months of leaving the country, coupled with accelerated emigration since the post-'Celtic Tiger' economic crash left many citizens in a situation of precarious enfranchisement. Within this context Gray analyses the role of social network platforms facilitating re-engagement with citizenship and new forms of participation and, in doing so, explores the intersection of physical mobility with social media enabled connectivity. By analysing how social media campaigns themselves become translated through print media, the mobilization of enfranchisement claims through different democratic events to enable the construction of specific, progressive narratives of citizenship, belonging and entitlement. Also focusing on the digitally mediated experiences of migrant groups, Davis' (2010) 'cyberethnography' assessed the relevance of Foucault's (1986) enigmatic yet underdefined conceptualization of heterotopia in addition to post-colonial theorizations of cultural hybridity and, drawing from Bhabha (1994) (and Soja's (1996)) 'third spaces' in this space. In doing so, she finds the former holding greater theoretical value in capturing the complex and fluid lived senses of space and time.

Communities, Emotions and Everyday Life

Another, mostly recent, development in digital sociology has been a focus on experiences of data or data and emotions. Some of this theme has been mobilized by analysis of more recent digital innovation, such as the growth of the 'Internet of Things' and methodologies studying it. Hine (2020) conducted an autoethnography involving her siblings, her mom and a smart thermostat controller operated remotely by one of the siblings. She notes that smart technologies tend to obscure decision making and conflicts. Her autoethnography challenges the silence and lack of transparency around smart technologies and provides a reflexive account of the negotiations among family members.

Given the growing importance of Big Data and datafication in contemporary societies, how data are experienced becomes a crucial question, particularly among those who are not trained in and regularly engage in the analysis of data. Kennedy and Hill (2018) (included in this e-special) highlight the significant role that emotions play for the experience of visualized data. Both the way data were visualized as well as the subject matter elicited a wide range of strong emotional reactions including pleasure, anger, guilt and

shame to name just a few (2018: 838). This raises important questions about the relationship between cognition and emotions and their role for making rational decisions.

Social media platforms have attracted attention for their mobilizing abilities, yet also have affective and emotional implication including fostering a sense of solidarity and emotional engagement within political movements (Papacharissi, 2015) and its important role providing support for people in distress. Brownlie and Shaw (2019) (included in this e-special) investigate public emotion work through everyday exchanges on Twitter. Drawing on Goffman, they analyse interactional practices which include empathy, love and affection. Other social media hosted mobilizations have involved mass participation in 'viral memes', digital cultural events sometimes comprising tens of millions of actors. Burgess et al. (2018) (included in this e-special) analyse three such events, focusing on 2013's 'Ice-Bucket Challenge', 'Neknomination' and 'SmearForSmear' 'viral challenge memes'. Also finding promise in Tarde's canon for digital sociological analyses – to accompany those advanced by Latour (e.g. 2002) and others – Burgess et al. (2018) analyse how, for participants, these events require considered mediations of digital cultural and complex presentations of the self. Countering much-rehearsed mainstream media representations of such events, these seemingly mimetic events do not constitute simple or uncritical emulation but, rather, involve a complex merger of consumption and (re) production of media content, mediations between obligation and choice, performativity and struggles for recognition.

In a comparatively early intervention into this debate, Robards and Bennett (2011) examined formulations of youth identity through social network sites, including a more nascent Facebook and a now obsolete MySpace. They argue that young people's everyday engagements with social network sites are more appropriately seen as post-subcultural, than subcultural, given the more subjective and individualized expressions unmoored to class and other identities based on social location. Resonating with Mercea et al.'s (2018) aforementioned findings from an entirely different context, one contribution of this research is the identification of multifaceted uses for Facebook and other social media sites. Beyond the pursuit of self-expression to imagined audiences and, relatedly, the cultivation of new associations (networking), participants in this study were unequivocal over the primary use of these platforms to solidify and maintain existing relationships. Building on this insight, the authors argue such relationships are appropriately seen as a form of 'neo-tribalism', albeit with the added nuance that social network use is intended to add durability to relationships, something that runs counter to the more fleeting and ephemeral associations foregrounded in the literature on tribalism.

