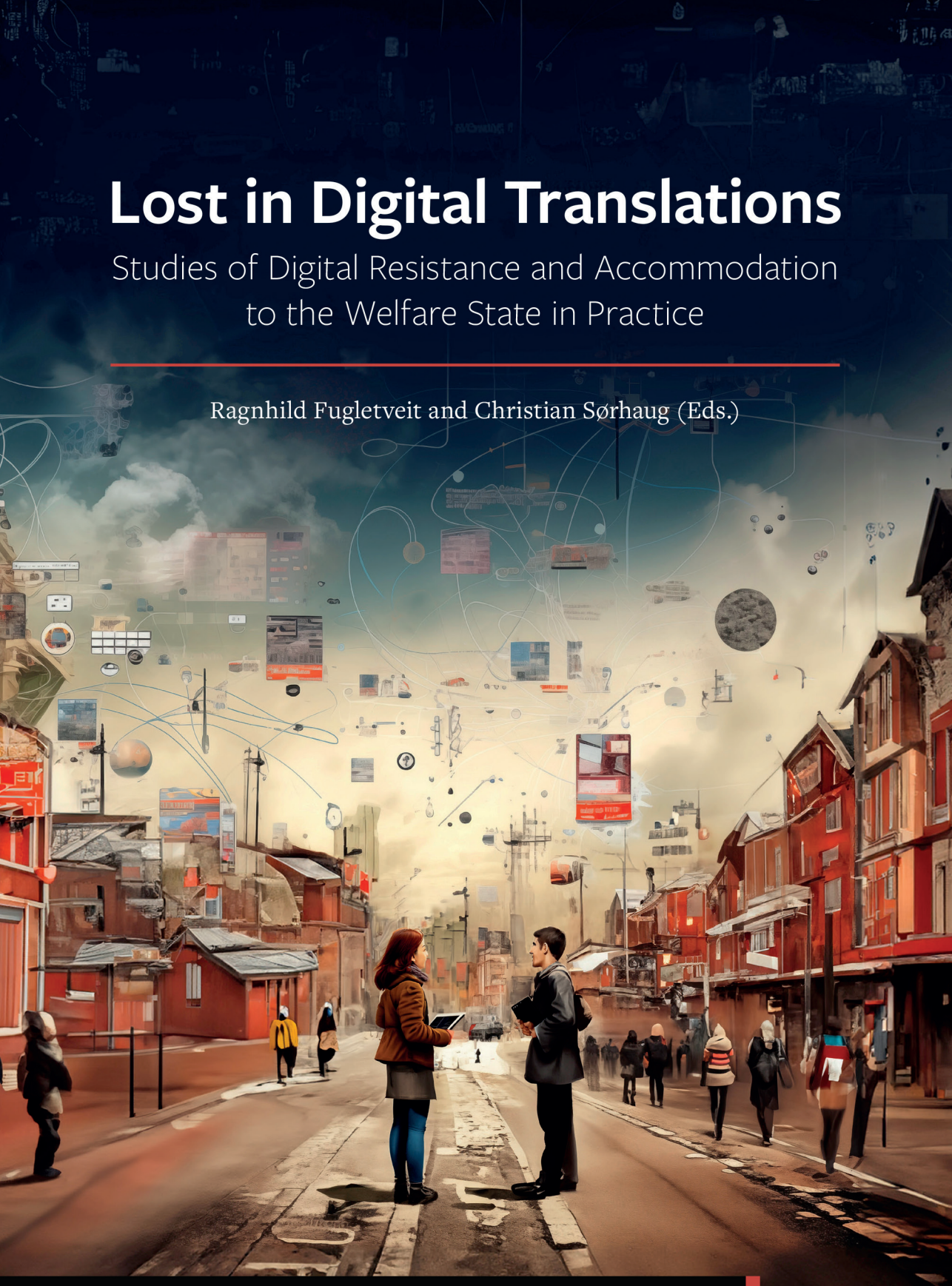
Lost in Digital Translations

Studies of Digital Resistance and Accommodation to the Welfare State in Practice

Ragnhild Fugletveit and Christian Sørhaug (Eds.)



CAPPELEN DAMM AKADEMISK

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Preface

What do you get if you ask artificial intelligence to generate an image from the prompt: 'Welfare state that goes from analogue to digital'? Apparently, our front cover. In the centre of the image, a woman with an iPad is talking to a man. Helping with directions? Conducting a survey? Is she a social worker doing outreach work? Their surroundings are dominated by a flow of information in the 'cloud' that mirrors traditional infrastructure such as roads, electrical grids, and streetlights. In the process of digitalizing our welfare state infrastructure and communication, the structures in-between us have become even more concealed, obscure, and invisible. Yet the impact of digitalizing welfare on our everyday lives has never been more profound.

In our critique, we have emphasised how digital translation risks reducing, supplanting, or undermining the analogue dimensions of human communication. This influences the very production of meaning. As the philosopher Jean-Luc Nancy writes in *Being Singular Plural*: 'There is no meaning if meaning is not shared, and not because there would be an ultimate or first signification that all beings have in common, but because *meaning is itself the sharing of Being*' (2000, p. 2). Communication and community are etymologically close allies. How we communicate also influences how we are as a society. We cannot separate online from offline in everyday life when it comes to how we share our existence. Sharing digitally also gives existence meaning.

Artificial intelligence is for the most part a question of statistical machine learning processes. AI is a tool that may or may not assist us in grappling with existential questions like the meaning of life, or why we write books like this. The designer of the cover of our book said he was not concerned about AI taking over his job as a designer: AI does not understand context, and his job is to calibrate and tailor the design the way the customer wants. AI is simply not able to do the things that he does.

Our primary focus has been to sort between the techno-optimistic and the techno-pessimistic narratives that emerge from a society that is engaged with a massive experiment of digitalizing its welfare infrastructure and

services. The Norwegian state is eager to explore and exploit the potential gains in digitalising its welfare system. However, as modes of communication, services and transfers are digitalised, we argue that certain dimensions of welfare are influenced. For some citizens these changes are beneficial, while for others, misery is exacerbated. The Norwegian Digitalisation Agency calculates that about 20% of the population experience some kind of digital exclusion. However, less is qualitatively said about exactly how this exclusion is experienced, negotiated, and understood by citizens.

Through the studies presented in this book we provide insight into the digital resistance and accommodation expressed by various citizens and how they relate to the state and its effort to digitalize its infrastructure. If what Nancy says is true – that meaning is itself the sharing of being – what happens with meaning when the sharing of being becomes increasingly digitalised? What is lost? Which types of knowledge are prioritized, and which types are marginalized? As we see it, the very composition of our welfare state is at stake in these questions, and hence what welfare is and should be, is in play. Being a Norwegian citizen has in the postwar era been concerned with a robust welfare state that is rather more a guarantor of autonomy than a threat. We believe this is still the case. At the same time, we argue for a concern that involves some worrying tendencies in a state that is eagerly mining the benefits of digitalization, without being sufficiently critical of the innovations it is pushing through the state apparatus.

We hope that this book will contribute to the expanding field of digital welfare studies. Through the journey of writing this book we are lucky to have collaborated with inspiring colleagues and co-workers. First, we would like to thank Østfold University College, with its research initiative The Digital Society, for its generosity in financing the project's seminars as well as this book. Special thanks go to our administrative director Trine Eker Christoffersen for her generous support of the project from the beginning to the end. We are also very grateful to the publisher, Cappelen Damm Akademisk, and particularly Marte Ryste Ericsson for her insightful and experienced editorial work.

During the work with this project, we organized several seminars during which the contributors presented their chapters. We would like to extend special gratitude to Jens Olgard Dalseth Røyrvik at NTNU's Department of Social Anthropology: Your presence, comments and input have been greatly valued. Last, but not least, we are especially grateful to all the authors who contributed to the book. We feel privileged to have

had the possibility to work and collaborate with you all during the last two years. This book is the product of us sharing and being together. It has been a pleasure.

Christian Sørhaug and Ragnhild Fugletveit
5 December 2023

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Introduction: The Need for Implementing a Digital Welfare Critique From an Assemblage Analytical Approach

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> The complexity of our individual histories cannot be losslessly translated into neat, digital formats. Likewise, our self-assessments come from layers upon layers of subjective valuations, all of which are utterly unintelligible as ones and zeros.
>
> —Cheney-Lippold, 2017, p. 10

> A commonplace rhetoric has it that the world has entered a "digital age" whose dramatic "dawning" has made the analog obsolete. This is nonsense. The challenge is to think (and act and sense and perceive) the co-operation of the digital and the analog, in self-varying continuity.
>
> —Massumi, 2021, p. 143

Our aim in this chapter is to show and discuss what is lost in digital translations as the welfare state and society increasingly use digital technology in welfare production. We argue that there are several unintended consequences we need to be attentive to regarding digitalising society and our welfare production, distribution, and consumption. In addition, there is a need to make what is lost in digital translations more visible in welfare state practices. We use the concept of 'practical knowledge', to sensitise ourselves

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to the effects of how digital technologies disrupt, transform, and change welfare in various ways. Aristotle's term *phronesis*, practical knowledge (wisdom), has inspired generations of philosophers and social scientists to explore alternative dimensions of knowledge, in contrast to the hard sciences' search for neutral, objective, theoretical knowledge (Bourdieu, 1977; Flyvbjerg, 2001; Foucault, 1972; Heidegger, 1962; Wittgenstein, 1997). Practical knowledge is embodied and embedded in context-dependent settings and does not necessarily travel well. Classic works like *The Tacit Dimension* (Polanyi, 2009), *Situated Learning* (Lave & Wenger, 1991) or *Situated Knowledges* (Haraway, 1988) make the point that knowledge unfolds in settings, and cannot, without problems, be transferred from one place to another without a loss of information. As such, practical knowledge is embodied and embedded in the settings in which they unfold.

Today we find that digital technologies provide a wealth of new opportunities for states to exercise and use the power of information and knowledge to influence citizens (Fourcade & Gordon, 2020). Drawing on the work of James Scott (2020) and his analysis of states as a large set of heterogeneous institutions and people working to coordinate, measure and standardise the world according to a particular social ordering, Fourcade and Gordon stress the consequences of a dataist state on ways of governing (2020). This idea of classifying and interpreting the world also engenders a particular way of seeing – seeing like a state (Scott, 2020). Digitalisation is, in this perspective, bureaucracy on steroids, enforcing the socio-technical machinery that constantly interacts with citizens. Digital technologies standardise and quantify, and thereby de-contextualise information. In this process digital technologies tend to make visible the standardised and quantifiable aspects of human lives, where complexities and irregularities potentially become anomalies. This exacerbates inequalities where '… it turns out in practice, the process by which states come to see is a special kind of power that has been variously criticized as intrusive, imperfect, unjust, and oppressive' (Fourcade & Gordon, 2020). However, digitalisation is not just a question of new technology that offers quantities of data to use in governing. This also signals a qualitative difference in how statecraft is performed, and '… heralds a deeper transformation of statecraft itself' (Fourcade & Gordon, 2020, p. 80), offering new ways of exercising social control (Deleuze, 1992).

In the case of Norway, which is a leader in using digital technology in its state apparatus and public services (Ministry of Local Government and Modernisation, 2019), the drive to digitalise offers the promise of better and more efficient welfare services. However, if we follow the Danish sociologist

Gøsta Esping-Andersen, and understand welfare states and institutions as '… predominantly preoccupied with the production and distribution of social well-being' (1990, p. 1), then we need to ask what happens to social well-being (ensuring the social and economic inclusion of citizens) when we digitalise our welfare service state?

Digital Communication and Practical Knowledge

The word *digital* became popular with the advent of the electronic computer and the early cyberneticians, who took a keen interest in the distinction between digital and analogue information (Turing, 1950; Wiener, 1948). Cybernetics is 'the art of steermanship' (Ashby, 1957), and deals with how entities continuously adapt to changes in the environment based on information being fed back into a system (Pickering, 1993, 2002). Information in the feedback loop can be analogue or digital. The language of digital technology is based on zeroes and ones, as Lippold-Cheney notes (2017), information of discrete units forming the basis for computer programs and algorithms. Gregory Bateson expanded on this idea in anthropology and psychiatry, inspired also by the structuralism of Claude Levi-Stauss (1969). Digital information is characterised by being discrete, discontinuous units of completely arbitrary information (Bateson, 1972, p. 372). For example, Bateson makes the point that it is nonsense to say that your telephone number is larger than another person's. It is just a matter of '… names of positions on a matrix' (1972, p. 372). This is in contrast to the analogue:

> In analogue communication, however, real magnitudes are used, and they correspond to the real magnitudes in the subject of discourse. … in kinesic and paralinguistic communication, the magnitude of the gesture, the loudness of the voice, the length of the pause, the tension of the muscle, and so forth – these magnitudes commonly correspond (directly or inversely) to magnitudes in the relationship that is the subject of discourse. (Bateson, 1972, p. 373)

Bateson insists that in the natural human world communication is seldom either analogue or digital, but rather appears simultaneously in variations (Bateson, 1972, p. 291; Watzlawick, Bavelas, & Jackson, 1967). Digital technology, however, makes possible what Tord Larsen has called processes of entification, where relational phenomena become objectified through processes of measurement and standardisation (Larsen, 2009, 2013; Larsen, Blim, Porter, Ram, & Rapport, 2021; Larsen & Røyrvik, 2017). For example,

when welfare services and communication are digitalised, the frontline worker becomes partially entangled in systems that objectify citizens through measurement and standardisation, influencing the relational work that welfare production, distribution, and consumption are based on. The discretionary judgments of frontline workers may be undermined by the pull-down menus built into the software infrastructure (Fyhn, Røyrvik, & Almklov, 2021), thus limiting their options for helping clients. Digital communication platforms may be designed to promote coordination but end up producing anxiety in an already stressful working day.

The later philosophy of Ludvig Wittgenstein (Wittgenstein, 1984, 1997) can be a source of inspiration to criticise and reflect on the production of knowledge unfolding in digital welfare society. In *Philosophical Investigations* (1997) Wittgenstein clearly breaks with his previous propositional knowledge-based approach in *Tractatus* (2010), and introduces a philosophical perspective in which language and human action are in practice intertwined. Here language assumes a broader meaning, including gestures, hints, winks, nodding to a waiter in a restaurant to get his attention, or following signs on a road. To understand the meaning of the words and signs, you need to be familiar with their usage in particular settings, with their practice. In his later work Wittgenstein criticises the idea that language can be reduced to propositions. Practical knowledge is gained through training and practise in situations where concepts are applied (Johannessen, 1988). It is then through the *use* of words and concepts that you make sense of them. If you try to take them out of a particular setting or context, however, the entire meaning may change, since the meaning is given through the setting in which the concept is applied.

A Need for Robust Information in Providing Welfare

Practical knowledge can be said to be embodied and embedded in knowledge that develops through experience and training. In *Philosophical Investigations*, Wittgenstein refers to different types of knowing to answer the questions, 'How high is Mount-Blanc?' and 'How does a clarinet sound?' (§ 78). Answering the first question is a simple fact. The second requires experience and training, and the use of examples (Johannessen, 1992). Gilbert Ryle, himself inspired by Wittgenstein, distinguishes between 'knowing how' and 'knowing that' for practical knowledge versus

propositional knowledge (1945). Telling a joke, for example, is bodily, practical knowledge that requires timing, emphasising the correct parts of a sentence, and gesticulations. Providing welfare, in the sense of ensuring the social well-being of citizens, cannot itself be reduced to a question of propositional knowledge, on which digital technologies depend. Knowledge and the process of sense-making, we would argue, is characterised by needing both the analogue and digital dimensions of human communication, both propositional as well as practical knowledge.

There is a need for the non-reducible dimensions of practical knowledge involved in discretionary understanding and tacit, relational knowledge. Both Massumi (2021) and Cheney-Lippold (2017) note a potential loss in the translation of meaning into digital formats. We must be aware of this in the production and distribution of social well-being. We argue that there is a need for *robust information*, meaning the co-functioning of the analogue and digital dimensions of the practical knowledge needed to produce social well-being. Positioning ourselves in the debate regarding a dataist government, we investigate what happens to practical knowledge when the Norwegian welfare state implements digital technologies. We are especially interested in cases which deny, undermine, or undercut the co-functioning of the analogue/digital, and how this influences the unfolding of practical knowledge for both citizens and government employees.

Four Dimensions of the Assemblage Analysis in a Welfare Context

Our proposal to unlock the black box of a dataist state is through assemblage analysis. We draw on the fertility of the cybernetic and ecological thinking of Gregory Bateson, towards assemblage thinking associated with the philosopher Giles Deleuze, which has a certain family resemblance (Shaw, 2015). Deleuze does not clearly define assemblage, as he was more interested in concepts as heuristic devices (DeLanda, 2006). However, a frequently used explanation states that assemblages are a:

> …multiplicity which is made up of many heterogeneous terms and which establishes liaisons, relations between them across ages, sexes, and reigns – different natures. Thus, the assemblage's only unit is that of co-functioning: it is a symbiosis, a 'sympathy'. It is never filiations which are important, but alliances, alloys; these are not successions, lines of descent, but contagions, epidemics, the wind. (Deleuze & Parnet, 1987: 69)

Thus, we can understand the assemblage as a provisional analytical tool to conceptualise phenomena as unfolding, temporarily stable configurations of heterogeneous component parts, continuously transforming as components parts are added or extracted from the assemblage. Given that component parts, like digital technologies, their adding and extracting from certain welfare assemblages might have substantial effect, and this is what needs to be traced in these cases. In line with this thinking, we are interested in assemblages of the analogue/digital, where the co-functioning of the analogue and digital dimensions unfolds through various welfare state practices, and what this does to practical knowledge and the well-being of citizens in relation to governments.

Assemblage thinking has been suggested as a fertile approach for analysing the digital society (Lupton, 2015, p. 23), technologies at work in practice (Orlikowski, 2007), or how 'hipsters' are counter-reacting to the digitalisation of society (Thorén, Edenius, Lundström, & Kitzmann, 2019). *Welfare state practices analysed as assemblages may assist us in sensitising ourselves to the effects digital technologies have on practical knowledge and the production and distribution of the social well-being of citizens*. The assemblage analytical approach is characterised by: 1) emergence, 2) performativity, 3) territorialising, 4) desire. The concept of emergence is an anti-reductionist stance, insisting on the processual life of, for example, social well-being in all its forms in a welfare state. Cooperation, in the Deluzian-inspired processual philosophy of Bryan Massumi, is a question of the co-functioning of various heterogeneous humans and nonhumans, constantly unfolding in temporarily stable assemblages.

Secondly, digital technologies are performative in that they can potentially create and transform the assemblage they are plugged into. Matter matters, as Karen Barad points out in arguing for the intra-agency of technological artefacts, generating effects in how reality emerges (2003). Material objects and digital technologies are involved in determining reality (Mol, 2002), giving rise to what Brit Winthereik calls ontological trouble, thus questioning the fruitfulness of a data-driven management discourse that dominates current welfare regimes (2023). Thirdly, we find that digital technologies play into the re/de/territoralising of welfare state practices. Territorialising is meant literally, in that digital technologies influence the spatial-temporal rhythms of work and the quality of the welfare provided. Lastly there is a desire aspect to welfare state assemblages. Norwegians are keen to receive more, not less, welfare services. Desire (indicating wishes

rather than anything sexual) is embodied and corporeal, and the desire/wish for welfare services is experienced by different citizens differently (wicked problems). After presenting these four dimensions of the assemblage analysis, we will conclude with some remarks on applying an assemblage analytical approach to criticise and develop the use of digital technologies in welfare state practices.

1) Emerging: Digital Infrastructuring Between the State and Municipality Level

Digitalisation policies and the accompanying digital technology, and the ability to reconfigure infrastructure in various ways, have an enormous impact on how welfare state practices unfold in various settings. Assemblage analysis (Savage, 2020) can then be one way of sensitising us to how digital technologies influence the production and distribution of the well-being of citizens and contribute to sustainable lives. In Norway, hospitals (since 2002) have been removed from regional authority administration, and organised into state-owned, independently managed units, Hospital Trusts, each responsible for budget maintenance and cost containment. The central enactor of Norwegian welfare state ambitions is located on the municipality level (Vike, 2018). Elderly care, social welfare, and childcare are some of the tasks, as well as the long-term care of patients after being hospitalised. The importance of hospital – municipal coordination (*samhandling*) became apparent when the expected results of the hospital reform, in terms of cost containment, failed to materialise. This realisation gave rise to the Coordination Reform (2008–2009), reinstating coordination through mandated agreements between Hospital Trusts and adjoining municipalities.

Guro Huby discusses an attempt to tackle some of the challenges of coordination in the chapter 'The Bridge of Knowledge: Infrastructure for the Coordination of Health and Social Care or an Easy Fix?' (chapter 1 in this book). The Bridge of Knowledge is a digital learning platform designed to improve coordination between hospitals and municipalities by providing municipal staff with the evidence-based skills and knowledge they need to take care of patients previously managed in specialist hospital services. Huby shows that the complexity of transferring patients with multimorbidity and complex needs from specialised hospitals to generalist municipal care settings requires more than what this digital learning platform can

offer. She presents evidence that coordination, and the knowledge underpinning coordination, require attention to the construction of a shared understanding, alignment of interests, and building of commitment and trust between variously positioned actors in the healthcare system.

The difficulty inherent in digital infrastructure is that only some parts are visible, while other parts are invisible. Infrastructure is tangible in some places, and ephemeral other places. The processual ontological status of infrastructure makes it difficult to pinpoint, because it is boring and unexciting (Star, 1999), and that it '… resides in a natural background, as ordinary or unremarkable to us as trees, daylight, and dirt' (Edwards, 2003, p. 185). Infrastructure as a taken-for-granted and natural background, yet at the same time a very important aspect of organisational everyday life, means that we need to sensitise ourselves to its central position (Orlikowski, 2007). Infrastructure is critical to the unfolding of practical knowledge, since this infrastructure is a central organiser, connector, producer, and maintainer of everyday life for both frontline workers and citizens. Directing our analytical attention to infrastructuring in practice shows how politics, values and ethical standards are inscribed in governments' technological and material systems. Analysing digital welfare infrastructure as a 'connective tissue' (Edwards, 2003, p. 185) of society, which continuously crafts connections (Geirbo, 2017) and creates our welfare society, albeit in a somewhat different way, provides us with tools to understand some of the changes unfolding in a digital world. A recurrent worry is that professional discretionary understanding and deliberation, the cornerstone of practical knowledge, and central to quality healthcare, is undermined.

In another example of the cooperation between Health Trusts and municipalities, we find a central assumption to be that large quantities of data can generate quality health services. In 'Quality on the Dashboard' (chapter 2 in this book), Gunhild Tøndel and Heidrun Åm reveal the increased use of quality indicators in the healthcare sector. They uncover a push to quantify quality, or to reduce quality care to a question of gathering enough quantifiable data as information that can somehow create the basis for quality care in the future. This is demonstrated through their vignette on the Health Platform, which is the biggest and most ambitious ICT project in Norway. The project has been implemented in Central Norway and aims to realise the government ambition articulated in the white paper, *One citizen – one journal* (2012–2013). The platform has encountered a range of problems in its initial phase, with public outcry that it represents a threat

to patients' security. The translation of inhabitants' data into one journal has proven to be more complex than what managers in the regional health sector and national politicians imagined.

'Quality on the Dashboard' alludes to the real time synchronisation of data to immediately update all involved parties. If a hospital changes a medical prescription, the patient's home care service is immediately informed. The feedback of data into the system then provides quality in that the information is immediately available, and for example home care services can make adjustments to ensure quality. Datafication and automation of information gathering enables monitoring that previously was not possible, such as monitoring the differences in how individual doctor's work. Tøndel and Åm say that one problem with the need for data is also that health workers and street level bureaucrats must produce data constantly through what they feel are meaningless reporting demands. Further, the need to report also erodes their working hours and their care work in relation to clients and patients. As such, Tøndel and Åm suggests that what is actually going on is a 'deductive statecraft', in contrast to a supposedly "inductive statecraft" (Fourcade & Gordon, 2020).

Reducing the complexities of human lives to zeros and ones has clear advantages. At the same time, these findings also suggest that we need to be aware of the pitfalls of digitalising welfare infrastructures, as this might also mean that practical knowledge and discretionary judgment is undermined or made less legitimate. Concepts like 'deductive statecraft' (categories built from the state perspective), and findings from the Bridge of Knowledge (where we find a lack of shared meaning and alignment of interests between hospital and municipality), reveal the undermining of practical knowledge between these institutions. This is problematic given that good welfare (quality health and social services) hinges on solid cooperation between hospital and municipality. Recently the Norwegian Board of Health Supervision has criticised the implementation of the Health Platform, because patient security is at risk given the malfunctioning of this digital technology (Helsetilsynet, 2023). The assemblage analytical approach, where digital technology is understood as an external relation into a welfare assemblage alongside other external relations (institutions, professionals, patients, clients, funds, laws etc.), sensitises us to the fact that we cannot assume beforehand that the implementation of digital technologies in these welfare systems is helpful or will increase the quality of welfare.

2) Performativity: Production, Relationality, Politics, and the Ability to Respond

Assemblages are performative. Technologies and materialities have a performative agency that is inextricably bound out to organisational everyday life and practical knowledge. The concept of sociomaterial assemblages, as introduced by Wanda Orlikowski (2007), underlines how materials and technology are inextricably bound to organisational life, and cannot be studied as separate entities, as has been the general tendency in organisation studies. From this standpoint, introducing automated decision systems or performance evaluation systems into an organisation will influence the very constitution of the organisation, and how it performs. If we follow the idea that organisations are sociomaterial assemblages composed of a range of heterogeneous elements, human and nonhuman, supposedly arranged with a specific strategic goal (producing welfare for citizens, or producing oil and profit for a nation), then the adding or extracting of central component parts will influence the composition of the organisation and its performance – or agency.

In 'Talking About Algorithms' (chapter 3 in this book), Hanne Cecilie Geirbo and Rannveig Røste explore the challenges of using algorithmic systems to make decisions in relation to casework in NAV. They study the ongoing development and implementation of an automated decision support system for the care of sick children. There are two central problems of translation, and hence loss. One is translating judicial law language into coded algorithm language. Judicial conundrums and subjective interpretations of legal solutions cannot be translated into data code without losing something. Further, professional case workers can make discretionary judgments case by case and are able to be context-sensitive to the challenges the clients experience. They point out the fact that equal treatment is not always fair treatment, and that an important part of discretionary judgment is to distinguish between fair and equal.

As algorithms and the datafication of public services entangle our everyday lives, many of us do not notice their influence on welfare. Digital technologies give us the promise of enhancing the quality of health and social services through the datafication of citizens. Algorithms as '… logically structured formal instructions for mechanically translating specific "inputs" into desired "outputs" – are now used to assist and replace human judgment and expertise in countless areas…' (Hasselberger, 2019, p. 977). They are also built on a specific understanding of ethics, which systematically

undercuts human deliberation of ethical dilemmas. If ethics deals with human deliberation bound to a certain dilemma in a concrete setting, the use of an algorithm to act ethically has some serious pitfalls. Heather Broomfield and Mona Lindtvedt (2022) ask, 'Is Norway stumbling into a digital welfare dystopia?'. In their review of policy documents relating to the use of predictive models (AI) in the Tax Administration and the Norwegian Labour Administration they find a lack of concern and critical thinking in these government documents. They call for re-politicisation, transparency, and public guidelines in the use of predictive models.

In their contribution 'Technologies of Control and the Invisible Transformation of the Labour Market from Welfare State Priniciples to Welfare Capitalism', Jens Røyrvik and Alexander Berntsen (chapter 4 in this book) discuss the organisational life of the Norwegian oil company Northoil and their performance management system called People@Northoil (P@N). In this management system workers are evaluated by co-workers according to numerical assessments by other employees and their managers. The score the employees achieve decides their salary and is important to their career. Røyrvik and Berntsen demonstrate how this digital infrastructure bypasses the trade union in negotiating salaries in the Norwegian welfare state model. This paves the way for welfare capitalism where individuals are rewarded individually – based on their calculated performance –rather than achieving rights based on collective bargaining through trade unions.

The undercutting of trade unions and the workers' individual negotiation of salaries through P@N sidesteps the tripartite collaboration (employees, unions, and government) that has characterised the Nordic welfare model. The trade unions oppose the use of P@N, since it undermines the collective position of employees, and bargaining possibilities. P@N then is a tool for digitising, the process of encoding an (analogue/digital) event or action into digital formats (ones and zeroes) that can be read, processed, transmitted, and stored through computational technology, and becomes a powerful tool for management at Northoil. This shift in salary negotiation from trade unions based on notions of fairness and solidarity between workers is replaced by 'correctness of calculations'. The digital infrastructure of P@N also signals a shift from the welfare state to welfare capitalism, emphasising individualisation and marketisation of human capital. The authors warn that when number evaluations (grading) of workers become equal to money, the communal actions embedded in labour unions and their social sense of safety are undermined, as is the very foundation of the welfare state.

The seemingly apolitical NAV and depolitical Northoil both constitute an attempt to avoid the political implications of digital technologies in their organisations. In the case of NAV, the digital decisions support system developers seem unaware of the political injustice these automated systems might create, a tendency that is indicated by other researchers (Bjørkdahl, 2021; Broomfield & Lintvedt, 2022). In the case of Northoil, the company seems eager to depoliticise negotiations by transferring them from the unions to individual workers and the company, leaving the tripartite model. Whether apolitical or depolitical this signals a need for technical politics, which also takes into account *knowledge from below*, and the experience of the subordinate participants (Feenberg, 2017, p. 10).

Practical knowledge (the co-functioning of digital and analogue) then plays a central part in the development of this technical politics. Trade unions possess a range of practical knowledge central to the development of a sense of community and ethics. If the social well-being of citizens is the goal of digitalising the Norwegian state, then we need to develop a political sensitivity to how the end users might experience these technological translations. However, the intended as well as unintended effects of digital technologies can be difficult to detect, as they become embedded in the very rhythm of everyday life, as we shall discuss in relation to the production of space-time.

3) Re/de/territorialising: When Spatial-Temporal Rhythms Reconfigure Work on the Frontlines

Digitalisation influences the spacing of welfare institutions and professionals' work processes, as well as clients' experience of welfare services. Architectural design and the interior layout of public buildings promise the creation of more efficient workflows and rhythms when digital technologies are introduced. At the same time, digital technologies introduce new rhythms that destabilise old ones, and influence the very efficiency that was originally promised (Orlikowski, 2007). The processual, relational, and productive aspects of space and its impact on everyday life have been discussed in the social sciences for a while (Feld & Basso, 1996; Ingold, 2002; Lefebvre, 1991; Massey, 2005). As an extension of this discussion, we draw attention to how a digital society also influences the very spatial-temporal organisation of our welfare society.

Sociomaterial assemblages are in a constant movement of territorialising, reterritorialising and deterritorialising space. Territorialising is here meant in a physical sense, where people's lives are embedded in their surroundings, and re/de prefixes indicate that this is a constantly unfolding process. The architectural design of public institutions and organisations is something we seldom reflect on, even though they are central to citizens' care and welfare (Nord & Högström, 2017). Analysing digital tools as sociomaterial assemblages that continuously reconfigure our welfare network exposes the fact that though the assemblage is constantly being amassed and built, its temporary stability partakes in and influences work practices and the production of reality. In practice, as Annemari Mol (2002) argues, '… objects are framed as parts of events that occur and plays that are staged: if an object is real it is because it is part of practice. It is a reality *enacted*' (Mol, 2002, p. 44). Similarly, we want to investigate the enactment of everyday reality for citizens when welfare infrastructures become digitalised. Welfare is a practice, and we always need to be aware of how welfare plays out in situ. The human and nonhuman exist in a network, and can mutually transform each other. Agency in this perspective is a *property of relations*, not something limited to either humans or nonhumans. And any entity in these assembled networks, like a hospital or Nav office, can potentially affect the constitution of the entire network (like society).

When it comes to the digitalisation of society, we discover new modes of territorialising. Hanna Ihlebæk (chapter 5 in this book) shows how nurses negotiate expectations that digital technologies increase the speed of work. The nurses in the chapter, 'The Fast, the Feeble, and the Furious', constantly negotiate multiple clinical rhythms. Ihlebæk argues that the implementation of information communication technology (ICT), digital devices and platforms, reconfigures work practices. Ihlebæk identifies three responses of the nurses in their interactions with digital technologies as strategies for *being ahead*, *falling behind*, and *working the system*, corresponding to the fast, the feeble, and the furious. Digital technologies influence the practical knowledge of nurses in the clinical situation vital to the production of care, and which is outside formal medical care logic (Ihlebæk, 2021). Ihlebæk argues for a critical examination of the digital technologies being implemented in organisational infrastructures to optimise and standardise work processes, and how this implementation produces care. The care work of nurses goes beyond the formal and propositional knowledge articulated by digital technologies. Informal and tacit relational work becomes less visible,

and is allowed less space to unfold through the ICT specialised hospital. Ihlebæk concludes that we need to understand the reactions of the fast, feeble, and furious generated by digital technologies, if we will ever be able to tackle the challenges of future health and welfare work.

This is also the case with NAV and the introduction of the channel strategy discussed in 'Machinic Bureaucracy, Affective Atmospheres, and the Impact of Digitalising NAV Services' (chapter 6 in this book). Sørhaug, Lindstad and Slettaøien discuss the encounter between state employees and citizens in a particular type of space. Inspired by assemblage theory, they draw attention to how a digitalisation and efficiency strategy plays out in the architectural and interior design of the reception area. A dance of agency (Pickering, 1993) unfolds between different component parts, and the dance itself is not very well choreographed. Security guards, electronic gates, and a clinical environment allow few opportunities for good encounters between state and citizen. This analytical effort draws attention to how emerging wholes are generated through the interaction of component parts. Introducing or extracting component parts can potentially alter the assemblage and its capacity to act. For example, digitalising welfare services can have a major impact on the quality of the services rendered, their effects, and how they are experienced.

The provision of welfare involves infrastructural technology, texts, buildings, machines, computers, laws, and other nonhuman elements. Seen from a relational view we can see that '… affordances and constraints are construed in the space between human and material agencies' (Leonardi, 2011, p. 153). The bridging, imbrication, decentring of agency over the human/nonhuman divide is potentially fruitful in discovering the mechanisms that generate the quality we term *welfare*. The point of dislocating agency from the human is *not* about locating agency in the nonhuman surroundings. Rather it is about exploring how relations unfold through the myriad of human and nonhuman agencies. Assemblages are wholes whose properties emerge through the interaction of component parts (DeLanda, 2006, p. 10), having a temporary, stable configuration. Given that the properties of an assemblage emerge from interacting parts, adding component parts to or extracting parts from the assemblage will influence the properties of the assemblage, and its territorialising dimensions.

For example, the Norwegian Board of Health Supervision, which is legally bound to supervise NAV, criticised the channel strategy for excluding citizens who were not able to communicate digitally (Helsetilsynet, 2022).

Given that many of the NAV offices had drastically reduced or even closed their reception area, many vulnerable citizens were not able to get their welfare benefits. The absence of face-to-face meetings was problematic for a number of citizens, and being unable to explain this problem was itself problematic. This criticism then led NAV to reopen and expand opening hours in reception areas. Annemari Mol discusses embedded and incorporated knowledge in medical practices, and the need for thinking about the activity of knowing widely (2002):

> To spread it [knowledge] out over tables, knives, records, microscopes, buildings, and other things or habits in which it is embedded. Instead of talking about subjects knowing objects we may then, as a next step, come to talk about enacting reality in practice. (Mol, 2002, p. 50)

To know is to territorialise, and to territorialise is to know. We could then argue that subtracting, diminishing, or displacing the analogue dimensions of human communication and practical knowledge, may well have a negative impact on our social well-being, and the welfare being produced.

