

16. Studying social policy in the digital age

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SOCIAL POLICY RESEARCH IN THE DIGITAL AGE

Technological change is hardly a novel phenomenon: humankind has always been exploring new ways to improve human capabilities with technological resources and machines. The modernization of European welfare states centres around contemporary technological advances. The rapid development and popularization of computers and the internet during the late twentieth century have become central catalysts for the third industrial revolution and far-reaching digitalization in the twenty-first century (e.g., artificial intelligence, machine learning, Internet of Things), in combination with big data and machine-based intelligence, creates opportunities and challenges for welfare states. It also creates a rich foundation for social policy research. In the twenty-first-century digital race, governments are keen to replace old methods of welfare provision with automation and datafication, with the aim of developing effective and ‘better’ public policies. Many new welfare technologies are, however, more invasive, as they ‘disrupt’ existing systems and practices (Christensen, 1997). For example, automated decision-making technologies – based on algorithmic learning – increasingly circumvent human decision making (Desiere et al., 2018) and thereby considerably challenge the logic of human intervention in giving and receiving public services.

This chapter sets out to explore social policy research on how and to what extent the technological change has affected European welfare states. This research is situated along two key themes: changing digital governance and the impact of digitalization on welfare recipients. Note that while academic interest in digital welfare states is growing, the debate is conceptually fuzzy and requires stronger theoretical embedding. The chapter therefore starts with a discussion of key concepts and their definition in social policy research. It then relates these discussions to classic welfare state discussions, and (levels of) welfare state change (Hall, 1993), to draw attention to two streams of interrelated research on welfare state development: the digitalization of social

policy administration (digitalization, automation, and datafication) and the impact of these technological advancements for social policy. The discussion of the latter focuses on two major social policy areas where digitalization efforts are felt the most: welfare policies and labour markets. The chapter concludes with a research road map in this new and quickly emerging field.

WHEN TECHNOLOGY MEETS THE WELFARE STATE

Technological change covers various processes of invention, innovation, and diffusion of technology or processes (Damanpour & Aravind, 2012). It includes the introduction of digitalization and automation technologies (e.g., Eichhorst & Rinne 2017; Thewissen & Rueda 2019), but also wider technological advances in generating knowledge and changing societies as a whole. Digital technologies are ubiquitous and involve various types of electronic tools, systems, or devices (such as artificial intelligence, machine learning, and the Internet of Things¹) that generate, store, or process digitized data. The terms digitalization and automation are deeply intertwined but they comprise the technological composition of the ‘digital welfare state’ as regards to its governance as well as its impact on welfare recipients.

Digitalization refers to the ‘ways in which social life is organized through and around digital technologies’ (Leonardi & Treem, 2020: 1602). It sustains a multitude of technology-driven processes utilizing one or more digital technologies. Standardization and automation are the central aims of many digitalization processes. *Automation* is a modern version of Weberian standardization, where routine tasks are standardized and efficiently organized (Weber, 1968). Modern automation involves the replacement of human action with a technological process, for example, it allows the introduction of (rule-based) decision making, where digital data are processed and all tasks (e.g., organization and assessment) are carried out without human interference (Eurofound, 2020). Automated systems, which involve the processing of enormous volumes of digital big data, are linked to *datafication*: ‘the practice of taking an activity, behaviour, or process and turning it into meaningful data’ (Ruckenstein & Schüll, 2017: 261; Leonardi & Treem, 2020: 1602). Both automation and datafication open up enormous opportunities for public administration in welfare states. Digital data can potentially deepen knowledge and foster greater efficiency and accessibility of (online) policies. Furthermore, big data, combing various sorts of data, allows the processing of (predictive) profiling and risk scoring and is thereby valuable for designing effective policy interventions for more heterogeneous population groups (see, e.g., Desiere et al., 2018), such as specific training services for a specific group of youth. At the same time, digitalization, automation, and datafication pose serious challenges for welfare governance regarding their impact on policy domains as well as to

society. These challenges are further discussed below, since they attract great interest from social policy researchers. As will be shown, technologies can challenge public administrations, by altering both the way that public administration functions as well as how welfare clients interact with administration. Technologies may also strengthen existing inequalities as well as generate new social risks for welfare protection and labour markets.