Conclusions

As the above discussion demonstrates, digital sociology has a rich history with roots reaching into the 1980s. The journal *Sociology* has been an important vehicle in this journey, publishing several landmark articles and articulating key milestones as the field has developed. With this growth has come a diversification of conceptual, theoretical, empirical and thematic interest. For the purposes of capturing this wide and growing field, we have heuristically grouped studies together according to the thematic poles they

appear to gravitate towards. As such, digital sociology has achieved significant advances in the ways in which we 'do' sociology and, relatedly, the subjects of its enquiry. Regarding the former, digital sociology has offered significant theoretical, epistemological, ontological and methodological advancements both through the rediscovery and adaptation of existing sociological insights, but also in the cultivation of something new. A number of thematic areas have also begun to emerge and acquire distinct identity. These include studies of work, organizations, inequalities, mobility, activism, migration, emotion, belonging and citizenship in the digital age. Of course, many more exist, such as growing digital sociologies of health, but particularly notable is the enduring nature of long-standing sociological concerns in digital society. Yet studying the form and societal impact of digital technology is a genuinely cross-disciplinary endeavour. Long-established journals attracting authors from diverse disciplines, such as *Information, Communication and Society* and *New Media and Society* are increasingly populated with contributions focusing on the digital while newer journals focused on advancing digitally focused scholarship, such as *Big Data and Society* have quickly risen to prominence.

Predicting any kind of technological future is notoriously specious and, more reliably, an easy way to risk one's credibility. That said, signs of some discernible tendencies exist and look likely to acquire further prominence during the near future. First, analyses of 'the digital' and everyday life remain nascent in some sociological subdisciplines, notably in analyses of leisure, volunteering and criminology. Yet a discernible quickening of the pace suggests this is on the cusp of changing. New digital technologies are bound to hold possibilities for transformational change, as they have in the past, with advances in blockchain, digital verification and quantum technologies seeming to hold noteworthy potential in this regard. Analyses of human engagements with technology and the emergent outcomes of such interactions are likely to remain relevant and grow. The discussion above details how particular emphasis has been placed on engagement, mediation and identity. Applying these new conceptual and methodological tools to understand the diverse consequences of such relationships, such as the impact on inequality and social justice, is gaining prominence. Finally, and perhaps above all, many of the discussions opened up and advanced by digital sociology – such as those addressing democratic participation, citizenship and identity in the digital age – look set to endure for many years to come.

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References

Amoore L (2013) *The Politics of Possibility: Risk and Security beyond Probability*. Durham, NC: Duke.

Bauman Z (1997) *Postmodernity and Its Discontents*. Cambridge: Polity.

Bhabha H (1994) *The Location of Culture*. London: Routledge.

Bloomfied B (1989) On speaking about computing. *Sociology* 23(3): 409–426.

Bloomfield BP, Latham V and Vurdubakis T (2010) Bodies, technologies and action possibilities: When is an affordance? *Sociology* 44(3): 415–433.