4) Desiring: Where Are the Missing Body Masses?

In 'Citizen From Hell: Experiencing Digitalisation' (Winthereik, 2023a) Brit Winthereik suggests a critical adjustment to Bruno Latour's Where Are the Missing Masses: The Sociology of a Few Mundane Artifacts (1992). Latour laments in his 1992 essay that there are too few accounts of the impact of technological artifacts and agencies. Winthereik, however, says that after 30 years sociologists now have become so skilled in doing tracings and accountings of technological artifacts and their agencies '… that human experiences of living with technology may have gone missing instead. Today, we might ask ourselves, where are the *missing body masses* in digital welfare research?' (Winthereik, 2023a, p. 1, our emphasis). These missing body masses are what we are trying to articulate in our exploration of what is lost in digital translations. The analogue and practical is very much associated with our bodies and particular settings, and does not necessarily travel well, like the digital and propositional dimensions of human communication. These missing body masses, connected with analogue, practical knowledge, are what become distorted, diminished

and/or displaced through using digital technology, causing a lack of robust information to orient the production and distribution of social well-being.

In Deleuze's philosophy, the concept of desire is a productive force actualised through assembled practices. We can argue that there is a connection between desire (understood as a wish rather than sexual) and social well-being. The welfare state apparatus is a desiring machine, with a stated purpose of producing welfare desired by its citizens. A common trait in Norway and other Nordic countries is that the concept of welfare is positive, and there is general consensus among political parties and the citizenry that welfare for the population is desirable (Sandvin, Vike, & Anvik, 2020). In the assemblage analytical perspective, assemblages are compositions of desires: 'The rationality, the efficiency, of an assemblage does not exist without the passions the assemblage brings into play, without desires that constitute it as much as it constitutes them.' (Deleuze & Guattari 1987, p. 399). Assemblages, according to Martin Muller and Carolina Schurr, are to be understood as expressions of desire/wishes co-functioning with the possibility to either stabilise or destabilise an assemblage (2016, p. 224). Desires/wishes co-function with bodies, objects, and social institutions, and arise through these assemblages. One desire/wish that suffers when digital technologies are introduced into the welfare assemblage is the ability to be understood, acknowledged, and recognised.

One way to analyse contemporary governments around the world who use digital technologies to capitalise on more effective and cost-beneficial public management and welfare production, is as a strategy to tame the 'wicked' problems that plague modern public welfare institutions and agencies (Rittel & Webber, 1973). For example, in *The Cyborg Manifesto* the philosopher Donna Haraway (1987) examines the problem of reducing the world to code where pure information flows without friction throughout the world. Her criticism is directed at the use of quantifiable information allowing universal translations. This '… translation of the world into a problem of coding…' generates '…instruments for enforcing meaning' (Haraway, 1987, p. 19). Digital technologies are *instruments for enforcing meaning*, undermining the possibility to negotiate an understanding of social problems as various groups of citizens experience them.

In 'You Become Very Powerless in the Digital System' (chapter 7 in this book), Fugletveit and Lofthus build on their argument, investigating how clients with co-occurring disorders experience their encounter with the digital welfare state. They show how service users with co-occurring diseases and complex social problems experience becoming digital users in

NAV. The analysis indicates that becoming a digital user in NAV involves situations where they are confronted by their lack of digital skills, thus making them powerless, and even excluding those without these skills. In other words, to become a digital user in NAV one must deal with digital interaction, also referred to as 'faceless interaction' (Fugletveit & Lofthus, 2021). Becoming a digital user is coping with a 'faceless position' in a welfare context.

Hence, the increased standardisation and evidence-based knowledge that dominates digital welfare distribution in Norway, creates new challenges addressing individual needs in order to develop sustainable lives. What is lost in becoming a digital user in NAV is the ability to recognise the complexity and variation of the needs of service users, by placing them into 'homogenising categories' (Harris, 2020, p. 2). According to these findings there is a need for a more nuanced understanding of becoming digital service users, which also includes more emphasis on 'systemic injustice' (Haslanger, 2023) to prevent further marginalisation of people in vulnerable positions by the digital social welfare services.

The fragility of information, distorted or diminished by digital channels, impacts its quality, and shapes interactions between citizens and frontline workers. In 'Becoming In/dependent' (chapter 8 in this book), Foss and Sørhaug highlight how digital technology profoundly impacts the lives of tech-savvy users with speech and mobility challenges. Their ethnographic study reveals how even minor changes in their technological setup can disrupt communication and hinder their path to independence. Some technologies empower them to maintain personal autonomy, but introducing new digital technologies can also destabilise it. This lack of analogue communication can render social intervention ineffective or worsen the situation due to inadequate information. In essence, recognition and understanding are crucial, echoing the plea from a citizen in 'Becoming In/dependent', 'You must hear me!'.

The influence digital technologies have on welfare communication infrastructure is immense. However, at the same time, we need to be attentive to the fact that these technologies also influence the quality of communication, which again influences citizens' experience of being understood. In cyborg bureaucracies digital technologies are instruments of enforcing meaning. However, if meaning is understood as emergent and negotiated then we need to be attentive to this if we are to grasp the complexities of citizens' lives. This requires an attentiveness to the limits and influence of digital technologies in the construction of meaning. It also requires an

attentiveness to resistance, and how people articulate feelings of powerlessness and lack of participation in the process of implementing digital technologies.

The Need for Practical Knowledge in Developing Digital Welfare Solutions

The push to digitalise welfare state practices is a global trend, influencing how statecraft is performed and enacted, influencing the lives of millions of people. At the same time, the implementation of digital technologies in the state apparatus and its periphery seems to happen without much attention, or even discussion. The omnipresence of digital technologies combined with public somnambulism makes it imperative to develop a critique of these global trends. We have confined ourselves to the question of digital welfare production in Norway, and how digital technologies tend to suppress, distort, or ignore the analogue and practical dimension of knowledge as it relates to emerging, producing, territorialising, and desiring welfare. There is a problem when digital technology is portrayed as the solution to a particular challenge, rather than dealing with more fundamental issues. For example, the implementation of digital technologies to enhance the coordination between Health Trusts and municipalities avoids the basic question of whether Health Trusts are a good idea at all. The very framing of the problem becomes a technological issue, rather than a fundamental political and organisational problem. As Huby points out, there is still a need for the *construction of shared understanding or aligning interests* between the various interested parties. Similarly, we find in 'Quality on the Dashboard', that quality indicators are the product of managers, IT experts and health professionals acting at a distance from the users who are the subjects of these indicators, creating a kind of *deductive statecraft*. The practical knowledge of nurses and doctors is subverted in these emerging, technological, classificatory regimes of health platforms.

The question, however, is not whether we have too much invasive and extensive quantitative data. Rather, it is a question of whether we have good quality and robust information to guide our welfare institutions in addressing the question of whom welfare is for and why. The assemblage perspective provides us with tools to examine the quality of digital data in the larger assemblage. We have seen how digital technologies influence the very quality of welfare state practices as performance evaluations

systems (P@N), and decision support tools (NAV). Organisations implementing algorithms or algorithmic type software sideline practical knowledge, which previously had a more prominent role in decisions concerning either employees or their clients. Though the use of digital algorithms is portrayed as a support or tool, algorithms can potentially become treated as silicon oracles, undermining other types of practical knowledge, such as professionals' discretionary judgments or the social, communal solidarity of trade unions. The question of a digital society is also a question of how best a society can manage life and death. How does the bio – life – become part of public digital management of a welfare society? We need a positive biopolitics, because the reality of viruses, depression, poverty, and desperation impacts all our lives whether we want it to or not.

Social workers and nurses, as well as clients and patients, engage in different types of work-arounds through acts of tinkering (Mol, Moser, & Pols, 2010), repair (Jackson, 2014) and hacks (Finken & Mörtberg, 2014, p. 313) when encountering the consequences of digital technology. Digital technologies even influence the very spatial-temporal outline of public institutions like NAV and hospitals, in that their architectural planning and interior design hinge on the use of these technologies. The challenge for NAV as a machinic bureaucracy, or for hospitals' efficient architectural designs is that the needs of citizens, and hence welfare, are left behind. There is a risk that we are building a society in which humans must adapt to machinery, rather than establishing and maintaining a well-choreographed dance/communication/interaction between state and citizens in the area of welfare production, distribution, and consumption. Given that digital technologies influence how citizens experience welfare, as well as the very composition of what welfare is, we need to develop a critique that considers the experience of clients' in/dependence and feelings of powerlessness. Some resist digital technology. However, to resist these technological changes is difficult, and often, though portrayed as a choice, is not one in practice. The pull-down menu becomes an instrument for enforcing meaning.

As we see it, the assemblage analytical approach provides tools to evaluate and criticise how digital technologies influence welfare state practices. Such socio-technical assemblages are temporary, stable entities that generate unforeseen effects. Thus, it may be necessary to adjust and tinker with the assemblage so that it creates the desired effect. We need a critical perspective, which not only documents and sensitises us to the ongoing tinkering, work- arounds, and hacking unfolding not only from

below, but also from above. We need a critique that enables us to really understanding the unfolding relations between humans and nonhumans in practice. This is in no way a question of abolishing or stopping technology because it does not work in the way it was originally intended. Rather, there is a need for tinkering, exploring, adjusting, and reassembling. In this way digital technology might play its part in positive welfare biopolitics, which is necessary to improve and strengthen public health and welfare services.

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CHAPTER 1

The Bridge of Knowledge: Infrastructure for the Coordination of Health and Social Care or an Easy Fix?

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Abstract: Managing increased pressure on healthcare resources is a key factor in the sustainability of Norwegian welfare. Coordination of state specialist hospital healthcare and municipal primary health and social care to reduce pressure on hospital care, is key policy, with digitalisation as a coordination tool. The Bridge of Knowledge is a digital learning platform for the upskilling of primary care municipal staff, so they can take on an increased share of disease management from specialist hospitals. Coordination, however, also requires alignment of interests, understanding, and commitment among organisations with different positions in a political healthcare landscape. Will the Bridge become a technological quick fix for unsolved political and organisational issues surrounding coordination? The chapter presents a case study of the implementation to date of the Bridge in one Norwegian healthcare region. Drawing on the concept of infrastructuring, it addresses the research question whether the Bridge of Knowledge can become a stable infrastructure that supports coordination of health and social care in this setting. The chapter suggests that the Bridge's role in coordination is not given in the platform technology per se, but in the ongoing management of political, organisational and technological factors shaping the role of the technology in specific local settings. These factors are likely to remain in flux due to rapid technology development and shifting policy on digitalisation and coordination. Questions about the Bridge as infrastructure for seamless coordination or a quick fix for intractable political dilemmas remain open. Implications for the implementation of digital technology in addressing wider welfare state challenges are outlined.

Keywords: coordination, health and social care, infrastructure, digital learning platforms

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Introduction: A Learning Platform for the Coordination of Health and Social Care

Norway faces increasing pressure on healthcare resources. Accelerating and increasingly costly specialisation in medicine is crowding out hospital space for general diseases, such as mental illness and addictions, chronic conditions like diabetes, respiratory disease, heart conditions, and increased multimorbidity in an ageing population. The treatment of these conditions is being shifted onto municipal care services deemed cheaper and located closer to patients' homes. Coordination (*samhandling*) within and between state hospital and municipal services is key policy, and part of the sustainability agenda of the Norwegian welfare state (Meld. St. 47 (2008–2009)) and worldwide (World Health Organization, 2008). Digitalisation is increasingly part of the Norwegian coordination agenda (Christie et al., 2018; Ministry of Local Government and Modernisation, 2019). However, questions remain regarding the role of digitalisation in supporting coordination efforts.

To address some of these questions the chapter examines The Bridge of Knowledge (the Bridge) (*Kompetansebroen: Portal for Kunnskapsdeling i Helsetjenesten*), a digital platform that supports coordination by posting training material to upskill primary care municipal staff, thus enabling them to take on an increased share of disease management previously undertaken by the specialist hospital sector. The platform also posts information about coordination initiatives to facilitate communication and network building, on national and local levels.

Digital teaching resources, replacing or complementing conventional face-to-face classroom teaching, are an increasingly important part of healthcare professionals' training and continuous development worldwide, offering easily accessible teaching resources across geographical distances, and enabling healthcare professionals to update skills and knowledge in busy working contexts. (Lahti et al., 2014; Lawn et al., 2017; Ruggeri et al., 2013). E-learning can be as effective as conventional methods in healthcare teaching (Cook et al., 2008). Digital learning resources, including learning platforms, are also used in teaching interprofessional skills, and they simplify synchronisation of teaching for staff working across different services and with different work schedules (Reeves et al., 2017; Ryan et al., 2020). The Bridge's main selling point is precisely this flexibility.

Online teaching resources are not, however, instant solutions to challenges of interprofessional and inter-service cooperation. Digital, asynchronous teaching has to involve group discussions and exchange of perspectives and experiences in order to foster coordination competencies (Ryan et al., 2020). Digital discussion fora are no substitute for day-to-day and face-to-face exchanges of perspectives, because ongoing personal relationships activated in different situations are a key resource in learning (Lave & Wenger, 1991; Norbye, 2020, p. 203). Also, as I will go on to demonstrate, facilitating this combination of digital and face-to-face learning is dependent on contextual factors, such as management support and time (Lawn et al., 2017).

Coordination between and within sectors and services is difficult. Fragmentation of services, incompatibility between sectors and services in terms of aims, structure, culture, financing and power differentials are common challenges (Auschra, 2018; Glasby, 2017; Looman et al., 2021; Pearson & Watson, 2018) and require an alignment of interests, understanding, and the commitment of organisations with different histories and positions in a political healthcare landscape (Cook, 2015; Dickinson & Glasby, 2010). Norway is no exception (Huby et al., 2018). How can a digital learning platform contribute to untangling these complexities?

Edwards (2003) suggests that trouble starts when we focus on a micro level technological hardware solution to address challenges of an increasingly complex world, where decisive issues lie in constellations of social, natural, and technological factors operating on meso and macro organisational and political levels. Coordination is, among many things, a policy response to a political dilemma of increased demand and shrinking resources (Glasby, 2016). Is the Bridge, then, a technological fix, on a micro level, for long standing and entrenched political and organisational issues, hardwired into the bumpy process of coordinating health and social care in Norway? Or can it offer more?

This chapter examines perspectives on digitalisation as infrastructure. Sørhaug and Fugletveit (the introduction to this anthology) quote Edwards (2003), suggesting that infrastructure is a co-construction of technology, society, and nature, whose interplay has become invisible in the taken-for-granted weave of our everyday lives. The invisibility of the interplay can prevent us from untangling its various strands. It is when the weave unravels that we see the discrepancy between aspiration and failure (Anand et al., 2018). Then we can begin purposeful *infrastructuring* to make the

strands work better together towards a desired purpose, in our case the coordination of state hospitals and municipal health and social care.

The Bridge is a new arrival on the scene of technological aids to coordination in a Norwegian health region I will call Naverage. The implementation process has sparked debates, which show what infrastructuring can mean in terms of bringing a range of practical, organisational and political strands together to make the learning platform work towards its desired end.

Writing about organisational transformation, Star and Ruhleder (1996, p. 111) point out the contradictions infrastructure holds: 'It is both engine and barrier for change; both customizable and rigid; both inside and outside organisational practices. It is product and process.' They ascribe the unpredictability of the direction of change to how structures of agency relations (re)form as these contradictions develop in specific organisational dynamics. They moreover suggest that infrastructuring implies addressing an inherent tension between a durable framework for continuity of communication over time, and flexible functionalities allowing local adaptations. They suggest that a device becomes infrastructure when this tension is resolved, holding in place, in our case, the technological and human weave facilitating collaboration across services and sector interfaces.

I will go on to describe the process of Bridge implementation to date in a Norwegian health region and address the research question of whether the digital learning platform can be made into a stable infrastructure that supports coordination of health and social care in this setting. I will aim to show how the function of the Bridge as a technological invention is not inherent in the technology per se, but a product of the interplay of technological, political, and organisational dynamics shaping its deployment. I suggest how this example can inform wider questions about the role of digital technology in addressing current welfare state challenges.

The Bridge of Knowledge

The Bridge emerged from a local IT design and innovation initiative in an Oslo hospital trust (*sykehusforetak*) to share teaching and training resources, along with information on coordination, between specialist hospital services, municipal primary and social care, and the adjoining professional training institution. The idea caught on, and the Bridge grew rapidly from its modest and local beginning into a project with a national profile. It was

established in its present form in 2018, and today comprises a central editorial team in the host hospital trust, and affiliated local satellite editorial teams in three different regional health authorities. These satellite teams benefit from the main website resources, and in addition establish their own webpages with local training resources and news regarding national and local developments in policy and practice, connected to coordination between secondary hospital services and municipal primary and social care.

The Bridge is not centrally funded and has to compete in a crowded market with businesses queuing up to offer digital solutions to clinical and organisational aspects of care. The Bridge has to stake its claim and expand, or die. One expansion strategy is to recruit editorial teams from other regional healthcare regions, who pay to join.

In 2019, a manager in the unit for professional development in the hospital trust (*sykehusforetak*) Naverage, with a catchment area of 18 adjoining municipalities, joined forces with the local university college Faculty of Health and Welfare, and a Naverage Development Centre for Nursing Homes and Community Nursing to establish a local editorial office of the Bridge in that region. This started a three-year implementation process which is still ongoing.

Joining as a local branch carries not inconsiderable costs, which must be paid for by financially stretched municipalities and hospital trusts. A main challenge for the Bridge is to prove its value for money relative to its competitors. On this question the Bridge is so far losing out in the Naverage health region. Two years' worth of pilot funding have failed to persuade municipality and hospital senior management that the Bridge is worth a long-term investment from stretched mainstream service budgets. A third pilot is underway at the time of writing.

Methods: A Case Study

The chapter is structured as a case study of the Bridge's implementation in Naverage from its inception in 2019 until the time of writing. I participated in this process as a representative of the university college. The chapter draws on material collected during the first two phases: a feasibility study and a pilot phase, carried out by a Bridge Implementation Working Group led by the hospital training and development department. I was the group's university college representative. The process is now in its third phase, a

research and development project run from the university college, in which I am also involved.

The case study approach allows the study of a social phenomenon 'in the round' through in-depth exploration of interactions of a range of factors constituting the phenomenon in question. The case can be constructed in various ways and comprises one or several instances of similar phenomena, studied on different levels, from individual to complex social formations like an organisation (Crowe et al., 2011; Yin, 2017). The term conceals imprecisions. Swanborn (2010) points out that most ethnographies constitute a case study without being termed as such. I use Swanborn's (2010, p. 13) definition of a case study as the exploration of one or more social units, in which a phenomenon unfolds over time, in this case implementation of a learning platform as a tool for coordination. The case study brings out the interactions, over time, among several actors, with different interests and perspectives shaped by their place in the setting in question. A case study involves an open ended and iterative analytical process, where questions emerge, are refined, and change in rounds moving between multimethod data sets, comparative literature, and theory. Here, the analysis has been guided by theory key to this anthology, focusing on the complex interplay between technology and health and social care organisations and practice producing constellations of cooperation in specific Naverage contexts (Dourish, 2004; Seaver, 2015; Strathern et al., 1987).

We carried out two studies. The first was a feasibility study to gauge interest in the Bridge and raise awareness among potential users. This consisted of a survey of middle managers in 5 of 18 municipalities selected to represent size and geographical spread, managers in the university college Department of Health and Social Care, and in specialist hospital departments, selected to represent specialities for whom the Bridge was likely to be most relevant: geriatrics and complex conditions like mental health and addictions. The survey collected information about professional development and training initiatives within and among different municipalities, and between hospital departments and municipalities. There were also open fields for comments and suggestions. The survey was followed by focus groups including middle management representatives of four municipalities who took part in the survey, three specialist hospital departments, and the university college department.

Evaluation of the pilot phase consisted of two group interviews with 'Bridge ambassadors' appointed to represent the Bridge and raise awareness

of what it offers, and also to encourage publication of local material on the platform that would stimulate communication, and the sharing of training resources across services and sectors.

The chapter draws on reports regarding the feasibility study (Huby, 2021a) and the pilot evaluation (Huby, 2021b; Huby et al., 2021), both published on the local Bridge pages. These texts outline key points, presented to facilitate engagement in the Bridge implementation. Further analysis in relation to the volume's theoretical framework has been undertaken in writing the chapter.

The stated aim of the research was to generate material that would facilitate the implementation of the platform. The research was, however, instigated by managers in the hospital, university college, and Naverage Development Centre for Nursing Homes and Community Nursing, for whom the implementation held some personal and organisational stakes. The implementation team thus had to negotiate at times conflicting roles of promoting the Bridge, and collecting material that may have questioned its cost-effective relevance to Naverage. As a member of the team, I felt that tension (Olsen et al., 2002), at times acutely. However, as an academic advisor with a marginal role in direct negotiations of the Bridge's future I was able to reflect on the process in which I was engaged, from the position of an observer. My role in the team also changed during the process.

The first phase feasibility study mixed data collection with advocating the Bridge to potential municipal and hospital users. This strategy in my opinion did not leave enough room for adapting the platform technology to the realities as we found them 'on the ground'. As the implementation process proceeded, the composition and dynamics of the implementation team changed, we collected more material and discussions within the team became more diverse and open. The team also engaged more with the regional healthcare cooperative's combined hospital and municipal management structures. I participated in drawing up interview schedules, analysing data, and formulating conclusions and recommendations from the data for reports, presentations, and funding applications. My arguments and analyses contributed to the implementation team strategy, which led to the present round of pilot money. This pilot, which has not yet reported, builds on lessons from the first two phases, and is trying out an approach to implementation that changes the context of the Bridge's role, and opens the potential for its broader strategic role in local coordination.

Contexts and Entanglements

The Bridge's implementation to date thus represents a chequered history, which compels a detailed consideration of context. Orlikowski (2007) argues that understanding the role of digital tools as active components of work processes demands a reassessment of ontological priority: people or machines. She holds that the divide between the social and the material is increasingly difficult to maintain, and coins the term 'entanglement' between the social and material aspects of digitalisation's impact on work and workplaces. In such entanglements ontological priority cannot be established a priori, but is a matter of a detailed examination of processes in specific instances.

For the Bridge to improve coordination of care, attention has to be paid to the context in which it is introduced. Dourish (2004) explores two ways of viewing context. One is anchored in a positivist paradigm, and views context as an entity that can be mapped at the outset: stable, delineable, and importantly, analytically and practically separate from the tools and their use. In contrast, he suggests a view of context grounded in a phenomenological paradigm, which posits context as an 'interactional problem' (p. 22), rather than a delineable entity. Context is a product of the interaction between people and tools, an emergent property of this interaction, and constructed, altered, and maintained according to the situation in which tools are deployed.

The Bridge is constructed on a premise of context as a fixed entity. It is easily navigable and a high-quality product, both visually and in terms of form and content. Designers are aware of the context in which prospective users work and produce visually engaging material, accessible to people working in busy settings, and often without the luxury of prolonged periods of study. Podcasts, videos and PowerPoint presentations can be studied in a number of situations: on the bus, on lunch breaks, and at home.

However, to hard-pressed Naverage staff, municipalities, and hospital departments other contextual factors played a part. Whilst they appreciated the website's accessibility and beauty of design, and the opportunities it presented for sharing learning resources across municipalities and the hospital, this clearly was not enough. A key issue that emerged from the first feasibility study interview was a crowded working day that left limited room for the Bridge to impact on coordination. The Bridge may well be expert at transmitting information, but information does

not automatically translate into improved coordination practice without some further investment.

Communities of Practice

The feasibility study revealed a lack of time and resources for coherent workforce development. Earmarked service development funding was lacking. Designated responsibility for professional development was only part of the job description of a small number of staff. When staff time for clinical tasks was short, time allocation for professional development was the first to go. Moreover, for new knowledge and skills to embed on the service level, staff need help to consider how new knowledge will impact on practice and the organisation of practice. Time is needed for both individual learning and group discussions. This time investment proved hard to release, as the daily operation of the service (*drift*) was tight (Huby, 2021a). Moreover, skills and knowledge were not retained: rapid staff turnover and extensive use of locums made continuity a challenge. The demands of *drift* also impede systematic sharing of learning and knowledge between and within services.

Systematic sharing of experience within and between services is an important aspect of coordination and requires other resources besides information. The concept of communities of practice (Lave & Wenger, 1991; Wenger, 1998, 2010) captures the interconnections between practice and knowledge in healthcare. Knowledge emerges through practice and informs practice in turn, and knowledge about how to coordinate patient care is best produced in groups of practitioners, who work across the divides and learn together to address coordination challenges, including how to involve technology (Suchman, 2007, 2012). The latest evidence of treatments of specific conditions is a necessary ingredient of learning to cooperate across specialist hospital and generalist municipal service boundaries. However, this evidence generalises across a range of patient and health care circumstances and characteristics. Its application involves synthesising different kinds of information into knowledge about how to manage complexity in specific service settings. It also involves work to translate this knowledge into routines on the unit and service levels. This joint learning requires staff time and some slack in daily routines, both of which were in short supply, according to participants in our feasibility study.

A team of managers in one of the municipalities we visited for feasibility interviews had worked for some years to develop a municipal strategy for practice-based learning across services for older people and patients with long term conditions. This involved managers and staff developing evidence-based procedures for patient care, and then organising group sessions for staff to learn together how to implement these procedures. Time for on-the-job professional development was not worked into routine schedules, on neither management nor practitioner levels, and cooperation among managers was vital to make up for the deficiency. They shared small pots of contingency funding and staff resources between them, so that if one service lacked staff to allow a group learning session, other services better resourced at the time provided staff to keep services running.

At the time, the implementation team did not give these data the weight I thought they deserved. Lack of time and personnel for professional development was a fact, and the point of the Bridge was precisely to help the professional development staff use their time better through shared up-to-date teaching resources available on the platform. Moreover, pointing out that full return on an investment in the Bridge would add the cost of more staff time to platform subscription and salaries for the Naverage editorial team was unlikely to hit home.

The End of the Bridge?

In the event, decisions about whether or not to implement the Bridge centred around cost and value for money. There is already a plethora of digital learning platforms, many of which have an edge on the Bridge, because they are linked to municipalities' administrative HR systems, automatically entering staff's completion of training programmes to their professional development HR records. The Bridge did not have this function at the time. Moreover, the existing learning platforms are costly, and resources have been committed long term. They are embedded in practice in ways that make it hard to disentangle them and put the Bridge in their stead. For example, their use is written into procedures on patient care. Shifting to the Bridge would mean rewriting the procedures, a huge and costly task in terms of person hours.

Findings from the evaluation of the pilot phase moreover suggested that the Bridge failed to catch on in other respects than cost. Group interviews with Bridge representatives in municipalities and hospital departments

(Huby et al., 2021) suggested that they had numerous other responsibilities than promoting the Bridge, ranking higher on their list of priorities. The pilot phase coincided with the post Covid-19 rush to catch up on long-term work that had been postponed during the pandemic. Moreover, interview participants did not understand their role or how to make it work. There were a number of training initiatives that crossed service and sector boundaries where they could have put their efforts, but they lacked support, they lacked time, and many felt these initiatives were not always relevant at the coalface of everyday practice. Finally, they saw little point in investing scarce work time resources in a pilot that might not lead anywhere.

Halfway through the pilot phase the signals were clear: the municipalities and hospital trust would not clear budget and personnel space for the Bridge's permanent implementation. And yet, a year on, the Bridge lives on, as yet another pilot project trying out a new approach.

Implementation as an Open-Ended Process

Pickering (2010) reminds us that the outcomes of socio-material entanglements (Mol, 2002; Orlikowski, 1992, 2007) of technological inventions are indeterminate, because they are connected with wider social and political developments in often unpredictable ways.

Together with the pitfalls revealed in the feasibility study and the pilot evaluation, we also heard compelling arguments for the Bridge's potential to support coordination. These arguments centred on the Bridge's potential to contribute to an alignment of interests, understanding, and practice between the hospital and municipal services, a key element in successful coordination (Cook, 2015; Dickinson & Glasby, 2010; Huby et al., 2018).

Participants in the feasibility study reported a one-way communication and sharing of skills from hospital to municipal services, but very little the other way. In interviews, municipal staff talked about the hospital staff's lack of understanding of the expertise and responsibilities of municipal services. Municipal care focuses on long-term support and rehabilitation, which require different skills sets and priorities from short-term acute healthcare. Assumptions that municipal services should take on the functions of mini-hospitals devalue the municipal contribution.

Participants in the feasibility study and the pilot evaluation alike told us how the Bridge could help address some of these issues by levelling the field of expertise, and focus on disparities in perspectives and ways of

working. It could bring people together to develop a joint language and understanding of the conditions of care, and appropriate skills sets and knowledge, across different settings (Huby, 2021a; Huby et al., 2021). In the free-text fields of the feasibility survey municipality respondents described the Bridge as a potential forum for dialogue, which could unify and lift competence and practice regionally, across municipalities and hospital departments. Thus, changes in practice and perspectives would reinforce each other, and create a joint understanding of arrangements required on the organisational level to ensure smoother patient journeys with better quality care, and also a more efficient use of resources (Argyris, 1999).

The pilot phase evaluation participants also emphasised the need for improved understanding between management and staff 'at the coalface'. They pointed to coherent and strong coordination work happening on strategic levels, but their experience was that coordination fractured on middle manager and practice levels. A suggestion emerged that the Bridge should focus on actual patient journeys in order to create a bottom-up change, to strengthen communication and understanding between different levels of the organisations. They pointed to the ongoing work between hospital and municipalities to systematically identify weak points in patient journeys across services and sectors. However, information about what different hospital departments and municipalities actually did to address these weak points was hard to come by. Sharing this information on the Bridge would be of immediate interest to practitioners and managers on different levels of both municipal and hospital organisations and contribute to a shared local understanding of the challenges of coordination and how to address them. They also suggested that Bridge training resources could be linked to ongoing work to improve patient journeys (Huby et al., 2021).

In this context, the Bridge's technical design advantage, with high visual quality, accessibility, and ease of navigation would constitute a meaningful resource, and give the Bridge an edge over its digital rivals. No other learning platforms span the secondary care/municipal divide like the Bridge. Other service platforms focus on and promote the agenda of their organisations, be it the hospital or a municipality. The Bridge is a neutral space. Partly based on the results of the pilot evaluation, an application for a third round of pilot funding was submitted to the Naverage coordination funds. The proposal was submitted as a university college led research and development project, trying out the Bridge's potential as a forum for dialogue relating to projects with strategic value for the Naverage healthcare

cooperative. To some surprise the proposal was funded, and at the time of writing the project is halfway into its 12-month period of funding. The Bridge is catching the attention of senior hospital and municipality managers as a strategic resource, progressing new agendas of digitalisation and coordination, and it is likely that permanent funding will at some point be secured.

The Bridge as Infrastructure? The Elephant in the Room

But will the Bridge become infrastructure, that is, a taken-for-granted weave of technology, organisation, and practice, which allows a seamless coordination of patient care across hospital and municipal boundaries? So far, findings from the current research and development project suggest that debates in Naverage about the role of the Bridge are unlikely to be laid to rest any time soon. Policy on coordination is a changing scene (Ministry of Local Government and Modernisation, 2019), and technological innovation is gathering speed, helped by public and private investments and state support.

The tension of increasing pressure on healthcare resources, which has precipitated the coordination and digitalisation policies in the first place, is unlikely to go away. In Norway, this tension has been addressed by separating the specialist hospital sector from regional municipal administration, and creating state-owned trusts run on business principles to control healthcare costs (Ot. Prop. 66, 2000). The coordination reform of 2012 (Meld. St. 47 (2008–2009)) was introduced to revitalise the coordination of state specialist healthcare and local authority health and social care. The results of the coordination reform have however been mixed (Norwegian Research Council, 2016). Healthcare cooperatives (*Helsefellessskap*) (Meld. St. 7, 2019) were introduced in 2019 to anchor coordination in locally relevant management structures. The Naverage healthcare cooperative is known for its robust combined management structure and systematic work to progress local coordination strategies jointly for the benefit of patient care.

However, the hospital and coordination reforms, together with the healthcare cooperatives, position the hospital sector as dictating the thrust of change. The Bridge reflects this unequal relationship. It is a hospital trust initiative, directed towards changing municipal ways of working.

The Bridge's potential to level the field of expertise notwithstanding, tensions remain. The shift of hospital care to community settings puts municipalities at risk because resources will be squeezed, and increased pressure on both sectors makes coordination more difficult.

Conclusion: What Can We Learn from the Bridge Implementation Process?

I have presented a case study of the implementation of the learning platform Bridge in the Naverage healthcare region. The case is framed as an exploration of infrastructure and addresses the research question whether the Bridge can become a smooth weave of digital technology, organisation, and practice that underpins coordination between the hospital sector and municipal primary health and social care. Three main lessons emerge from the case study, which are more generally applicable to the implementation of digital technologies in a range of welfare service settings. These lessons revolve around issues of context as a product of, rather than a parameter for, the implementation of a digital technology in complex service settings.

First of all, the functions of a piece of digital technology are not inherent in the technology itself, but in the way the technology is deployed in specific contexts (Huby & Harries, 2021). Contexts are emergent properties of interactions between the technology, the organisation, and the practice of health and social care across services. The technology is a partner in this interaction, it changes and is changed by the context. The key to shaping the role of technology to our own ends is: detailed attention to practice as situated action (Suchman, 2007, 2012); understanding what we do together with technology, in specific situations; the way situations impact actions; and how our actions in turn impact the situation and change our own and the technology's role.

Secondly, implementers of technology therefore need to pay heed to the expertise of the people who will be using it, and how they can make technology part of their everyday practice – or not. The Bridge had a limited role solely as a source of education material because there were insufficient resources to convert this material into knowledge relating to coordination on practice and service levels. However, staff had clear ideas about how the Bridge could become a forum for information exchange on strategic coordination developments in Naverage, and also level the field of knowledge,

understanding, and practice across services and sectors. These ideas are now being put to the test, but the outcome is uncertain.

Thirdly, implementation of digital technology for healthcare coordination and other welfare provisions is a continuous and open process, and needs to be managed as such. Circumstances around coordination and digitalisation are rapidly shifting, and the role of the technology changes in turn. Policy and technological development are driven by an ever more urgent political dilemma of squaring increased demand with insufficient resources. These factors are unlikely to resolve any time soon. Questions about the Bridge as a stable infrastructure for seamless coordination or a quick fix for intractable political dilemmas remain open. Detailed attention to shifting contexts in the implementation process will ensure steering towards desired results, even if the final goal may remain elusive.

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CHAPTER 2

‘Quality’ on the Dashboard: How Datafication Changes the Measurement of Work and Performance in Public Healthcare Services

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Abstract: Modern welfare states have a long tradition for measuring the quality of work and performance in public health and care services. Datafication is currently changing how this is done and thus, how quality is known. This chapter uses the ongoing case of the Health Platform (EPIC) in Central Norway to investigate consequences of datafication to quality data work. The platform aims to launch a joint journal system across all health and care services and service levels in the region. This includes an automation of quality indicator data production to tailor the services to focus on specific management goals and benefits realization. The new view into the services introduces new conceptualizations of quality and new possibilities for regulating and coordinating work. The chapter suggests that the case illustrates a shift towards *deductive* statecraft. Quality indicators do not emerge as categories inductively from data, but data is made to fit categories. Indicator categories become models of quality that get tested through the ongoing activities of the services. They do not necessarily fit easily with the observations of service employees and users but are often used as if they represent real activity that speaks directly to stakeholders. Data on quality is, in the end, core decision-making material for service planning and policy. It is therefore important to further explore how changes in speed, time and visualization of quality known and done affect this material.

