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Digital society: risks and challenges

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Innovations in digital technology have advanced more quickly than in any other field in human history. Society and the economy have been revolutionised by the advent of digital technologies, and virtually all industries and everyday life activities are experiencing daily disruption as a result of the digital revolution. The extent and breadth of these changes are uncommon in the history of humankind, and it had only been previously held by the revolution brought in by the advent of the steam engine, the electrical generator, and the printing press. Those revolutions have changed the way we work, think and live, having a tremendous long-term impact at both local and global levels. Likewise, the digital revolution has shown an extraordinary disruptive force able to introduce new methods of working, communicating, and connecting across disciplines, communities, and boundaries. Professional vocations, economic and social institutions, financial and banking reforms, popular culture, as well as communication and consumption, to name a few, are all impacted by this revolution. The line separating the physical and digital worlds continues to be muddled by the rate of development. To match the ever-rising expectations of their customers, business and media companies are modifying their business models. Similarly, public services are reinventing themselves to improve their delivery in the digital society.

During the final decades of the 20th century, the digitalisation and the development of technology like fibre optics, computation, and satellites spread around the world, making the World Wide Web and the Internet widely used and adopted. Today, as the digital revolution advances, we are witnessing an increase in data usage and artificial intelligence applications powered by machine learning and algorithms (Ragnedda 2020). We are also seeing the emergence of robotics in manufacturing and home applications, the Internet of Things (IoT), blockchain technologies (Ragnedda & De Stefanis 2019), neural networks, and quantum computing, among other technology in use. These technological innovations work together to create new worlds of professional practice, knowledge-driven processes, business and management paradigms, and worldwide social networking. As new ecosystems emerge, digital technologies are radically altering business models, and private and public institutions, posing serious challenges for the whole society. Significant political issues are looming, and policymakers need to adopt new paradigms to tackle these problems. First, the political pressure will increase when significant portions of the middle class will face an impending unemployment crisis. Many “middle-class” occupations will be at risk due to the techno-acceleration or as a result of the delocalization of labour in other areas of the world. Within the next few years, a substantial component of white-collar occupations will be inevitably automated. Secondly, the challenges of the digital revolution are clear also in terms of new oligopolies and concentration of power. The major web companies and big tech giants are mainly based in two nations, namely China and US. 90 per cent of the market capitalization of the 70 biggest internet platforms is shared between China

and the US. Together, Africa and Latin America only account for 1%. It is therefore important to consider the implications of such a shift in digital geopolitics, not just for the regulation of technology but also for issues such as human rights, digital content and ubiquitous and transnational surveillance. Further challenges are related to how businesses have taken advantage of the absence of regulations controlling data privacy. The Cambridge Analytical scandal of 2018 brought to the surface the implications that AI and algorithmic decision-making may have both on society and on how our personal data are (ab)used. New policies are needed to address what Couldry and Mejias (2019) define as “data colonialism”, namely the method by which companies, non-governmental organisations, and governments seek to commercialise and claim ownership of the data that users produce. The exploitation of personal data frequently occurs without users’ knowledge and usually against their will. Furthermore, the digital revolution needs to be seen also in relation to climate change and how it may contribute to either shrinking or exacerbating it. In fact, on the one hand, the rise of digital technologies has exploited the environment (by withdrawing resources), accelerated the misuse of resources, and increased pollution. On the other hand, the embeddedness of digital technologies into everyday life could represent an opportunity for a shift toward sustainability. There are knowledge gaps regarding whether and how individuals’ pro-environmental attitudes and behaviours interact with digital forms of consumption, working, learning, and social networking, which may also indicate a potential interaction between digital and pro-environmental attitudes and behaviours, giving the rise to what Ruiu, Ruiu and Ragnedda (2021) define the “Techno-environmental habitus”. A 2017 study on the digital economy revealed that having digital abilities enables people to make environmentally friendly decisions (Gazzolla *et al.*, 2017). Therefore, it is not the simple adoption of technology that might help the environment, but the digital skills and the savvy use of technologies that can promote pro-environmental engagement. As digital technologies advance and permeate every aspect of life, understanding and using technology for societal good is becoming crucial.