British Sociological Association (2017) *Statement of Ethical Practice*. Durham: BSA.
Brownlie J and Shaw F (2019) Empathy rituals: Small conversations about emotional distress on Twitter. *Sociology* 53(1): 104–122.
Burgess A, Miller V and Moore S (2018) Prestige, performance and social pressure in viral challenge memes: Neknomination, the Ice-Bucket Challenge and SmearForSmear as imitative encounters. *Sociology* 52(5): 1035–1051.
Burrows R and Gane N (2006) Geodemographics, software and class. *Sociology* 40(5): 793–812.
Camus A (1953 [1971]) *The Rebel*. London: Penguin.
Cole SJ (2018) Use value as a cultural strategy against over-commodification: A Durkheimian analysis of craft consumption within virtual communities. *Sociology* 52(5): 1052–1068.
Conservative and Unionist Party (2019) *Conservative and Unionist Party Manifesto*. London: Conservative and Unionist Party.
Davis T (2010) Third spaces or heterotopias? Recreating and negotiating migrant identity using online spaces. *Sociology* 52(4): 830–848.
DiMaggio P, Hargittai E, Neuman WR, et al. (2001) Social implications of the internet. *Annual Review of Sociology* 27: 307–336.
Dyb K and Halford S (2009) Placing globalizing technologies: Telemedicine and the making of difference. *Sociology* 43(2): 232–249.
Foucault M (1986) Of other spaces. Trans. Miskowiec J. *Diacritics* 16(1): 22–27.
Frade C (2016) Social theory and the politics of Big Data and method. *Sociology* 50(5): 863–877.
Gandoni A and Haider M (2015) Beyond the hype: Big Data concepts, methods, and analytics. *International Journal of Information Management* 35(2): 137–144.
Gibson J (1977) The theory of affordances. In: Shaw R and Bransford J (eds) *Perceiving, Acting, and Knowing: Toward an Ecological Psychology*. Hillsdale, NJ: Erlbaum, 67–82.
Golding P (2000) Forthcoming features: Information and communications technologies and the sociology of the future. *Sociology* 34(1): 165–184.
Graham S (2005) Software-sorted geographies. *Progress in Human Geography* 29(5): 562–580.
Gray B (2019) Mobility, connectivity and non-resident citizenship: Migrant social media campaigns in the Irish marriage equality referendum. *Sociology* 53(4): 634–651.
Grint K and Woolgar S (1997) *The Machine at Work: Technology, Work and Organization*. Cambridge: Blackwell.
Halford S and Savage M (2010) Reconceptualizing digital social inequality. *Information, Communication & Society* 13(7): 937–955.
Halford S and Savage M (2017) Speaking sociologically with Big Data: Symphonic social science and the future for Big Data research. *Sociology* 51(6): 1132–1148.
Halford S, Pope C and Weal M (2013) Digital futures? Sociological challenges and opportunities in the emergent Semantic Web. *Sociology* 47(1): 173–189.
Halford S, Weal M, Tinati R, et al. (2018) Understanding the production and circulation of social media data: Towards methodological principles and praxis. *New Media & Society* 20(9): 3341–3358.
Harvey D (2014) *The Seventeen Contradictions and the End of Capitalism*. London: Profile Books.
Hine C (2020) Strategies for reflexive ethnography in the smart home: Autoethnography of silence and emotion. *Sociology* 54(1): 22–36.
Hutchby I (2001) Technologies, texts and affordances. *Sociology* 35(2): 441–456.
Hutchby I (2003) Affordances and the analysis of technologically mediated interaction: A response to Brian Rappert. *Sociology* 37(3): 581–589.
Julien C (2015) Bourdieu, social capital and online interaction. *Sociology* 49(2): 356–373.
Kennedy H and Hill R (2018) The feeling of numbers: Emotions in everyday engagements with data and their visualisation. *Sociology* 52(4): 830–848.