Keywords: quality indicator production, health and care services, quantification, datafication, benefit realisations, the Health Platform, deductive statecraft

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Introduction

What happens to analogue information when it turns into digital representations is a main concern in critical literature on digitalisation (Christin, 2020). Arguably, digital information would benefit from a warning label, Lack of Robust Information (see chapter 1). As is often observed, the opposite seems to be true. The combination of being both 'digital' and 'data', with its double decontextualized and mobile character, is rather understood as giving the indicated information an extra aura of usability, precision, objectivity, and rationality (see Bartl et al., 2019). It is also broadly acknowledged that expressing reality in (digital) numbers cannot grasp the world holistically, but necessarily implies simplifications and reductions. Inventors of numbers and statistics as planning tools have warned about the dangers of not taking this simplification into account when using these kinds of representations. Yet, when numbers are put into the hands of stakeholders, this awareness seems sometimes to be put aside.

A telling example is the use of *quality indicators* (QI) in public organising and policy. Since Thatcher and Blair and their aggressive implementation of target management in the UK public sector in the 1990s (Hood, 2006), QI has had a bad reputation (Bevan & Hood, 2006) – while simultaneously being used as a preferred and valued method for public governing and management (Wallenburg et al., 2021). Despite criticism,[1] the survivability of indicators in policy and management culture is impressive. The ongoing intense datafication of public governance even strengthens their position and voice (Bartl et al., 2019; Saltelli & Fiore, 2020). With the speeding up of data production and dashboarding of information that new digital technologies and platforms imply, the use and circulation of quality indicators are on the rise.

The case of quality indicators enables us to explore the effects of interactions between healthcare work classifications, digitalisation, and the practical work of making things, acts, and people fit into categories (Bowker & Star, 2000). QIs are also a good example of unavoidable tensions inherent in the quantification of information, because there is a lot of interpretive flexibility and practical-political concerns involved when defining what

1 Arguments against QI and performance measurement point out the risk of goal displacement, tunnel vision, target fixation, and process bias – that one tends to measure what is easily measured (see Tøssebro et al. (2022) for a discussion of performance management in Norwegian services for disabled people, including a summary of these arguments. See also Bruijn (2007) for an extensive critique of performance measurement systems in practice).

quality is (Tøndel & Rindsem, 2022). In municipal care, an elderly person may interpret high quality service as a good, friendly talk with a professional care person. The carer might believe that their work is high quality if they have enough time for the task and interpret it as the opposite if their work schedule does not allow for assisting someone to shower. Management may not even think about such concerns when they evaluate the services and interpret the available documentation. They then need to simplify and summarise the information from the services.[2] Quality indicators, understood as the institutionalisation of quantifiable knowledge about a certain 'quality', afford many opportunities for distortions, simplifications, and reductions, requiring cautiousness in terms of which information they convey.

In this chapter, we use one ongoing case of digitalisation within Norwegian public healthcare services as a vignette to investigate the consequences of recent shifts towards the datafication of quality (indicator) work: The introduction of a digital health record system called the 'Health Platform' in the region of Central Norway, across municipalities, professions, patient groups, services and service levels.[3] Among many changes, the platform aims to speed up the creation and use of quality indicators for management, and is a well-suited example for discussing how digitalisation may affect the institutional infrastructuring of 'quantified knowledge about quality'. Our aim is to outline a future research agenda for further exploring the performative roles of knowledge infrastructures as governance tools for welfare state workability.

At the same time as datafication in public governance increases, the sociomaterial assemblage of quality indicators in public health and care services is undergoing change as well, including the way indicators as objects work and how they are known. Some changes are anticipated, while others emerge from practical challenges discovered along the way, for instance those related to technical infrastructure, access to data, privacy

2 The list of different and equally legitimate quality definitions can be easily expanded … Leadership may rate something as high quality if the carer manages to serve many users/patients during one shift. Kin of the elderly person might consider it high quality if there is stability in the staff, and if the staff take time to discuss matters of the care arrangement with them – even if this reduces the time that staff have available for their care tasks … and so on.

3 The system is delivered by EPIC Systems Corporation (EPIC), an American privately held healthcare software company. Much could be said about EPIC, but that is not our aim in this chapter. Several countries (e.g., UK, Denmark, Finland) have experienced many problems related to the implementation and use of this electronic health record system, yet the Central Norway hospital trust decided to buy it anyway.

and security, skills gaps, organisational culture, and data quality and accuracy (Redden, 2018). Hoeyer and Wadmann (2020) call our attention to that new digital tools for datafication generate new forms of inspection and control, reconfigure perceptions of work, and potentially erode both goal orientation and the room for professional judgement.

Thus, the question arises as to how datafication affects the relation between quality done and quality known – and how this may change the public services from within. How does datafication change the traditional work of making quality indicators, with what consequences for whom? In what ways does datafication represent a new paradigmatic change in governance that also shapes the knowledge of 'quality' in health and care work and service performance?

In the following, we will first situate our research interest within the recent shift towards data driven public governance, and then proceed to introduce our empirical vignette. Norway is an especially interesting case in this context. Here, the use of QIs in health and care service management differs from other more dominating and marketised healthcare systems internationally, such as the US (Panzer et al., 2013). The main part of the chapter describes instances of data driven quality creation in and through the Health Platform. Our contribution is part of a bigger research project,[4] with interviews on measuring quality in health and care services in Norway. The research project explores the making and doing of quality (through measurements) in the municipal health and care services. This is a work environment where creating objective data about phenomena and processes such as care, loneliness, and social support is demanding but still required, and currently formatted through digital tools.

The chapter draws on a small number of qualitative interviews done in 2022 with core employees from the agencies establishing the managerial quality indicator structure in the Health Platform. These are supported by a larger number of interviews (from 2021–2022) with municipal health and care service managers and bureaucrats about the making and use of quality indicators for the same services before this datafication turn. The core informants work, respectively, for a public specialist hospital, a large city municipality, and for the Health Platform firm. Our aim is not to give

4 The acronym of the project is MASQ (MeASuring Quality: Exceeding the limitations of quality management in municipal health and care services). The acronym is not random. It camouflages a reference to the old interactionists Goffman and Strauss, who wrote about the importance of the masks that people wore for the construction of reality. Organisations can also wear masks, such as Qis.

a detailed empirical study of the Health Platform itself, but to introduce broader issues and developments in datafication that can be seen from this example. We conclude with reflections on what the automatisation of data production for quality implies, and the outlined future research agenda. But let us first begin with a short background section on making quality indicators before the datafication turn.

Making Quality Indicators Before Datafication

'Quality work' has always been on the agenda of the Norwegian health and care services, but how policy and management agencies have conceptualised quality has changed over the years. The origin of the current institutional vocabulary of 'quality' is clearly traceable from the 1990s and the then emerging ways of knowing regulations and standards for quality systems. Tøssebro et al. (2022) explain that while many countries introduced performance measurements with QI in response to the marketisation of services, this was slightly different in Norway, and in some cases linked to an implemented purchaser-provider split. Tøssebro (2019) also links the introduction to a general shift that simultaneously took place, from a social-policy reasoning that focused on living conditions to a reasoning that addressed the role of quality issues in the internal control systems that then became mandatory in health and care services.

As mentioned, specialist health and care services have been seen to provide an environment in which indicators mushroom well. Some health occurrences are straightforward to measure. For example, the number of 'births – with occurrence of birth defects', 'hip fractures operated on within 24 hours and 48 hours', and 'stroke – survival 30 days after admission'[1] can be counted rather easily. Other output is more complicated to formulate into such clearcut targets, for instance in municipal elderly care, where users depend on long-term assistance to secure life quality and dignity. An approach to solving this measurement problem is to sequence work. Slicing depends on the approach to the work tasks, processes, and results that are deemed interesting to operationalise. For instance, in a study of female leaders, Wadel (1990) reported that one short morning care situation could be broken into 90 small acts. In theory, one could choose any act of these 90 and turn them into indicators of quality.

As described by Tøssebro (forthcoming), first attempts within the Norwegian municipal health and care services to define, document, and make quality tangible were based on user surveys, annual reports, the introduction of internal control, and individual guidance. However, the emphasis quickly shifted to procedures to ensure quality, and quality was redefined as quality *development*. After 2000, the approach of the national government gradually transitioned away from a more reflective process and assumed a measurement orientation, and quality indicators emerged as a topic in national policy (Tøssebro et al., 2022). The development of professional quality registers came into focus, and quality indicators became a part of a national strategy for quality improvement in the public sector.

Tøssebro (forthcoming) explains that then the next step was that internal control and quality indicators become obligatory in the Norwegian health care sector from 2010. The Norwegian Directorate of Health was commissioned with the mandate to develop, disseminate, and maintain national quality guidelines, including national quality indicators as a tool for management and quality improvement in the municipal health and care services. According to the law, the indicators should be publicly available and provide users with a basis for safeguarding their rights. Two years later, the government committed to even more systematic quality improvement. Their white paper about quality and patient security in the health and care services (Meld. St. 10 (2012–2013)) suggested to use more indicators on national and local levels, also committing the municipalities. On the national level, this development culminated in 2018 with what the Norwegian Directorate of Health termed 'a national framework for quality indicators for the health and care services'.

Since the introduction of indicators and quality control in the public health and care services, general knowledge about quality has turned into specific knowledge derived from very specific welfare state and managerial methodologies (see e.g., Tøndel & Rindsem, 2022), such as checklists and reports (Mjøen, 2019). Checklists importantly order ways of knowing quality and establish a hierarchy with criteria for formality, transparency, and transport possibilities being core sorting principles. As a consequence of such ordering practices, 'quality work' and 'quality improvement' have in many ways become two completely different work practices in the welfare services: 'Quality work' often gets identified as the daily (and invisible) efforts to achieve quality in the services' human-processing work (Hasenfeld & Cheung, 1985); while 'quality improvement' represents the

work that supports and makes 'the quality system' transparent – in line with the criteria of the system and revision demands.

Sande (2023) refers to a municipal homecare service unit manager, who describes a situation of two 'worlds of qualities' – the formal and the practiced – as such: It is as if the unit manager is responsible for quality in the same way as in large companies, where the chairman must answer to criticism even when she has nothing to do with it directly. At the same time, the work of making quality indicators implies an extensive workload for hardworking health personnel and street level bureaucrats, often identified by them as vague 'meaningless reporting demands'. They are not necessarily aware of the end use function of the information they report from the corridors and care situations within the services, but they do know that they are obliged to pass on this information.

In sum, it is fair to say that quality indicators have become the paramount method for measuring quality in the public health and care sector. Critics could say that this diagnosis is not reasonable for the *municipal* health and care services, as the extension and use of quality indicators in management and policy are here quite humble. Yet, the point is that there does not exist an alternative system for quality measurement produced by these services. QIs are thus the authoritative representation of the quality of the municipal health and care services. Currently, parts of the information infrastructure enabling quality work is undergoing change due to datafication, and the question emerges how this changes quality work and quality done.

From the Quantified to Datafied Welfare State?

Calculation and quantification have always been critical features of modern societies, but the increased use of quality indicators in the public health and care sector in Norway illustrates how in the past thirty years, the pace, purpose, and societal scope of quantification have greatly expanded (Mennicken & Espeland, 2019). Increasingly, administration, management, and mundane daily activities have become structured around performance measurements, cost-benefit analyses, risk calculations, ratings, and rankings (Hovland, 2010; Mennicken & Espeland, 2019; Wallenburg et al., 2016).

Partial answers as to why numbers and measurements play dominant roles in current welfare societies and policy can be found in technological

development increasing the possibility for data collection, analysis, and dissemination (Sætnan et al., 2011). This development is currently accelerating due to digitalisation reinforcing the spread of *management methodologies*, such as NPM, Post-NPM and other neo-liberal specialties, which demand 'objective knowledge' and specific information systems to function in accordance with their workability principles. This management methodology trend has strengthened a knowledge hierarchy, in which figures and measurements have greater value than other kinds of knowledge (Larsen & Røyrvik, 2017), and where these objects, such as QIs, transform the world they claim to describe (Bartl et al., 2019).

If what is measured is what matters (Bevan & Hood 2006), 'what is measured' requires close attention. From a sociological perspective, classification and categorisation (Bowker & Star, 2000) are at the heart of quality indicator work. In the work of making quality indicators, even the most mundane and least visible acts of care work are objectified and sliced into categorised sequences. The outcome of the slicing, such as the mentioned morning care situation, could always be otherwise – as the old interactionist saying of Hughes (1984) goes. What was earlier identified by a patient as a 'hospital visit that went well due to the physicians who saved the suddenly acute and life-threating situation', could later turn into one of several reported crises in a hospital quality system. The translation of work into measurements goes through a very intricate molding to achieve the status of an institutional reality in organisation and policy documents. The dimensions of work that are ordered into measurements in the first place are not random. As introductorily sketched, these decisions are often results of 'what data can be collected', due to practical technical-administrative concerns, yet always in some relation to professional and policy concerns about 'what we are working on' and 'what data is needed'.

In the current age of datafication, *any* social action can potentially become digitally recorded as a quantitative occurrence (Mayer-Schönberger & Cukier, 2013). With the increase of datafication, the question of 'what data can be collected' is no longer relevant, because any data can hypothetically be collected. Indeed, never has any actor had so much and such diverse data about things and people (Bigo et al., 2019) as public authorities and companies can have today. Consequently, attention towards public services data has increased exponentially with the emergence of datafication (Broomfield & Reutter, 2021). Here, important works have addressed

the relation between data and the welfare state (Dencik & Kaun, 2020; Mann, 2020; Reutter, 2022), and one finding is that there is a worrying lack of information available about the impact of new data systems in the public sector (see Redden et al., 2020).

According to Fourcade and Gordon (2020), the change towards datafication can imply that it is no longer 'what data is needed' that governs data collection, but rather data is collected because 'we can', and categories then do not prompt data collection, but are increasingly produced *inductively*. In other words, Fourcade and Gordon's argument is that statecraft in the digital age is characterised by states no longer seeing their populations through man-made, broad categories, but that these categories emerge organically from regularities observed in the data. What makes this possible is machine learning. Artificial intelligence systems today cannot only imitate rulelike procedures but can play chess games or write poems. This was made possible by feeding them large amounts of data, and by training them to decide rules and categories themselves. At the same time, states are in a unique position to mint data, like they print money, in the course of delivering public services (Fourcade & Gordon, 2020, pp. 90 ff.). If governance relies on machine-based analysis of these data, states, Fourcade and Gordon (2020) argue, can turn to inductive statecraft. By inductive, they mean that the state lets exploratory data bring categories worth attention – what matters – into view (p. 87). When digital infrastructures get to define categories, they become powerful actors. We move from governance through policy towards governance through technology (Metzler & Åm, 2022).

The question of course emerges whether these predictions hold true. In the following, we want to probe developments of datafication by having a close look at changes in quality work made possible by the Health Platform that was introduced in Central Norway. Zeroing in on empirical developments in the health care sector makes sense for studying the performative consequences of datafication, because 'intensified data sourcing' (Hoeyer, 2019) became a goal in Nordic public health governance as part of a general trend in sharing, making use, and marketisation of data unprecedented in history. As part of this development, heavy investments are made to make health data more available and integrated, for example, by creating digital health platforms, such as the Health Platform in Central Norway.

Vignette: The Health Platform in Central Norway

The Health Platform is an impressive organisational infrastructure. The core setting for the development of the platform is the city municipality of Trondheim, which has been known to be an early innovator in the development and use of public and service statistics as a tool of governance. Trondheim currently happens to be the arena for a digital experiment of considerable scope: A digital electronic patient record platform termed the Health Platform, which also brings with it new operationalisations of 'quality'. While quality indicators and the measurement of quality on the managerial level until now have had more the aura of bureaucratic exercises, report writing and (digital) quality reports covering different sectors, a completely different municipal quality data production line potentially enters the scene with the Health Platform, containing aspects of digitally driven automation, speed, and time. But first, what kind of species is this platform?

The Health platform aims to launch a joint journal system across all health and care services and service levels in the region of Central Norway, thus eventually tying up its hospitals, municipalities, general physicians (GPs), health stations, elderly homes, and homecare services. Currently the Health Platform is limited to being used in Central Norway, thus making the region a lab and testing arena for the government's white paper, *One citizen – one journal* (2012–2013). Thus, the initiative does not arise bottom-up from the frontlines of the services, even though they also have acknowledged the need for improved communication between services to secure patient security and service quality.

The story of the Platform is international, complex, and long, and it is beyond the scope of this chapter to elicit how Norwegian actors decided to buy a patient administration system delivered by the American company Epic. Answers can partly be found in previous research on social, technological, organisational and health-related dimensions of the platform, especially within eHealth and health service research (see Mehmood & Farschchian, 2021; Hertzum et al., 2021). It is not surprising that the platform attracts research interest, since it represents the biggest ICT project ever realised in the Norwegian health and care sector.

Importantly, the Health Platform is far more than just a large-scale ICT project. The goal is, among others, to achieve more collaboration across

sectors, and to enable professionals to communicate across services and units, while also making the patients more active through increased transparency in relation to their own received health services and health status. With the Health Platform, patients will have access to all their patient information, in one immediately accessible archive. The platform will also contribute to cost reductions, for instance through eliminating prospective 'time thieves' in the services' daily operative work by enabling users to book and cancel appointments themselves in maternity and child health care centers, and school health services (see e.g., Trondheim Municipality, n.d.).

After ten years of preparation, the Health Platform was launched in 2022 in Trondheim municipality, and then in the regional specialist somatic hospital, St. Olav. Today, 70% of the inhabitants in Central Norway live in a municipality that has implemented the platform or decided to do so in the near future (Health Platform, 2023). Since the launch, the platform has been discussed heavily in regional news. Hospital health employees have gathered in public protests over worries about the system's potential negative impact on the quality of the services and patient safety, and the Office of the Auditor General of Norway has started to revise the platform case together with a local municipal revision agency. Recently, an anonymous webpage, called the 'Hell Platform',[5] emerged that collects critical media reports about the Health Platform. In general, the hard work that employees on the platform do on a daily basis with and around this digital infrastructure is drowning in media criticism.

Gains Measured on the Dashboard

Our interviewees anticipate the platform to improve 'quality work' through the datafication of communication within and between services. The platform produces data now synchronised and in real time. If the hospital changes a patient's medical prescriptions, the patient's home care services are notified automatically and immediately on the platform, so that they can adapt accordingly – and the patient is given the opportunity to be informed of the journal change as well. In line with digitalisation policies in general, seamlessness and interoperability are envisioned goals.

Quality indicators are now produced automated, and they will appear on dashboards on the daily welcome screen of municipal service unit

5 https://helvetesplattformen.no/

managers. This real-time dimension constitutes a significant difference from the traditional, previous work with quality indicators. For instance, while Trondheim municipality publishes their indicator-based quality report on elderly care annually, the quality indicators produced through the Health Platform will be updated on a day-to-day basis. Dashboard visualisations using traffic light color prominently provide leaders with real-time quality data. An informant who leads the development of quality indicators for the platform firm explained:

> All leaders will be able to monitor their benefit goals through indicators on the solution's dashboard. They will be responsible for implementing actions to achieve the desired development in these indicators. The Health Platform supports customers by providing access to indicators on the dashboard, but it is up to the customers themselves to achieve their benefit goals by using the functionality and management information correctly. It is crucial that when benefit goals are set, they are not hidden in an Excel sheet with manual measurements. These goals must be displayed on the dashboard you use in your daily work.

The organization shall be tailored to focus on management goals daily. In the quote, the informant introduces the term 'benefit goals'. Within the sphere of the Health Platform, quality indicators are operationalised into measurements of 'benefits' and 'profit targets'. Within the platform, these terms and also 'benefits realisation' all relate to a modeling for how to improve the services. This way of working reflects the position of the ICT and project expertise that are involved in the design of the benefit realisation process. The change of vocabulary wording from quality to benefits have already and brittlely emerged in the Norwegian health and care sector during the past decade, for instance through innovation frameworks linked to the implementation of care technologies in municipal services (Tøndel, 2018). How these frameworks were introduced, by whom, and how 'benefits' started to emerge within the Norwegian public sector as a regular requirement for creating sustainable services is an interesting discussion, but beyond the scope of this chapter. What is a relevant take-away on the performative effects of changes in digital infrastructures on quality work is, however, that the introduction of the Health Platform contributes to cementing and institutionalising discourses of 'benefits' or 'gains' – and to materialise them through the orchestration of benefit realisation as a driving force for the legitimation of the platform itself.

Overall, the platform has developed eight overarching 'benefits' or 'gain targets' for specialist and municipal health services, respectively. The two target lists are quite similar (Table 1).

Table 1 Gain Targets, the Health Platform of Central Norway (Health Platform, n.d.)

Specialist Health Services	Municipal Health Services
Patient involvement	Citizen involvement
User friendliness	User friendliness
Drug handling	Drug handling
Digital home follow-up	Digital home follow-up
Research	Research
Governance information	Governance information
Collaboration and patient logistics	Logistics
Quality registers	Collaboration

Behind each of these targets lie a number of quality and effect indicators that should measure whether the introduction of the HP contributes to achieving the intended gains. For example, St. Olav's hospital wanted to achieve increased patient involvement by introducing the platform. This potential effect is measured by an increased score in a patient satisfaction survey, in combination with the number of patients who have logged onto the platform and/or booked or changed a consultation themselves there. Another example is the target 'collaboration and patient logistics'. Here, indicators are the number of days between the registered physician referral and when the patient is informed about the outcome, or how quickly a doctor reviews the referral.

To anchor the platformed gain system into the services, hospital sections appointed 'gain/benefit coordinators' and municipal services appointed 'gain/benefit owners'. Coordinators at the hospital were typically section managers or employees who had worked with quality management from before the platform project. Thus, the implementation of the Health Platform also implies a subtle translation of quality into benefits or gains, within the service reality.

What is interesting for us to bring into this chapter is that the quality indicators in the Health Platform aim at measuring how services improved due to the introduction of the platform itself. In the words of one of the municipal informants working with quality indicators in the platform,

'What we have been concerned about on the indicator side is that we should share more information. For example, how many days does it take before test results are online, and did the doctor share their notes with the patient? This is completely new that you share the journal note with the patient'. It is assumed that monitoring work through measuring time and sharing will improve the quality of the services, but this does not answer what quality is.

Indicators Coming from the System

The Health Platform is supposed to take over as the key machinating instrument for indicator production in the health services that use it. In the introduction, we mentioned that quality is measured relative to governance demands. For example, if the law demands that elderly care must provide worthy services, the question is how 'worthiness' is translated into a quality indicator, and then put on the agenda. The translation is affected by the standard, as the meaning of the definition limits which data can be used to shed light on and watch over 'worthiness', yet it still reflects the original political goal. How then have governance demands been incorporated in the HP?

According to our informants, many discussions took place to extract the most important items to focus on. Examples of important items were 'waiting time' and 'breach of deadline', as was 'drug alignment'. Thus, the short answer to the question of policy incorporation is the 'quality indicators'. The longer answer is that digitalisation changes the work of creating quality indicators, through mutual co-production of the indicators, law requirements, new software solutions, and new competences, especially ICT and project management. A benefit-oriented configuration of the services takes place through the platform. In what follows, we try to explain briefly what we mean by that.

The process of developing quality indicators as measured in the platform involves many steps, including a series of workshops, counseling and adjustments. It started with what an informant termed 'a gigantic workshop' in 2019, in which health and medical experts, consultants, platform representatives, management and employees and union representatives tried to develop common denominators bottom-up. They also had a meeting with service user representatives. This process concentrated upon *harmonisation* and creating consensus among the involved partners and evolved over long time after the initial workshop. When deciding for a list of indicators,

an important criterion was to select indicators that were mentioned *most often*.

Practices of systematic quality improvement and quality indicator systems are different in the municipalities and the hospitals. The latter were, for instance, genuinely concerned with integrating existing quality registers, due to the aforementioned high quality and level of operationality of the quality registers in the Norwegian hospital sector. However, the final list of quality indicators integrated into the Health Platform software is more flexible than traditional quality indicator systems in the municipal sector. Epic offers many hundreds of indicators, and participants in the Health Platform can choose what events they need to be measured and visualised. In the words of interviewees, 'Units can pick indicators for areas that need attention' …. 'The list is like an IKEA catalogue.' Despite this freedom of choice, an informant told that, to her surprise, when given the opportunity to choose, different municipal actors seemed to choose very similarly. She interpreted this as a consequence of the municipalities having the same tasks to solve and the same legal frameworks, but still, she emphasised that 'it is very important that they [the municipalities] are allowed to choose themselves'.

Data are envisioned as emerging more automatically through digital platforms such as the Health Platform – this is one of their main tasks and a main reason for building them in the first place, and this also applies to quality indicators. In the words of an informant from Trondheim municipality:

> What we have as a main principle is that the indicators that we create should be measurable by the system, that they come out automatically. Some indicators need to be plotted in manually, but not many. Most indicators come through the system. This is pretty new. Or maybe not new, but this makes indicators more manageable and easier to follow up.

Note that the goal is that the indicator measurements will be automated through the technology. This delegates a lot of power to the setup of the software. Much time and work were invested into developing the right codes that structure the health personnel's work with and reporting into the platform. Thus, the originally coded data in the system, which are produced from health personnel-user interactions, affect the aggregated set of quality indicators. An informant from the specialist hospital described how software solutions secure systematic data:

> Previously, there was a lot of free text in all journal systems. Then you do not get to retrieve the data and you do not get to structure them. You had to go to the doctor's or nurse's notes, and then you had to read them page by page to try to understand a patient's medical history. In EPIC, you put in medical records as neatly structured points. It is very clearly specified, like 'then he got this diagnosis.' Much better oversight and structure.

In the quote, the informant argues for why free note taking is restricted in the platform. While the physicians and other employees may experience this as facing 'the tyranny of the drop-down menu' (Almklov & Antonsen, 2019), in which they must find and apply codes prestructured by the system, the informant considers this necessary to enable automatic retrieval of the information produced.

Thus, the platform and the accompanying ambitions depend on controlling the data reporting moment. The detail level of the drop-down menu was also higher than what characterises traditional patient journal writing practices, making the platform very effectively enabled to potentially monitor work. An informant from the hospital maintains that this had triggered discussions and resistance in making the platform as well. 'Now, everything becomes very visible. For example, that one doctor usually spends four hours on the same surgery and another only two, but that the one who spends two hours needs to conduct several resurgeries.' Thus, the now available view into the organisation opens new possibilities for regulating and coordinating work, as they can measure and compare individual levels of performance on a more detailed level than before.

We see that the automation of data production implies automatic monitoring of employees, which is challenging. New information about the work, such as time spent on a surgery, demands that management can make ever more wise decisions. According to the informant from the municipality, platform developers have therefore set as a main principle that '[w]hat is important is that employees are informed that everything is registered. Everything is counted and measured. Heads of sections need to convey this message to their employees: Everything you do, can potentially be measured. This is not only about "gains"'. Informed consent was hereby made into a necessity, and in practice, part of the work contract. Yet, this also distributes the responsibility for informing and collecting informed consent to the unit and the individual level, and it is still necessary to explore how this constant monitoring and potential for automatic data analysis

will change health personnel's reporting of their activities and the content of patient data that are fed into and circulated by the system.

Towards Deductive Statecraft?

What can we say from our initial observations of the Health Platform for the future of quality work and knowledge of quality in times of datafication? Although only a vignette and as such preliminary observations, there are indications that the balance of actors involved in the mundane governing and regulation of quality work will change. The distribution of power among stakeholders who speak about or contribute to defining measurements of 'quality' will then also potentially change. IT, project and data analysis expertise obviously become even more important than before, and they contribute to build another way of making measures of work and service quality. The speeded-up character of the making and testing of quality indicators represents something different than the traditional data work of public administration. A gap in the health administrative data culture may emerge – a then and a now, before and after setting up automation, with potential changes in authority implied.

The story of change that emerges from the vignette of the Health Platform points to important questions about the manufacturing and role of monitoring technologies in the public health and care services in times of datafication. While previous research on quality indicators is aware of these questions, the challenges that they pose have become urgent within a datafied context. For example, how are the people in the services, from frontline care workers to professions and managers, affected by being monitored on such a detailed level? How will management use the new possibility of seeing into organisational life and the employee-service user interaction through dashboard technology? How is automation changing the quality demands that the services are asked to respond to, and how does this change prioritisations in everyday care and medical work? Further, how will awareness of these changes in speed, time and visualisation among service employees change their investment in work, colleagues, and patients/users? And how will visualisations and real-time production affect the production of data on quality – which in the end is core decision-making material for health and welfare planning? This list of questions creates a usable research agenda, once the Health Platform is properly implemented, and has become part of routine practice. Further research is

needed that will follow these developments closely to analyse what is lost and gained, with the datafication turn concerning knowledge production from and about the performance and quality of public services.

Earlier in the chapter we introduced the concept of *inductive statecraft,* that the modern datafied welfare state will turn into, according to Fourcade and Gordon (2020). While the case of QI could have been another example supporting this hypothesis, we suggest that the vignette reveals the opposite: quality indicator work is more deductive than inductive. That is, quality indicators do not emerge as categories inductively from data, but data is made to fit categories. Indicator categories are models that get tested through the ongoing activities of the services, and they do not necessarily fit easily with what the actors in the corridors of the services observe and experience. This was the quality indicator developer's dominating story before the Health Platform and its dashboard, and they strived to use these data as such, implying a lot of energy spent on translating the message that could be drawn out from the indicators – when transporting the data further around in the service apparatus and to the politicians. The speed and automation effect of the platform may camouflage this deductive characteristic. It may give even more power to the voice of the indicators, as if they represent real activity that has spoken directly to stakeholders through the technology.

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CHAPTER 3

Talking About Algorithms: How Can Interdisciplinary Translation in the Automation of Public Sector Casework Be Facilitated?

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Abstract: Motivated by the need to save resources, increase efficiency, and reduce human error, public authorities are increasingly developing digital systems for the automation of casework. Since professional practices and algorithmic systems co-evolve, it is crucial that the expertise of caseworkers is included in the design of these systems. This presupposes that the algorithms can be scrutinised and discussed across professional boundaries. Recent literature on the digitalisation of public administration has called attention to several problems of translation associated with the development of algorithms. This chapter discusses two related problems: the problem of transforming laws, and transforming professional practice into algorithms. Based on interviews with system developers and caseworkers in the Norwegian Labour and Welfare Administration (NAV), the chapter presents and discusses tools and methods for overcoming these problems, and facilitating translation between professional groups in the development of digital decision support systems.

Keywords: digitalisation, automation, algorithms, digital decision support systems, public sector casework

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Introduction

Information and communication technology (ICT) increasingly constitute the frames for how we, as humans, perceive the world and act in it. Despite this computerisation of society, knowledge of how these technologies are constructed and function is mostly reserved for people with expert knowledge of ICT. In the last decade, there have been dramatic advances in the development of digital systems for automating procedures in the public sector, ranging from software that acts on predefined rules, to machine learning where algorithms identify patterns in historical data sets and produce recommendations based on these patterns (Faraj et al., 2018; Janssen et al., 2020; Pencheva et al., 2020; Zuiderwijk et al., 2021). For the public sector, algorithmic systems represent opportunities to improve quality and increase effectiveness in service delivery, but also challenges to the public's trust in government (de Sousa et al., 2019; Zuiderwijk et al., 2021). An algorithm is 'an abstract, formalized description of a computational procedure' that is written into code and applied to data (Dourish, 2016, p. 3). Scrutinising the outcomes of algorithms is difficult, due to the black boxing of input data and rules for processing, or due to the lack of competence in understanding the available information about the algorithms. This is a democratic challenge, because structures of great political and ethical importance may escape public debate (Bowker & Star, 2000; Kitchin, 2017). This is also a challenge to the legitimacy of professional work, since routine tasks are delegated to algorithms, and professional judgement is transformed into decomposed tasks, monitoring, and accountability (Hasselberger, 2019; Orlikowski & Scott, 2014).

As increasing areas of our personal and public lives are being digitalised, a tendency to fetishise algorithms, that is attribute to them powers of their own, has been noted (Ames, 2018; Monahan, 2018; Thomas, 2018). This tendency is expressed and perpetuated in simplified terms and suggestive metaphors, which obstruct informed conversation. Developing vernacular ways of talking about algorithms and other components of digital systems is thus important. Interprofessional teams that develop digital systems for automation are pioneers in this work, since they have to find ways of communicating across areas of expertise, along with these systems being developed and implemented.

In this chapter, we will address the development of digital decision support systems in the public sector and explore how various professional

groups talk to each other about algorithms. We approach this interaction as translation between different fields of knowledge and practice, and ask the following research question: How can interprofessional translation be facilitated in order to develop fair, legally sound, and trustworthy algorithms in the public sector?

The chapter focuses on the communication challenges within two related problems of translation. The first problem is the translation from law to algorithms. Developing digital systems for casework in public administration entails making law computational. However, laws are written in a genre that is not directly translatable into the discrete categories required to describe a computational procedure. Adding to this challenge, the translation work is done by programmers who do not have the juridical knowledge needed to assess fully the consequences of their choices. The second problem is the translation of professional practice into algorithms. Caseworkers are requested to delegate tasks to algorithms, which they lack the competence to fully understand.

Given the limited understanding of how various professional groups communicate in developing digital decision support systems, there is a need to study the translation in real life. The empirical basis of this chapter is data from an exploratory case study of how translation problems in the development of automated decision support systems is handled in the Norwegian Labour and Welfare Administration (NAV). NAV is the largest public organisation in Norway and administers benefits to help citizens with labour-related loss of income, such as occupational injuries, sick leave, childbirth and caretaking. NAV has adopted a strategy in which ICT solutions have a central role in channelling and releasing resources to be used in solving complex cases. The selected case is a project to develop a decision support system for a distinct public service in NAV: benefits for the care of sick children. The project has brought together system developers and caseworkers in developing a legal and reliable system. This offers a great opportunity to study in real life how different professional groups talk about algorithms. Further, the chapter will review recent literature on the problems of translation in developing algorithms in the public sector. Then, methodology is discussed, before presenting results from the case study. Finally, the chapter discusses tools and methods for facilitating translation between professional groups in the development of algorithmic systems for casework in the public sector.

Theoretical Approach to Problems of Translation of Algorithms in the Public Sector

Motivated by a wish to save resources, increase efficiency, and reduce human errors, public authorities are increasingly relying on automation in public service systems (de Sousa et al., 2019; Nordrum & Ikdahl, 2022; Pencheva et al., 2020). This entails handling cases by means of processing data from government registers by using computer algorithms. The proportion of automation varies from fully automated systems, in which the entry of data simply produces resolutions, to decision support systems, in which algorithms provide the caseworker with suggested decisions (Scholta, 2019). Systems based on rule-driven algorithms apply predefined if-then codes to settle the outcome of cases, whereas systems based on data-driven learning algorithms can identify patterns in large historical data sets (Bayamlıoğlu & Leenes, 2018; Nordrum & Ikdahl, 2022). Thus, humans are still in the loop in digital decision support systems, but the degree of human involvement varies (Lindgren et al., 2019).

In any case, due to their role in distributing public resources, these automated systems of public sector work constitute infrastructures of great political and ethical consequence (Bovens & Zouridis, 2002). Yet, knowledge of how these systems function is not easily available to the general public, and can be difficult to access and comprehend for the bureaucrats who use them. Understanding how an algorithm has arrived at its outcome can even be unclear to the system developers, due to the quantity and complexity of the input data and its interactions (Faraj et al., 2018; Janssen et al., 2022).

