FIMS Publications   Information & Media Studies (FIMS) Faculty

1-1-2020

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Citation of this paper:

Quan-Haase, A., Boulianne, S., & Harper, M.-G. (2020). The sociological imagination in studies of communication, information technologies, and media: CITAMS as an invisible college. *Information, Communication & Society*, *23*(5), 633-641. doi: https://doi.org/10.1080/1369118X.2020.1742366

The Sociological Imagination in Studies of Communication, Information Technologies, and Media: CITAMS as an Invisible College

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Introduction

Sociology is an interdisciplinary field that has much to offer. The *sociological imagination* as C. Wright Mills (1970/2000) proposed it comprises "vivid awareness of the relationship between personal experience and the wider society" (p. 5). While much debate surrounds the idea of the sociological imagination, it is often understood as an outlook, an outlook that steers us away from thinking routinely about our everyday lives and instead it encourages us to re-examine daily routines, everyday practices with a critical lens (Quan-Haase & Tepperman, 2018). This makes the sociological imagination a particularly fruitful framework to draw from when examining communication and information technologies, digital media and legacy media. ICTs surround us all and have become a routine practice, a normal element of daily life in many parts of the world. This is not unique to the Global North, but ICTs and their impacts and values are equally important to the Global South, making ICTs a unifying factor globally.

In this 2020 CITAMS special issue of *Information, Communication & Society*, we bring together an important body of work that draws on the sociological imagination to ask critical questions of our times. We selected nine papers that represent both the breadth of sociological work taking place within CITAMS as well as the diversity of its members. CITAMS is welcoming of a range of perspectives in more than one way. We welcome studies of a range of tools and practices. For example, Kadylak and Cotten (this volume) study the willingness of older adults to use six different emerging technologies in a single study including autonomous vehicles (AVs), assistive robots, Internet connected home appliances, Internet connected cameras for home monitoring, a

smart home with a built-in personal digital assistant, and virtual reality (VR). Hoang, Blank, and Quan-Haase (this volume) deconstruct platform work and examine nine different types: "rideshare driving", "delivery", "online tasks", "house/laundry cleaning", or "other platform work", "selling used goods", "selling homemade goods", "selling consumer brands", and "selling other goods". The special issue also showcases in-depth qualitative work. Brause and Blank (this volume) conduct in-depth interviews to learn about the role of Smart Speaker Assistants (SSAs) in the home. And Orr and Davis (this volume) conduct interviews with practitioners to find out about the ethics of artificial intelligence practitioners. Hargittai and colleagues develop a protocol for studying people's awareness and understanding of algorithms in their interactions with online services including voice assistants, such as Alexa and Google Home. A key theme through all papers is a critical lens. Dodel and Mesch (this volume) look at automation. Boulianne, Koc-Michalska, and Bimber (this volume) examine the Facebook, Twitter, and television in protests. And finally Li and Luo (this volume) examine the roles of news media and Weibo in gender bias. Overall, the special issue provides theoretically-grounded, empirically-sound, and cutting-edge research and analysis.

The first article of the volume by Boulianne et al. (this volume) "**Mobilizing media: Comparing TV and social media effects on protest mobilization**" adds to a growing body of literature on the role of media in creating awareness of and participation in protests. The article is uniquely positioned to answer foundational questions around media and protests, as it moves away from examining social media in a vacuum, rather the article compares and contrasts the role of TV, Facebook, and Twitter providing much more nuanced and contextual understandings for the role of media in protests. Through the analysis of two major protests, the Women's March and the March of Science, we learn about the unique roles different social media platforms play in promoting awareness and encouraging participation. An important finding is that legacy media played no role in protests; specifically, Boulianne and colleagues found that television has no impact on awareness and therefore has limited potential for real mobilization. The study stresses the importance of social media and its networking features for protest mobilization, as the technology allows people to learn about specific protest events, discuss key issues, encourage others to participate, and reach out to others on the platforms who share similar interests in the movement. Twitter emerges in the study as a valuable tool for protest mobilization compared to Facebook, for example. The study findings provide much needed insight into the role of social media in protest awareness and mobilization and have practical relevance for social movement actors, providing key understandings about the role of media in the process of social change. One of those highly relevant findings uncovers the differences between various types of social media engagement. Boulianne et al. find that posting to social media triples the likelihood of protest participation, but joining a social group on social media quintuples the likelihood of protest participation.