THEORIZING THE DIGITAL WELFARE STATE

The digitalization of the welfare state attracts significant scholarly attention, yet theoretical reflections on ‘digital welfare states’ are scarce and the term ‘digital welfare state’ lacks an explicit discussion of its theoretical foundations. This omission makes it difficult for social policy researchers to evaluate what constitutes a digital welfare state and to what extent welfare states have fundamentally shifted into a new state of being.

Perhaps the most well-known (and used) reference to ‘digital welfare states’ was provided by United Nations Special Rapporteur for extreme poverty and human rights Philip Alston (2019: 1) in his utterly critical report on the effect of digitalization on society and particularly on vulnerable groups (see, e.g., Dencik & Kaun, 2020; Bekker, 2021). Alston defined digital welfare states as a process where ‘systems of social protection and assistance are increasingly driven by digital data and technologies ... used to automate, predict, identify, surveil, detect, target and punish’. Without lingering on origins or causes of the digital welfare states, Alston (2019: 1) claims that ‘the digital welfare state is either already a reality or is emerging in many countries across the globe’. Van Zoonen (2020) uses a similar process approach to define digital welfare states as a ‘transition to data-driven social policy’. Similarly, Dencik and Kaun (2020: 2) have built on Alston’s definition as ‘a new regime in public services and welfare provision intricately linked to digital infrastructures that results in new forms of control and support’. Also, Pedersen (2019: 301) refers to ‘a new model of the provision of public welfare services to citizens’. Neither Pedersen nor Dencik and Kaun define what is ‘new’ in comparison to the ‘former’ welfare state and both tend to draw a parallel to the development of technological infrastructures and socio-economic development (in a similar fashion as scholars commonly do in Smart City debates, see, e.g., Caragliu et al., 2011). These scholars notably add to this discussion with an explicit outlook towards welfare state tasks, but do little in extending and enriching the welfare state discussion. As commonly done in welfare state studies intersecting economic and social performance, central to this debate is neo-Marxist and critical theory highlighting the linkage between technological advancement and (societal responsibility to safeguarding against) societal harm (e.g., Bär et al., 2020).

The current social policy literature poorly clarifies how welfare states in the digital era have changed. For instance, in terms of a Hallian perspective of change (Hall, 1993), are we witnessing fundamental (i.e., third-order) changes, where digitalization changes the policy paradigm and fundamentally reorients welfare state responses? Or are we witnessing partial developments in certain welfare state institutions, in certain social policy domains, and/or welfare state administration (i.e., second-order change)? Or are we merely witnessing the inclusion of some new welfare state instruments (i.e., first-order change)?

To consider how social policy research on welfare states in the digital era is evolving, this chapter takes a more theoretical approach, returning first to basic theoretical foundations of welfare state research. Although lacking a single definition, welfare states are institutions that protect people's economic and social welfare and wellbeing. In the classic definition given by Therborn (1983), welfare states are state-led institutions servicing the welfare needs of households. Classic scholarship, such as Offe (1984), also claims that welfare states embody an explicit obligation of the state to support citizens with specific needs and risk characteristics. A broader understanding of institutions going beyond the welfare state (see Chapter 1 by Nelson, Nieuwenhuis, and Yerkes, this volume) has given rise to theoretical scholarship on how welfare states (or welfare systems) establish and guarantee social welfare rights and risk protection against the ailments of capitalist market economies (Schubert et al., 2016).

A central concept in this research is the notion of social risks, and the welfare state's collective management of such risks. In the seminal work by Taylor-Gooby (2005), post-war welfare states protected citizens against 'old' social risks, meaning the potential loss of income occurring over a standard industrial life course, e.g., industrial injury, sickness, unemployment, and old age. Welfare state efforts were later extended to cover 'new' social risks arising from post-industrial changes in work and family life, individualized life choices, and also risk rising from globalization (see Chapter 18 by Greve and Paster, this volume; see also Bonoli, 2005; Taylor-Gooby, 2005; Huber & Stephens, 2006). The welfare state and its management of social risks is clearly affected by the technological transformations of the late twentieth and early twenty-first centuries. It creates a need to reorganize and recalibrate welfare state structures and systems to extend social risk protection towards a diverse set of risks, including existing (e.g., changing family structures and labour market participation patterns) and 'new' digitally driven risks (e.g., labour market insecurities induced by platform work and automation). I scrutinize these assumptions below in relation to social policy research on digitalization of the welfare state and welfare state governance as well as digitalization and its impact on specific social policy outcomes.