Developing digital systems for automation in public administration entails making law computational, that is formal and quantitatively precise (Hasselberger, 2019; Wihlborg et al., 2016). However, laws are written in a genre aimed at facilitating human interpretation, and are not directly translatable into discrete categories. As described by Kitchin (2017, pp. 16–17), an algorithm consists of two components: the 'logic' component, which specifies what should be done, and the 'control' component, which specifies how it should be done. The logic component is specific to the domain within which the algorithm will work, and requires the translation of a task into pseudocode: a structured formula with a set

of rules that establish the categories into which information is sorted. However, system developers rarely have the juridical knowledge needed to assess fully the consequences of their choice of categories. This implies that while the automated systems limit the discretionary power of the caseworkers, such power is allocated to the system designers, who might not be aware of the significance of their power (Bovens & Zouridis, 2002; Lindgren et al., 2019).

The increase in digital automation in the public sector has led to concerns of black-boxing. We can only see the input data and output data to an algorithmic system, and not the process of turning input into output (Ebers, 2022). Black-boxing is particularly problematic in the public sector because its legitimacy is based on how the government executes its tasks in accordance with core values, such as democracy, accountability, and efficiency (Andersson et al., 2018). Automating decisions reduces human bias and increases the likelihood that all citizens are treated equally. However, equal treatment is not always fair treatment. Bovens and Zouridis (2002) ask whether an expert system that leaves no room for considering the specific circumstances of each case can still be considered just. Excessive use of discretion in casework will lead to arbitrariness. However, a system based on the assumption that fair treatment equals uniform treatment can also produce arbitrary outcomes due to excessive rigidity. Hence, to ensure good quality from the decision support systems it is crucial to invite the professional competence of caseworkers into the process of developing them.

The introduction of digital decision support systems implies that the professional practices of caseworkers co-evolve with algorithmic systems (Agarwal, 2018; Grisot et al., 2018). Wihlborg et al. (2016, p. 2903) argue that such systems 'reframe relationships, responsibilities and competences'. They illustrate this through two different strategies that caseworkers can adopt in communication with a client who argues against a decision. The first strategy is to explain why the system arrived at a certain conclusion. The second strategy is to help the client translate information into a format that is better adjusted to the logic of the system, so that the caseworkers and the system can be more precise in arriving at a decision. This illustrates how digital systems for automation do not merely enable or constrain established professional practices, but also engender new professional roles in the interplay with algorithms.

Methodology

This chapter draws on data from an exploratory case study (Yin, 2009). The selected case is a project to develop an automated decision support system for a distinct public service in NAV: benefits for the care of sick children.

An exploratory case study is useful for developing initial understanding through an empirical introduction to a topic of interest. The method follows a theoretical sampling strategy (Eisenhardt & Graebner, 2007), selecting cases to create theoretical constructs of a little-known phenomenon. The case serves as an empirical basis from which to develop theory by the experimental logic of replication: of repeating, testing, and extending the emerging theory in real life contexts. Studying cases in a real-life context is a critical element of case studies, which aim to gather comprehensive empirical material to understand the distinct phenomenon.

The benefit for taking care of sick children is one of several related activities aimed at covering income loss in caretaking situations. The number of applications for this benefit increased enormously during Covid-19, when kindergarten and schools closed, and parents were obligated to stay at home with their children. In general, NAV faced an enormous workload, and the processing time for this and other benefits increased. Before Covid-19, NAV had started several projects relating to digitalisation, and they now considered the benefit for the care of sick children as a suitable service to consider for automation. An automated system would result in an efficient service with reduced processing time, leaving the caseworker with the manual work of checking and controlling the automated decisions. Besides, the benefit for the care of sick children is one of similar related benefits for caregiving situations, in which NAV saw a potential for automating by using the same rule-driven algorithm. This group of related benefits could then provide them with unique experiences on developing digital decision support systems for casework.

In developing the system, NAV invited caseworkers who had experience from working with the benefit. Some caseworkers were released from their daily tasks so they could contribute as experienced consultants in the project group developing the system. All other caseworkers were invited to post questions and comments on their experiences in applying the digital decision support system in their daily work, onto a digital platform. The posted experiences were discussed in project meetings with various professional groups present, such as system developers, project owners, designers,

and lawyers. In these discussions, the caseworkers who were enrolled in the project served as translators of their colleagues' casework practice in developing the automated system.

Studying this interprofessional translation work, we applied a narrative strategy, collecting stories of people participating in developing the digital decision support system for the care of sick children. The main source of data collection was interviews with system developers, product managers, and caseworkers. Their narratives were supported, questioned, and put into context through using publicly available information on NAV's strategies and work, their attention to digitalisation, and experienced pressure during Covid-19. Besides, one of the authors had collected data in a previous case study of NAV's effort to develop internal competence on artificial intelligence and digital support systems. This study served as a pilot study for the choice of research design in the study presented in this chapter, offering critical empirical and theoretical insight into the phenomenon.

The primary data material consists of semi-structured interviews with people participating in the project. There were five informants with various professional backgrounds and roles: system developers, product managers, and case workers. We used a number of documents as supporting material: reports from previous projects on digitalisation in NAV, and strategy documents. We also used publicly available information from NAV's own digital news arena MEMU, podcasts, and daily newspapers. Three of the interviews were done between June and September 2022, and two in March 2023. The interviews were based on semi-structured interview guides, focusing on their various roles and tasks in the development project, how they worked with algorithms, and how they talked with people from other professions. In particular, we asked about challenges they experienced in translating their work to people with another professional background, and their tools and methods for overcoming these. The interviews were recorded and transcribed.

The data analysis followed the analytical strategy of replication logic, in which existing theory is used as a template to compare and contrast empirical findings (Eisenhardt & Graebner, 2007; Yin, 2009). We started by selecting interesting statements from the interview material, assessing similar statements, and testing for theoretical patterns. We revised our findings by discussing and sending the analysis back and forth between the authors, and refining our results and final findings. The analysis did not follow a strict deductive style of replication, but iterated between inductive

and deductive approaches, where data collection was inspired by previous data. In interpreting data from the interviews, we arrived at new insights about related concepts, which we decided to investigate further, and which led us deeper into the material. These concepts were related to how various professional groups talk about algorithms in digitalising public sector case work, and the related problematic issues of translating of laws and professional practice, which is addressed in the scholarly literature. We gained critical insight into the conceptual aspects of interprofessional translation, through the various professional groups involved in the project. Also, the technical aspect of digital decision support systems was investigated, which in this project turned out to be strictly rule-based algorithms and not data-driven learning algorithms, which we as researchers thought it would be. This empirical insight into digitalisation technology led us to an extended review of the concept of algorithms in social science literature.

Translating Law into Algorithms

In the interviews, the system developers and the product managers describe the development of information systems for decision support as consisting of many concrete operations of programming. The procedures construct so-called stopping points on each formal requirement in the legal basis for the public service:

> The team consider all the relevant laws and ensure that everything is in order, for example has the applicant applied within the deadline? Does the applicant have the right age? Has he lived long enough in Norway? Does he nurse someone? Is there any information from a doctor? Is he an employee, freelance or self-employed? Based on all the information a calculation of the compensation is made. (Product Manager, NAV)

However, as pointed out in the scholarly literature (Hasselberger, 2019; Wihlborg et al. 2016), the problem is that laws are written in a genre not directly translatable into discrete categories. The law is not written for computer programs, as noted by a system developer in one of our interviews:

> The National Insurance Act is poor craftsmanship if you write it as code, because you break some principles by referring to things across chapters. Chapter 9 points very much to chapter 8, which is sick leave benefits. If one is going to refer across, it should be taken out of sick leave benefits and be a separate chapter. (System Developer, NAV)

The system developer points to the challenge of how the information in the National Insurance Act is structured. While a human being who reads chapter 9 can easily follow an instruction to look up a section in chapter 8, such cross-referencing is not easily translated into algorithms that serve as instructions for a computer.

While the translation of laws to algorithms can be a critical challenge, it can also shed light on gaps and inconsistencies that had previously escaped systematic attention. Moreover, our case study showed that in translating laws to algorithms, the system developers became aware of new juridical aspects of case management work:

> There are some laws that eliminate each other, and you will first be aware of this when you put the rules into the system. Then you notice that the rule is not possible to implement because the two laws eliminate each other. (System Developer, NAV)

In translating the National Insurance Act into pseudocode one, for example, found that some groups of users had been uncategorised in the previous system:

> One has the right to adjustments for work, for example, 'I will reduce my position by 50%'. But what about the ones who have not had any job, how are they to be categorised? How can you assess a loss of 20% of income for them? How can you assess loss of work when you have not had any work? (System Developer, NAV)

In cases like this, important juridical conundrums requiring clarification are discovered when attempts to describe a task as a structured formula with a set of rules fails. Similar to infrastructural inversion (Bowker, 1994), where action is taken to bring the otherwise transparent or slippery infrastructure into view, the translation from law to algorithms can render inconsistencies in the law 'visible through programming'.

When there are juridical inconsistencies, programmers may end up in a position where they need to prioritise to make the system work. This means that the discretionary judgment previously held by caseworkers may be transferred to system developers (Bayamlıoğlu & Leenes, 2018; Bovens & Zouridis, 2002; Lindgren et al., 2019). This redistribution of discretionary power can result in important decisions being taken unknowingly and without auditable traces.

The detailed step by step operation of programming in the development of new case management systems in NAV has resulted in many

discussions of the laws, interpretations, and inconsistences. This translation work is done by system developers who do not have juridical training. However, in translating laws into algorithms they interact with other groups of people who do have specified knowledge about the legal basis of public services, such as the product managers, the Ministry of Labour and Social Inclusion, and the caseworkers, etc. Our data material shows that interaction with caseworkers is crucial in translating algorithms, but also difficult.

Translating Professional Practices into Algorithms

Digital decision support systems imply automation of casework, aimed at standardising simple cases and releasing resources to attend to complex cases (Larsson & Haldar, 2021; Scholta et al., 2019). This may sound logical and uncomplicated, but in practice it involves many possible transition failures (Bayamlıoğlu & Leenes, 2018; Nordrum & Ikdahl, 2022). Translation between different logics of problem solving is one of the challenges. The new system introduces a step-by-step procedure, in which the caseworker is guided through information collected from various public records, like the population register, income and tax information, medical diagnosis, etc.

> The system collects the necessary information needed for the case management and presents the relevant information for each decision to the caseworker. (System Developer, NAV)

Our data material indicates that this step-by-step approach represents a radical break with the previous practice of many caseworkers:

> Many of the proceedings in the past have been in people's heads: that you read an application and then make up your mind, and then you grant benefits according to that. But (the new system) splits up the casework, you could say. Based on the information it collects, you can stop at various action points. (Caseworker, NAV)

A holistic approach to case handling, in which the caseworker establishes an overview of the case before delving into the details, cannot be practiced with the new system. While there is still room for using discretion in the

new system, it is not the case worker but the system that decides when discretion can be used. Some experience this as a loss:

> They lose control when the system handles the process. They feel that they do not own the case anymore, because they are just asked to do small tasks. 'Control the letter', and such things. They have lost everything they felt was casework. (System Developer, NAV)

However, some people might be inclined towards an algorithmic approach to problem solving, whereas others might be more intuitive and holistic in their casework. For the latter group, it will be harder to adjust to an algorithmic system.

The implementation of digital decision support systems is not only changing how caseworkers understand their own professional role, but is also, as Wilhborg et al. (2016) put it, reframing relationships, responsibilities, and competences that the caseworkers have in relation to others. When a new technology is introduced in a workplace, this can alter the established hierarchies and change power dynamics (Faraj et al., 2018). With increasing automation, advice from a newly employed colleague who masters the technology might be more in demand than the experience-based knowledge of long-term employees. This was expressed in one of the interviews:

> … those who seem to find this the most demanding are perhaps those who have previously been very good at their profession, and had been the one everyone asked. Now they are suddenly in a completely different situation where they may have to ask the newer, or younger colleagues. The roles are, in a sense, completely reversed. (Caseworker, NAV)

The introduction of automation also accentuates the relationship between the organisational units. Some caseworkers interpret the delegation of their tasks to algorithms as a signal that their work is no longer trusted:

> [Some] experience these changes as meaning that they had done everything wrong before. 'Why can't we do it like this, don't you trust us? Don't you trust that we can manage this?' (Caseworker, NAV).

However, it is of critical importance to involve caseworkers in the development of the algorithms. Implementing new information systems in an

organisation entails grappling with existing practices and conventions that can inhibit change but also be a key to successful adoption if used as a resource in the development process (Aanestad et al., 2017; Star & Ruhleder, 1996). Blurring the line between the development phase and the use phase has its risks, because the system that is released for use will necessarily contain errors. The timing of when to release a new module of the system is important, but tricky. If you release a module too late you lose important testing opportunities, but if you release it too early the amount of error can erode the trust that caseworkers have in the system:

> Trust is so easy to say but so hard to earn. If you've done something that causes you to lose it, it takes a long time to get it back. It is a bit of a challenge to put new systems in motion, because new systems often have errors, and when something is wrong, trust falls. You will not be able to create anything flawless from day one. (System Developer, NAV)

Involving caseworkers is not only essential for assuring the quality of the algorithms, it is also crucial for developing the caseworkers' understanding of how algorithms work. As emphasised in a report from the Norwegian Data Protection Authority (2022), insight into and understanding of how the algorithms work is important for the caseworkers' ability to assess critically the recommendations they produce. While building trust in the system is crucial, it is also important to prevent 'automation bias', the blind belief that the computer is always right (Carr, 2014; Hasselberger, 2019).

NAV has established several arenas for involving caseworkers in developing the automated systems. There are digital communication channels where caseworkers at the NAV offices can ask questions and seek guidance when they encounter problems. Since these channels facilitate dialogue, they allow opportunities to tailor explanations to the needs of individual caseworkers. In addition to helping build knowledge about the systems among the caseworkers, these channels are also important for detecting gaps and errors in the solutions. Caseworkers also interact with system developers in the development project. Our case study shows that communication about algorithms between caseworkers and system developers is challenging, but that NAV uses several tools and methods to facilitate translation between these two groups. In the next section we will discuss some of them.

Tools and Methods to Facilitate Interprofessional Translation in System Development

Interaction between caseworkers and system developers is essential for developing well-functioning algorithms for digital decision support systems, but since they contribute to this work with different knowledge, their contributions are likely to be characterised by partial understanding. One of our interviewees emphasised that distinguishing between what is necessary and not necessary to understand is important for effective communication across various professional groups:

> New people in the team often have problems understanding how the developers talk. They talk about things like Java and Jakarta, and you don't understand what they are. But now that I have worked with the developers for a long time, I no longer think about the things that I don't understand. Now I distinguish between what I need to understand and what I don't need to understand. (Product Manager, NAV)

This also applies to caseworkers at local offices:

> Think about a telephone for example. You can use it without needing do know what is inside it. As a caseworker you have to understand the Proceedings Act, but you do not need to know that Kafka is used for developing the system. (Product Manager, NAV)

While striving to understand professional secrecy can be counterproductive, having an overall understanding of the perspectives and concerns of the different professions is important for working together and collaborating on development projects. The following is a reflection of a data scientist on his collaboration with lawyers and designers:

> While we are not lawyers, we need to have a sufficient understanding of law, of what you want to safeguard, what you mean by this question, what motivates this question. Because when a question comes from a designer, and when it comes from a lawyer, there are often two different things they want to safeguard. Both want to create good services, but the starting point is different. (Data Scientist, NAV)

The system developers seek to bridge the professional communication gap by using terms and concepts that are familiar to the caseworkers:

> We actually talk about it in the same way as what you see. There is always a cut-off point, because this is jargon that the caseworker recognises. The cut-off point is when you are first entitled to the benefit. So we use the same jargon as the caseworker. The calculation basis, and things like that. There is, in a way, a catalogue of terms that exists. It makes sense to reuse [the terms], because we then have a clear language. (System Developer, NAV)

Communication is facilitated by framing the unknown in known terms. Thus by reusing the terms the interprofessional group can build a shared vocabulary over time. Talking about the algorithms in terms that are specific to what NAV does not only benefits the caseworkers' understanding, but also serves the purpose of maintaining a common focus on the organisation's overall aim. NAV is an attractive workplace for system developers, because of the opportunities to develop advanced technical solutions, but interest in technical issues should not overshadow the purpose of developing the systems:

> NAV is supposed to have interdisciplinary teams that will solve the user's needs. Everyone is expected to do so. It is important to be aware that the purpose of creating solutions is not the technical, but the functional. I expect the developers to be able to talk functionally about things. (Product Manager, NAV)

Another tool used for facilitating translation between developers and caseworkers is visualisation:

> I'm a fan of drawing, trying to visualise where the problem is, and how it will turn out for the different groups. So a visual and good dialogue is essential. (System Developer, NAV)

Since algorithms are logically structured instructions with entry points for input, application of rules, and production of output, they lend themselves easily to visualisation:

> … when we try to visualise for professionals what the flow is like through the system, and how specific rule types are to be implemented, it is usually decision trees or things like that, which can clearly depict the flow. Where does someone fall out in a rejection, which criteria go into a rejection? (System Developer, NAV)

Much interprofessional translation happens before the system is released for use, but some needs for translation also emerge when the algorithms

become part of the everyday practice of the caseworkers. One example concerns errors in the input to the algorithms, such as clients' applications. Initially, there was no opportunity to correct erratic input, but soon after caseworkers started to use the system, the need for incorporating this practice emerged. This resulted in a support system named Punch:

> So if something is wrong and we want to correct something, we have Punch, and then we can punch in the information we receive so that it overrides the system. It wasn't there at the start, but it is absolutely necessary, because it happens all the time that clients make mistakes when filling in forms. (Caseworker, NAV)

This highlights time as an important dimension of interprofessional translation. Mundane, but essential practices can easily escape the attention of a developing team and will first emerge after the system is in use.

Concluding Remarks

Motivated by the wish to increase efficiency, save resources, and reduce human errors, systems for automating casework are increasingly used by public authorities. Despite the important role such systems have in distributing public resources, knowledge of how they are constructed and function is difficult to access for the general public, as well as for the professionals who are asked to rely on them in their casework. Moreover, those who develop these systems often lack the competence to assess fully the consequences their programming will have for casework. Based on a case study of the Norwegian Labour and Welfare Administration (NAV), we have discussed problems of translation from law and professional practice into algorithms, and explored tools and methods for facilitating interprofessional translation in the development of automated decision support. To conclude this chapter, we will suggest some recommendations based on our findings for how interprofessional translation in the development of automated systems can be facilitated.

Establish low-threshold communication channels. Involving caseworkers in system development is essential for quality assurance and error detection, and also for developing their ability to assess critically the recommendations produced by the algorithms, so automation bias can be avoided. Frequent contact with a wide range of caseworkers can be

facilitated through low threshold communication channels on digital platforms.

Distinguish between what needs translation and what does not. While some common ground is necessary for translating between professional practice and algorithms, it is also important to identify what one does not need to understand. Competence in coding is, for instance, not necessary for caseworkers to be able to contribute their professional expertise in developing pseudocode.

Use domain-specific language and visualisation. Using vocabulary from casework to talk about algorithms is not only useful to develop automated systems, but can also strengthen the system developers' commitment to the functional purpose of the system. Decision trees and other visual aids are useful for showing and discussing how algorithms work.

Allow time for translation needs to emerge. Some translation needs will emerge through practice. Programming can render inconsistencies in the law visible, and errors and needs for alterations will be revealed when the system is applied in casework. Hence, it is important to set aside time and resources to make the necessary adjustments after the system is released for use.

With the rapid digitalisation of increasing areas of public and personal life, 'algorithms' has become a catchword in public debates, referring to a vaguely defined set of processes that concern the delegation of tasks to digital technology (Thomas et al., 2018). As noted by several scholars (Ames, 2018; Monahan, 2018; Thomas et al., 2018), there is a risk of fetishising algorithms, in the sense of attributing to them power of their own and treating them as 'magic black boxes' (Thomas et al., 2018). This can lead to knee-jerk rejection of any algorithmic system, but also to deterministic responses, in which technological development is seen as inevitable, and critical debate therefore seems futile. To cultivate a broad, informed debate on digitialisation in the public sector, there is a need to facilitate vernacular conversations about the inner workings of digital technology, such as algorithms. Translation practices in organisations at the forefront of developing digital public service systems could inspire approaches to initiating inclusive and constructive dialogue on algorithmic systems in other areas of society as well.

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CHAPTER 4

Technologies of Control and the Invisible Transformation of the Labour Market from Welfare State Principles to Welfare Capitalism

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Abstract: This chapter is based on an evaluation of the Norwegian oil company Northoil's performance management system, People@Northoil (P@N), by which workers evaluate their co-workers, producing numerical assessments of every employee's performance, behaviour, and adherence to company values. We argue that a specific techno-logic is written into P@N as a digital infrastructure, transforming the labour market from welfare state principles to welfare capitalist reward and punishment. Through its techno-logic of governance at a time of financial abundance, P@N is a herald of welfare capitalism. It is only one of many such systems, which both build and build *on* the selfsame techno-logics present everywhere in New Public Management and neo-liberalisation. Together this leads to anti-democratisation by expelling human judgement and discretion. As such, P@N is one of many structures of capitalist working life, which both harbours its own individualisation and technological control, and simultaneously furthers them as global techno-logics. P@N is one of the many technological reward mechanisms, whereby welfare capitalism is increasingly replacing the welfare state as the provider of security. We see an individual sense of security tied to capital, gradually replacing the need for a communal, that is, a social sense of security.

Keywords: welfare capitalism, techno-logic, governance, digitalisation, control, work life

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This chapter is based on an evaluation of the Norwegian oil company Northoil's[1] performance management system, People@Northoil (P@N), by which workers evaluate their co-workers, producing numerical assessments of every employee's performance, behaviour, and adherence to company values. Said numerical assessments form the basis for employee salary settlement and company streamlining. We argue that a specific techno-logic is written into P@N as a digital infrastructure, transforming the labour market from welfare state principles to welfare capitalist reward and punishment, or in a word, control.

The chapter is theoretically grounded in Michael Burawoy's analysis of how workers willingly submit to the conditions of capitalism (1979), and discusses disciplining and specific forms of control written into digital infrastructures. We rely primarily on Tian Sørhaug's analysis of the fetishisation of relations (2017); Byung-Chul Han's reflections on the role of transparency today (2015); Fredy Perlman's understanding of technological capitalism as daily activity (2017); Martin Heidegger's articulation of the metaphysics of our age as 'the age of the world picture' controlled by modern technics (1977); Tord Larsen's perspectives of self-objectification (2009); the reassessment of power by Fyhn, Røyrvik and Almklov (2021); Tim Ingold's perspective on humanity's position in technological society (2000); and finally our own work relating to technological articulations (Røyrvik & Berntsen, 2022).

In 2013, NTNU Social Research (NTNU SR) conducted a survey of P@N, and its possible impact on Northoil's 'culture of openness' (*åpenhetskultur*). Northoil requested this survey in response to criticisms in the aftermath of a collision incident—namely that offshore workers did not report safety issues for fear of reprisals. Union representatives therefore wanted Northoil to evaluate whether P@N was part of this so-called culture problem. During the survey project, internal political tensions emerged both through P@N itself, and through its evaluation – especially between management and worker unions, as P@N both actualises and transforms power relations and positions within the Nordic welfare model, and the tripartite agreement more specifically. The data presented in this chapter stem from this evaluation, as well as a survey, and interviews of workers, middle and top managers, both onshore and offshore. Experiences from the evaluation, and related meetings and discussions, also form important data for the analysis and argumentation of the chapter, enabling deeper

1 'Northoil' is an anonym for a large Norwegian oil company.

contextualisation. Though these data are nearly ten years old at this point, they are still very much relevant. In fact, the passing of time has, in some ways, strengthened our discussion – as did it Burawoy's, because we are now able to point out other trends, and in turn relate P@N to these. P@N is but one of many such systems, and much of our discussion focusses on the underlying techno-logic of these systems, and why they emerge in the first place.

After presenting the data, we discuss how P@N can be understood as a fetishising technic. Based on Karl Marx's (2004) description of commodity fetishism, by which economic value appears as inherent to the commodities themselves, Tian Sørhaug (2017) describes the fetishisation of relationships, whereby relationships appear as inherent to the individual. P@N is a technic that produces precisely this fetishisation of relationships. In public discourse, systems of evaluation that end up with a set of numbers, are often talked about as a form of *grades*, as in school grades. The debate quickly turns to whether it is right to quantify workers (including managers), that is, to measure and express their performance as grades. This is an interesting discussion in itself, particularly if we were to question what a grade actually is, and what it is meant to express (rather than measure). But here we focus on how the numerical assessments are made, and what conditions the numbers express, and, through this, how P@N acts as a *fetishising machine*, turning relational aspects into objective attributes – that is, the attributes of objects.

Next, the chapter discusses why trade unions in particular oppose P@N. The study shows that employee attitudes towards P@N depend on their background, and especially, what potential consequences the system could have for them. Young onshore managers were the most positive, whilst experienced offshore non-managers were the most sceptical. Views on the salary determining component of P@N were divisive. P@N yields different consequences depending on several factors outside of the worker's control, such as their position on the salary scale, the type of work they were engaged in, and the approach to P@N taken by their manager(s). This factor is essential for workers' assessment of P@N. Interestingly, the employees positive to P@N emphasised individual consequences, such as increased salary, whereas those who were negative emphasised systemic consequences, such as lowered trust between workers, reduced loyalty to the company, and the potential for abusing the system and creating conflict. This same individual-system dichotomy

is also found in how Northoil argues in favour of the system, and trade unions against it.

The lines of conflict actualised through P@N have in fact already been established through the introduction of individual salary settlement. P@N further exacerbates this conflict by increasing individualisation and lessening collective bargaining, by objectively fixing performance, behaviour, and values through rigorous numerical assessment,[2] thereby ensuring a 'formally correct' settlement, as opposed to a shared agreement founded on human judgement. This shifts power from unions to upper management, and furthermore, transforms power from human-centred assessment to human-peripheral principles of techno-logics. Taken together, this shift and transformation forms the basis for distributing rewards through welfare capitalism.

Finally, we show how P@N is a symptom – and at the same time also one of the driving forces – of global megatrends such as neo-liberalisation, anti-democratisation, and individualisation of labour. In Norway, these logics challenge the so-called Nordic model, and introduce welfare capitalism through technological and digital governance at a time of financial abundance.

Background

On the oil platform Gullfaks C, on 19 May 2010, what is called an 'unwanted incident' (*uønsket hendelse*) occurred in the North Sea, involving a vessel and a platform, both of which were Northoil's responsibility. As always in the event of an unwanted incident – that is, an accident or near accident – there was an investigation in order to clarify responsibility, and the causes of the incident. This particular incident was the collision of the vessel and the platform. The investigation, carried out by a Norwegian institute for interdisciplinary research on climate change, was thorough, going far beyond merely establishing the incident's causal conditions, and problematised the company's work culture, characterising it as lacking transparency. The institute found that some workers were afraid to speak out about safety-critical conditions, for fear of consequences, conflicts, and

2 This is an expression of a larger tendency, discussed and described by, amongst others, Blim (2012), Sørhaug (2016), Supiot (2017). Politics and governance are increasingly done through numbers and calculation, which in turn both entails a very specific form of control and reinforces existing power structures and inequalities.

causing a ruckus. The investigation received a lot of attention both within the company and in the media, giving various groups in the company the opportunity to direct attention to aspects of the company of which they disapproved, in order to track down the cause of what eventually became known as the 'lack of transparency culture'. It is no coincidence that a security investigation pinpoints the lack of *transparency* as a problem – as Byung-Chul Han (2015, p. vii) shows, today's society is the transparency society, and '[w]herever information is very easy to obtain … the social system switches from trust to control.' P@N was one of the factors that found its way into the spotlight, and NTNU SR[3] were tasked to investigate whether the system affected the company's culture of openness.[4]

P@N is a system, or – depending on whom you ask – a process, with multiple elements and purposes. Northoil calls it a 'performance management system', describing it as 'the company's process for managing performance, development, and placement of our employees' (Fenstad et al., 2013, our translation). The process is often represented as a wheel of time, consisting of four phases that together span a year. The first phase is a preparation process that consists in structuring and registering dialogue between manager and employee, and agreeing – in accordance with the system – on performance and evaluation targets. Next is the evaluation of the employee, expressed through numbers, which people clearly regard as the key phase. Afterwards, the results of evaluation form the basis for follow-up and manager-employee dialogue. Lastly, data from the former three phases is collected to form the basis for the next turn of the wheel.

In addition to being a process, P@N is a digital system, and a system for digital coordination, governance, and control over the process. This entails – amongst other things – a digital structuring of employee tasks, wherein employees must log on, and log their performance goals (together with their manager), evaluate others – and log this evaluation. They may also read their own evaluations in this digital system. Several employees relate to us their discomfort with having a poor evaluation logged and available – in principle permanently – in this digital storage. Another aspect

3 Røyrvik, who was working there at the time, was the project leader for this task. We would like to thank Jørn Fenstad and Anniken Solem, who also worked on the study.

4 Although the 'culture of openness' is not the topic of this chapter, the idea and the concept of openness appear throughout this text in different ways. As a topic of research and investigation, it is a desired state of organisational culture to include honest criticism and discussion. 'Openness' as a dimension of the organisation's management technology is technically specified and operationalised as a distinct measurement unit of human behavior.

of this system is, as we will discuss in more detail later, the surveillance of logging and being logged by others. Digital systems like these are examples of what we elsewhere (Fyhn et al., 2021; Røyrvik & Berntsen, 2022) refer to as drop-down menu power, because you are at the mercy of the design of the menu system – you are not allowed, nor technically able, to do anything counter to the way that the system intends, but are compelled to follow the rigid interface. Furthermore, you must perform the evaluations – if you do not, this is logged as well. The system is inscribed with a concrete form of technological discipline and power, which is inescapable by design.

When NTNU SR were assigned the evaluation of P@N, it became clear early on that there were really two clients: the company Northoil, and the trade unions. The evaluations of the Gullfaks C accident, which shone a spotlight on the company's culture of openness in the first place, gave unions the chance to actualise their issues with P@N, and maybe even get rid of it – a prospect the company, for its part, had no interest in doing.

Trade unions were negatively disposed to P@N for several reasons. For instance, there were stories of the system being abused. Stories, such as workers receiving terrible evaluations – and the associated, equally poor, salary development – from managers with whom they had conflicts. There were examples of people who had suffered severe psychological breakdowns from the violation of receiving bad grades for their personality, people regretting their rushed grading of others, and other stories of power infringement and abuse. The company thinks that this type of abuse is unavoidable, and that P@N merely made it more visible and transparent. But the trade unions believe that the power bestowed – particularly upon management – by P@N is qualitatively different from issues of power infringement and abuse prior to the implementation of P@N.

Even Stronger Values, Performance, Behaviour

Everyone in the company is evaluated in three ways through P@N. These are:

1. Even Stronger Values (ESV)
2. Performance
3. Behaviour

The ESV evaluation is a so-called 365° evaluation, in which a middle manager would be evaluated by those above, equal to, and below them in the

employee hierarchy, whilst someone from upper management would only be evaluated by those below, and an employee at the bottom of the hierarchy would be evaluated by their peers and managers. The evaluation examines whether the employees live up to company values – is the employee 'open', 'critical', and 'creative'? The name, Even Stronger Values, is meant to suggest that the values will be complied with 'even more strongly'.

Performance is evaluated by the employee's manager. The manager and employee will have defined objectives for the employee to achieve for the year of evaluation. The manager then evaluates how successful the employee has been in achieving their goals, which then becomes the worker's performance for the year.

Behaviour is yet another assessment of how well a worker complies with company values, where the manager alone assigns a numerical value to the degree of compliance.

The company refers to these quantifications as 'numerical evaluation', but employees all refer to them as their 'grades'. The evaluations in P@N are all on a numerical scale from 1 to 6. It is important to note here that in the Norwegian school system, primary through upper secondary schools use numerical grades on a 1–6 scale, which is replaced at university by an A-F scale. When workers refer to their evaluations as 'grades', this highlights the fact that the evaluations may be perceived as somehow infantilising.

The issues and discussions that accompany these evaluations differ slightly. The ESV evaluation prompts reflections on the social aspect of being evaluated by one's immediate colleagues, as well as on how this evaluation is expressed as a mark. The performance and behaviour evaluations prompt reflections on both the grading itself, but also its direct consequence, since the worker's salary settlement is based on their grade average.

Evaluating P@N

The mandate for NTNU SR was to investigate whether – and if so, in what way – P@N influences the culture of openness in Northoil. Though we will touch on some of the results from this evaluation, our aim here is not to answer Northoil's mandate,[5] but rather to expose and discuss the logic of P@N.

5 This was however the aim of Fenstad et al. (2013).

A precise answer to the mandate would be: 'It depends on the context.' This conclusion is about as interesting as it is surprising. However, if the culture of openness is supposed to be the solution to the lack of transparency culture, then clearly there is a rather curious form of openness at play here. Han (2015, p. vii) writes that '[t]he society of transparency is not a society of trust, but a society of control'. In keeping with this, the lack of transparency is actually a lack of control. 'Openness' then, in turn, describes how willingly an employee subordinates themselves to transparency. Han writes of 'the dialectic of freedom', that '[f]reedom turns out to be a form of control' (p. 49). In Northoil's case this dialectic seems entirely appropriate, substituting openness for freedom.

The results of the evaluation help us understand the more fundamental tendencies that we want to point out in this chapter, as well as the role – and differences, in terms of legitimacy – of the different types of data gathered by the evaluation. For the sake of simplicity, we can divide the evaluation into a quantitative and qualitative part. Thus, it is interesting to note which participants emphasise quantitative data, and which ones emphasise qualitative data – and how this in turn relates to an individual or systemic focus. But before we examine all of that, we will review the actual data.

The Survey Study

NTNU SR carried out a questionnaire survey, and Northoil helped to ensure it was communicated efficiently, leading to a large scope, as well as a high response rate. In addition to generating useful statistics, the survey received an unusually high number of written comments from respondents, who wanted to contextualise their answers. The survey provided information on how P@N is used as a tool, and what respondents find useful about it. Additionally, it yielded information on how P@N affects workers on the unit level, and how they experience the feedback they receive through P@N.

Most employees are reasonably satisfied with the system. The most frequently cited complaint was the system's link to salary settlement. Interestingly, this problem was raised from two, diametrically opposed angles. That is, some workers found the link itself problematic, while others did not think the link was strong enough, and that grades should impact salaries more directly.[6]

6 The report contains an in-depth presentation of this data. Here we only present what is relevant to our present inquiry.

Though the evaluation is clearly considered the most important phase, when survey respondents were asked what they consider P@N's most important use, most responses emphasise the setting of goals and clarification of expectations. Personal learning and development are in second place, and effects on salary determination and promotions are of tertiary importance.[7] The distribution of responses to questions regarding P@N's use as a tool shows how the vast majority agree that P@N is a good system for managing goals in their unit, as well as for personal learning and development. This may be explained by respondents interpreting the wording 'most important use' to mean that use which yielded the best, or most positive, effect. In any event, most people disagree that P@N's most important function and suitability is linked to evaluation or reward.

Summarising the descriptive statistics, the numbers are not particularly drastic, except for the assessment of the link between P@N and salary. Answers are fairly evenly distributed, with consistently more positive than negative answers. When combined with the company's work environment and satisfaction analyses, we see that the answers correlate with the respondents' backgrounds. Namely, onshore managers with little experience are the most positive, whilst more experienced non-managers, especially those working offshore, are less positive.