The second article in the special issue by Dodel and Mesch (this volume), **"Perceptions about the impact of automation in the workplace,"** examines the intersection of work and technology. At a time when society is increasingly becoming more digital and technology-driven, causing changes to the nature of work and workplace structure, the authors investigate concerns over how individuals perceive such changes: is computerization in the workplace helping or hindering jobs and wages? Through the use of secondary data from the nationally representative 2017 Pew Research Centre American Trends Panel, it is revealed that positive and

negative views about the effects of technology on both jobs and wages are tied to specific socio-demographic and job characteristics. Supporting the self-interest hypothesis, findings show groups with low levels of human capital and who are working in poorer paid jobs are much more pessimistic about the impact technology has on their jobs and wages whereas younger, more educated, and higher-skilled workers are much more optimistic. Findings also revealed, consistent with the job polarization hypothesis, job skills matter in workers perceptions of technological innovation. For instance, those working in more managerial roles or who conducted data analysis were more optimistic toward technological innovation compared to those whose jobs involved more manual labor or physical duties. Moreover, individuals with positive perceptions about the impact of technological innovations in the workplace report significantly lower levels of job or wage loss due to automation. In this study, sociological debates surrounding technology in the workplace are brought to life to highlight various dimensions of individual perceptions regarding how technology has come to influence the way people formulate opinions about its role in relation to their own jobs. Such findings urge for a much broader view of technological unemployment and under-employment, digging deeper to refocus how to counter such outcomes and address the consequences of automation and computerization. Shedding light on such an issue allows for us to consider the implications of digital technologies and automation in the workplace in regard to policy and programs addressing its consequences, which need to be implemented to ease the anxieties of workers who are most vulnerable.

With inequality on the rise globally, work in the platform economy has emerged as potential equalizers. Can platform work provide new earning possibilities for low-income individuals and create a more equal society? Or does the platform economy benefit already advantaged social groups and exacerbate inequality? In the next article by Hoang, Blank, and Quan-Haase (this volume) "**The winners and the losers of the platform economy: Who participates and why**?", the authors follow on the topic of work changes resulting from technological change. The paper draws on the 2016 Pew Research Center, American Trends Panel Wave 19, a US nationally representative dataset. The authors examine whether social and economic characteristics are tied to participation in certain types of platform work. The authors find evidence that different social groups do not participate in the platform economy in the same ways. For example, the authors find that men, younger people, and college educated people are more likely to participate in the platform economy. However, there are differences in how they participate. For example, men are more likely to participate in online selling platforms, compared to women. Further analyses provide more evidence of occupational segregation with women more likely to work in home/laundry cleaning, but much less likely to drive as part of a ridesharing service. White people are less likely to be drivers in ridesharing services, compared to other racial and ethnic groups. Younger people are more likely to earn money from performing online tasks, such as coding, data entry, and taking surveys, compared to other age groups. In this study, the authors add to the current sociological debate surrounding who wins and who loses from platform work. Overall, the paper offers mixed support about whether the platform economy will change current patterns of stratification in the labour market since disadvantaged individuals are not likely to be participating in the types of platform work likely to improve their economic positions. Furthermore, individuals fall back onto societal notions about who should perform what types of work, leading to the reproduction of patterns of advantage and disadvantage.