Digital Welfare Governance

Starting from digitalization of welfare governance and public administration, a key area of social policy research is focused on the impact of technological change on welfare state governance. As argued, digitalization and information and communications technology (ICT) have been an integral part of the modernization of welfare states for decades. For instance, in the Nordic countries, welfare and population management are largely based on administrative databases, which allow standardized, nation-wide assessment of citizens' needs as well as determination of deservingness and just allocation of public resources (Dencik & Kaun, 2020: 2; Larsson & Haldar, 2021). The national register datasets are paramount for 'evidence-based policy', where – in the positivist public administration and social policy research tradition – data are central in assessing and evaluating the impact of public policy and interventions (Crato & Paruolo, 2019). Through datafication and a massive increase of devices connected to the internet, digital technologies produce unprecedented amounts of data. With potential interlinkages to administrative data, the potential of new digital bureaucracies and policy research thus seem endless. Although big data is seen as an opportunity for more accurate and real-time evaluation of social phenomena that social policy researchers are interested in, rising criticism in social policy research is focusing on 'digital governments' who hereby gain technological powers, which enables them to scrutinize and control their citizens. Yeung and Lodge (2018) term this growing reliance on data-driven systems and algorithmic-driven public administration 'new public analytics'. Especially in the field of health, data-driven medical research and public health infrastructures (such as biobanks) allow highly personalized interventions but also undetected surveillance and constant monitoring (Ruckenstein & Schüll, 2017). A similar trend is visible for welfare services, where digitalized processes and machine learning are becoming an integral part of public administration and much scholarly attention is now geared to analysing 'the digital by design' Universal Credit reform, where the United Kingdom's welfare claim and provision was fully automated in 2013 (Millar & Bennett, 2017). Much scholarly attention has also been paid to analysing Denmark, where automated decision-making systems currently process complex tasks, even those requiring in-depth discretion (Henriksen, 2018; Schou & Pors, 2019; Ranerup & Henriksen, 2020). Research shows that although technical systems (are expected) to cut down tedious tasks (Schou & Pors, 2019), they are generally driven by efficiency and budgetary considerations and allow more forceful monitoring and stigmatization. For instance, the British Universal Credit system included 'a fully automated risk' (National Audit Office, 2018: 11). A similar welfare fraud detection system (System Risk Indication) was introduced in the Netherlands. This was recently prohibited by a court decision

(<https://perma.cc/DS89-K477>) on human rights grounds, since it was found to target poor and marginalized neighbourhoods (Bekker, 2021). The high-profile case of automated decision-maker robots (called the robo-debt), used by the Australian government to calculate overpayments and issue debt notices, is another example of what social policy researchers have shown to go wrong with automated decision making (Braithwaite, 2020; Carney, 2020). Cases like this have raised concerns in Europe about machines automating inequalities and currently receive much attention from social policy analysts. United States-based experiences about automation targeting the poor (Eubanks, 2018) and the risks of ‘math destruction’ inherent in today’s algorithmic systems (O’Neil, 2016) have paved the way for increased activism against (un)responsible artificial intelligence also in Europe.

In addition to questions related to human rights, much scholarly work evaluates the effect of digitalization on the nature of public and welfare services. Digital welfare reforms – shifting administrative reorientation – are often fuelled by new public management logics, aiming at improving efficiency and cutting costs (Schou & Hjelholt, 2018). Yet, from a street-level administration’s point of view, digitalization may significantly alter existing (human-to-human) work practices by transforming the bureaucracy into ‘screen level bureaucracy’ (Bovens & Zouridis, 2002) and circumventing human judgement in welfare provision. This may lower the personal biases in decision making (Bullock, 2019), but also blur democratic values such as accountability and transparency (O’Neil, 2016; Eubanks, 2018; Bullock, 2019). Indeed, highly influential scholars see cutting out the human factor from public services as disrupting the very heart of welfare administration (Lipsky, 1980; Simon, 2013). Lipsky’s much-quoted claim that ‘the nature of service provision calls for human judgement that cannot be programmed and for which machines cannot substitute’ (Lipsky, 1980: 161) highlights the view that digitalization is incompatible with some aspects of human-centred work (Hansen et al., 2018; Schou & Pors, 2019; Larsson & Haldar, 2021). The paradox, however, remains that although some public-sector professions, such as social workers drawing on their discretion and holistic understanding of the clients, seem to be ill-suited targets for digitalization, the technological processing is particularly well suited for the public sector, where the workload is high and resources are scarce (Lipsky, 1980).