The Interview Study

The survey shows that rather than P@N producing one culture or another, respondents evaluate P@N differently according to their own situation. Interviews corroborate this finding. Three different descriptions of P@N were offered, based on the type of consequences P@N could potentially have for the respondent. P@N is:

1. A professional system that works positively for the company's culture of openness
2. A problematic system with negative consequences for individuals and the company's culture of openness
3. Something that 'just has to be done', which does not really have any particular impact on anything

7 It is important to note that the survey's order of the answer options, the result of negotiations between us and Northoil, is identical to this order of priority. The order of answers may have influenced the result.

Position 1: A Professional System That Works Positively for the Culture of Openness

Those who consider P@N to be a professional system, point out that it can be helpful for career building, or for getting another position. It can also contribute to a high salary increase. Some interviewees focus on how they can register where they would prefer to work, and what they want to work with. The system is thus perceived as helpful, since information is both stored and processed in the employee's best interest. Others say that they assessed their own efforts somewhat modestly, and were then positively surprised by their salary development, when the manager's numerical evaluation had exceeded their own, bringing up the average mark. Interviewees point out that the immediate managers are important, and that the system helps to highlight their qualities, and that P@N makes a positive difference when the managers need to develop their employees and/or themselves. Common to these assessments is the focus on individual benefits from the system, and on P@N as a tool for managers to assess their employees.

This group describes their given and received ESV assessments as something positive. ESV lets one adjust one's self-image to workable feedback. Additionally, when assessing others, it forces one to focus on different characteristics of one's subordinates. Some interviewees had reservations concerning who evaluates whom. Several interviewees were unsure as to whether the appropriate people – that is, the ones who know them best – are the ones assessing them.

Managers, irrespective of whether remote or not, argue that the system can also ensure transparency, in that they can be more honest than they would be face-to-face – even if some feedback can be difficult to handle for the subordinate. Some managers put a positive spin on this and say that employees who score low (1 or 2) should be followed up more closely than other subordinates, in order to turn a difficult situation into a positive one.

Though members of this group, like everyone else, refer to their marks as 'grades', they do not object to being graded. They do, however, point out that an increase in salary is not perceived as the logical extension of one's grades, and they argue that there should be an even closer – more automated – link between grades and salary.

One interviewee refers to giving and receiving evaluation through P@N as 'getting the truth out, and having one's self-esteem adjusted'. Many

interviewees emphasise this aspect of being made aware of one's development, goals, and plans. They are confident that the manager evaluations are high quality, and that managers and subordinates use P@N honestly and not for manipulation. Feedback through P@N is considered precise and will, among other things, lead to an improved culture of openness. In summary, this group considers P@N to contribute positively to the company and the 'culture of openness'.

Position 2: A Process with Possibly Negative Consequences for the Culture of Openness

Those who assess P@N as a negative process, perceive this process as primarily related to the determination of salary – even though they have heard that P@N is supposed to be used for something more than this – and problematise both how the system should work, and how individual managers use it for discipline and punishment in conflict situations. Union representatives explain how they received better grades when they stopped being critical, or halted their union work.

ESV and behaviour grades are perceived as especially problematic for transparency. Both to give and receive grades on attitudes seem problematic to many. If the managers try to 'game' the grading (for example by giving everyone a 4), they are pressured into 'using the scale' to achieve a normal distribution, regardless of the department size. The same interviewees argue that it is evident that those receiving a lower salary development will not be openly critical the following year.

Also linked to transparency is the concern that issues that could previously be raised with a manager onsite, must now go through the 'system' instead. This is also linked to the now frequent change of managers, as the system requires internal flexibility, enabling the transfer of personnel – upwards or downwards, through reward or punishment. Some tell us that they have a new manager each year, and interviewees say that having a new manager every year, perhaps someone who has never even been in the same location as themselves, makes it difficult to achieve a good relationship with their manager. This is seen as generally having a negative impact on transparency, especially considering the effects on salary development. Manager continuity is thus suggested to be a prerequisite for P@N to function at all. Yet the opposite – increased mobility – is a prerequisite written into the system.

The group also points out that P@N can be abused by managers, and there were several stories about this. Furthermore, there is a fear of reprisals, which makes the system unable to contribute effectively to transparency. Many stories from this group describe problems related to the evaluation and grading of behaviour. They say that P@N can be used as a tool for managers to gain and exercise power. Several interviewees point out how poor chemistry between a manager and a subordinate can result in a 'bad grade', which has permanent consequences for the employee's career and salary development. In addition, the less contact there is between manager and subordinate, the easier it is for the manager to give a bad behaviour grade, as a form of reprisal.

In the cases of remote management, the relationship between work and salary is considered to be even more mathematically calculated, as the manager can base their gradings on only a few meetings. Thus, there are stories of strict self-disciplining in the twice a year departmental meeting, in order to avoid giving the manager a negative impression on these few, rare occasions, to impress them.

P@N is also seen as a system best suited for highly educated and careerist landlubbers. This is also a criticism of the system's standardisation, which makes it impossible to address certain occupations and skills. The system is thus considered to be made by and for middle management, focussing on relational activities.

This group is also troubled by the general development of the organisation in recent years. They suggest a shift in the organisation, from that of a worker collective, to one in which the individual is responsible for solving their own tasks. They suggest that Human Resources (HR) has been transformed from something that links management and non-management, into a tool purely for managerial control, a control based on a clear division of the company into different units with separate Key Performance Indicators, deliverables, and targets to be met. These are then included in P@N as different standards for the workers to be measured and graded by, and both the difference in standards, and the fact that they are used for measuring, are considered problematic from this position.

Position 3: Something That 'Just Has to Be Done'

Lastly, one group considers P@N something that 'just has to be done' and considers some elements of the process as positive – others negative.

Their main objection is that there should be *daily* feedback and contact between manager and subordinate, not merely occasional and ritualised forms of feedback like P@N. The group further suggests that P@N can function as a means of speaking out, and mentions managers who have used P@N instead of raising a difficult issue directly with the subordinate. They also point out that P@N, when considered as a career development system, works best for highly educated employees at the beginning of the career ladder and salary scale. Furthermore, P@N is perceived as HR's way of conducting personnel and resource management. P@N is thus considered suitable for personnel administration, but not as a system for learning and development.

The consequence of this attitude towards P@N, is that it is relegated to something that 'just has to be done', a kind of nuisance with little effect on – and of little consequence for – employees. Several managers tell us how they carry out their evaluations with a minimum of effort, so they can instead spend time having separate meetings with their subordinates. Both managers and non-managers alike describe how they paste ready-made sentences into the evaluation forms in order to avoid wasting any more time or thought than necessary. One interviewee sums it up for us: 'It is just a farce!'

In contrast to the two previous positions, this group does not describe P@N as making any big difference either way. This attitude seems to stem from a position at the top of the salary scale (meaning that the grades do not affect their salary), or from an environment in which managers have succeeded in gaming the system. In sum, they thus do not think that their situation can be meaningfully affected by numerical assessments, so they have devised alternative strategies that they find more effective.

P@N as a Fetishising Machine

Formally, employees receive 'numerical evaluations' in P@N. But every interviewee consistently refers to these numbers as their 'grades'. The vast majority of them furthermore associate P@N mainly with grading, and its associated effect on salary development. Though statistics indicate that most employees are reasonably satisfied with P@N, the qualitative data reveals that different employees discuss and understand P@N very differently – and that there are numerous aspects that are not viewed favourably at all.

We will now move beyond the employees' own impressions of P@N, and try to say something about what the system does to people, and to the world, based on these impressions.

The system evaluation was performed at the behest of Northoil, and interviews were therefore booked through their management and HR. As a result, interviews simply popped up in the interviewees' calendars, with allocated times and places, and some minimal information. For many, particularly for middle managers, an average workday consists in going from meeting to meeting, without necessarily being fully aware of – or prepared for – the next meeting. Every interview therefore started in much the same way: the interviewee(s) entered the room, sat down, unpacked their laptop, and optionally, other necessary management tools, and prepared themselves for what they expected to be another standard meeting. We then asked them if they knew why they were here – what the meeting was about. As we explained the purpose of our meeting, laptops and other tools were put away as a discussion of the workday, and how P@N affects their life, emerged.

Every discussion touched on both being graded, and grading others. As university employees, we have ourselves graded many exams, a craft that we find difficult enough in itself – but we cannot even begin to imagine how we would approach the task of grading someone 'as a person', as opposed to merely grading their work. We were therefore not surprised to hear many interviewees tell us that being reduced to a number[8] is offensive to them. Gunhild Tøndel (2017) writes about the violation of being so reduced.[9] Her interviews reveal how the number leaves its impression on the person's body, and how it feels like the number takes precedence over them as a whole person. Several interviewees told us how terrible they felt after receiving a 'bad grade', insinuating that they somehow identify with their marks. Tøndel also points out how some people nonetheless try to play the numbers game, which is exactly what certain of our interviewees did, in elaborating different strategies for obtaining a desirable grade.

8 As discussed by several others, even though Norway has been shielded to a greater extent than most other countries from the worst forms of 'neoliberal governance by numbers' (Kuldova, 2021, p. 46), it is precisely through the discomfort and offense of being reduced and managed through numbers that the consequences of this logic emerge most clearly also in Norway. (See also Tjora, 2019; Kjeldstadli, 2010.)

9 Tøndel writes about a Norwegian public registry of statistics pertaining to public caregiving, and the people who have become statistics in this registry.

An example of a value that we find particularly difficult, and indeed absurd to evaluate, was the company value[10] of openness. An employee's 'openness' is assessed in both the ESV and the behaviour evaluation. Considering openness as mere behaviour is not exactly straightforward. It is surely also a value. It could even be said to be a mode of being, a coming-into presence. Is there indeed any behaviour which is *purely* behaviour? Do similar objections not hold for values as well? In any event, the employees' quality of openness must be a core component of the desired company culture of openness, and it seems that openness here does not really mean an openness to being, but rather the willingness to become transparent, and therefore under control.

However, most of our interviewees do not find the prospect of quantifying values and behaviour as absurd as we do. Young middle managers in particular thought it was good that these were included in the evaluation of the employee, that the evaluation was not based exclusively on performance.

In order to poke at this a bit, we asked interviewees to explain the scale to us. When explaining what the extremes of the scale signified – that is, the difference between receiving 1 or 6 in openness – most interviewees comfortably manage to convey this difference, illustrating a closed and an open person through body language and tone of voice. But distinguishing between, say, a 3 and 4 in openness, proves substantially more difficult. Many interviewees suggest that these nuances are based on a subtle feeling that they get. Others try to ground their evaluation in more objective criteria, but struggle to do so, as body language and tone of voice no longer suffice to articulate the difference.

It becomes clear to us that the openness mark cannot be understood merely as a quality of the person being graded, that is, the person's openness. Rather, it speaks to the relationship between the grader and the graded. The subtle degrees of openness articulate something about how well these two people know each other, how comfortable they are in each other's company, whether they have any quarrels or conflicts, and so on. Openness marks

10 The values of Northoil: *Open* – we promote transparency, we embrace diversity and new perspectives, we raise ethical dilemmas and act with integrity; *Collaborative* – we work together as one team, we share knowledge and help each other succeed, we engage with, respect, and earn the trust of our business partners and society; *Courageous* – we are curious, innovative and commercial, we continuously improve, we use foresight, identify opportunities and manage risk; *Caring* – we seek zero harm to people, we respect each other, and contribute to a positive working environment, we act in sustainable, ethical, and socially responsible ways (from the 'Northoil book').

can in this way be understood as expressing how the grader feels about their relationship to the graded. This point, that what the grade expresses is in fact a relation – and more precisely how the one that does the grading understands and experiences this relation – is nevertheless hidden. What remains after the evaluation is simply a grade assigned to the other person in the relation, attributed to this person as a resource. The relation is thus transformed into an attribute ascribed to the receiving end in the relationship, through the quantification mechanisms in P@N.

Thus the P@N process echoes Bruno Latour's (1999) point about how objects of science are defined by their ascribed attributes. The worker is articulated as a resource for management control. This is what Sørhaug (2017) describes as a fetishisation of relationships, where relationships are articulated as a value of the individual. The fetishisation itself forms the core of this objectification, thus transforming the human being into – what we have elsewhere (Røyrvik & Berntsen, 2022) described as – a technological articulation, and, as Han (2015, p. 3) observes, this articulation 'flattens out the human being itself, making it a functional element within a system'.

Fredy Perlman (2017) discusses how people reproduce themselves by alienating their activity, and embodying it in commodities as material receptacles of human labour. By calling P@N a fetishising machine, we want to show how P@N secures the worker as a technological quantity that can be controlled to achieve better performance, behaviour, and values. The term 'performance management system' is therefore completely precise, since P@N is a fetishising machine that transforms the person, with their performance, behaviour, and values, into a manageable object of technological control. And, as Perlman argues, power moves from the worker to this object. In other words, 'the fetish worshipper emasculates himself and attributes virility to his fetish' (p. 42).

A Question of Power

P@N, through the many examples of self-disciplining, is an example of what Michel Foucault (2019) called biopower, whereby people are managed through a techno-logic of control. The power of the evaluation is encoded in the worker, who modifies their behaviour accordingly, possibly even on a subconscious level as well. Workers' bodies thus become objects of power in a disciplinary system. This is in keeping with Tøndel, who points

out – via Foucault – that procedures and technics for mapping, surveilling, and governing, are at the heart of the modern exploitation of power.

Foucault (1977) used Jeremy Bentham's panopticon – a prison design wherein a single warden can observe every prisoner, without the prisoners knowing whether they are currently being watched – as a metaphor for the modern disciplinary society, whereby all aspects of social life are surveilled and subjected to self-regulation for fear of punishment. P@N, however, may be better understood as a case of what Han (p. vii) calls the *digital panopticon*, observing how these differ from Foucault's disciplinary panopticons, wherein occupants 'were isolated from each other for more thorough surveillance, … not permitted to speak. The inhabitants of the digital panopticon, on the other hand, engage in lively communication and bare themselves of their own free will. In this way, they actively *collaborate* in the digital panopticon.' Despite the fact that some (notably the group in the second position described above) dislike P@N, everyone more or less collaborates with P@N, irrespective of their enthusiasm for doing so.

Individualisation and the Internal Labour Market

Perhaps even more important, and somewhat left unsaid, is the way in which the trade unions lost a great deal of power through P@N. The system, and therefore the fetishisation, calculation, and grading – due to the system's connection with wage settlement – fits neatly into what is often called the Norwegian or Nordic model, namely a tripartite collaboration. However, through P@N, one's salary does not result from agreements and negotiations, but rather from calculation of the individual's achievements and attitudes. And with this sidelining of unions, salary settlements are no longer a matter of fairness according to agreement, but rather of correctness according to calculation. Rather than a negotiation between the workers and the unions, emphasising joint and collective group interests, workers are rewarded as individuals.

In this way, P@N actualises and reintroduces tensions and controversies which are built into the very structures of capitalistic working life, especially those pertaining to individualisation, the development of an internal labour market, and the technological control of both individuals and the labour market. In *Manufacturing Consent*, Burawoy (1979), through an analysis of changes on the factory floor and management at the US

company, Allied, over the course of 30 years, describes how a labour market defines: (1) occupations, (2) workers, and (3) the rules for which workers get which jobs. In analysing the 30-year development, it becomes clear that a strong internal labour market has developed, leading to greater mobility for the workers *within* the factory, and less *between* factories. Consequently, profits are hidden and secured in new ways as: (1) the factory internalises characteristics from the external market, competing individuals, and individualism; and (2) factory mobility dissolves most of the tensions between workers and management, as it is transformed into mobility between competing individuals.

An internal labour market implies that the company has developed institutions for political processes within the company. Burawoy focusses particularly on institutions for collective bargaining and complaints, and shows how the advanced stages of capitalism incorporate the formation of class compromise between workers and management, which Burawoy says is an internal state through which institutions organise, transform, and suppress struggles over relations in and of production on the corporate level.

Burawoy's analysis is based on American working life, and development in the period 1945–1975, and as Marietta L. Baba (2009) points out – and we describe this in more detail in the last section – unions and labour rights were already weakened compared to Europe, and benefits were already understood as rewards functioning as instruments for increasing worker activity and efficiency. An important point to understand here is that the Norwegian model is by no means a model that can, for example, be neatly introduced into a company in the US labour market. This so-called model is not really a company model, but rather a social contract with conflicts and negotiations underlying the rules of working life and practice. In an American capitalist system, the benefits of the Norwegian 'model' will appear as being the company's benevolent prerogative, and function as welfare capitalism rather than welfare as such.

P@N – as a system and digital infrastructure – was created and coded by an American consulting company (Mackenzie), for American working life. This means that the understanding of control and resource management inscribed in P@N is tailored to an American, individualised, competition driven internal market. Through this, the system changes the very rules of collaboration and negotiation between the parties. It is difficult to resist this logic, as these changes have been introduced through 'digital resource management'. Such systems are introduced everywhere today, so

that management can manage workers precisely as company resources. And this is how we can understand P@N, as both a driver and a symptom of the neo-liberalisation of the labour market, in promoting: (1) market supremacy; (2) 'human capital' as the goal of all activity; (3) the need for incentive and revision in all institutions; and (4) the loss of union power and legitimacy, as well as the lessened impact of collective bargaining.

Objects@Northoil

P@N may be understood as a symptom of global worklife megatrends, such as neo-liberalisation, anti-democratisation, and individualisation of labour life. However, its logic may be understood equally well as one of the integral parts and driving forces of these trends.

The need for systems like P@N is itself a global trend, and as such a symptom of our age. Following Heidegger (1977), we understand an age as grounded 'through a specific interpretation of what is, and through a specific comprehension of truth'; '[t]his basis holds complete dominion over all the phenomena that distinguish the age' (p. 115). We suggest (Røyrvik & Berntsen, 2022) that our age is one in which the world is articulated as technology. It is the age when each phenomenon is always-already conquered as technology through an objectification, which inscribes a specific instrumental logic turning everything into a resource. In corporate (emic) terms, this resource is a (liquifiable) asset. Heidegger (1977, pp. 3–35) calls this process the 'standing-reserve', wherein beings are revealed – technologically articulated – as resources. Everything is reduced to its potential. In this way, the standing-reserve does not refer to the stock of resources as such, as much as to the world's coming into presence as a stock of resources. That which is not subjugated into this stock, does not exist.

Perlman (2017) argues that our daily activities reproduce our 'social form of daily life', and the daily activity of our age is the reduction of everything to an object. This reduction is 'gigantic', to borrow another phrase from Heidegger (1977). Every employee evaluates and is evaluated through P@N, the whole year round. This, as a daily activity, is an example of what Heidegger calls the 'ongoing activity' of amassing an ever-increasing number of objects, objectifying towards both the infinitely huge (such as solar systems, or even galaxies – or P@N's 'culture of openness') and minute (such as cells, or even quarks – or the 'openness' particular to each of us). It is ongoing precisely because it reproduces itself in and for itself.

The gigantic is however not merely this 'endlessly extended emptiness of the purely quantitative', but 'rather, that through which the quantitative becomes a special quality and thus a remarkable kind of greatness' (p. 135). This very process is itself unquantifiable and so does not exist. The conquering of objects is unconquerable – objectification is not an object. And when an object is revealed, everything that escapes its articulation as object is ontologically concealed. We name this age elsewhere (Berntsen 2022) *gigantiquity*, the age wherein the world assumes form through and as its conquest into technology. Though people can be more or less open, in P@N 'openness' exists only as a technological attribute. The metaphysics of gigantiquity is grounded on such technological articulations of the world through the technological conquering of the world, and this is expressed through the aesthetics, ethics, and epistemology of gigantiquity, all of which presume the technological articulation of the world.

Ours is the age of objects, or more precisely, the age of objectification. But Heidegger explains that it is therefore also necessarily the age of subjects – the subjects who give meaning to objects. Tord Larsen (2009) describes the subject's self-objectification, whereby the subject seeks its own objectivity. The grades workers receive as part of P@N are an instance of precisely this. They are *objective*. The quality of being objective does not mean that something is somehow more correct, neutral, or pure. It simply means that something, in this instance a subject, has become an object in the world's transformation into technology. And though the grade-object is revealed through a rigorous method, this method, this conquering, conceals the uncertain assessment that enables it. This is in some ways the very point of objectification itself. In revealing the object as meaningless, that is, as divorced from the uncertainty of its many connections, these may all be disregarded, permitting the use of the object in an exact science. It may thus be measured and considered by itself, objectively. Objectivity is gigantiquity's greatness, and so the workers identify with their 'bad grades' and feel bad when their personality is objectified by a low mark.

For the purpose of calculating salary settlements, the workers are replaced by their grades. The objectivity of the grade-objects enables their juxtaposition and calculation. The grades reveal the worker-subject as an object, which conceals everything that eludes this object. The objectivity of the grades ensures controllable entities. P@N produces these objects precisely in order to conquer and control all aspects of the workers. Note that we do not here mean to suggest that P@N was developed with the

intention to control workers in the sense of exercising some malevolent domination over the workers' behaviour – although it might have this potential – but rather that it is intended to control, in the sense of being in control and making sense of, a large number of workers in a way that yields a satisfactory salary settlement. And this sense of control is enabled by the technological conquering of the worker's performance, behaviour, and values. As we write elsewhere (Røyrvik & Almklov, 2012, p. 631), part of the gigantic objectification process is the development of standards that ensure their control – that is, objectification 'is a means of domesticating and controlling risk'.

In this way, P@N entails a new kind of power that emerges in, and as, gigantiquity. As Fyhn et al. (2021) show, the transformation of power takes on a particular pattern today. By increasingly attending to technological systems, power moves not from one person to another, but rather from people to techno-logics. The technological society itself accumulates power, rendering people impotent. It becomes altogether unclear how to resist and oppose such power.

Fyhn et al. (2021), writing about P@N, among other examples, describe digitalisation as a key element – rather than a cause – of this pattern. Digitalisation shapes the pattern's megarectic potential through simultaneously enabling and requiring certain forms of technological articulation, which increasingly enable and require standardisation and quantification. Thus, digitalisation not only accelerates the technological conquest of the world, but the technological conquest of the world now takes the form of acceleration. Specifically, it takes the form of the gigantic. Digital resources can be infinitely divided, quantified, and specialised, as well as infinitely copied. This is because they are always-already gigantic.

This happens in P@N, in which all three evaluations are performed by people assigning numbers, which are then aggregated by the digital system. Every evaluation is automatically registered (and therefore everyone who does not perform the evaluation is also registered), producing large quantities of data that enable Northoil to compare the individual to groups of employees, and even enable external companies, if they use evaluation systems from the same consultancy, to compare their data to Northoil's data. Additionally, change over time and trends may be calculated relative to individuals, companies, even globally – which in turn can be used by the consultancy company to improve the evaluation itself. And all this data create a sort of technological debt version of the sunken cost fallacy,

whereby the trends and changing metadata become as important as the data themselves, discouraging any change to the system. In this way, P@N also demonstrates how digital systems are designed to manage their digital resources through a particular decontextualisation, whereby the resource objects become arguably more important than their circumstances. As we will return to later, this is a form of fetishisation whereby metadata are transformed into commodities and are thus not only decontextualised from the original situation, but also from P@N and the digital system which performed said decontextualisation in the first place. The drop-down menu power of the system ensures that each step in the evaluation process is mandatory and unavoidable, as opposed to the negotiation that would occur naturally in a conversation.

Gigantiquity is home to what Tim Ingold (2000, pp. 209–218) calls 'the withdrawal of the human presence from the centre to the periphery of the lifeworld', a tendency reflected in several modes of today's work life (Ingold, 2000, pp. 294–311). P@N imbues the design of the digital system with more power, as opposed to the worker who uses it, thus accordingly transferring human agency from the centre to the periphery of the salary settlement process. Gigantiquity is in many ways an age of impotence, since the subject becomes object, and power transfers not from subject to subject, but from the centre to the periphery of human life. One possible result of this is what Gunther Anders (2014) calls Promethean shame, 'which is the shame the worker [feels] when confronted by the machine … that consisted in the sense that he was less perfect than the machine' (p. 65). Indeed, some employees were quite upset at receiving low grades. At the same time, other employees support Anders's (p. 15) other thesis, whereby the worker no longer experiences this Promethean shame, 'something that would certainly justify a second kind of shame, since it is not very honorable to resign oneself to' being a mere machine part.

One serious implication of the modern power transformation, pointed out by Fyhn et al. (2021), is how any opposition to the P@N system likely results in its 'improvement' or substitution for a similar system. That is, protesting P@N is of no consequence to the underlying logic itself. This is also related to how, as we write elsewhere (Berntsen, 2022), mistaking social problems for mere technical problems permits only technical solutions. Similarly, once the worker-subject has become an object, it is the object that matters – a sentiment echoed by both our interviewees and Tøndel (2017). Holistic matters of concern are thus reduced to partial matters of

facts in gigantiquity. Such facts can be techno-logically arranged, and thus concerned parties such as trade unions give way to technical systems or, to borrow some phrases from Han (2015): facts, being additive, enable acceleration, and so narrative processions – which cannot be accelerated – must give way to processors.

Workers grade each other, and in some cases even embrace self-objectification – provided it comes with an increased salary! This is a case of what Ingold (2000, pp. 294–311) describes as people authoring their own dehumanisation. While some of the people we talked to were acutely aware of this irony, and described being graded as a violation, others thought it was very nice to receive a high grade, and a correspondingly high salary. (Anders would ask them if they were not ashamed of this.) This individualisation is in keeping with humanity's withdrawal from the centre to the periphery through techno-logics, enabled and to some degree necessitated by a reliance on technological artifacts, such as digital systems. As we discuss elsewhere in the context of a political party (Berntsen, 2019[11]), gigantic organisations assume a form that rewards those who excel in the technological articulation of instrumentality. Gigantiquity rewards self-objectification with capital, in this case an increased salary compared to others.

From the Welfare State to Welfare Capitalism

With the Hawthorne experiments,[12] Elton Mayo demonstrated the importance of informal structures and patterns arising from social groups in the workplace, and the underlying tension between the managerial logic of cost and efficiency, and the workers' logic of sentiment (Friedmann & Sheppard, 1949). Though the general idea was to impose efficiency onto workers from above, the Hawthorne experiments found such attempts nullified by the workers' actual behaviour. Though calculations based on economic incentives anticipated that workers would work as hard as they possibly could in order to increase their wages (which were tied to how much they produced), the experiment found that workers in fact restricted their output to ensure nobody had to work harder than they were able.

11 See also our discussion and contextualising of this case in Røyrvik and Berntsen, 2022.

12 The Hawthorn experiments refer to the Western Electric Company's Hawthorn Project, based in Cicero, IL, research dedicated to the improvement of industrial productivity through experimental changes in working conditions within a large formal organisation (Roethisberger & Dickson, 1939).

The formal organisation of the factory lost out to the workers' own non-formal organisation – 'the logic of efficiency blocked by a logic of sentiment' (p. 205). The workers did not act solely according to economic considerations, rather they acted according to the whole of their environment. In other words, they did not act as anticipated by a logic that places humans at its periphery, but rather according to a human-centric logic, by which they are 'wholly immersed in the relational nexus of its instrumental "coping" in the world' (Ingold, 2000, pp. 406–419).

With P@N, however, a large portion of the workers are more than happy to submit to a capitalist logic, provided it means they increase their earnings. Informal group sentiment has given way to an individualised internal job market, as described by Burawoy. Thus, it seems that what the managers in the Hawthorne experiment got wrong was not the capitalist logic itself. Their error was to attempt to enforce this logic from above. The solution, it seems, is to build it from the ground up, and to substitute objects for workers, which 'prove transparent' because they have 'shed all negativity', ''are smoothed out and leveled', and 'do not resist being integrated into smooth streams of capital, communication, and information' (Han, 2015, p. 1).

In sidestepping a more social salary negotiation, P@N is part of the individualisation of working life. This transformation is often connected to neoliberalism by social scientists, but there is also a case to be made for its compatibility with the Nordic welfare state. Mark Graham (2002, p. 204) points out a peculiar aspect of Swedish social life, whereby there is '[o]utside a clearly defined circle of family and friends, … no compunction to be sociable or even acknowledge the presence of another person unless it has been agreed on in advance.' Graham further connects this to the welfare state and 'the stress on independence that is central to the welfare state ideology of the "strong society"'. In Graham's analysis, the Swedish welfare state seeks above all to produce security (*trygghet*) for its citizens, by providing healthcare, education, unemployment benefits, and so on. This creates a unique type of individualism, which in social life 'translates into independence, the avoidance – even dread – of relationships of debt with other people, and wanting to have strong control over the frequency and intensity of social contacts'. Living in Norway, we can safely say that Graham's observations from Sweden could equally well have been made here. The welfare state thus produces its own brand of individualisation.

No wonder then, that the Nordic welfare state has become a model for welfare capitalism. Just like the welfare state's well-meaning paternalism

creates and exacerbates individualism, so too does welfare capitalism. However, whereas the welfare state's primary task is to produce (for example social and medical) security for its citizens, this is merely a means to an end in welfare capitalism.[13] Here the end is the production of efficient workers, who in turn generate capital – two aspects of the same phenomenon, since capital, Perlman (2017, p. 54) reminds us, 'is equal to the sum of unpaid labor performed by generations of human beings whose lives consisted of the daily alienation of their living activity'. As such, the main difference between the production of security in the welfare state and in welfare capitalism, is whether security is produced through a logic of sentiment, or a logic of cost and efficiency.

Through its techno-logic of governance at a time of financial abundance, P@N is a herald of welfare capitalism. It is only one of many such systems, which both build and build *on* the selfsame techno-logics present everywhere in New Public Management and neo-liberalisation. Together this leads to anti-democratisation by expelling human judgement and discretion. It is the reign of resource custodianship. As such, P@N is one of many structures of capitalist working life, which both harbours its own individualisation and technological control, and simultaneously furthers them as global techno-logics. It does this, according to Burawoy's analysis, through internalising the logic of markets, enabling internal mobility. These movements are all part and parcel of the logic of digital objects, and thus they are at once technological and capitalist.

P@N is one of the many technological reward mechanisms, whereby welfare capitalism is increasingly replacing the welfare state as the provider of security. We see an individual sense of security tied to capital emerging in our time of financial abundance, and gradually replacing the need for a communal, that is, a social sense of security. It is said that there is safety in numbers, but in capitalist society it seems that 'numbers' refers principally to money, not people. If we persist on this antisocial trajectory, we may as well say farewell to welfare.

13 Of course, the welfare state could rightfully be said to produce security as a means of controlling its citizens. (Keeping in mind our previous discussion of what we mean by *control*.) However, the citizens, people, cannot meaningfully be said to be the means of a state in the way that they are means to capital for a corporation.

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CHAPTER 5

The Fast, the Feeble, and the Furious: Digital Transformation of Temporality in Clinical Care

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Abstract: This chapter draws on material from an anthropological study among nurses working in a hospital cancer unit in Norway. Based on participant observation and interviews, the chapter explores how nurses in a Norwegian cancer ward apply various strategies in balancing multiple clinical rhythms, through their interaction with digital devices and platforms in their clinical work. To address this issue, perspectives inspired by science and technology studies (STS) on acceleration and the interrelationship between technology and temporality, as presented in works by Hartmut Rosa and Judy Wajcman, have been applied. The study identified 'being ahead', 'falling behind', and 'working the system' as three different behavioural strategies or responses among the nurses. These responses were accompanied by feelings of being fast, feeble, and furious in meeting expectations related to speed in various clinical situations. By discussing how nurses engage with digital tools, to control, avoid or oppose dominating conceptions of time in modern hospital care, the chapter contributes new empirical nuances to the literature on how digital technology has become an integral part of the management of health and welfare institutions, and how such managerial power works.

Keywords: digital transformation, temporality, nursing, clinical care, Nordic welfare state politics

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Introduction

This chapter draws on material from an anthropological study among nurses working in a hospital cancer unit in Norway. The modern hospital is a context where the focus on time optimisation has been concomitant with an increased use of universally designed infrastructure, permeated by standardised and digitalised technologies. According to the promoters of this technological development, digitalisation bears the promise of improved efficiency and quality of care, by altering the temporal structures of treatment trajectories and work practices (Pedersen & Roelsgaard Obling, 2020). Hence, 'faster' is taken as a corollary of 'better', thus enabling improved access to healthcare services, better allocation of economic and human resources, and resilience in the face of new emerging demographic challenges (Adam, 2004; Pedersen & Roelsgaard Obling, 2020).

However, increased digitalisation in and of healthcare systems has also been said to have wide-reaching implications, with unintended and often opposing or surprising outcomes. First, technological protagonist perspectives, often associated with time optimisation and profit-oriented care policies, are seen to be insensitive to the time and space needed to fulfil requirements of situated and person-centred care, which cannot be prescribed and measured (Cohen, 2011; Davies, 1994; Gherardi & Rodeschini, 2016; Kleinman & Van der geest, 2009; Schillmeier, 2017).

Second, questions have been raised about whether digitalisation can in fact solve the time crises in contemporary healthcare, and even more specifically, why it does not seem to do so, despite the fact that technological acceleration provides opportunities to solve more tasks in less time (Rosa, 2003; Wajcman, 2015). This puzzling tendency, namely that we turn to digital devices and solutions to alleviate time pressure, but still experience a growing scarceness rather than an abundance of time, is conceptualised in the literature as the 'time-pressure paradox' (Rosa, 2003, 2017; Wajcman, 2008, 2015).

Based on these contrasting perspectives of the potentials, problems, and puzzles associated with digital technologies as ways to enable work efficacy and high-quality care, this chapter explores *how the use of digital technologies transforms healthcare professionals' experience and managing of time and speed.* More specifically, the chapter discusses how nurses in a Norwegian cancer ward apply various strategies in balancing multiple clinical rhythms, through their interaction with digital devices

and platforms in a particular organisational, social, and material work context.

To address this issue, the chapter draws on perspectives inspired by science and technology studies (STS) on acceleration and the interrelationship between technology and temporality (Rosa, 2003, 2017; Wajcman, 2008, 2015). Within these perspectives, temporality is conceptualised as fundamentally socio-technical or socio-material, that is, as an enacted and constructed phenomenon, emerging in social processes through the mutual shaping of technology and human actors (Orlikowski & Yates, 2002; Rosa, 2017; Wajcman, 2008; Wajcman & Dodd, 2017). Thus, an STS approach makes it possible to avoid a deterministic view of the relationship between technology and time. On the contrary, it becomes possible to explore how people collectively find ways to adapt and actively shape the use of digital technologies, in order to take more control of time, rather than be victims of it (Wajcman, 2008). Finally, as outlined by Wajcman and Dodd (2017) it enables an examination of how the handling of speed is an essential property of the powerful in contemporary societies.

Based on these perspectives, the study findings indicate that nurses' experience of managing the multiple temporalities existing in a hospital context depends on their ability and willingness to appropriate, control, and manipulate digital technologies in their daily work. Three different behavioural strategies or responses, characterised in this study as 'being ahead', 'falling behind', and 'working the system' were identified in the exploration and analyses of caring practices, accompanied by feelings of being fast, feeble, and furious in meeting expectations related to speed in various clinical situations. Thus, the chapter contributes new empirical nuances to the literature on how digital technology affects and is affected by the temporal micro-coordination of labour processes in healthcare contexts (Erickson & Mazmanian, 2017; Mazmanian et al., 2013; Wajcman & Dodd, 2017).