What network structural features influence productivity and influence in work environments? What role do online and offline social ties play? The fourth article by Hayat, Dimitrova and Wellman (this volume) "**The differential impact of network connectedness and size on researchers' productivity and influence**" examines new organizational forms and how they operate by drawing on a case study of an interdisciplinary, multi-year research network in Canada called GRAND. The authors develop an innovative network methodology and combine data from multiple sources: a survey, a dedicated forum, and Web of Science publication and citation data. They found that different types of computer-supported networks are associated with productivity (number of publications) and influence (citation count). A key finding is that connectivity matters in research networks: those researchers who are highly connected are the most productive. Connectivity allowed scholars to become more aware of each other, leading to joint idea-generation and new opportunities for collaboration. Yet, when looking at influence, they found that it is the non-redundant ties, or the effective size of the networks, that mattered, in particular the effective size of acquaintanceship and advice ties. This suggests that non-redundant ties play a particularly important role in research networks. The study expands existing understanding of social processes of influence taking place at work: they found that it was not trust, but the ability of a scholar to increase awareness of their work in GRAND's inter-disciplinary and inter-university networks that increased infuence. The study contributes to the ongoing theoretical debate between closure and brokerage arguments in knowledge production and creativity. The authors go beyond studies of a single type of network by comparing and contrasting six different types of networks. This provides a much more nuanced understanding of how networks operate in the workplace and the role of ICTs. Many of these changes are related to information and communication technologies (ICTs), but not in simple, deterministic ways, rather ICTs weave into work environments in complex ways.

As artificial intelligence (AI) become routinized and normalized as part of society, mainly in the facets of work, leisure, and governance, concerns over ethics emerge. In the fifth article, "**Attributions of ethical responsibilities by artificial intelligence practitioners,**" Orr and Davis conduct qualitative interviews with practitioners in Australia seeking to understand how ethical attributions figure into the professional imagination. Through interviews with participants from both public and private sectors as well as academics, it becomes clear that both groups offer a critical viewpoint on ethics in intelligence systems, particularly in attempting to address where the burden of responsibility lies. With focus on responsibility, findings suggest a pattern of ethical dispersion, where the relationship between parameters and those who implement them are defined by both power and technical expertise. The authors reveal how practitioners are bound by an inter-related web of expectations, mandates, interests, and goals of more powerful bodies, complicating practitioners' roles in how much discretion can be exercised while exhibiting independent efficacy. Academics face similar challenges regarding ethics -- they move between public and private sectors and are often bound by research funding granted by benefactors who have their own agendas. Thus, the lines become blurred for practitioners and academics when it comes to ethical responsibility. The importance of this research lies in garnering such a perspective, from AI practitioners as well as academics, because their treatment and perceived norms of ethical accountability and responsibility will give insight into current and future AI systems, thereby reinforcing the need and demand for continuing and ongoing research in this area. With the issues of ethics, specifically ethics in relation to AI systems and the perspectives

of those directly involved, overlooked in the broader body of literature, this article begins to unweave the complex, tangled web of understanding ethical accountability and responsibility. By doing so, we are able to better understand the nature of ethics as sociotechnical practice, paving the way for future studies of ethics and ethical responsibility.

There are new challenges confronting societies of the Global North and Global South alike, as globally the aging population is growing at a rapid pace. Kadylak and Cotten (this volume), in their article "**United States older adults' willingness to use emerging technologies,**" examine how new technologies can have positive health outcomes and encourage independence in older adults. Building on theories like aging-in-place, the authors examine the willingness of older adults to adopt six emerging technologies: AVs, assistive robots, Internet connected home appliances, Internet connected cameras for home monitoring, a smart home with a built-in personal digital assistant, and virtual reality (VR). This provides a thorough investigation into what emerging technologies have the greatest potential for supporting the everyday lives of older adults. Employing a dataset comprised of 1,148 US older adults (65+) collected via an Internet-based survey, Kadylak and Cotten found that US older adults are more willing to use some technologies over others. US older adults saw potential in the use of digital home assistants, smart appliances, and Internet connected cameras, while they were less keen on adopting AVs and VR. To provide additional context as to why some emerging technologies are preferred to others, Kadylak and Cotten examine a number of factors, finding that health variables, such as limitations with instrumental activities of daily living and self-reported health status, are important for determining older adults' willingness to use some emerging technologies, such as assistive robots. This is an important study as more older adults want to maintain their independence and wish to continue living at home, rather than moving into institutional environments. Through technology use, older adults are given more options as to how to live their lives. The study also makes recommendations for future interventions aimed at enhancing the health and independence for older adults with the help of emerging technologies.