Challenges to Social Policy Outcomes

The change in governance arising from technological advancements also changes policy outcomes. The digitalization of governance may mean improved targeting of certain benefits and services, and it may solve previously wicked problems, such as the non-take-up of social benefits and the

inaccessibility of (online) services. Yet, digitalization can also exclude people based on criteria obfuscated by the black boxes of automated decision making as well as increase the digital divide and digital inequalities in access to, use, and benefits of digital technologies to their users (van Dijk, 2008; Schou & Hjelholt, 2019; Schou & Pors, 2019; Helsper, 2021).

Social policy research has been particularly strong in analysing the challenges arising from technology, in particular in relation to social risks (e.g., how automation transforms and disrupts labour markets and employment). The literature denotes abundant examples of risks relating to technological transformation, including, e.g., the disappearance of routine tasks and higher insecurities among the low skilled (see, e.g., Eichhorst & Rinne, 2017; Thewissen & Rueda, 2019; Lim, 2020). Although more recent forecasts no longer suggest the ‘end of work’, destruction of jobs or full-fledged human/machine substitution (Frey & Osborne, 2017), digitalization is believed to cause a creative destruction of jobs and to fundamentally change the nature of work and skills attainment. This is expected to necessitate more effective public policy solutions in education and training policy, social protection, and care policies (see, e.g., Greve, 2019; Palier, 2019; Dermont & Weisstanner, 2020a). Valenduc and Vendramin (2017: 132) recently noted that the relationship between technology and jobs is mediated by various factors, including skills and learning, human resource management social dialogue, as well as economic and social processes of diffusion and adoption of innovations. Some elements of digitalization, such as the rise of platform economies, strengthen labour market precariousness and drive polarization between labour market insiders and outsiders. In a way similar to previous atypical labour forms, platform work may strengthen existing inequalities and magnify social risks (such as workers’ exclusion from labour law, social protection, and labour representation) (Drahokoupil & Jepsen, 2017). Platform work can also foster insecurities relating to work and working conditions (Pesole et al., 2018). Some scholars claim that digital labour markets jeopardize the overall functioning of welfare states and labour markets (Degryse, 2016).

These observations have resulted in academic efforts to discuss appropriate welfare state actions in the digital era and the need to renew social protection and social services. Palier (2018: 253–254), for instance, suggests ‘a disproportionate increase in resources and security concentrated on one side of modern society, and a growth of low-paid, precariousness and new social risks concentrated on the other’. Palier’s observation (see also Palier, 2018; Im et al., 2019; Thewissen & Rueda, 2019) reminds us of the scholarly attention in the early 2000s calling for a rethink of welfare states due to labour market dualism and the recalibration of old institutions into a social investment state (Esping-Andersen & Vandenbrucke, 2002; Ferrera et al., 2007; Jenson, 2010; Hemerijck, 2018). Further scholarly discussions focus on the idea of basic

income as a potential answer to technological disruptions in work and income as well as to the problems of social protection of precarious workers and atypical workers (Martinelli, 2019; White, 2019; Dermont & Weisstanner, 2020b).

ROAD MAP TO FUTURE RESEARCH

The welfare state is historically tasked with protecting and investing in people's welfare and wellbeing. In Offe's (1984: 154) words, the welfare state is 'a device, rather than a step in transformation of, capitalist society'. Fundamentally, the welfare states in 2021 still embrace the basic idea of welfare rights and protection. Technological advancements in contemporary societies are great, but the welfare state remains intact. Social policy research shows that differences across Europe remain, but the analysis does not (yet) support the assumption that welfare states have undergone a third-order change (Hall, 1993). As for analysing the nature of welfare states vis-à-vis digitalization, I follow Esping-Andersen by suggesting that it is *not* 'the presence of the battery of typical social programs' that signifies 'the birth of a welfare state' (Esping-Andersen, 1989: 20). It is not just the presence of technologies that makes up a digital welfare state. The emerging social policy research discussed in this chapter implicitly suggests that welfare state changes arising from digitalization tend to be 'second-order' changes (Hall, 1993). New institutions such as digital welfare administration (from front-office digitalization to back-office automation) have been introduced and some of these have been 'disruptive', altering the logic of the administration and delivery of social services. Therefore, the digital welfare and automation changes go beyond first-order change.