Tackling social and digital inequalities is another key challenge that still struggles to be at the centre of local and global policies. The rise of the information society was initially viewed as a chance to mitigate inequality, improve access to information and promote political and civic engagement (Negroponte, 1995). Initially, an over-optimistic approach that interpreted the Internet as impossible to be controlled and neutral by default, prevailed. The same approach described, by contrast, the old media as centralised, run by wealthy proprietors and with passive consumers. The rate of global digital transformation and the network’s phenomenal expansion was unprecedented in media history. In 1994, only 1% of the world’s population had access to the Internet, compared to more than 60% in 2022. In other words, in less than 30 years the number of citizens using and relying on the Internet for everyday tasks and activities moved from a few thousand to more than five billion people globally. The worldwide adoption of technologies and the embeddedness of the Internet into everyday life introduced new challenges given that the benefits that citizens and societies were receiving from the digital revolution were not the same for everyone. Beyond the hype and the techno-evangelist approach, it quickly became apparent that access to new digital technologies was not distributed equally across populations (Resnick, 1998). Numerous empirical studies have demonstrated that one of the main causes of differences in the early years of ICTs adoption was the economic development, both within and across nations (domestic digital gap)

and globally (global digital divide) (Chinn & Fairlie, 2010; Crenshaw & Robison, 2006; DiMaggio *et al.*, 2004; Fairlie, 2004; Norris, 2001; Pohjola, 2003; Rogers, 2003). This is still evident in the contemporary digital experience. While the effects of the digital revolution on the economies and social lives of individuals are evident in the so-called Global North, it is less noticeable in other regions (Ragnedda & Gladkova, 2020). This does not mean that even in these less technologically advanced regions, ways of life are not evolving, governmental structures are not undergoing changes, and the delivery of health and education services is not being reviewed to adapt to a new normal, particularly in this age of the Covid 19 pandemic. It means that some areas of the world are slower in adopting technologies and they have limited advantages and benefits compared to the Global North (Mutsvairo & Ragnedda, 2019). However, even at the country level, the benefits introduced by the digital revolution are not shared equally by citizens from various socioeconomic and socio-demographic backgrounds (Ragnedda, 2020). Differences in the adoption of ICTs are evident in terms of motivation, skill, and lifestyle as well as dynamics in the socio-economic and socio-demographic spheres. Those who are already advantaged in the social sphere, also tend to benefit the most from the adoption and use of digital technologies (Ragnedda, Ruiu & Addeo, 2020). Therefore, cultural, social, economic, and political context cannot be ignored when analysing digital exclusion and digital inequalities, and when trying to understand the social implications of the digital revolution. The social structure's disparities and the digital world's inequalities are interconnected. As Blagoev (2015, p. 2793) states, "the Internet as a social institution generates new possibilities that may, with a much greater probability than in the pre-digital age, precondition the creation of life chances, because it fosters and intensifies the interplay between globally dispersed individual potentials, whatever their origins and qualities may be, and market potentials dispersed across different societies, whatever their stage of development may be". Intra-generational mobility and inter-generational mobility are characteristics of democratic societies and citizens can use digital technologies to move up the social scale on their own, greatly increasing their chances of success.

However, the fundamental socio-economic inequities will not change as a result of this. The social structure might occasionally allow those with exceptional digital talents to ascend in society, but successful structural social mobility is less likely to occur than individual success stories of social mobility. The offline social networks, which are based on factors including family, occupation, political affiliation, income, and level of education, catalyse digital technologies' potential. Society constitutes of layers that are organised hierarchically, with the rich and poor in a top-down interaction that results in various social inequities (Giddens, 2006). The social hierarchy is a reflection of these disparities, which result in an uneven distribution of resources and rewards and are influenced by factors such as economic resources, gender, age, status, and political power (Ragnedda, Ruiu & Addeo, 2022a). At the same time, the socio-cultural-economic background is crucial in determining the adoption and uses of digital technologies, as also the advantages and benefits that users can receive (Ragnedda 2018). Digital inequalities are strongly intertwined with social classes and status, influencing the process of social inclusion and exclusion. Therefore, the technological determinist perspective, which believes that having access to technology can solve societal issues including social injustice, democracy, freedom, interpersonal relationships, and a feeling of community, is deceiving (Van Dijk, 2005). We should keep in mind the takeaways from the knowledge gap hypothesis concerning the socio-economic advantages that result from the targeted usage of ICTs (Tichenor, Donohue & Olien, 1970). The central tenet of this theory