More and more people are integrating certain technologies into their lives that transform the nature of the household. In "Externalized domestication: Smart speaker assistants, networks and domestication theory" Brause and Blank (this volume) examine the role of smart speaker assistants (SSAs) in users' everyday lives. To frame their study, the authors draw on domestication theory, develop a typology of use genres and propose an expansion of domestication theory to include the process of 'externalization'. This process describes how spatially distributed, networked devices, such as SSAs can impact each other's domestication. Based on qualitative interviews, the authors found that there was no archetypical user, rather individuals have developed use genres that describe the way they use SSAs. Beyond previously studied convenience and entertainment, new use genres include companionship, self-control and productivity, sleep aid, health care, peace of mind, and increased accessibility. In addition, findings revealed the unique spatial affordances of SSAs, specifically the potential ubiquity of SSA features, link-ability for users, and control-ability of connected devices. Domestication of SSAs, then, influences the domestication of other connectable devices, such as additional SSAs or smart bulbs, impacting each device's objectification, incorporation, commodification, and conversion. The fact that SSA domestication can impact connected devices' domestication and vice-versa requires an extension of domestication theory that the authors call 'externalization'. This new concept sensitizes authors of future studies to the affordances and use genres that are

distinctive to networked, always-on devices and technologies, and their integration into people's lives and daily routines. This research comes at a time when always-on, networked devices, like SSAs, are coming to infiltrate our lives, making both work and leisure more convenient, easier, and adaptable, while also challenging the traditional privacy of the home. Because their various features are perceived by users in manifold ways, the use of devices like SSAs become tailored to the user's needs and interests. Thus, this research helps to expand our understanding of the use genres of such devices to demonstrate that SSAs, and similar networked technologies, are routinely integrated into people's lives in complex and novel ways.The paper by Hargittai, Gruber, Djukaric, Fuchs, and Brombach (this volume) entitled **"Black box measures? How to study people's algorithm skills"** outlines the challenges in and possibilities for examining people's awareness and understanding of algorithms. These algorithms are largely hidden from users and researchers, which poses a challenge in trying to determine awareness of these algorithms and how they operate. Understanding algorithms is important because they shape the information that people encounter, whether it be on search engines, news websites, social media platforms or other sites. Users who understand these algorithms are better equipped to engage more critically with these sites and may be better able to address the biases implied by algorithmically-driven newsfeeds. This paper outlines a methodology for examining algorithm skills, without having to use the concept directly during data collection or without knowing the exact mechanics. This methodological approach is presented with special attention to how it can be adapted to different cultural contexts as well as adjusted for those with low and high levels of Internet skills. The proposed methodology explores algorithm skills beyond social media platforms and search engines, addressing a gap in existing research about algorithms. The researchers give details about the protocol for studying voice assistants, such as Alexa and Google Home. They also outline how the data from these in-person interviews could be coded. Since they have pilot tested this methodology with 83 respondents, they provide specific examples of how responses could be coded. The coding scheme helps to shed light on how people's knowledge and skills might shape their subsequent uses of digital technology.