Regarding policy outcomes, the functioning and legitimacy of welfares are challenged to see to what extent they protect against and mitigate technology-driven risks sustained by the digital era. Again, the empirical evidence remains inconclusive. There is evidence of tech-driven inequalities, such as insecurities in the labour market due to automation. The literature also highlights the inability of existing institutions to safeguard against some of these risks (such as precarious platform workers having no access to social protection). However, to what extent this is fuelled by technology, or other socio-economic factors (globalization, deregulation of labour market) is not clear. Therefore, it is important that the future social policy research agenda gathers and evaluates more empirical evidence of societal and institutional changes caused by technologies and critically analyses its impact on welfare state institutions. This research field remains under-researched, in particular in relation to empirical work. I suggest next some areas and concepts that may prove fruitful for the future research agenda.

A first area of future research should focus on the politics of digitalization. Digital welfare reforms tend to be highly apolitical (Schou & Pors, 2019; see also Löfgren & Sørensen, 2011; Saikkonen & van Gerven, forthcoming), however, these reforms are highly salient and affect the fundamental issues of democratic states, such as equality and legitimacy. Influential research has shown the dangers of automating inequalities on an economy of scale (O'Neil, 2016; Eubanks, 2018). Yet, little empirical work investigates the politics behind digital welfare reforms, the trade-offs making these policies, and the perceived legitimacy of the digital welfare state from a societal perspective (both policy administrators required to use digital systems as well as citizens being subjected to digital reforms). A particularly interesting starting point would be civil society organizations' influence in these areas as they are traditionally important actors in many welfare states. The keynote of Joanna Redden in the ESPAnet 2021 conference, for instance, discussed how these civil society actors draw media attention to digital failures, which can lead to policy change.

A second area needing more research is in welfare administration, for example the impact of digitalization on work for the autonomy and professionalism of welfare administration (Bovens & Zouridis, 2002; Busch & Henriksen, 2018; Bullock, 2019) as well as from the clients' perspective (Hansen et al., 2018; Lindgren et al., 2019). What are the long-term effects of the ICT systems and how multiprofessional organizations construct technology are important areas to understand the long-term effects of digitalization in a broader organizational perspective. Finally, fruitful scholarly advancements can be made by analysing drivers and specific aspects of digital exclusion and interventions against exclusion. Although we know about the risks of exclusion and vulnerabilities in the digital age, we know very little about the mechanisms of digital exclusion and inclusion and how and by whom these can best be mitigated. We also need better empirical evidence of new social risk categories and how technological risks are defined as risks.

CONCLUSION

Coming back to the main puzzle that I started with, what is a digital welfare state and to what extent welfare states have been transformed into new digital welfare states, ample social policy research supports the conclusion that the welfare state's mission to protect citizens against social risks, whether 'old', 'new', or those risks emerging from digitalization, is very much alive. Digitalization can provide useful tools for governing welfare but it also stratifies society and can strengthen marginalization by excluding the vulnerable (Mossberger et al., 2003; Schou & Pors, 2019). In that regard, welfare protection is seen to fall short in many domains. The rapidly growing research

agendas around digital exclusion and the existence of a digital underclass (Watling & Rogers, 2012; Helsper & Reisdorf, 2017; Ragnedda, 2020) illustrate stratified inequalities for marginalized groups: old, young, low skilled, migrants, disabled, and work incapacitated.

These research agendas, together with a wide range of social policy scholarship (Greve, 2017; Neufeind et al., 2018; Eichhorst et al., 2020, just to name a few), necessitate a profound rethinking of twenty-first-century welfare states, the impacts of technological change strengthened by the fiscal welfare state, and changing demography and climate change. Emerging social policy research draws inspiration by building on political responses to technological change within the social investment paradigm, encompassing the cross-sectional institutional arenas of the labour market, education policy, and social protection (Hemerijck, 2017; Eichhorst et al., 2020), but also themes of sustainability, city planning, and environmental policies. Technology is part of these discussions and an important research agenda to develop further, but it is not the only challenge welfare states face. We need social policy analysts to engage in the societal, political, and academic debate on the impact of technology on social policy and the welfare state. It is no longer a question of whether technology is a solution for welfare states, but rather *where* technology adds value for welfare and wellbeing and *how* technology should be designed to fight inequality and exclusion.

NOTE

1. Artificial intelligence in algorithmic technologies imitates human behaviour in applying knowledge in repetitive tasks. Machine learning (or deep learning) is more advanced: it trains algorithms by feeding data to detect patterns or other information. The Internet of Things is a general term for systems of interconnected devices, in a wireless manner, via the internet.

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