is that the information gap would persist even in a society with equal access to technologies. This is still applicable to the digital age. Early adopters of technologies, who frequently belong to higher-status groups, tend to employ them more effectively, resulting in wider disparities. Social inequality manifests in a wide range of increasingly complex ways, many of which involve the aspects of digital inequality. Between social and digital inequality, there is something resembling a cyclical pattern. Early on in the study of the digital divide, policymakers and academics emphasised the importance of accessing the Internet and owning digital devices (Warschauer, 2003). Their programmes and research were centred on access to the Internet and technology ownership, emphasising the disparity between those who had access to digital technologies and those who did not (Selwyn, 2003).

Their policies and reports underlined how socio-economic divides between people and nations would have widened if these “digital gaps” had not narrowed. As a consequence, many policymakers, both at national and international levels, have increased investment in telecommunications infrastructure to close the digital divide, but they have neglected other important variables including digital skills, assistance, and the range of uses (useful to reduce digital inequalities). For instance, the FCC in the US advocated for extending a phone-funding programme in 2015 to include socially disadvantaged classes in the digital sphere, hence reducing the digital divide (Ragnedda, 2017). This strategy appears to be centred solely on the first level of the digital divide (inequalities in accessing ICTs), omitting to address and consider the other factors that make up the second level of the digital divide (inequalities in using ICTs), including skill, support, scopes of usage, autonomy, and equipment. Researchers soon realized that describing digital inequalities in binary terms (have vs have no access to technologies) only partially helps in tackling the issue. The digital divide, seen as “a moving target” that requires an ongoing conceptualisation (Gunkel, 2003: 505), needs to be conceived in terms of diverse levels of e-inclusion rather than as a binary concept. Citizens must have both access to and the ability to use digital infrastructure to fully engage in a digital society and benefit from the use of technologies. Digital inequalities, therefore, are multifaceted and the Internet offers a wide range of opportunities and societal rewards, but they may also exacerbate already existing social inequalities. By providing less expensive and physical access, the divide between those who connect and those who do not can be narrowed, but this does not necessarily mean that digital inequities will also be reduced. The potential adoption and use of ICT “depend on and embodies to some extent the society’s differences” and it “is strongly related with users’ attributes” (Stiakakis *et al.*, 2010, p. 43). Inequalities between users can widen as a result of additional dimensions and patterns that create and reinforce inequality. Digital technologies continue to be characterised by inequalities, that could further solidify and widen previously existing social inequalities if they are not addressed.

To conclude, we need to reiterate how the technologically-induced digital changes come at the expense of dislodging and disrupting conventional work systems, household routines, media access, languages, customs, and communication techniques. Everything has been affected by the digital revolution including the economy, innovation, research, education, health, sustainability, government, and lifestyles. Along with this revolution, inequalities in the ways citizens adopt, use and benefit from technologies have grown wider. Reynolds and Stryszowski (2014) and Van Dijk (2005:15) emphasised that, in a society that is becoming increasingly reliant on digital technologies for daily tasks, digital inequality has grown to be a significant form of contemporary inequality. Adopting a technology point of view

does not allow for the analysis and comprehensive understanding of such imbalances. The rise in inequality is not just a result of technological advancement, but it is embedded in the social structure. Addressing digital inequalities is not a technological issue, but a political choice. Failures of policy have played a significant role in the narrative, given their lack of responsiveness to the new power dynamics of the digital society and to the new challenges brought by the digital revolution. Long-term policy thinking should not be abandoned in a time when politics is becoming increasingly focused on the immediate future. Social and digital marginalisation are on the rise as the advent of digital technologies plays an increasingly significant role in our daily lives. Digital technologies might be a tool for social inclusivity and level-up inequalities if the process of digital inclusion is led by specific policies, otherwise, they exacerbate already existing social inequalities (Ragnedda, Ruiu & Addeo, 2022b).