Time and Acceleration in Social Theory

Time has, for quite a long period, been a major phenomenon of study and theorisation within the social sciences, constituting a pervasive and inescapable, yet intangible, dimension of every aspect of social experience and practice (Gell, 1992; Munn, 1992; Schulz, 2012). Much of the theorising in this literature has its roots in the classical dichotomy between *chronos,*

the objective, measurable and spatialised passage of time on the one hand, and *kairos*, the subjective 'presence of time' as lived quality and inner *durée* (Bergson, 2013) on the other (Davies, 1994; Munn, 1992; Orlikowski & Yates, 2002; Wagner, 1986).

This dichotomy is evident in sociological and anthropological concepts of the relativity of speed, stemming back to classic thinkers such as Marx, Weber, and Simmel, and analyses of the accelerating pace of modernity seen to be fuelled by technological innovation and industrial capitalist development (Dodd & Wajcman, 2017; Wajcman & Dodd, 2017). In recent diagnoses of contemporary times, interest in acceleration has taken centre stage, and was for a long time dominated by deterministic views of the role of technology in social change, and the idea of an emerging 'acceleration of just about everything' (Giddens, 1990, 2002; Gleick, 1999; Rosa, 2003, 2010; Virilio, 1995). Thus, standard sociological analyses have affirmed the concept of social relations as existing prior to and outside the intervention of technological innovations. Furthermore, information and communication technology is assigned a pivotal role in processes of acceleration (Wajcman, 2008).

Aiming to take on a less simplistic and more dynamic approach, this chapter is inspired by insights from science and technology studies (STS), which envision the technical as part of the constitution of the social (Wajcman, 2008). STS scholars have tried to nuance the conversation about the relationship between technology and temporality, focusing on the social dynamics and materiality of speed, including how digitalisation is concomitant with, but not determining the stepping up of the pace of our technological, economic, cultural, political, public, and private lives (Rosa, 2017; Wajcman & Dodd, 2017). Thus, the study that is presented in this chapter rests on the assumption that one must acknowledge the relative experience and expectation of time's passing as fast or slow, with various moral connotations and political implications in different empirical contexts (Molotch, 2017; Wajcman & Dodd, 2017).

The Rhythms of Care and The Modern Welfare System

Studies of time in contemporary healthcare contexts have identified how different care logics imply variations in how time is understood and addressed, with implications for different roles of care providers and receivers (Habran & Battard, 2019; Mol, 2008; Randall & Munro, 2010; Tomkins

& Simpson, 2015). Building on insights from this literature, Ihlebæk (2021), in a recent study, identified 'medical time', 'patient time', and 'hospital time' as three clinical rhythms that can be useful in deciphering and enhancing our understanding of the multiple temporalities handled by nurses in clinical work, and its effect on caring relationships.

'Medical time' is described as a dynamic rhythm that patterns patients' treatment plans and nurses' work schedules according to biomedical knowledge of the problem at hand, aimed at desired and fixed outcomes (Ihlebæk, 2021). 'Patient time', on the other hand, involves a flexible ordering of care activities according to patients' overall situations, their bodily responses, medical needs, and emotional and social aspirations. To nurses this means balancing the medically defined trajectory with the fluid boundaries of care as a process, where 'things take the time that they need to take' (Davies, 1994). Finally, 'hospital time' represents a task-oriented rhythm, structuring care activities according to the clock. It builds on the conception of time as an objective, measurable quantity, a resource to be managed according to demands for time optimisation and cost reduction (Ihlebæk, 2021).

In this chapter, these rhythms are used as a backdrop for detecting and discussing the various responses and strategies applied by nurses in their use of digital tools to control, avoid, or oppose dominating conceptions of time in modern hospital care. As such, the chapter should be read as a contribution to social scientific research on how digital technology has become an integral part of the management of health and welfare institutions, and how such managerial power works.

Awareness of the effects of welfare state politics, and how various processes of decentralised responsibilities combined with increased managerial control are met and handled is not new in a Scandinavian context (Vike et al., 2002). In studies of female-dominated professions like nursing, much attention has been given to how the evolution of modern healthcare systems has caused an increase in informal and invisible work, and a lack of control of the amount and complexity of organisational responsibilities (Allen, 2015; Englund & Solbrekke, 2011; Griffith & Smith, 2018; Haukelien, 2020; Olsvold, 2016; Thagaard, 2016; Thomassen, 2016). Contributing to this line of research, this chapter explores and discusses how nurses relate to digital tools in the temporal structuring of tasks, balancing their mandate as a caregiving profession and their role as the organisational 'glue' in the modern welfare system.

The Study

The empirical data presented in this chapter are based on a larger ethnographic study of knowledge in use among nurses in a Norwegian hospital cancer ward. The hospital is defined as a large emergency hospital in a Norwegian context, with about 5,000 employees and a catchment area of over 300,000 inhabitants (Norwegian Ministry of Health and Care Services, 2017). In line with lean management principles, measures had been taken to optimise organisational resources and maximise patient-related services at this hospital. This involved extensive use of clinical procedures, universal physical designs, and an extensive use of information and communication technology, like various computer programmes and smart phones, in the accumulation and documentation of patient-related knowledge.

Participant observation among the nurses was conducted from January to June 2017. The physical structure and work processes in the cancer ward were organised into three work sections, with nine single patient rooms in each, making a total of 27 patient rooms at the time of the study, and about 45 nurses working in the ward, including two men. I spent several days a week in the ward throughout the fieldwork, to gain familiarity with ward activities and continuity in field relations.

Since the nurses were attached mainly to one work section, I observed all three, spending three weeks in one section at a time to become accustomed to staff and routines. Two to three registered nurses ran a section during the day shifts, by dividing responsibility for the nine single-patient rooms among themselves. The main activities were centred around decentralised workstations, where nurses met on their way to and from patient visits. Here they would check or record information on computerised systems and get brief updates among themselves and with physicians and other practitioners.

Fieldwork was followed by formal interviews with nine of the nurses, with whom I had already built some rapport through observations. A semi-structured interview guide was developed to let nurses talk without undue interruptions, containing open-ended, descriptive questions (Spradley, 1979). In the interviews, I explored the nurses' experiences of organisational possibilities for and constraints to their nursing work. The value of time and the use of digital technology were among the topics that were raised most often. The interviews thereby brought further nuance and depth to fieldwork observations, in which time and technology

seemed to be ever-present and pervasive factors, affecting nurses' everyday work.

Appropriate IRB approval was obtained from the Norwegian Centre for Research Data (ref. 54770). All ward nurses were informed of my role, and none refused to take part in the study. To ensure internal and external confidentiality, names and ages were anonymised. All participating nurses signed non-disclosure agreements and gave informed consent. The nurses worked as gatekeepers for patient encounters, and all accounts of conversations involving patients were anonymised in the analysis by producing 'typical' patient stories, altering age, sex, or diagnosis.

Data analysis began immediately on entering the research setting, using temporality and technology as sensitising concepts, in order to orient my ethnographic gaze in the field (Blumer, 1954), and familiarise myself with the fieldwork material. The subsequent steps of thematic analysis, as outlined by Braun and Clarke (2006, 2019), involved generating, reviewing, and naming overarching patterns of responses in the combined empirical material, while simultaneously reviewing the literature on temporality and technology (Rosa, 2003, 2017; Wajcman, 2008, 2015; Wajcman & Dodd, 2017).

From this abductive process, allowing empirical observations and existing theories to enhance each other (Tavory & Timmermans, 2014), three analytical categories were identified: being ahead, falling behind, and working the system. The findings will now be presented as three ethnographic vignettes, representing typical situations condensed from the analysis of the data, and allowing for contextual richness and vivid presentation of the findings (Hammersley & Atkinson, 2019; Humphreys, 2016)

Being Ahead: It's Now or Never

> I join the morning meeting and find nurses from all three sections gathered around the conference table, all with their paper patient lists in front of them. Imatis is open on the digital whiteboard, and the coordinating nurse routinely starts naming patients, one section at a time. In response the nurses call out a number from one to three, according to the patient's status as: 1) in critical/poor condition; 2) ready to be discharged; or 3) stable but staying at least another night. Often the number is followed by additional information on the patient's condition, future treatment plans or care trajectory. I am seated next to Anna, the nurse I am to join on the coming shift, when Mr. Olsen, a number 1 patient in the haematology section, is announced and the coordinating nurse asks about the situation. 'Still critical, he needs close

surveillance', the nurse replies. The coordinating nurse makes some notes, and they go on to the next patient.

For the rest of the shift, Anna is on her toes rushing between patients and the workstation. She is especially worried about and attentive to Mr. Olsen, making sure to read through his situation on the computer. She scrolls down and opens note after note, back in time, trying to find relevant and essential information from other nurses and doctors, switching between the record system DIPS, and the medical e-curve system Imatis. 'There's such a long history and lots of information here! It is difficult to get the whole picture', she sighs to herself struggling to find the intake note. The computer is slow, and time passes. 'The wife is on us about their experiences at the previous hospital', she explains to me. 'And because mistakes were made when he first arrived here, they are afraid and suspicious, and compare all our decisions to what was said and done there. It's important that we make up for that now. That we build trust by taking their worries seriously.'

For the remaining part of the day, she tries to keep close surveillance, regularly taking the NEWS score and running back to the computer to document the results, responding to the wife's and patient's critical comments and questions. Even though his situation is thoroughly described in the electronic record notes in DIPS, and documented in the e-curve system MetaVision, she also calls the doctor to confer and discuss the patient's condition and her evaluation of it. 'I try to be ahead of the situation', she explains to me, and goes on, 'The life of a patient like Mr. Olsen hangs on a thread. He is curable, you know! We just need to get him past this critical phase. It is now or never.'

This vignette illustrates how information and communication technology (ICT) is closely integrated into, and affects the structuring and coordination of work. This was also evident when tracing how the scaling of patients at the morning meeting structured the rest of the working day, for both nurses and doctors.

Following the morning meeting, number 1 patients must be attended to first during the doctors' round, and they needed to be closely and frequently observed and attended to throughout the shift. Next in line were number 2 patients, who need to be digitally registered as ready for discharge before 12 noon to make sure that municipal care services take over responsibility and financial expenses for the patient. The discharge generated several tasks like writing the digital discharge note, making phone calls to the municipality services and relatives, getting hold of necessary medication and equipment, packing the patient's belongings, and ordering transport. Simultaneously, number 3 patients have to have help with personal care, get their medication and food at a set time, and be made ready for transport to other hospital units for various examinations and

interventions. Finally, these activities need to be documented in the electronic patient records at the end of a shift.

All these nursing responsibilities involved running back and forth, regularly engaging with the computer and the cell phone in between patient visits to obtain necessary information, make new requests, or tick off tasks that were completed. Through all of this, there seemed to exist a mutual agreement that the feeling of being fast involved being able to take advantage of the available technology to be ahead of work, to be updated, and in control. Thus, digital tools played a central role in the nurses' responsibilities for relational and organisational tasks oriented towards creating flexibility in work flows and continuity in patient care.

Nursing literature has shown that such obligations are often delegated to nurses, but not specified or acknowledged in the formal distribution of work (Allen, 2015; Olsvold, 2016; Thagaard, 2016). Accordingly, the managing of time through digital technologies has become an individualised responsibility, with moral connotations (Erickson & Mazmanian, 2017; Rowell et al., 2016; Thomassen, 2016), concomitant with being a capable, punctual, and hence, reliable employee.

The digital competencies of nurses did, however, not only relate to knowledge of specific platforms or devices. The complexity of patient cases like Mr. Olsen also illustrates that even though technology represents a motor for keeping up the pace of nursing work and ward activities, some digital tools were considered faster and more efficient than others. ICT, then, is not one thing, but is connected to and embedded in the social dynamics of work (Wajcman, 2015, pp. 87–109). The record note system clearly represented an important and necessary, but quite tedious, tool or partner in obtaining and communicating patient information. The phone was therefore frequently used to get quick answers and make swift decisions, that is to get things done. This was also evident in other situations, when things were at stake in evaluating patients' medical risks against their psychosocial needs.

Quite early during my fieldwork I witnessed a pre-round meeting, in which a haematologist and a nurse discussed a patient who was diagnosed with myelomatosis.[1] Considering her overall clinical condition they both agreed that she needed a Central Venous Catheter (CVC) versus a peripheral one for her future medication, as this would make the patient feel less

1 Myeloma is a blood cancer that develops from plasma cells (Cancer Research UK, 2020).

medicalised and more available to her small children. The anaesthesiologist, who was to insert the catheter, however, did not agree and had declined their request, considering the patient's lowered state of immune defence, and the risk of infection. The nurse then called the anaesthesiologist to update him on information that could not be found elsewhere, in order to convince him to change his opinion. Listening to the conversation the haematologist whispered, 'She should be a salesperson!', then wrote 'boss' on a post-it note and stuck it to the nurse's shirt. Following the pre-round meeting, the anaesthesiologist called the haematologist, and they agreed to take the risk.

Thus, in situations like these, the phone was not only a more efficient, but also a more strategic choice of tool to accommodate the needs of patients. It enabled the communication of information not suited for digital record notes, making it possible to align activities structured according to medical time, with the individual patient's rhythm and needs (Ihlebæk, 2020, 2021). Thus, being fast involved both technical skills and the ability to navigate the ecology of various digital devices and platforms. Finally, it demanded insight into organisational norms and values related to time as a resource, and the efficiency of different modes of communication. These abilities were variously distributed among the nursing staff on the ward, as illustrated in the next vignette.

Falling Behind: Computer Says No!

Anna meets up with Thelma, a fellow nurse, at the section workstation, and expresses her worries about working conditions, especially regarding patients like Mr. Olsen. She claims that she has reported through every possible channel on his critical condition, and the serious lack of resources needed to keep him under close surveillance, but with no response or results. 'In addition to the fact that Mr. Olsen might die on our watch, the other patients are suffering too. It is not possible both to keep him under close surveillance and take proper care of the others. What's the use of documenting our observations and raising our voices when nothing happens?' She goes on, 'I even physically went to the ward nurse to insist that if we do not get extra resources, he needs to be transferred to the intensive ward. And she responded by talking about financial costs, and that our staffing situation is not the intensive ward's problem. Yet as soon as the doctors report the situation, the transfer is made immediately. It is so disheartening.'

The conversation drifts into a sharing of mutual frustration over being reprimanded for registering overtime spent on documentation, and being questioned about the high percentage of sick leave. 'No wonder people get sick', Anna claims.

'The responsibility for these patients, when we are constantly understaffed, is both mentally and physically exhausting. We are constantly on our toes, receiving incoming calls and responding to alarms, even during lunch hour', she goes on. 'Agreed! We are always available nowadays, with mobile phones and all. The small micropauses are gone really. In addition, there are longer distances here compared to the old hospital. The number of steps on my pedometer nowadays!? All this endless walking from here to there is very time-consuming', Thelma claims.

While talking, Anna was trying to print a tag for a urine test. 'Why isn't this stupid machine responding?' she bursts out. 'Having problems installing the right printer again?' an arriving health worker joins in, humorously. 'Not only that, today nothing works. I feel I have spent most of the day waiting for MetaVison. It's been so slow, updating or uploading or whatever it is doing', Anna responds. She then turns to me, 'You have probably noticed the difference between me and her when it comes to technological speed and skills! She is young and intuitively understands all this computer stuff. I just feel like giving up.' 'The computer says no?', I ask with a smile. 'Exactly!', Anna replies and sighs.

A second behavioural response identified during the fieldwork observations of nurses' interaction with digital technology was to jump off the hamster wheel. The high percentage of sick leave was one distinct and serious way through which capitulating to the accelerating speed of work activities on the ward surfaced. Physical exhaustion and mental burnout were frequently discussed among the nurses, as a response to their heavy and complex responsibilities and time pressure.

These findings are in line with research showing that the current managing of modern healthcare institutions leads to disillusioned and morally stressed nurses who become alienated from work, with withdrawal from employment as the ultimate response (Allen, 2015; Epstein & Delgado, 2010; Thomassen, 2016). Feelings related to being powerless in meeting expectations to speed up, and becoming passivated in a technologically dominated work environment, were, however, also evident among the nurses who persevered. The vignette shows three different ways through which this surfaced during fieldwork.

First, nurses at times felt that technologically mediated knowledge about patients was not heard or responded to. As an experienced nurse, Anna felt disheartened by the fact that her evaluations did not lead to action. Not only did her assessment weigh less than the doctor's assessment, but her arguments were also dismantled by financial and organisational considerations. Thus, nurses' inability to promote change on the receiving end was accompanied by an experience of feebleness, being outmanoeuvred by

a system 'saying no'. The nurse's disapproval could be illustrative of how medical time constitutes 'the silent politics of time' in hospitals (Ihlebæk, 2021), building on a biomedical and technoscientific language and line of argument that nurses need to acknowledge and master to be heard.

The situation also illustrates insights from STS literature on how analyses of technology and speed need to address the differences that exist in temporal experiences among variously placed social actors (Jackson, 2017; Rosa, 2017). Hence, the possibility of being fast in a technologically mediated world is not evenly distributed, meaning that some people become agents of speed, getting things done, while others are forced to wait, or are ignored altogether (Jackson, 2017). Furthermore, it confirms the basic assumption that technological devices and platforms are given power, and used as tools to control who become agents of speed in particular contexts (Wajcman & Dodd, 2017).

Second, the vignette shows how the nurses experience an increased expectation to be always available. Thus, they face more and more legitimate claims on their time budget, that is to their availability, responsibility, and opportunity to solve any task at any time (Rosa, 2017). Nurses frequently spoke warmly about the old hospital, which represented a more analogue workspace, where expectations to solve certain tasks were largely restricted to their physical presence in a specific location at a particular time. In contrast, they nowadays operated in a digitalised working environment arranged for ubiquitousness.

Technology, according to Rosa (2017), plays a role in the current piling up of people's to-do lists, because it lengthens the possible list of legitimate claims on our time budget, increasing imaginable opportunities, and converting all hypothetical opportunities into real options. This creates a mismatch between the time allocated to a set of given tasks, and the actual time needed to do them properly (Rosa, 2017). The distribution of such mismatches is not even. Nurses are an occupational group in an unsolvable cross-pressure, stuck between two different sets of incompatible but legitimate expectations (Rosa, 2017). Patients and their needs require unlimited and unmeasurable care and attention, while managers and regulations allocate much less time to each treatment. Thus, the mismatch between nurses' identity as a caregiving profession and their technical and managerial responsibilities is built into the very structure of routine work (Allen, 2015; Olsvold, 2016; Thagaard, 2016). According to Rosa (2017) this makes burnout or withdrawal a very natural and understandable response.

Finally, in the last paragraph of the vignette it became clear that digital devices were experienced as a nuisance, causing disruption to the communication of information and ruptures in workflows. Technical problems of installing printers, time lags due to uploading documents, or restarting programmes caused numerous frustrating situations for the nurses and were often stated as reasons for feeling ineffective. Jackson (2017) also highlights how digital devices, as key instrumentalities of speed, are prone to failure, breakdown, and decay, directing our attention to the temporalities of maintenance and repair. Maintenance is a type of work that is often considered routine and mundane, but in reality involves crucial elements of creativity and skill (Jackson, 2017).

In this study, skills seem to vary among nurses according to age, experience, interests, and the situation at hand. It also varied according to whether the nurses related to digital devices as an integral part of their work, or as something exterior to it. Thus, overwhelmed by what seemed like technological fatigue in an accelerating digital environment, some nurses felt they were standing still, and hence, falling behind. Such feebleness was at times replaced by fury, as will becomes evident in the last vignette.

Working the System: Winning Battles but Losing the War?

> Anna and I go to the combined kitchen and conference room, where one of the haematologists is seated at the computer. Thelma, who is working in one of the other sections today, is also present eating her lunch. After some general small talk about ongoing ward activities, the conversation naturally drifts to the vulnerability of the patients, and the critical staffing situation in section two. 'These patients are so vulnerable! They say we are supposed to delegate tasks to the oncoming nurses, but that is not always possible', Anna exclaims. 'I know! Last week I was reprimanded for having registered too much overtime, it's a very stressful situation! We cannot always leave a patient because we need to spend the last 30 minutes on documentation! They don't get it! It makes me so furious! So, now I choose to stay behind to finish off the reports without registering the extra time', Thelma replies.
>
> The doctor seems upset on their behalf, and claims she has talked to the executive physician about the matter. He emphasised the importance of evaluating the patient's condition and follow-up needs to calculate the severity of the resource situation. She looks at the computer and the nurses join her, trying to find the evaluation form. The haematologist opens different programs. 'Hm … is it done in Imatis?', Thelma wonders. They call on the ward nurse who is in the office nearby. She is stressed and resignedly mutters that she has not had time to eat. 'You need to remind us how important

> doing the evaluations is, and the routines for doing them', Anna states. 'I have done that, I can't remind you every day', the ward nurse replies bluntly and rushes off.
>
> The haematologist finds a stack of post-it notes and starts writing: 'Please remember to evaluate the patients, so that we can hire more nurses!' The nurses seem to appreciate this and laugh. The haematologist puts the notes up on the wall several places around the lunchroom. An alarm suddenly goes off on Anna's phone, and she replies and leaves. 'I guess lunch is over', Thelma says, starts to clear the table, and puts her lunchbox back in the fridge. Before she leaves, the doctor continues her motivational appeal, 'Remember, if you work extra, you need to register it, even though they might refuse to pay for it. They can't fire you for working overtime.' Thelma nods, 'You're right, we need to be better at documenting reality, to show what we are up against. I guess we need to be better at working the system!' She looks at her patient list, and then rushes out.

This last vignette illustrates how the nurses were indignant about not being allowed to structure their time in ways that allowed them to take proper care of patients. Furthermore, they needed more nurses, which they saw as essential for increasing the available amount of time spent on each patient, rather than more technology. One option to show their opposition, and to obtain more human resources, as suggested by the haematologist, was to work the system. This was a strategy much talked about when sharing frustrations about the hospital and ward management. Still, it did not seem to lead to any shared efforts or ongoing campaigns. Two possible reasons will be offered to explain this.

First, the strategy was already being practiced, but without luck. During the fieldwork I learnt that there was always one nurse responsible for operating the emergency phone for cancer patients, who had received treatment or been hospitalised in the cancer ward. Incoming calls were often plentiful and long-lasting, and in addition, the information received on the patient's condition needed to be documented in the electronic record system, as well as the length and total number of incoming calls during a shift. I was told that they used to have an extra resource to handle such emergency calls in addition to the ordinary staff, but with the introduction of mobile smartphones this extra role was terminated. The cancer phone was now operated by one of the nurses, who simultaneously had responsibility for several ward patients. The need to register data on the number and length of consultations had been introduced to clarify the workload, which hopefully could then be used as an argument to reinstate the extra resource, thus working the system. This had not happened, and the nurses now found that

filling out this form represented a useless expenditure of time on top of other responsibilities. Thus, it presented one more task on their to-do list.

Experiences like this naturally left the nurses with the disillusioned impression that the system could not be beaten. More importantly, however, they found that in fighting this battle there would be victims, which eventually meant losing the war. In an interview, one of the nurses claimed:

> You know, we probably should be better at documenting … for instance, that today I didn't get time to sit down for lunch or to complete the documentation on time. But in the end, we rather end up stretching ourselves to the limit. You know, if I played rough, for instance by prioritising the report and delegating all patient-related tasks at the end of a shift, I know there's only one person who would suffer, and that is my patient. And so, I never end up doing that!

A second possible reason for lack of joint resistance among the nurses, then, was their main and shared concern to provide proper care for their patients, which entails building a partnership, through deep ethical commitment and attachment (Mol, 2008). Furthermore, it involves a particular structuring of care activities, where time is valued as a process or a journey, oriented towards the patients' unknown future (Habran & Battard, 2019; Randall & Munro, 2010; Tomkins & Simpson, 2015). Hence, patient time represents a clinical rhythm characterised by fluid boundaries, enmeshed in social relations, and inseparable from context and is, therefore, difficult to manage, plan or measure (Davies, 1994; Ihlebæk, 2021). Fighting to establish and sustain such openness in care relationships, the nurses' enemy did not seem to be technology itself, but the dynamics of a capitalist care policy, using digital tools to streamline and control work.

Rosa (2017) claims that if the experience of time pressure increases, despite the introduction of technology that makes it possible to accomplish more tasks faster, then the technology itself cannot be blamed. To understand the reasons for 'the time-pressure paradox', then, we need to explore how the increase in the number of tasks on the to-do list might be caused by other factors, like economic competition or socio-political conditions. In proposing a definition of modernity, Rosa (2017) claims that modern societies and organisations are characterised by their striving towards a mode of 'dynamic stabilisation', which is a state that systematically requires growth, innovation, and acceleration to remain at its socio-political and institutional status quo. In a hospital context, this involves a constant drive to increase the number of treatments 'produced', the number of treatment

options developed, and the rate of patient throughputs, through an acceleration of technological innovation.

The problem is that the time we can apply to the accelerating growth in number of products, options for action, and possible human contacts virtually stays the same, with an ever-increasing time-scarcity as an unavoidable result (Rosa, 2017). Solving this puzzle seemed to be a lonely and invisible endeavour, depending on the individual nurse's willingness and ability to push oneself to the limit and beyond to ensure good quality care. The question of how much speed individuals can take before they break, then, becomes central (Rosa, 2017). These are important insights that need to be understood, if we are to grasp the fury of nurses who find themselves fighting battles in a war that is difficult to win.

Conclusions: The Fast, the Feeble, and the Furious

This chapter has explored how nurses in a Norwegian cancer ward apply various strategies in balancing multiple clinical rhythms, through their interaction with digital devices and platforms, and how this has altered their experience of time and speed. Through observations of care activities and interviews with nurses, 'being ahead', 'falling behind', and 'working the system' were identified as three responses or strategies accompanied by feelings of being fast, feeble, and furious. Three overall implications of these findings will now be highlighted, indicating how this study might bring nuance to established perspectives on digital technologies, and their effects on the temporal structuring of professional work in modern health and welfare contexts.

First, the various strategies and related experiences among the nurses, of the possibility to manage time through the use of digital tools, illustrate how we cannot treat all time the same, as if we inhabit only one time-space, namely that of an acceleration society where everything is going faster (Molotch, 2017; Wajcman, 2015; Wajcman & Dodd, 2017). The increased temporal pressure reported by nurses seemed to be related to an apparent layering of responsibilities in time and space, rather than a constant speeding up of things.

Thus, in a modern hospital context, tasks associated with the complexity of different clinical rhythms are, to a lesser extent, sequentially organised,

stretched out in time, and allocated to different spaces. Instead, they appear piled up, since claims emanating from any context were increasingly perceived as legitimate at any given time, competing for the nurses' temporal attention. This is an important insight with implications for our understanding of the complex ways through which digital technology transforms the nature of healthcare professionals' temporal experience, and the management of work in modern health and welfare contexts (Rosa, 2003, 2017).

Second, the finding that ICT can both speed things up, slow them down, and pile them up, indicates that we need dynamic perspectives on what technology is, based on empirical investigations of the affordances of specific tools in any given context. Thus, we need to realise how temporality is an enacted and constructed phenomenon, emerging in socio-material processes through the mutual shaping of technology and human actors (Rosa, 2017; Wajcman & Dodd, 2017). Only then are we able to comprehend the role of human creativity and skill in handling the ecology of available tools and platforms, and technology's possibilities and vulnerabilities, related to breakdown and decay. By exploring the complex interplay between human and non-human actors, then, we can nuance both overly optimistic and deterministic perspectives, to achieve a real picture of what technology can and cannot do.

Finally, if we really want to solve the time crises in modern healthcare systems, this study suggests that we need to critically evaluate management systems and care policies, which authorise technology as a means to optimise, standardise, and control work. In the modern hospital, technological implementations are advanced through formally acknowledged biomedical care logic, creating a particular temporal order (Ihlebæk, 2021). Nurses, however, have wider relational and organisational responsibilities beyond the patients' medical trajectory, solving tasks that are difficult to prescribe, document and measure, and therefore are often rendered invisible and tacit (Allen, 2015; Olsvold, 2016). To nurses, and other professions in similar positions, the temporal flexibility and autonomy facilitated by ICT, thus comes with an individualised moral obligation to manage several competing professional and organisational demands and clinical rhythms effectively and simultaneously.

These implications need to be acknowledged if we will ever be able to grasp the potentials, problems, and dilemmas associated with digital technologies in modern health and welfare contexts.

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CHAPTER 6

Machinic Bureaucracy, Affective Atmospheres, and the Impact of Digitalising NAV Services: The Case of a NAV Reception Area

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Abstract: Digitalisation of public services and communication also affects architecture and the interior design of public buildings. In this chapter we follow the machinic philosophy of Giles Deleuze, and his insistence that the entanglements and communications of humans and machines are co-constitutive. In this case the machine is the bureaucratic system of NAV, and we investigate how changes in socio-material organisation influences the encounter between state and citizen. Using a NAV reception area to study this encounter, we have interviewed employees and user rights consultants, to examine how they experience the changes brought about by digitalisation. In particular, we were interested in the affective response to the interior design. The findings indicate that the NAV reception area is experienced as clinical, sterile and cold. However, at the same time, the informants differ as to whether they think this is a good thing. Managers and employees draw attention to the effectiveness and security issues the design addresses. The user rights consultants on their part experience the space as hostile and unwelcoming for clients. Lastly, we discuss the double bind design. Two contradicting messages are given to clients. On the one hand, NAV welcomes clients to their reception area, and offers people assistance in a situation of personal crisis. On the other hand, the very interior design and 'ontological choreography' indicates hostility through its security guards, electronic registration, and electronic gates.

Keywords: risk society, double bind design, affective atmosphere, digitalisation, machinic bureaucracy

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> But one can also say: There must be a dancer here who functions as a part of a machine; this machine's component can only be a dancer; here is the machine of which the dancer is a component part. The object is no longer to compare humans and the machine in order to evaluate the correspondences, the extensions, the possible or impossible substitutions of the one for the other, but to bring them into communication, in order to show how humans are component parts of the machine, or combine with something else to constitute a machine … The dancer combines with the floor to compose a machine under the perilous conditions of love and death.
>
> —Deleuze & Guattari, pp. 91–92

Upon entering the new office of the Norwegian Welfare and Labour Organization (NAV), an architecturally interested individual is struck by the design and interior of the building. You enter the building from a heavily trafficked road passing through sliding doors. What stands out immediately are security guards, three electronic gates made of metal and glass, and a large touch screen on stilts to your left. The security guard will ask if you have an appointment, and if so to register on the screen. Your appointment number is entered onto the screen, however, it does not work. Next to the screen there is an entrance into another room. A row of computers is arranged on standing desks for self-service, a NAV supervisor at the entrance informs you. A supervisor tries the number, and it does not work. A call is made, and after a while the frontline worker shows up, uses her card, and the electronic gate is opened. Beyond the electronic gates there is a large open space. There are some seats against a wall, and windows at the far end. The reception area has linoleum flooring, powerful lighting, and there is not much on the walls. A series of cubicles for meetings with clients are organised in a row. Each has a window. All are more or less identical: a desk, a chair on each side, no personal items, white walls, and bright lights.

The architectural and interior design of the reception area can be seen as a consequence of the white paper, *NAV in a New Era*, and NAV's channel strategy, by which clients are strongly encouraged to use digital platforms in communication with the welfare office. A central goal of the white paper was to enable NAV to improve its employment services and ensure user-oriented services (Fossestøl et al., 2020). Intensifying

the process of digitalising NAV services also meant that several work tasks would be outsourced to users through digital platforms (Breit et al., 2021). Such 'proactive welfare services' (Larsson & Haldar, 2021) have a range of consequences. For example, frontline workers in the reception area today are frequently instructed by managers to send clients home if they have not used NAV's self-help platform navet.no (Lundberg & Syltevik, 2016). This shift in services from face-to-face to screen-level bureaucracy (Røhnebæk, 2016) also influences the very architectural and interior design of several contemporary NAV reception areas, as illustrated above. In this case the digitalisation of society influences the spatial arrangement of welfare services, and the encounter between frontline workers and their clients.

In this chapter we try to understand interaction in the NAV reception area, from an assemblage analytical approach. Central to this approach is the fact that we do not limit our analysis to purely human interaction. Rather, we suggest understanding the reception area as a heterogenic assemblage of human and nonhuman component parts. As the quote from Deleuze indicates, the human 'dancers' need to be brought into communication with the machine in order to grasp how they mutually constitute each other. As we will argue throughout this chapter, the 'dance' between client and frontline worker is inhibited through the current design of the NAV reception area under discussion. The claim is that the combination of security concerns and the digitalisation of NAV services has created a reception area with an inhospitable atmosphere that influences the encounter between citizen and frontline worker. Though it can be argued that NAV reception areas have always had a tense atmosphere (Lundberg & Syltevik, 2016), the current reception area under discussion, exacerbates this tension. The dual process of heightened security concerns, combined with inserting digital technologies to effectuate welfare services, can potentially be counterproductive to the welfare produced in these public spaces. The antagonistic atmosphere may provoke citizens rather than help them with their problems.

The assemblage approach relates to how entanglements play out in practice, as well as the need to describe unfoldings of humans and nonhumans. In our case it is a question of interactions of different human actors (dancers), like welfare clients, security guards, and frontline (social) workers, with a host of nonhuman component parts in the reception area, like electronic gates and the self-help screen of a contemporary, public, bureaucratic

NAV machine. We are especially interested in trying to grasp some of the various ways one can experience affective atmospheres, which are generated through this machinery. We argue that we need to pay more attention to the design and interior organisation of public buildings, when elucidating the quality of the welfare services provided.

The NAV reception area is also an affective space, where people bring hope and desperation with them in their quest for welfare assistance. As part of the geography of hope (Anderson, 2006), the reception area is for some people a highly affective space, thus directing our attention towards analysing the affective materialism at play (Anderson, 2004). We need a shift in understanding from how architects like Le Corbusier argued that houses are machines for living in, whereas public buildings for the most part are treated as containers for people, who both provide and receive welfare services effectively. Rather, we are interested in what types of affective atmospheres are created in the NAV reception area, given the architectural and interior design, and how these structures influence service providers, as well as service receivers (Nord & Högström, 2017). Shifting the focus to buildings as performances, or continuous processes of assembling (Rose et al., 2010), provides us with the opportunity to recognise the many actors, human and nonhuman, involved in creating a particular space.

Method, Data Collection and Analysis

In our method we utilise a combination of semi-structured interviews, observations, and documents. Data was gathered and analysed through a student active learning lab (Halvorsen et al., 2018), called 'NAV: Organization, Services and Technology' by our social studies research group. In our student lab we were concerned with how NAV organises their services, and how digitalisation has impacted the encounter between citizen and frontline worker. This is not a laboratory in the traditional sense of doing experiments in a confined space, but a naturalistic approach striving to explore the in-situ unfolding of encounters. The first author has followed students in practice at more than 10 NAV offices between 2017 and 2023, making more than 50 visits to these venues. During these visits the first author has made a range of short, informal, covert observations of how the channel strategy has affected the organisation of NAV offices' services. These short observations were made while

entering and leaving the reception venue, and the initial description is from one of these visits.

Doing covert observations in public spaces like a NAV reception area requires ethical consideration (Tjora, 2021). In our case we need to weigh the potential harm in relation to the people being studied, against the potential social benefits of making these observations (Petticrew et al., 2007; Podschuweit, 2021). As we see it, the potential for doing harm is considered low, as there is little likelihood that the people being observed can be identified. Further, the findings from the study reveal an aspect of public life that is seldom discussed. Covert observations created an important basis for understanding how the encounter between citizen and frontline worker develops, and how the physical organisation of these surroundings influences the encounter. Descriptions of physical elements of the NAV reception area have also been changed to ensure anonymity of the venue.