Kitchin R (2014) *The Data Revolution: Big Data, Open Data, Data Infrastructures and Their Consequences*. London: SAGE.
Kitchin R and McArdle G (2016) What makes Big Data, Big Data? Exploring the ontological characteristics of 26 datasets. *Big Data & Society* 3(1): 1–10.
Latour B (2002) Gabriel Tarde and the end of the social. In: Joyce P (ed.) *The Social in Question: New Bearings in History and the Social Sciences*. London: Routledge, 117–132.
Lee L (2008) The impact of young people's internet use on class boundaries and life trajectories. *Sociology* 42(1): 137–153.
Lupton D (2015) *Digital Sociology*. London: Routledge.
Lyon D (ed.) (2003) *Surveillance as Social Sorting: Privacy, Risk and Automated Discrimination*. London: Routledge.
Lyon D (2017) *S*urveillance culture: Engagement, exposure, and ethics in digital modernity. *International Journal of Communication* 11: 824–842.
MacKenzie R, Marks A and Morgan K (2017) Technology, affordances and occupational identity amongst older telecommunications engineers: From living machines to black-boxes. *Sociology* 51(4): 732–748.
Mayer-Schönberger V and Cukier K (2013) *Big Data: The Essential Guide to Work, Life and Learning in the Age of Insight*. London: John Murray.
Mercea D, Karatas D and Bastos M (2018) Persistent activist communication in Occupy Gezi. *Sociology* 52(5): 915–933.
Murray D and Fussey P (2019) Bulk surveillance in the digital age: Rethinking the human rights law approach to bulk monitoring of communications data. *Israel Law Review* 52(1): 31–60.
Murthy D (2008) Digital ethnography: An examination of the use of new technologies for social research. *Sociology* 42(5): 837–855.
Murthy D (2012) Towards a sociological understanding of social media: Theorizing Twitter. *Sociology* 46(6): 1059–1073.
Papacharissi Z (2015) *Affective Publics: Sentiment, Technology, and Politics*. Oxford: Oxford University Press.
Rappert B (2003) Technologies, texts and possibilities: A reply to Hutchby. *Sociology* 37(3): 565–580.
Rettie R (2009) Mobile phone communication: Extending Goffman to mediated interaction. *Sociology* 43(3): 421–438.
Robards B and Bennett A (2011) MyTribe: Post-subcultural manifestations of belonging on social network sites. *Sociology* 45(2): 303–317.
Rose E (2015) Temporal flexibility and its limits: The personal use of ICTs at work. *Sociology* 49(3): 505–520.
Roth S and Luczak-Roesch M (2020) Deconstructing the data life-cycle in digital humanitarianism. *Information, Communication & Society* 23(4): 555–571.
Rouvray A and Berns T (2013) Gouvernementalité algorithmique et perspectives d'émancipation: Le disparate comme condition d'individuation par la relation? [Algorithmic governmentality and prospects of emancipation: Disparateness as a precondition for individuation through relationships?]. Trans. Libbrecht E. *Réseaux* 177: 163–196.
Savage M and Burrows R (2007) The coming crisis of empirical sociology. *Sociology* 41(5): 885–899.
Savage M and Burrows R (2009) Some further reflections on the coming crisis of empirical sociology. *Sociology* 43(3): 762–772.
Scheerder A, Van Deursen A and Van Dijk J (2017) Determinants of internet skills, uses and outcomes: A systematic review of the second- and third-level digital divide. *Telematics and Informatics* 34(8): 1607–1624.

Soja E (1996) *Third Space: Journeys to Los Angeles and Other Real and Imagined Spaces*. Cambridge, MA: Blackwell.
Tinati R, Halford S, Carr L, et al. (2014) Big Data: Methodological challenges and approaches for sociological analysis. *Sociology* 48(4): 663–681.
Tufekci Z (2017) *Twitter and Tear Gas: The Power and Fragility of Networked Protest*. New Haven, CT: Yale University Press.
Williams ML, Burnap P and Sloan L (2017) Towards an ethical framework for publishing Twitter data in social research: Taking into account users' views, online context and algorithmic estimation. *Sociology* 51(6): 1149–1168.
Wood A, Graham M, Lehdonvirta V, et al. (2019) Networked but commodified? The (dis)embeddedness of digital labour in the gig economy. *Sociology* 53(5): 931–950.
Wynn J (2009) Digital sociology: Emergent technologies in the field and the classroom. *Sociological Forum* 24(2): 448–456.
Zuboff S (2019) *The Age of Surveillance Capitalism: The Fight for a Human Future at the New Frontier of Power*. London: Profile Books.

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