The paper by Li and Luo (this volume) entitled **"The 'bad women drivers' myth: The overrepresentation of female drivers and gender bias in China's media"** examines the coverage of female drivers in traditional and social media in China. This topic is important because these gender biases in news coverage can manifest in biased policies and practices including laws limiting women from driving and gender-specific parking spots in different societies. The paper reveals the complex systems that structure this coverage, including journalistic norms that may limit sexist coverage, social media norms that reward more sexist and provocative content, as well as broader cultural norms in China related to female drivers. The paper is methodologically distinctive, conducting a computational analysis of more than 97,000 Weibo posts and more than 11,000 articles from almost 400 Chinese newspapers, as well as a qualitative analysis highlighting both sexist discourse as well as discourse challenging sexist discourse on Weibo. The authors document how females compose only 30% of drivers and 10% of drivers causing accidents. In contrast, the large majority of newspaper articles (79%) and Weibo posts (94%) discuss female drivers as being involved in a traffic accident. The news coverage is not in line with real-world experiences. This disconnect is stronger for Weibo posts, than newspapers. The authors find differences in coverage of traffic accidents for individual and institutional Weibo users, with individual users less likely to report the gender of the drivers, compared to institutional Weibo users, such as the police. The paper offers a well-rounded view about how social media platforms can be both places to exhibit prejudices as well as places to

challenge prejudice. Overall, this paper contributes toward understanding both structural/institutional and cultural issues in news coverage. We should be careful about concluding that news coverage is a mirror of the real-world experiences.

Conclusion

We conclude this special issue by stating the relevance of the sociological imagination in guiding inquiries into how communication and information technology, and digital and legacy media continue to change, influence one another, and integrate into society. CITAMS embarks in investigating important and difficult questions of our times. Questions around the ethics of artificial intelligence, the use of smart assistance in the home, and the changes in job creation. CITAMS is also at the forefront of methodological innovations, never content with the *status quo*, but rather trying to open the black box of technology design and its underlying power relations. Brent (2018) has described how "IT has transformed both the methods of research and the substantive foci of research" (p. 41), as the area of digital sociology continues to evolve. It is important to note that CITAMS itself continues to reflect on its role in society, its mandate to members, its connectivity to other social groups and academic circles. What really distinguishes CITAMS is the nature of its invisible college (Crane, 1972), as CITAMS members not only read each other's work, but we form many networks comprised of collegial and friendship ties--strong and weak-- to support and contest one another's thinking, always striving to gain new insights. Thus, CITAMS is not a static group, but rather it is an active network, branching out and building bridges to many parts of society, industry, and academia. CITAMS continues to grow, expand, and change. Jennifer Earl (2015) in 'CITASA: intellectual past and future' provides a critical historical overview of the section's intellectual growth, identifying key milestones. Earl (2015) argues that:

> CITASA [now CITAMS] has, for both practical and intellectual reasons, become the largest point of reconnection between communication and sociology after a period of diaspora...in addition to being a point of reconnection, our section has re-introduced critical sociological concerns and insights into the study of new media and digital technology (p. 478-79).

This historical review demonstrates the importance of CITAMS' invisible college as a bridge to other American Sociological Association sections, communication studies and other disciplines, but also as an invisible college that shapes the study of media--new media, legacy media, the relation of digital to other media, etc. CITAMS research is diverse in its choice of topics as we see in this special issue of CITAMS which addresses issues of media effects on protest mobilization (Boulianne, et al., this volume), work automation (Dodel & Mesch, this volume) and gig economy and platform work (Hoang, et al., this volume) to social media and gender bias (Li & Luo, this volume), thus, it intersects in important ways with research and thinking taking place in every section of the American Sociological Association (ASA) (Earl, 2015) such as "Organizations, Occupations, and Work", "Collective Behavior and Social Movements", "Science, Knowledge, and Technology", and "Race, Gender, and Class". As Wenhong Chen (2015) has argued CITAMS is becoming a "networked transfield", where many intersections exist between media sociology and communication studies, with overlapping questions, new methods and new approaches. We hope that the articles will spark new research in the networked transfield of CITAMS and reach out to other disciplines, we are excited with the contributions

and look forward to seeing this invisible college continue to transform itself. This is a call to "think ourselves away from our daily routines and look at them anew" (Giddens, 2006, p. 4).

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Acknowledgement