The interview data is primarily from the frontline workers' professional experience of the reception area, though user representatives are present for both 2019 and 2022. The students recruited employees and managers from the NAV office, and employees from a local organisation that works with and for user rights. The students used a snowball method to recruit informants. They contacted team leaders at NAV and the user organisation via e-mail. In conversation with the team leaders, they found potential candidates for the interviews. All the informants have been employed for at least two years and have positions that involve regular meetings in the reception space.

Nine interviews were conducted, three during spring 2019 and six during spring 2022. These two stints of interviews follow the same procedure, using a combination of go-along (Kusenbach, 2003) and photography (Del Busso, 2011), followed by qualitative interviews. The informants were asked to walk through the reception area, and take pictures of the elements in the space that they thought were important to talk about, or that made an impression on them. During the go-along the interviewers and the informants had an unstructured conversation about the reception area. The pictures the informants took were later used in the semi-structured interviews, when they were asked why they chose the motifs they did. This approach made it easier for the informants to discuss the architecture, interior design, and other elements that operate in the reception area. The interviews were recorded.

Table of Informants 2019 and 2022

Frontline worker inside NAV	4	Eva 19', Edvarda 19' Rita 22', Ragnhild 22'
Frontline worker outside NAV	2	Anne 22', Anita 22'
Management	1	Reidar 22'
User rights consultant	2	Claudia 19', Geir 22'

During coding of data, a thematic analysis was used (Braun & Clarke, 2006). Thematic analysis is a method in which one identifies and systematises data to look for themes in the material. A six-step thematic analysis followed: familiarity, coding, searching for themes, reviewing themes, naming themes, and describing findings. This minimises and describes the data on a detailed level (Braun & Clarke, 2006). The NAV office we studied is relatively new, large, and whose interior design we would say is inspired by the channel strategy. The office is in one of Norway's larger cities. The data presented in this chapter are only related to one office out of 264, so we cannot generalise based on this one case. At the same time, we would suggest that there are some general analytical insights to be had as to how the reception area unfolds in a digital age NAV. Other NAV offices have similar inscriptions in their reception area design, and the tension between security concerns and a welcoming atmosphere is something we would argue needs more attention from researchers. Our findings are 1) An Efficient Reception Area: Clinical, Cold and Sterile; 2) Inscriptions: A Security-Oriented Design; and 3) A Double Bind Design: Welcome and Not Welcome. The findings led us to articulate the following research question: How does the architectural and interior design of a NAV reception area influence the encounter between frontline worker and welfare client? Secondly, we ask: How can an assemblage analysis help to shed light on this encounter?

An Efficient Reception Area: Cold, Clinical and Sterile

> It is not supposed to be warm and cosy, coming to NAV. You come to NAV to get assistance with something, and you are there to meet a person who will help you, and eventually guide you further.
>
> —Eva 19'

All the informants agreed that the reception area was clinical, sterile and somewhat 'cold'. However, they were divided as to whether or not that was a good thing. From the position of the manager and the frontline workers in NAV, this was a good thing. Eva 19', quoted above, thought that the reception area was designed correctly, given that it reflects the idea of NAV as a public place. She also added that she did not think there should be pictures on the walls, since they might constitute a security risk. Instead, she thought there could be screens in the reception, with NAV information. This point was further elaborated by Edvarda 19':

> The reception area should not be too attractive a place to be. Earlier, in other offices, there were sofas, tables and coffee in the reception area. At that time, it was used as a place to be, where people would come by and visit the users who were there applying, and waiting for help from NAV. (Edvarda 19')

Edvarda reminisces about a time when the reception area had a social function for the visitors, when the atmosphere was influenced by serving coffee and the chance to sit down to talk and socialise. The NAV employee informants look back on this type of design for user encounters as less effective than today's solution. Changes in many NAV reception areas have been substantial. The contrast is evident even from the research on NAV reception areas. In their article 'Everyday Interaction at the Front Line: The Case of the All-in-One Bureaucracy' (Lundberg & Syltevik, 2016), Kjetil Lundberg and Liv Johanne Syltevik reveal a gap in research relating to public reception areas where the state meets its citizens. Their argument is that reception areas are important venues to study the encounters between frontline workers and citizens/clients. The ethnographic approach provides data on how interaction works in institutional settings, and provides an insight into the boundary work being performed in these micro settings. Boundary work refers to the group dynamics of performative strategies, creating experiences of inside and outside. Here we are also presented with the ethnography of a somewhat different waiting room. The reception area was open throughout the day, there were no security guards mentioned, people drew a number and waited for their turn, there was comfortable seating and attempts to create a friendly atmosphere, even though the power asymmetry makes itself felt in the older venues as well (Lundberg & Syltevik, 2016). The authors

conducted their short-term fieldwork before the changes at NAV that interest us took place. They note that the all-in-one bureaucracy they were observing '… is designed to include most people, with its universal design, play corner for children, computers for free use, chairs and sofas, and a variety of activities taking place there' (Lundberg & Syltevik, 2016, p. 158). With the implementation of the channel strategy, we are confronted with a somewhat different waiting room:

> … it's designed rather plainly, grey, few pictures, grey on the walls, we have one of those branches of fake flowers over there by the corner … chairs, tables, that is everything is very institutionally designed. It's the same. In a certain way I understand why people think it is … it's not so nice to come here, I can get that from a purely visual standpoint. (Rita 22')

This institutional design has produced popular tongue-in-cheek expressions like 'prison yard' and 'airport' to describe the reception area at NAV. This was the case from the establishment of the reception area, as well as in 2022:

> …. comments that it looks like a prison or an airport are very common, so I usually treat this as nonsense, or small talk. I do think it's somewhat sterile, and I do understand why. However, it would not hurt to have a picture on the wall, something that demonstrated some warmth, because there's a lot of warmth at NAV, it's not just gloomy. Some think it's great and modern, and it is modern, and that's positive. However, sometimes I think it's a little bit cold when you arrive as a user. (Ragnhild 22')

Though the frontline workers express somewhat more ambivalence to the atmosphere created through the interior design, some are quite content with the performance of the venue:

> The space is as it should be in most ways. There is a small waiting room, because people should not wait too long. It is perhaps a somewhat cold room to enter, and somewhat sterile. But then you will meet pleasant people who come over to you and are eager to provide service. (Eva 19')

From a management perspective the concept of security is emphasised. The manager Reidar talks about personal security when discussing the design:

> I guess it's mainly positive. But I see that it … takes care of personal security well, given that people with appointments are guided in, and not kept standing and waiting in a crowd. And so, we do not have a lot of people that, so to say, stay in the reception area. There is a short time lapse, and then it's into a conversation room, and there the user sits with their back to [others], so even if it's possible to see in, a partial view into the room ensures the security of people … (Reidar 22')

The security issues he refers to relate to privacy rules, though the security of the frontline workers is also important. NAV's user research indicates that most people are satisfied with digitalisation (NAV, 2021). The channel strategy produces more efficient public management, while also saving time, and freeing up time for other activities for users. The strategy implemented in NAV reception areas entails shorter public opening hours, and encourages the use of digital platforms, as well as changes in architecture and interiors. And this was an explicit goal of the white paper, *NAV in a New Era*, in which you can read repeatedly that the goal of the channel strategy is to free up time so that one can help those most in need.

However, as Ida Løberg has argued, the drive to make NAV more efficient also carries a range of hidden costs (2022). Digitalisation standardises and makes bureaucratic processes more efficient. At the same time, these processes of standardisation make it more difficult for people who live unstandardised lives, simply because they do not fit the 'mold'. The ideology of efficiency permeates contemporary public management, and yet there are reasons to be sceptical of the tendency towards efficiency for the sake of efficiency. In the drive to govern by numbers (Shore & Wright, 2015b) we risk seeing that the reason for the existence of a particular institution becomes shrouded in efficiency goals, rather than that it actually assists the people involved in what is important for them. In our 'audit culture' we run the risk of undermining professionals and their discretionary understanding (Shore & Wright, 2015a), and thus potentially create a deeper desperation in people already in desperate need of help. Though research indicates many positive sides to the channel strategy (Breit et al., 2021) we are sceptical of what may be called 'unintended' effects of this strategy. One such unintended effect is the design of the NAV reception area.

Inscriptions: A Security-Oriented Design

> I was in a meeting with a client whose request for financial aid was turned down. The client reacted with violent frustration and wanted to get out of the reception area as quickly as possible. When she stormed out of the meeting room, she collided with the glass doors of the electronic gate. Moreover, the glass sliding doors in the entry room open and close slowly, so she also crashed into them. When this happened, the reception area was full of people.
>
> —Edvarda 19'

The security arrangements and design of the reception area not only make it more difficult to enter, but also to leave. The machine and the dancer mutually influence one another, both positively and negatively. The machinic metaphor is meant to draw attention to concrete practices that develop in the everyday experiences of people in need of assistance. As we argue, the spatial organisation, material components, and technological solutions constitute nonhuman components that also need to be examined when we describe the encounter between client and frontline worker. In science and technology studies, the concept of *inscriptions* has been important. Technological entities and objects are inscribed with certain patterns of how they are to be used, and these can be strong or weak. Madeline Akrich and Bruno Latour use the example of a hotel key (1992). If hotel managers grow tired of guests losing their key, they can attach a heavy weight to the key, creating a stronger inscription, and an incentive to deliver the key to the reception. Similarly, the designers of the NAV reception area have tried to influence the behaviour of clients and frontline workers and their encounters:

> The channel strategy is a key word. We try to be good at guiding how you as a user should approach NAV and your case worker. We direct users to the number 55 or digital plan. However, we also need to apply understanding. We take into consideration if it is an elderly person, then we can't send them home to get help from their grandchildren. Then we need to provide some extra service. (Eva 19')

Many frontline workers, at least in 2019, were aware that there was a certain connection between the design of the reception area and the channel

strategy. Managers in many NAV offices across the country encouraged their frontline workers to push clients to use digital platforms, instead of coming to the NAV reception area. The user rights consultant is quite explicit about her point of view:

> I think that NAV wants to minimise the numbers of visitors. This has been a guiding principle in shaping the building. I feel that those who come here will not experience much value as citizens. That it might be difficult to visit the office, because one must think about what one really wants here. That if you want to get help, then you need to master the digital. (Claudia 19')

From NAV's public administration point of view, the reason for the channel strategy and accompanying reception design, these inscriptions are a question of efficiency and providing better services, not about excluding citizens. The frontline workers themselves do reflect on the fact that the channel strategy makes it more difficult to visit NAV. At the same time, they focus on the positive side of the inscriptions:

> The fact that you need to use an electronic gate to be admitted, some clients think this is very positive. Since you can log in at an electronic gate, we supervisors receive an immediate notice, so some think this is very ok. But other users think this makes it even more difficult to come into NAV. I hear a lot of words like 'prison' and 'airport', so they think it is more difficult to come to NAV. If a supervisor has made a human mistake, something that happens, or there is something wrong with the system, then you are not able to enter [the building]. (Ragnhild 22')

Spatial organisation, material components, and technological solutions are involved in staging encounters between clients and frontline workers. And some frontline workers express an explicit satisfaction with the way the inscriptions form these encounters, hindering people from visiting the NAV reception area unnecessarily:

> I do not like it that people can just walk right in. I like having the electronic gates. If not, I think that a lot more people would come by, and then the design of the reception would be completely different. They would have to go back to the counter, like we had before. In terms of the channel strategy, I think it works well. (Eva 19')

Frontline workers located outside the NAV office have a somewhat different perspective on the reception area:

> I know many think it's uncomfortable to meet at NAV … I work in a job where I can meet people anywhere really. So, when they go to NAV … you talk about standing outside, because sometimes they are not allowed inside, so they stand on the street outside. Then I think they experience this as stigmatising, that they are in a way standing outside NAV, and are not allowed inside. And when they are allowed inside, they need to talk to a security guard in a uniform, and then they need to give personal information, and then they are allowed into a very sterile place, where in a certain manner it's not … I don't know … I work for the most part with people who are mentally ill … I work to motivate towards the future and for a belief that things can work out and so on, and I think these venues do not enable that. (Anita 22')

Having your workplace inside the NAV office versus outside seems to influence the frontline worker's opinion on whether the design of the reception area is good for the quality of welfare services. However, they all seem to agree that the inscriptions of the venue influence the encounter between client and frontline worker. The user rights consultant wanted to take pictures of how narrow the reception area was during opening hours. She talks about the fact that the clients she escorts to NAV often have substantial and complex issues. When she is asked about the design of the reception area, she emphasises how the appearance might create challenges for people with anxiety issues.

> It's not like you can pass the electronic gates if you cannot persuade the security guard that you have an appointment with someone. You must have an appointment ready on your phone or on an app. If not, you have to stand outside the 'sluice' gates and wait until you are seen by the person you are supposed to talk with. When I accompany people to their meetings, we plan well in advance to have their documents ready, and arrive early to avoid too many people in the reception area. I don't think that you need to be prone to anxiety in order to feel that it's uncomfortable to be here during opening hours. (Claudia 19')

During the photo session, the user rights consultant wanted to take a picture of a motif that showed the spatial organisation of the self-service apparatus. The space is framed by partially screened windows facing a heavily trafficked road, with glass walls and glass doors, facing the waiting area and the entrance. There is a row of computers along the windows. The computers are placed at standing height, and there are separation walls between each machine. According to the user rights consultant, this was a privacy problem, given that it was easy for others to hear what was said when you were getting assistance. Further, as Lundberg and Syltevik point out, this

also means that clients are forced to make their lack of digital competence visible to others (2016, p. 163).

Analysing the reception area as a machine bureaucracy directs our attention not just to the human interactions that occur. We also understand how nonhuman component parts influence the interaction. Commenting on the vocabulary of science and technology studies, comparable to the initial quote by Deleuze, Madeline Akrich and Bruno Latour say that we should understand the actors, not in isolation but rather in a setting: 'A machine can no more be studied than a human, because what the analyst is faced with are assemblies of human and nonhuman actants where the competences and performances are distributed …' (Akrich & Latour, 1992, p. 259). The object of analysis is then a locus, a hub of various component parts coming together, creating a certain situation. Our work in understanding this situation, like Deleuze and Latour and others, requires us to consider all the various entities that generate a particular situation.

A Double Bind Design: Welcome and Not Welcome

> Concrete, that is ok, however [you can have that] at your own place. This is a place for people who might be in their darkest [moments], in their most depressive state. It is not a mingling space for architects.
>
> —Claudia 19'

The user rights consultant makes a rather sharp comment as to how architects might appreciate this venue. Her point of view is that the design is not suitable for welcoming people in their darkest moments. She points out the use of security in the reception area: the reception space outside the electronic gate is small and tight, while the waiting zone inside the sluice is a large, open and spacious room. She claims that for such a type of spatial partitioning to work, NAV needs to let people in past the electronic gates. As she experiences it, given the current plan of the space, it is only the space outside the electronic gates that functions as a reception area.

> The last time I was here with a user, there were three, four guards. I think this was a lot. The need for guards is substantial. I respect the need for a safe work environment, I think everyone wants that. However, it might be that the arrangement of the sluice gate system creates the need for even more security.

> I think it can be agitative for those who have to stand and wait. One is especially visible when standing outside the sluice. And it is a tight fit. Then you might become infuriated if you do not get in. It's like standing in line at a night club, where people make one another angry. Just imagine what happens in a taxi line. There you stand in the same manner. (Claudia 19')

The user rights consultant's experience of the reception room is a contrast to some of the in-house frontline workers describing the same venue. For example, Eva 19' emphasised the productive aspect of the strategy, when she says that this gives the supervisors time to prepare encounters with users, and that they may answer good individual questions. Further, she emphasised the need to limit access, because NAV is responsible for the management of public resources, and is therefore responsible for prioritising in order to use these resources correctly. Eva 19' said she had been able to influence the design of the office in terms of the security measures in the architecture. Eva said that one of these ideas was a specially adapted crisis room for drop-in users who seek financial social help. The room ensures the employees' security, given that there is a table separating the employee from the visitor. However, another IPS (individual work support) supervisor, Anna 22', experiences the offices in the reception area, meant for emergency conversations, as being challenging to use in relation to the building, given the original architectural design, and the distance to the client that might be created:

> I think it really gives an impression of, 'I am on this side of the table and you are on the other side of the table'. It creates a distance. I assume that the person on the other side may quickly feel inferior. So, if I must use these rooms, I always take the chairs and place them alongside each other, as we are sitting now … [meaning sitting next to each other]. (Anne 22')

Security issues are central themes that often appear in the interviews. For example, the team leader Reidar had a different understanding of the electronic gate, and its influence on the clients. He emphasised the importance of security for both client and frontline worker, and the need to have a system for registration that generated efficiency and flexibility in public management work. When he was asked if he would feel less safe without the electronic gate, he responded:

> Yes, if you took away all the alarms, it's clear that that would have an effect. If you take away the security guards it would have an effect, if you take away the registration screen it would have an effect, so all these factors would reduce the experience of safety. (Reidar 22')

Most informants used the word 'airport' for either describing the electronic gates the users had to pass in order to enter NAV, or words they had heard the users themselves use to describe the entrance to the reception area. The first picture the in-house frontline worker Rita 22' took during the go-along was of the electronic gates. During the interview after the go-along, she recalled what she had been thinking the first time she entered the NAV reception area during a practice period, revealing an ambivalence to the security measures:

> The first time I was here I thought, wow, am I going to be 'sluiced' further? … like Gardermoen or another airport type device, because you log in with your birth date and receive a note, and walk nice and orderly through a sluice, and I guess it looks more dramatic than it is, because it's about security, both for the ones who are in-house as well as the users themselves, considering fire and registration. However, sometimes people might find it overwhelming, because for many it crosses a threshold – it's uncomfortable. However, we need to have it for control and security. (Rita 22')

Rita also notes that the current design might also dissuade people from contacting NAV. The associations with airports and prisons are also emphasised by the out-of-house frontline worker, Anita, in her interview. Anita, who has worked as a prison correctional officer, described the electronic gates as more or less identical to the ones they have in the prison she worked in. In addition, Anita pointed out the fact that encountering the electronic gates and security guards, which are present at all times in the reception area, in many ways can be experienced as inhospitable, and generate a feeling of not being welcome:

> I think a lot of NAV employees are preoccupied with security when they are going to meet clients, nonetheless I think that this is an inhospitable way to be met. It was the uniform [of the security guard] I was considering taking a picture of, who then stands by the entrance in front of these electronic gates. Though they also stand inside, the security guards are very visible. I figure that, that you feel somewhat suspect, like being an enemy of the state. (Anita 22')

The user rights consultant Geir recounted incidents of clients who experienced being met by the electronic gates and security guards as uncomfortable and discouraging. In addition, he emphasised the experience of power asymmetry between NAV and the clients:

> They [clients] say they think that it's scary to walk through the door, and that they think it's difficult both to be met by a supervisor, but also by a security guard, and that creates a type of, I don't quite know how to say it, a power relation … that you tell the user that they see the supervisor behind an electronic gate, and that they need to type the code so that they are able to enter. You are not overconfident when you come in there. (Geir 22')

Citizens seeking assistance from the state often find themselves in a vulnerable situation. The different informants indicate the challenge of a reception area that is supposed to be the venue for an encounter between the state and the citizen. Public waiting rooms are physical spaces central to understanding how the encounter between citizen and state plays out, creating barriers to the availability of welfare services, and analysing who are denied or given access to these services (Lundberg & Syltevik, 2016). One way of analysing the design of the reception area is what Gregory Bateson calls a double bind. A person receives two conflicting messages. Bateson uses a range of examples: the mother who holds her child sternly and shakes him/her while saying, 'I love you'; or the alcoholic who is told to go and do some controlled drinking (therapeutic double bind) (Bateson, 1971, p. 450). On the one hand, the client as a citizen of the Norwegian state is invited to NAV to claim his/her rights to welfare benefits. The universal welfare state grants the right to support for all citizens. However, upon arriving, a different (meta) message is received. For example, as the user rights consultant Geir reflects upon entering the reception area:

> The first thing I think about is that I am met by a sliding door and security guards, and that in itself is rather scary … there have been occasions during winter when people have had to stand outside – and then security guards asked, 'What do you really want here?' So this is in itself rather scary. The venue when you come in through the sliding doors …. comes off as sterile and cold, and the building in itself, when you are about to enter NAV, it comes off as very big, and you quickly feel very small when you come through that door. (Geir 22')

The informant describes a consequence of the double bind, which might belittle, confuse, and stigmatise clients entering the NAV reception area,

creating a potentially inhospitable atmosphere for them. A central component of the double bind is conflicting communication, which causes great anxiety in the person, and which, in addition, the person cannot necessarily escape (Bateson et al., 1956). The contradictive messaging can be illustrated when you enter the homepage of nav.no. You are asked the inviting question, 'What can we help you with?' However, when entering the NAV reception area, other messages are communicated. Security guards ask what you want, you need to make appointments in advance, and register electronically. Citizens in need of assistance, who lack the possibility or digital competence to do this, might find themselves in this double bind design. Elaborating on Bateson's theoretical cybernetic system approach, Linda Blaasvær and Tore Gulden explore how we can understand the design of public services' influence on communication between client and social worker.[1] The contradictory messaging in NAV and other public services is the object of their on-going research, in which design itself is involved in the feedback communication system.

Double Bind Design in a Digital Risk Society: How to Dance Better?

In an opinion piece written by a former NAV manager, she says that the current NAV machinery is not calibrated to take care of people who find themselves in their worst crisis in life.[2] Her statement came in the aftermath of another murder of a frontline worker by a client. The security measures we find in today's NAV reception areas were generated by these types of incidents, where frontline workers are threatened and intimidated by clients, to whom they also provide assistance. Ulrich Beck's understanding of a 'second modernity' as a risk society (1992) provides fertile ground for analysing the contradiction between helping clients in need, and at the same time protecting frontline workers. Risk society hinges on '… a historic trend towards an *institutionalized* individualization' (Beck, 2008, p. 4). Beck aligns himself with Zigmund Bauman and Anthony Giddens in making this argument. 'The crucial idea is this: individualization really is imposed on the individual by modern institutions'

1 31.10.2022: https://www.designsociety.org/publication/43539/DESIGN+AND+DOUBLE+BIND+COMMUNICATION+IN+PUBLIC+SERVICES%E2%80%94THE+MODEL+OF+LOGICAL+PARADOXES

2 31.10.2022: https://www.nrk.no/ytring/jobben-i-nav-1.15660271

(Beck, 2008, pp. 3–4). These sociologists identify the fact that although a second modernity relishes the ideal of individualisation, this individualisation also has a flip side. You end up being individually responsible for your own failures. This becomes especially evident when you as a citizen are confronted by a NAV reception area that gives you ample time to reflect on your own failures.

The institutionalised individualisation characterising a second modernity manufactures uncertainties, which are unintended side effects of technological and economic developments (Beck, 2008, p. 5). Debora Lupton elaborates on this point, through what she calls a digital risk society (2016). In a digital risk society, certain citizens are targeted and separated as more dangerous and riskier than others. Everyday surveillance, or *dataveillance*, is the process of sorting out certain groups, potentially discriminating or stigmatising these groups of citizens (Lyon, 2002). Of course, this chapter is concerned with the unintended consequences of a public institution like NAV and its reception area, which is designed in a manner that responds to the digitalisation of society. We do not want to imply that there was any malign intent or deliberate attempt to create a situation in which welfare clients are sorted out and stigmatised. A central goal of the digitalisation of NAV and its channel strategy was to 'free up time to assist those most in need of help'. (*frigjøre tid for å hjelpe de som trenger det mest*) (*NAV in a New Era*). However, at the same time we need to consider the possibility that this type of architecture and interior design create an affective atmosphere, which provokes and antagonises, potentially leading to the exclusion of and even violent responses from certain citizens more than others.

We have applied an assemblage analysis to generate understanding, which can shed light on what might unfold through the various perceptions of the NAV reception area. A precursor to assemblage analysis is the cybernetic system theory of Gregory Bateson (Shaw, 2015), who insists that it is always a question of man plus his environment, which needs to be accounted for when trying to understand the human condition, as mind is immanent in the surroundings (Bateson, 1971, p. 444). The immanence philosophy of Giles Deleuze is especially interesting when he applies this thinking to the emergence of new types of control in society. Digital technology and computers are new machines, which also make possible a new way of controlling a population, and do not need the establishment of great enclosures. 'Enclosures are molds, distinct castings, but controls are modulations, like a self-deforming cast that will continuously change from

one moment to the other, or like a sieve whose mesh will transmute from point to point' (Deleuze, 1992, p. 4). Deleuze claims that computers and associated digital technologies enable a modulation of human behaviour that does not need the disciplinary enclosures of the psychiatric clinic, military, prison, or museum that Michel Foucault analysed (Foucault, 1973, 1977, 1986, 1995).

Though the reception area is most certainly an enclosure, in a wider sense it also modulates citizens, so that they become good digital users. Today, we see a continuous modulation of users in their encounter with NAV employees in the reception, where they are persuaded yet not necessarily disciplined into becoming digital citizens. For example, social work students in practice talk about how they themselves, and other employees, are instructed by leaders to send clients home, and thus to try to solve their problems through their personal navet.no. These instructions are not malignant or meant to be disciplinary, but are rather benign and encouraging. They encourage clients to be responsible and in charge of their own life. They can be the captain of their own ship, if only they can learn how to control themselves through the digital machinery that now partly regulates all our lives. Another relevant architectural element in this staging is the control mechanism. Examples from the data material, where the NAV employee must run after an agitated social client and let them through the electronic gate, is a clear picture of how political influence on architectural design has a direct influence on users, and on the interaction between users and street-level bureaucrats. Within these material frames, employees are supposed to encourage changes in the attitudes of non-digital users, while simultaneously making discretionary evaluations of the channel strategy on the front line.

The dance, or interaction, between client and frontline worker is influenced by the bureaucratic machine within which the dance unfolds. The bureaucratic machine is an integral part of welfare society, and it is difficult to do good and efficient social work without these tools (Ellingsen et al., 2021). At the same time, the very design of the bureaucratic machine might be altered somewhat, to improve the very dance in which one is entangled. A report from the Norwegian Board of Health Supervision, which is legally bound to review the work of NAV, criticised the effects of digitalisation and the channel strategy (Helsetilsynet, 2022). Though many citizens expressed satisfaction with the strategy, some were left out. The Norwegian Board of Health Supervision pointed out that the strategy, which aimed at reducing

the number of drop-ins, thereby also reduced opening hours. Further, as some citizens cannot for various reasons be digital (lacking bank-id, don't speak the language, or for mental and health reasons are unable to communicate digitally), their problems are exacerbated. NAV is the last resort for many citizens, and when this safety net does not work properly, we risk that people who were already struggling become even more desperate, pushing them further to the fringes of society.

This criticism was not lost on NAV, and the director of NAV said that NAV offices needed to expand their opening hours,[3] something which has already happened. The NAV office in our case study expanded from two hours to six, as have many other NAV offices as well. This external critique thus altered the organisation of the NAV office. However, nothing has been said about the very physical design and atmosphere of the NAV office, as a place where citizen and state meet, and how the reception area itself lays the groundwork for a good encounter. For example, NAVs design concept for their offices does not mention how users might experience visiting the reception area.[4] If social work is a core competency in NAV, as the director himself claims,[5] we need a reception area that enables the social aspect of doing work in these spaces to be possible. In the current double bind design of the NAV reception area, we argue it is difficult to establish a good dance between frontline worker and citizen. We need a reception area that creates the conditions in which interactions between client and frontline worker can develop productively and generate welfare for citizens. NAV's reception area represents the public encounter between state and citizen. The way we choose to design space sends a clear signal to the public in relation to how NAV receives citizens. All in all, we believe we need to lay the groundwork for a better dance, as the very dance itself hinges on a machinic bureaucracy, which should facilitate success.

3 21.04.2023: https://www.altinget.no/helse/artikkel/nav-direktoeren-vi-fungerer-daarligst-for-dem-som-trenger-det-mest

4 21.04.2023: https://www.ntl.no/Content/209001/cache=1625473520000/attr=C1F53FEDC6341BC3E0530100007FEFA2/Arealkonsept%20for%20Arbeids-%20og%20velferdsetaten%201.0.pdf

5 21.04.2023: https://fontene.no/nyheter/navdirektoren--sosialfag-er-en-kjernekompetanse-i-nav-6.47.913583.feabc10272

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CHAPTER 7

'You Become Very Powerless in This System, the Digital System' – Becoming a Digital User in the Norwegian Labour and Welfare Administrations

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Abstract: This paper shows how social service users experience the process of becoming digital users in the Norwegian Labour and Welfare Administration (NAV). The main objective is to examine the impact of e-government reforms on social service users, by exploring the channel strategy in NAV, from service user perspectives. Our research question is: *How do users experience becoming a digital user in NAV?* We explore the question empirically by examining experiences from service users' perspectives, based on findings from qualitative interviews with people having substance abuse and mental health challenges.

An analysis of our findings shows that NAV may have failed to recognise the complexity of becoming a digital user in a digital social welfare system. This complexity may cause less user participation, and thus further marginalise people in vulnerable positions.

Becoming a digital user in NAV is referred to as a 'faceless position', which involves a kind of powerlessness, and also requires digital skills that exclude those without them. In this respect, we argue for more attention to juridical and ethical dilemmas to prevent digital unpredictability, and risks of systemic injustice regarding current data-centric developments in social services in NAV.

Keywords: digital services users, systemic injustice, digital welfare

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Introduction

Digitalisation has become a leading organising principle in the Norwegian public sector. Norway is also most advanced in the digitalisation of this sector (Ministry of Local Government and Modernisation, 2019), ranking at the top in Europe in the use of Information and Communication Technology (ICT) and online services. According to Madsbu (2016), coordination, efficiency, and simplification for the user are three main factors explaining the increase in digital public services in Norway.

Digitalisation of the public sector is often characterised by optimism and faith in digital management (Germundsson, 2022). This optimism and faith tend to create high expectations, with less attention paid to outcomes. This could therefore entail a risk of technologies being adopted before their actual consequences are understood (Lindgren et al., 2019). This paradox calls attention to the fact that the transformational effect of digital technologies might be a double-edged sword, generating new types of societal challenges. This necessitates a critical understanding of the actual impact of the expansion of digital technologies in the domain of social services (Løberg, 2022).

The Norwegian government's current digital strategy involves becoming efficient, and utilising the information digital reality can offer, while placing service users in the center (Ministry of Local Government and Modernisation, 2019). Digital administration can give users easier access to services, but also requires expertise (Løberg, 2022). Thus, digital administration is often difficult to navigate for users with insufficient digital competence, and complex support needs (Fugletveit, 2021).

This can result in digital exclusion with costs for both individuals and society. Hence, whether the public sector can achieve the creation of *both* effective *and* user-oriented services often depends on the complexity of users' needs (Løberg, 2022). The increased use of digital social services might fail to recognise the complexity and variations in the needs of service users, and lead to further marginalisation of vulnerable people by placing them in 'homogenising categories' (Harris, 2020, p. 2).

Although Norway ranks at the top in the use of ICT in Europe, the Organisation for Economic Co-operation and Development, OECD (2017), highlights the need for stronger governance and coordination of this work, as well as for clarification of roles and responsibilities between sectors and administrative levels. Coordination, efficiency, and simplification for

the user are evident in the case of the Norwegian Labour and Welfare Administration (NAV), and its implementation of the channel strategy introduced in 2015 (Breit, 2019). The aim of the channel strategy is twofold: firstly, to improve services in terms of helping service users receive correct answers; and secondly, to improve service efficiency by freeing up resources for one of NAV`s primary objectives, which is motivating unemployed citizens to return to work (Breit et al., 2019; Ministry of Labour and Social Affairs, 2015, 2016).

The channel strategy in NAV has led to a further emphasis on digital processing in communication and decision making within NAV. Service users are routed away from resource demanding, face-to-face meetings towards digital channels, which are less resource intensive for case management (Breit et al., 2019). The justification for this digital shift was to release more time for close follow-ups of vulnerable clients. In reality, this development led to shorter opening hours and more communication using various digital solutions, creating a need for increased digital literacy among service users and counsellors (Løberg, 2021).

Digital Social Services Becoming 'Faceless Interaction'

More emphasis on digital self-service solutions means that both service user and counsellor must relate to multiple digital solutions (Breit et al., 2019). Fugletveit and Lofthus (2021) have conceptualised these changes in relations in NAV as 'faceless interaction', referring to digital interactions in NAV between users, frontline workers, and the welfare system. These elements form parts of a closed circuit that is widely influenced by technology. In our context, the closed circuit involves three actors: the NAV service user, the counsellor, and the digital system. Faceless interaction has contributed to increased activity among service users in the production of their own services. This can be interpreted as a form of participation (Løberg, 2022). An example of this is the increased use of digital self-service solutions, which allow users to solve administrative problems on their own by collecting information themselves or submitting applications online. Breit, Egeland, Løberg, and Røhnebæk (2020) demonstrate how this new self-service solution has altered case workers' routines and coping strategies.

The overall intention of digital social services is to produce better services, create a simpler everyday life, and enable more efficient use of resources in public enterprises (Ministry of Local Government and Modernisation, 2019). Hence, digital social services have in fact 'distanced bureaucrats from the citizenry by relying on digital systems and platforms to facilitate interactions' (Larsson, 2021, p. 3).

'Techno-digestion' and Risks of 'Systemic Injustice'

The term 'techno-digestion', introduced by Haraway (Haraway, 1987, p. 18), refers to the way we process information to suit the demands and needs of technology. The term refers to limiting human subjects simply by using nonhuman technological objects. Haraway's (1987) critique is directed at the use of quantifiable information allowing for universal translations. This undermines individual differences among users in a welfare context. More emphasis on digital interaction among users suffering from substance abuse and mental health challenges increases the risk of further 'homogenising categories' (Harris, 2020, p. 2), when in fact the complexity of users' everyday lives both unites them as a group, but also separates them through individual differences and needs. This is an important issue in the ongoing distribution of digital social services in NAV.

Digital social services in NAV affect case management, communication between service user and counsellor, and front desk operations (Breit, 2019). Busch and Henriksen (2018) suggest that relational and professional values are weakened in a digital discretion system in the interests of/in the name of ethical and democratic values. A crucial question is how these changes impact relationships with social services users. Digital social services in NAV might redraw the boundary between state and civil society, as well as interfere with tasks and public employees' professional roles, as many studies have already shown (see Breit, 2019; Greve, 2012; Jæger & Löfgren, 2010; Løberg, 2022; Melin & Axelsson, 2009; Røhnebæk, 2016). Public service organisations are transformed into 'digital agencies' (Dunleavy et al. 2006, p. 225), thus 'making (able) citizens do more' (Margetts & Dunleavy, 2013, p. 6).

The overall risk of 'homogenising categories' (Harris, 2020, p. 2) and greater marginalisation of vulnerable service users as consequences of

increased 'techno-digestion' (Haraway, 1987) in social services might be termed as elements of 'systemic injustice'. Haslanger (2023) characterises systemic injustice as occurring in a social system of networks of various relations that develop from social practice. 'Systemic injustice' occurs 'when an unjust structure is maintained in a complex system that is self-reinforcing, adaptive, and creates subjects whose identity is shaped to conform to it' (Haslanger, 2023, p.22).