Synopsis

Encouraged by the techno-acceleration due to the COVID-19 pandemic, this issue of *Culture e Studi del Sociale* brings together international scholars to examine the impact of digital technologies in our everyday life. It focuses on daily routines and behaviours to give a fundamental and in-depth exploration of how the digital transition is changing everyday life. This issue helps us understand how digital technologies are affecting and will affect our future and daily lives. It also aims to improve our comprehension of the concepts and theories that underlie these developments and their consequences for those living in the developing civilisations of the twenty-first century.

Exploring today's youth's preparedness for the new challenges of the digital age is essential given how drastically ICTs have changed our daily lives, jobs, and social connections. To shed light on this timely topic, in the first article "*Computer and Information Literacy at the eighth-grade differences between boys and girls*" Elisa Caponera, Francesco Annunziata and Laura Palmerio examined the International Computer and Information Literacy Study (ICILS) 2018 data for gender variations in computer and information literacy at the eighth-grade level. ICILS 2018 participants from Italy (N = 2810; mean age: 13,3) were taken into account. Students completed the CIL (Computer and Information Literacy) test and the international questionnaire, which asked them about their socio-economic and cultural backgrounds, their expectations for the use of ICT in the future for work and study, how they have used ICT to complete a variety of tasks in the classroom and outside of it, and how confident they feel in their ability to use it. A path analysis was conducted using a structural equation model (SEM) to investigate whether or not there is a connection between student socio-demographic and socio-economic variables and CIL performance. The findings showed that there are differences between boys and girls in the correlations between the CIL test, on the one hand, and self-confidence and expectations for using ICT for job and study, on the other hand. Finally, some potential ramifications for the Italian educational system are examined.

The next article, titled "*De-Sanitising the 'New Normal': The Lived Experiences of 'Digital Research' in context of the COVID-19 India*" by Ahana Choudhury, explores the lived experiences, complexities, and use of digital research among social researchers in the context of the COVID-19 pandemic in India and its North-East Indian state of Assam. While the pandemic sparked a global crisis, India faced its bitter consequences due to a lack of strong infrastructure to combat it.

Furthermore, while the quick adoption of digital research by educational institutions emerged as a viable option for some researchers, it had more serious repercussions for those who belonged to marginalised groups. In the context of the actuality of digital research, the article illustrated the complexity of research practises, the critical reflexive spaces of research actors, and their social categorisation, such as gender and class.

Suania Acampa, Noemi Crescentini and Giuseppe Michele Padricelli in “*Is it still disintermediated? The role of the influencer news-maker in the social platform era*” focused on how the Internet revolution over the past 20 years has shifted the traditional news models used by journals’ gatekeeping toward a fresh disintermediated logic created by prosumers. This phenomenon has fundamentally altered how news is disseminated, pushing journalists to reconsider their position. The purpose of this article is to discover the characteristics of the modern journalists’ reinvention that the authors designated as influencer news-makers through a research design based on a Facebook Content Analysis. The article identified five of the most influential Italian journalists on social media, and the editors they work with. The main findings of this study, which involved the analysis of 20,000 social media posts, related to the emergence of two distinct journalistic profiles: the journalist who reinvents conventional news production methods by utilising the logic of social media, and the journalist who incorporates the promotion methods of his own content into the gatekeeping process.

Finally, “*The Italian perspective on the use of Big Data in Sociological Field Implications, Empirical Findings and an Impact Analysis on the Discipline*” by Michela Cavagnuolo investigates the impact of the digital revolution in Social Sciences and more particular in Sociology. Cavagnuolo points out how the advent of digital technologies modifies and innovates the typical toolkit of social sciences. It is therefore vital to analyse how digital technologies, and specifically the use of big data, has changed social sciences and how that has affected social scientists’ work.

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