Service Users with Complex Needs Becoming Digital Users

Digital social services have contributed to changes in relations between counsellors, service users, and technology (Breit et al., 2019; Margetts & Dunleavy, 2013; Pedersen & Wilkinson, 2019). According to Pors (2015, p. 178), digital social services require the introduction of new tasks, which change service providers' professional practice towards a greater emphasis on welfare support rather than on service. In a previous paper (Fugletveit & Lofthus, 2021), our purpose was to explore how digitalisation of social services works for NAV service users with mental health and other co-occurring challenges. Our findings indicated that digital solutions in NAV have become a crucial part of 'faceless interaction' involving self-service and more distant service providers (Larsson, 2021; Løberg, 2021). Our aim in this paper is rather to explore how service users with complex needs respond and act in a digital context.

The empirical sample consists of service users with complex needs, meaning a situation where multiple social problems exist simultaneously and require assistance in different ways. Our research question is: *How do users experience becoming a digital user in NAV?* Our main task is to explore how users with complex needs experience the transformation into a NAV digital user. What does it mean for users with complex needs to become digital users? We explore these questions empirically by examining experiences from services users' perspectives, based on findings from qualitative interviews with people having substance abuse issues and mental health challenges.

People stuggling with substance abuse and mental health challenges are not homogeneous, and their complex situations are experienced in various and sundry ways (Fugletveit, 2021). This complexity includes poor living

conditions, poverty, unemployment, criminality, lack of meaningful activity, and other individual challenges in their everyday lives, which require extensive follow-ups from health and welfare services (Lofthus et al., 2018).

We argue that involving users of social services is crucial to understand how digital reforms are applied and change practice. Exploring this from the perspectives of social services users is also a response to the call for empirical research into the role of citizens in the processes that make digitalisation possible (Broomfield & Reutter, 2022). Drawing on citizen experience also has the potential to expand practical knowledge about: i) how the digitalised systems that organise the modern welfare state may constitute and reshape the identities and experiences of users of social services; and ii) how becoming digital users of social services may involve a risk of systemic injustice.

Methodology, Methods, and Sample

Transformative Paradigm and 'Systemic Injustice' Considerations

As indicated above, the main aim of our study was to examine marginalised groups' experiences of becoming users of digital social services. We chose a transformative paradigm as our philosophical framework (Mertens, 2017, 2019). According to Mertens (2017), this framework is based on the following four assumptions: 1) The axiological assumption relates to the ethical importance of the lived experiences of people in marginalised groups, in terms of gender, race, ethnicity, sexuality, and socioeconomic status. Our study focuses on the voices of people dealing with substance abuse and mental health challenges; 2) The ontological assumption privileges multiple versions of a phenomenon described by a group. This emphasises the importance of capturing the diversity of opinions among research participants; 3) The epistemological assumption demands a critical sensitivity to the researchers' lenses and how their own views shape the research; and 4) The methodological assumption requires a meaningful inclusion of service users' voices. In our study, this was achieved partly through the inclusion of a researcher with personal experience as a user of NAV services.

In accordance with the transformative paradigm, researchers have an ethical and moral obligation to describe possible wrongs in society (Mertens, 2019). Our concern is that marginalised groups (comprising vulnerable

individuals with complex needs) may become excluded or further marginalised in digital encounters with the welfare system. This is a crucial ethical and social justice issue, which requires further attention and knowledge concerning the actual consequences of digital social services from the users' perspectives. We argue that systemic injustice can serve as a key concept to guide the examination of *both* the experiences of digital users of NAV services, *and* power structures in the complex digital social services system. As stated above, 'systemic injustice' occurs 'when an unjust structure is maintained in a complex system that is self-reinforcing, adaptive, and creates subjects whose identity is shaped to conform to it' (Haslanger, 2023, p. 22).

Methods, Recruitment and Sample

The empirical sample is based on a qualitative design and consists of individual interviews and focus groups. The topics discussed in both were related to participants' experiences of digital social services in NAV. We have taken a multimethod research approach combining two qualitative methods, thus giving us access to a wide range of voices and perspectives (Mik-Meyer, 2020; Nikupeteri & Laitinen, 2023). Our rationale for choosing both individual and group interviews (focus groups) involved both strategic and ethical considerations. Strategic reasons related to getting access to as many participants as possible. During the recruitment process we found it challenging to recruit young people for focus groups. This challenge was addressed by offering the participants individual interviews. Group interviews enabled us to be efficient while maximising the valuable knowledge and insights (Silverman, 2017) gained from our participants' reported experiences of becoming digital users in NAV.

In the recruitment process, we contacted several institutions to recruit participants in various age groups from non-governmental organisations, and local mental health and substance abuse services. Our rationale for doing so was to ensure that the participants faced complex needs in their everyday lives. The sample consists of participants with experience of NAV's services over time, mainly related to unemployment, work assessment allowances, and disability benefits. Service users in our sample had substance abuse and mental health challenges, and consisted of 25 service users with complex needs, referring to a situation where multiple social problems coexist and require assistance/support in different ways.

The sample included 11 females and 14 males, ranging from 19 to 65 years old, with temporary or permanent benefits in NAV.

Ethical Considerations

Ethical principles regarding conducting both individual interviews and focus groups meant ensuring participant choice. Some participants, especially the young ones, preferred individual interviews. However, some of the other participants, mainly older, preferred focus groups.

Our research question highlights the consequences of digitalising social welfare by emphasising the ethical consequences emerging among users, in their interactions with NAV. We start with users with complex problems, some finding themselves in a vulnerable situation in society, in terms of access to work, activity, and relationships. The respondents have utilised services from NAV for longer periods of their lives, and they have ample experiences, for better or worse, which are also important to highlight as ethical issues in relation to digital interactions in social welfare.

Further emphasising the point stated above, we repeat that in accordance with the transformative paradigm, researchers have an ethical and moral obligation to describe possible wrongs of society (Mertens, 2019). Our concern is that marginalised groups may become excluded or further marginalised through digital encounters with the welfare system. This is an ethical issue, which demands more attention and knowledge about actual consequences of digitalisation in social services from user's perspectives, and whether digital social services enforce systemic injustice.

In the analysis that follows, participants' names are pseudonyms.

Analysis of Findings

Our analysis drew on Braun and Clarke's (2022) description of thematic analysis. Thematic analysis is 'flexible' (Braun & Clarke, 2012, p. 57), which suggests a variety of analytic processes. Our analysis of the transcribed material from the individual qualitative interviews and focus groups, was an iterative process, focusing particularly on themes that pertain to *power* and *becoming digital users* in NAV. We explored terms such as *trust*, *efficiency*, *predictability, feedback*, and *skills* in the transcribed material.

The findings are structured as four main themes and thematic categories: 1) Powerlessness/disempowerment ('You become very powerless in the

digital system'); 2) Digital response as both digital independence and digital relationship; 3) Unpredictability of digital feedback and doubts regarding the effectiveness of the digital service transformation; 4) Manoeuvres in the digital domain.

'You Become Very Powerless in This System, the Digital System'

Our analysis shows that some participants' levels of trust in their own digital competence appeared to be low. Several participants reported difficulties in trusting their digital competence when they tried to navigate the social services website in their homes. Furthermore, accessing their case records was complicated for some. James, one of the participants, described the challenges relating to accessing his case records on the social services website as follows:

> I found it extremely difficult. I do not know enough about data and how to use it. So, for me, just writing a message on the website under "My Page" and asking for a meeting with the case manager is a challenge. I can do that, but from there to dealing with my case… it is hopeless. So, for me, it has been hard.

James strongly emphasised that digital interaction is a complicated and incredibly stressful situation, for which there is no support. A lack of skills in being able to find his case records on his personal page on the NAV website causes uncertainty, and dependence on caseworkers in NAV. Yet according to the respondents, the caseworkers in NAV constantly replace each other, so there is always a new caseworker. Paula, one of the respondents, expressed her frustration about this as follows:

> If I have talked to someone, I find that next time they have changed my caseworker. They change very often, and it is so frustrating!

The lack of continuity/stability in personal support appeared to dominate some participants' experience of digital interactions. Paula and other respondents expressed difficulties with technical elements, but also with the fact that there is less personal contact between service users and caseworkers. To some extent this creates difficulties, since service users do not get the answers they need. Previously, service users could phone their

caseworkers in NAV directly, and be updated on their case. This is one of the most radical changes for many participants in our study. Many seemed very disappointed and troubled about this change.

Another problem relating to digital solutions appears to be the lack of control over one's case. One of the participants, Peter, describes this in terms of a feeling of being disabled:

> In other words, you become disabled by things you somehow have no control over. You become very powerless in the digital system. When you call them (NAV) and talk with a (recorded) voice, or you have contact, they should register your information. But that is true sometimes, and sometimes not. When you then refer to something in your case that has not been registered, and then there is something that is registered, and still other things that are not registered, it's hard to convince NAV about what is missing, because it has not been registered, and they (NAV) suspect that you are lying. So... I cannot do anything about it. And then it becomes, in a way, a vulnerable system for some. And why something does not sometimes work, I don't know, but anyway there are a lot of conversations that both my employer and I have had with NAV, in connection with my case, which are missing in the system (NAV) and are not registered. In other words, you become disabled by things you somehow have no control over.

Losing control, as Peter describes, was found to be of central importance to some participants in this study, and demonstrates feelings of being unable to communicate with the digital system. A number of participants appeared to experience digital interactions as unpredictable, in the sense that they did not trust the digital system, and preferred non digital feedback from their counsellors.

Digital Response as Both Digital Independence and Digital Relationship

Participants in this study reported a variety of experiences of digital responses in NAV. Experiences were at times contradictory, which highlights the complexity of the issues at hand. For example, some respondents asserted that digital communication was more predictable than face-to-face communication. They pointed out that the digital encounter could improve service efficiency due to shorter and more transparent case management on their own personal page on the NAV website (my nav.no), especially in cases that did not require many meetings between service providers and service users. One of the participants, Victoria, explains how

digital solutions worked well for her without any assistance from counsellors in NAV as follows:

> I reapplied for a work assessment allowance after a period of work. This process was digital, and it was predictable. The answers were good, and it was a well-organised and positive experience. I felt no need to meet a person. It was OK to sort it out on my own screen. I got what I asked for, and within a reasonable time limit.

Evidently, Victoria had no need for additional help as the digital relationship worked well, and her application process was completed without a face-to-face meeting. Victoria illustrates how digital relations can also contribute to independence. Other participants described digital communication on their NAV personal page as a tool for establishing digital relationships with counsellors in NAV. Digital communication on "my nav.no" may demonstrate case management developments and one of the participants, Charles, illustrates how digital relationships with counsellors may work as follows:

> My counsellor helps me by reading the activity plan as a diary, taking notes and 'seeing me through it'. That gives the counsellor a better overview.

According to Charles, the digital responses established a relationship between user and counsellor in order to control the activity plan, but they also established a relationship helping to navigate digital interactions in NAV at large.

Another participant, Caroline, also pointed out the possibility for dialogue and relationship with her counsellor based on digital tools:

> My activity plan (on the website) makes it possible to have a dialogue with my counsellor. To call NAV means waiting. It is a problem that not everybody has a computer, because NAV needs us to use the website.

Caroline implies that ordinary modes of communication, such as using the phone, are difficult in the world of digitalisation and create more uncertainty in case management. On the other hand, using the available technological solutions makes case management easier, which in some ways affords the service user a sense of control. Although Caroline found the use of the NAV website convenient, she was concerned about people with fewer digital skills. Even though a number of the study participants do not appear

to mind operating without regular face-to-face meetings and in a faceless environment, on the whole, it is important for participants to know who they are dealing with. Our analysis shows that digitalisation requires various kinds of communication between actors. Although face-to-face interaction may enable more substantial communication, digital encounters were experienced as adequate by service users who were digitally literate. On the other hand, service users with limited digital knowledge described digital solutions as incomprehensible and cumbersome.

Unpredictability of Digital Feedback and Doubts Regarding the Effectiveness of the Digital Service Transformation

Another topic regarding digital public encounters we identified in our data, related to digital feedback from counsellors. As indicated above, the shift to digital solutions changed the nature of service users' contact with counsellors in NAV. Participants in our study reported not knowing when to expect digital feedback from counsellors. One of the participants, Mick, was very troubled by the digital solutions, because of what he described as unpredictability in terms of the timing of decisions in case management:

> The information works well on the digital website, but the challenge is to know who your caseworker is in the digital services. It's great to have digital services when you know how to handle them, but not knowing if things will take a day or three days, and you haven't had any real dialogue with your caseworker yet, so you don't know who's behind the keyboard. If you've met the person only once, you have no confidence. How are you going to do it then? Not only to know who your caseworker is, but also how long it will take to get a decision in your case.

Mick expressed a lack of trust and confidence in the digital system. As a result of the unpredictability of feedback, some participants also felt a greater sense of responsibility for their own cases.

For example, Oscar, another participant, maintained that digital services led to more individual responsibility. Like Mick above, Oscar and some other respondents appeared very frustrated and confused, since they did not know when to expect feedback from the digital system. Oscar expressed his increased frustration about the unpredictability of digital feedback as follows:

> I think it's a really great way to do it, if you just had a little more information about 'When do I actually get feedback?' Because there you tend to have deadlines, and you're not quite sure if this is what you're going to submit, and so on. It's difficult to get specific answers about what you must do. You kind of must figure it out for yourself. That's what's a bit silly about digitalisation, that you must figure out a lot yourself. So then, but no one taught me how to do it, so I just had to go about it myself. It's impossible to find out yourself, when you don't know the system, it's hard. It should be like, the first time you're with the caseworker, you just sort of go through it once. It took six months before I realised how to get hold of my caseworker online. It's supposed to be more efficient. I understand that for those who use it, it's probably easier to deal with in a way, but it gets very impersonal then. And then you run the risk that you've already given all the information, but then you still must explain what you're going to do because they often don't know what you've already submitted.

Our study found both advantages and disadvantages in digital encounters, but revealed a definite need for a greater degree of certainty in terms of case management given the 'digital unpredictability' discussed above. It could be argued, therefore, that participants expressed a degree of doubt as to whether the digital transformation of social services in NAV is effective.

Manoeuvres in the Digital Domain

Johnny, one of the respondents, compared NAV services before and after the digital transformation. According to Johnny, the staff's newly acquired digital routines may be experienced as more limited help compared to the past, when social service users could get instant help and answers to various questions in the NAV office. Johnny presents this argument as follows:

> Everything needs to be digitalised, you see, but I personally know that before social services were digitalised, you could talk to people who knew about social security, welfare things, unemployment, you got an answer. Today, you're very much at the mercy of who you're talking to.

According to Johnny, the expansion of digital social services made it more difficult for service users to be informed about important elements of the social welfare system. Johnny alluded to a system of mutual scrutiny involving both service users and counsellors, that appears to have been lost in many ways following digital transformation.

Furthermore, many participants expressed considerable frustration at NAV counsellors' digital behaviour, such as being unavailable and hard to reach for the service user. One of the participants, Nick, characteristically, said:

> The counsellor here hasn't called me often, it was just, 'I'll call you!' The only time I remember her calling me was when I put a message on Facebook to the local group asking for a lawyer, because I saw a lot of arguing between NAV and my employer. Then it took about one or two hours after I posted the message on Facebook that she called me and advised me to delete the message on Facebook, because it would put me in a bad light with my employer. But I think she was more concerned about her reputation, or she would never have called me.

In his account, Nick describes himself as being in an inferior position in his digital encounters with his counsellor. Hard-to-reach behaviour on Nick's counsellor's part led to a rather desperate situation, in which Nick to some extent precipitated feedback from his counsellor (a call from her) by threatening.

Manoeuvring in NAV's digital domain requires digital skills. As we have shown, digital encounters in NAV involve less human presence and greater dependence on technology, thus resembling developments in digital society in general. One of the participants, Sue, drew a parallel between banks and NAV, in terms of the movement from physical encounters to digital service. Sue said:

> It's like banks, there are no people anymore. It's not like that anymore. In the end, we may end up with NAV as a receptionist, then there are plenty of screens around that can communicate with some caseworker. I don't know if that's the future. I don't care, but again, some have more digital skills than others, and I guess they're not going to create a system that only works for those with digital skills. A lot of people don't understand how to use a computer, but they still need help.

Stressing variations in digital skills among service users, Sue warned against a development where service users` digital competence becomes pivotal to exercising fundamental rights, such as accessing social welfare benefits.

Overall, participants emphasised how various digital skills, both technical skills and knowledge about social media, were important tools to be able to navigate the digital system, and secure their fundamental rights in NAV.

Discussion

Becoming a digital user in NAV is experienced as marginal analogue support in vulnerable situations, and indicates that digital social services both strengthens and weakens the end user's power and opportunity to influence their case management. According to Haraway (1987, p. 19), cybernetic (feedback controlled) systems theory applied to digital interactions developed on 'a theory of language and control'. Our study shows that becoming a digital user involves challenges in translating into coding. This problem or challenge is revealed by the fact that digital social services consist of operations of coding that also, in accordance with Haraway (1987), determine quantifiable elements allowing universal translations. This leads to less activity among service users in the production of their own services, and promotes less security for the end user's needs in order to counteract systemic injustice.

Our analysis shows that becoming a digital user involves, to some extent, digital faceless interactions, which deprive service users of their rights and power. It is a part of NAV's power structure that makes it possible for the system to communicate both inside the system, as a part of case management, and outwards – to the clients (Løberg, 2022). Our analysis also shows that faceless welfare service was difficult to deal with, and user descriptions coincided with the overall NAV system's demand for digital skills. Digital technologies undermine your ability to negotiate and deliberate in relation to your own problems. To 'become powerless' implies that you do not own your own problem, and that you have fewer options or the ability to define your own problem. Therefore, to become a digital user in NAV means or implies lower user involvement.

This study contains various experiences of becoming a digital user in NAV. In sum, the analysis indicates increased uncertainty and lack of power in becoming a digital service user. This may be a hindrance for digital users to be able to receive just case management, and to secure their juridical and social rights in the Norwegian welfare state. In this matter we argue for concern towards increasing systemic injustice related to maintaining an unjust structure. This structure, in practice, forces subjects' identities to conform to the new system. These findings make the concept of systemic injustice relevant (Haslanger, 2023). Lack of trust in digital users' knowledge and difficulties in accessing their own cases, reveal some of the realities and consequences of digital welfare related to the power of digital users. Digital

users are expected to accept that a significant part of their case management fits the cyborg bureaucracy's needs (Breit et al., 2019; Larsson, 2021; Løberg, 2022). However, our study also shows that becoming a digital user gives digital independence. The participants who had digital competence could experience this intention as relevant and essential. Others in vulnerable situations, who are digitally illiterate, become more marginalised in faceless interactions. This acknowledgment is critical to understand, as one of the consequences of digital interactions.

Digital Social Services Promote Digital Unpredictability for the Faceless Users

Digital solutions are described as both effective and ineffective at the same time. Breit et al. (2020) outline strategies counsellors use to survive in a digital world, which the authors call digital coping. Various means were utilised by the counsellors to meet the demand for increased availability, and more responsibility for service users, as well as noise reduction. Increased transparency in digital settings led to cautious behaviour and use of language. Løberg (2022) maintains that digital encounters have social costs regarding the demand for digital skills among NAV's digital users. Our findings show service users' responses to this digital coping, and indicate that digital services are effective in matters limited to specific areas, such as submitting an employment status form and seeking information. The participants expressed uncertainty regarding whether digital solutions worked well for them. This is another description corresponding to the definition of systemic injustice, in which the tasks, roles, and identities of the system actors become shaped by the system's needs (Haslanger, 2023).

Overall, the participants responded that digital services were efficient. This statement was related to whether they were computer literate and knew how to log on and register. The chat function on the entrance page "nav.no" was considered less reliable, because the chat text was not saved, and it was difficult to prove what was said by NAV, due to this impersonal/anonymous service. Nevertheless, participants seemed pleased with the chat function on the website, My NAV, which gave digital users easy access to their counsellors, and may be interpreted as a strengthening of power for them.

One aim of the digitalisation of NAV was efficiency (Breit, 2019; Ministry of Labor and Social Affairs, 2015-2016), and Madsbu (2016) emphasises that

a digital process is motivated by coordination, simplification, and efficiency, and argues: 'These justifications are closely connected to key normative ideas of NPM on how and why modernization and reform processes should be carried out within the public sector' (p. 171). Even though expectations were not always met in this digital transformation, this does not affect the commitment to go all in for digital solutions in the future. Madsbu's (2016) argument seems relevant in the case of NAV. Løberg (2021) argues that digital efficiency sparks a need for innovative services to support the impression that digital transformation is being advanced.

It is essential to question whether and how digital practice is profitable for all involved: the NAV organisation, the individual counsellor, and the digital users. Technology tends to precede administrative and human practice, and transformation seems to be woven together with optimism and faith in digital management, without knowing the consequences (Germundsson, 2022; Lindgren et al., 2019). Our findings show that digital social services promote 'digital unpredictability' among digital users, and trigger a need for confirmation from counsellors in 'digital digestion' in NAV.

Becoming a Digital User Indicates a Faceless Position in the Social Welfare System

Overall, our inductive approach in this paper shows that becoming a digital user in NAV involves processes that force the social service user into a faceless position. This position involves advantages and disadvantages, and contains powerless situations, unpredictable feedback, and efficiency. The term faceless position evolves in favour of the system, organised as a top-down principle in the public sector in Norway, in favour of optimism and faith in digital management (Germundsson, 2022). In practice and regarding our empirical sample, we must emphasise the outcome and impact that digital social welfare creates, as well as the overall risks of becoming a digital user.

Our analysis shows that becoming a digital user in practice might create a double-edged sword in generating new societal challenges. Our concern is that this issue is linked to the overall risk of 'homogenising categories'. In contrast, the digital user in practice has less impact on adjusting their needs and social support. This fact shows the need for knowledge about the actual consequences of the expansion of digital technologies in distributing social

services. It also leads to consideration of ethical assumptions and juridical rights in order to prevent further marginalisation as a consequence of increased 'techno-digestion' (Haraway, 1987). The expansive use of digital platforms in closed circuits might reduce user involvement and contribute to a feeling of powerlessness, thereby promoting systemic injustice. This demands more attention to striving to increase transparency in providing welfare services to citizens.

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CHAPTER 8

Becoming In/dependent: An Assemblage Analysis of Technical Design from Below

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Abstract: In this chapter we investigate the resistance of two tech-savvy speech and mobility impaired users to increased attempts at digitalising their communication devices. Though these informants are keen users of technology and accommodate various types to increase their ability to become independent, they are also highly critical of the technologies they are continuously confronted with. Through in-depth ethnography, we suggest a context-sensitive approach when introducing new technology, for people who are not always able to communicate and express what they mean directly. We believe that we need to be attentive to what is being introduced, as well as to what is taken away from the assemblage of speech and mobility impaired users and their technologies. In a society that is increasingly streamlining services and communication towards digital technologies, we need to be attentive to users' resistance, and how digitalisation might hinder people's ability to become independent.

Keywords: technology, disability, assemblage, design, digitalisation, feedback, cybernetics, analogue/digital

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> What then is analogue communication? The answer is relatively simple: it is virtually all nonverbal communication. This term, however, is deceptive, because it is often restricted to bodily movements only, to the behaviour known as kinesics. We hold that the term must comprise posture, gesture, facial expression, voice inflection, the sequence, rhythm, and cadence of the words themselves, and any other nonverbal communicational clues, unfailingly present in any context in which an interaction takes place.
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> —Watzlawick et al., 1967, p. 62

In this chapter we investigate the circumstances of two extraordinary persons, Jon and Thomas, who are speech and mobility impaired due to cerebral palsy, and how they interact with and through a gamut of both digital and analogue technologies in their own distinct ways. Central to our argument is that the texture of communication is both digital *and* analogue. Purifying or greatly reducing one over the other in human communication can potentially influence this texture, and hence, our understanding of what is communicated. Working from a branch of language philosophy that defines communication as performative acts embedded in practice (Austin, 1975; Searle, 1969; Wittgenstein, 1997), we argue for sensibility to acts of communication, and a need to examine technologies that reduce or completely cancel the analogue dimension of human communication. When introducing new technologies into the lives of people who are speech and mobility impaired, this is perhaps especially important, as they already struggle to be heard and understood. The ethnographic fieldwork with Jon and Thomas was conducted 20 years ago (and some years after that). In our reanalysis of this material, we find ethnographic details, which have become especially interesting given the contemporary drive towards digitalisation in society. We ask: In a society where digital technologies are being introduced everywhere, how can we develop a critique that is sensitive to the fact that communication is both analogue as well as digital; and/or does transforming communication into purely digital diminish the texture of communication, and therefore its quality?

As discussed in the introductory chapter, the distinction between digital and analogue communication and technology was made by early cybernetics. In the initial days of cybernetics, a precursor to digital computers, artificial intelligence, and robotics (Pickering, 2010), Norbert Weiner

pointed out the importance of feedback processes when working to understand relations and communication between living beings and machines. Cybernetics comes from the Greek word for steersman and refers to how he constantly needs to adjust the course of the ship in relation to changing circumstances at sea, through the flow of information being fed back into the activity of steering the ship. Ongoing adjustments based on feedback processes to create stability are commonly referred to as homeostasis. Andrew Pickering agrees with Norbert Wiener (1954) that the concept of homeostasis is a substantial philosophical contribution to contemporary thought (Pickering, 2002, p. 417). It also plays a central role in Gregory Bateson's *The cybernetics of 'self': A theory of alcoholism*. In this work Bateson criticises the Western epistemological legacy of conceptualising the self as an autonomous, independent entity, operating in opposition to its surroundings. The alcoholic imagining himself as 'the captain of his soul' (Bateson, 1971, p. 441) continuously finds himself in conflict with the 'bottle', and each attempt to conquer the alcohol eventually leads to defeat. Bateson commends Alcoholics Anonymous' cybernetic epistemology insisting that the alcoholic surrender to his alcoholism, rather than articulate any position in which he can 'win' or overcome his alcoholic state. By insisting on the 'bottle' being a continuous part of the alcoholic self, the individual no longer needs to engage in a competitive relationship with alcohol. By accepting himself as an alcoholic, the tension and conflict resolves, laying the groundwork for a sober existence as an alcoholic. For Bateson, this was part of a general critique of Western epistemology:

> If we continue to operate in terms of a Cartesian dualism of mind versus matter, we shall probably also continue to see the world in terms of God versus man; elite versus people; chosen race versus others; nation versus nation; and man versus environment. It is doubtful whether a species having both advanced technology and this strange way of looking at its world can endure. (Bateson, 1971, p. 455)

Bateson finds a misanthropic antidote in his cybernetic epistemological systems theory, in which human existence is immanent with its surroundings. It is always a question of '… man plus environment' (Bateson, 1971, p. 444). The assemblage concept of Giles Deleuze, which will be used in this chapter, also draws inspiration from aspects of Gregory Bateson (Bell, 2020; Shaw, 2015). For our argument, analysing the relations and feedback processes of the assemblage of humans and machines, or more concretely,

the relation between speech and mobility impaired people and the technology they are becoming with, the process of establishing stable states is especially interesting.

Take for example an incident from a technology conference for disabled back in 2000, entitled Being Independent. A man demonstrates a motorised wheelchair that can walk on stairs and stand upright. He proudly comments, 'Now you can lift yourself up and talk with standing people on their level of height', to an audience impressed by this technology (Foss, 2002b). After the demonstration, a salesperson approached Jon, one of the main characters in the ethnography this chapter builds upon, saying, 'It's okay isn't it? Hahaha'. He was enthusiastic about how wheelchair users could now 'stand upright', alongside other 'normals'. Jon, however, replied in a stoic manner, pointing with spastic finger movements to a hardwood letterboard, lying across his lap in his low-tech but sturdy wheelchair: 'It should stand straighter' (i.e., not so laid back). Jon was not as impressed as the rest of the audience, and was also less certain as to how this tool could assist him. Jon, for his part, was more concerned with everyday tasks and his work as a computer programmer and special aids entrepreneur. It was clear that he did not consider this technology to be as useful as his own bespoke designs, based on a specific mixture of analogue and digital technologies. Jon, we would argue, is more concerned with continuously becoming independent, and thus wonders how this technology might impede him in becoming increasingly more independent. The distinction between being and becoming is that 'becoming' is acutely aware that independence is an emergent quality, made possible through the many lively human and nonhuman elements conspiring to create this (relatively) stable state. Introducing new, apparently unstable, technologies into this assemblage potentially destabilises an otherwise stable condition. Being independent is not something you are, rather independence is a question of continuous becomings, as the 'steersman' adjusts to uphold independence, or relative control, in a constantly changing environment. The technologies that Jon and Thomas interweave ensure that they are continuously becoming independent, a fact of which they are acutely aware.

Though early cybernetics drew attention to the possibility of thinking that human communication was both analogue and digital, they were also attentive to the fact that purifying one over the other would lead to a loss of information. For example, an important contributor to systems theory was Anthony Wilden, who writes: 'Digitalization is thus a TOOL employed

to maintain an overall analogue relation: the survival of the ecosystem as a whole' (Wilden, 1977, p. 55). The emphasis on the digital as a tool to maintain analogue relations underlines the importance of acknowledging the fact that human communication is both analogue and digital. The analogue dimension of communication, which involves things like body language, voice intonation, or the rhythm of a conversation, is continuous and context dependent. The digital dimension of communication, which involves the human capacity for verbal speech and use of abstract signs like the alphabet or numbers, is discontinuous and can be context independent. The analogue may of course be partly translated through digitalisation, however, never at the risk of something being lost in the translation. In our attempt to understand the man/machine relationship, we argue that there is a need to be attentive to the fact that technologies are tools to assist in certain endeavours.

In a society that is now replete with technology enabling the streamlining of digital communication to various degrees, we need to be attentive and sensitive to the importance of the analogue aspects of human communication. Early cybernetics were attentive to the fact that, in practice, human communication is both analogue and digital at the same time. However, purifying one dimension at the expense of another will potentially have consequences for homeostasis, the relatively stable state of an assemblage. Or, it potentially destabilises the process of becoming independent, thus affecting our informants' struggle to maintain and develop their independence.

In the example above, we were concerned with man-machine, wheelchair-environment, and Jon's dismissal of the (out)standing wheelchair. His dismissal was not based on scepticism towards technology in general. Rather, it was based on doubting this particular technology, and how it might destabilise his independence. The current digitalisation of society has enormous influence on how we humans relate, and our ability to interact. Digitalisation impacts government infrastructures, public spaces, as well as everyday social interactions. With these substantial changes to the very fabric of society, we argue for critical attention to be paid to these technological developments, to harness the best, while at the same time working to limit unintended negative impacts on our lives and societies. In the drive to digitalise society, we need to develop a critique, especially when we deal with people who are less able to articulate such a critique themselves.

Ethnographic Sensibilities

The ethnography that this chapter builds on was produced by the first author through two years of fieldwork among a multidisciplinary state-run service division and their clients, during the period 1999–2001 (Foss, 2002a). Their mandate was to develop and disseminate knowledge on information and communication technologies (ICTs) for speech and mobility impaired people. Following actor-network theory (ANT) (Latour, 1987, 1993; Latour & Woolgar, 1986; Law, 2007), this unit could be seen as a laboratory for knowledge production where the fieldwork consisted of following the actor-networks of the sociotechnical assemblages in question. This strategy necessarily implied following their interaction with their clients, and their clients' interaction with others, with and through the technologies at their end. Some of the clients also had learning difficulties, and were excluded from the study due to ethical considerations of ability to consent to participation. One could argue that 20-year-old ethnography in the field of technology is outdated (though there have been follow-ups). However, we think that some of the resistance and accommodations demonstrated by Jon and Thomas, amongst others, may exemplify some of the potential traps of overeager implementation of digital technologies.

As much of the work of the multidisciplinary, technoscientific team (or laboratory) was of an abstract nature, and communication with their clients was to a large extent nonverbal, ethnographic film was used as a method (Foss, 2002b; MacDougall, 2006; MacDougall & Taylor, 1998). This way the ethnographer established a complementary role within the team, since they found film useful also as a tool for their own reflexive processes, and for dissemination purposes. In the perspective of ANT, the video camera also became an *actant* in the ethnographer's interaction with Jon and Thomas, amongst others, in a form of collaborative storytelling. Often, Jon and Thomas led the way and pointed out what they wanted to be filmed, and sometimes used the camera interaction to highlight situations of marginalisation or even discrimination. An example from the mentioned aids fair, when Jon asked another salesman a question, the salesman replied by talking to the interpreter above the head of Jon in his wheelchair. Eventually, Jon interrupted by poking his arm at the salesman's hip, then typing the following sentence on his hardwood letterboard: 'Hey, talk to me (not the interpreter)!', whereby he looked into the camera with a triumphant grin. As the situation was being filmed, he said in-between, 'And by the way,

you are on camera'. The salesman apologised and continued talking more directly with Jon, lowering himself to his height.

A key methodological reason for entering this field was ANT's perspective on the blackboxing of actor-networks, allowing technology and knowledge, i.e., technoscience, to appear as apolitical objects. The point of departure entering this fieldwork in a knowledge producing laboratory was that standardised technology for non-standardised bodies might produce opportunities to unblackbox normality standards, i.e., destabilise the orderings of normal. Also, the aim was to investigate creative appropriations and resistance from the user end. Participant observation (Malinowski, 2002) and analytic autoethnography (Anderson, 2006) are important methodological tools to grasp and describe the subtleties and intricate situations in which the analogue dimension of communication became evident. As we will argue, ethnographic sensitivities (Stewart, 1998) are especially necessary in understanding the importance of the more-than-digital dimensions of communication.

Design from Below

A challenge for developing a constructive critique of technology is its apparently neutral appearance and ability to become naturalised through implementing standards for normality. However, as Susan Leigh Star notes, the consequence of the standards that technologies bring with them, also have the potential to create 'monsters' out of those who are not able to adjust to these standards (Star, 1991). We are confronted with the unintended marginalising effects of standardisation. As opposed to the commonsensical notion of technology as a neutral means, thus apolitical, critical theory claims that technology is ideological (Feenberg, 1991; Marcuse, 1964, p. 11). This insight has later been demonstrated at large by many STS scholars (Akrich, 1992; Gomart, 1999; Latour, 2005; Law & Hassard, 1999, to name a few). According to philosopher of technology, Andrew Feenberg (2017), new technologies, disguised as politically neutral, first and foremost contribute to the reproduction of dominant ideologies. For instance, the smartphone is a wonderful tool for the expansion of neoliberalism (Eriksen, 2021). Nonetheless, democratic interventions in the widely assumed apolitical sphere of technology are possible as long as participant interests, i.e. *alternative rationality from below* (Feenberg, 2017, p. 8), are integrated into sociotechnical design-use dynamics. In this

perspective, Jon and Thomas could be understood as proponents of alternative rationality from the margins of a dominant normality, in ways that may crack open (or widen) that normal.

Following Feenberg's request for a more democratic technical policy, we are interested in what we call *design from below* (Foss, 2002a), meaning users' tactical responses to new technologies. Our main research question is: How might we imagine alternatives to the brute orderings (or narrowing) of the normal, as defined by sociotechnical standards in relation to technical design processes in digital society? Also, we argue that we need to dive into the nitty-gritty mundanity of sociotechnical assemblages in order to grasp how 'matter matters' (Barad, 2003). As Feenberg (2017) emphasises, democratic interventions in the field of technology are not revolutionary in form, but rather unfold through everyday negotiations, often tacit and invisible. From the standpoint of critical theory, he pleads for a more concrete insight into alternative rationality from below. From this ethnography, we attempt to tease out some ethnographic details illustrating the problems for some of the more disadvantaged people in society, and their rationality from below, when confronted with processes of streamlining digital communication, and how they resist.

Attempts to Digitalise Speech: Resistance from the Margins

Thomas is a user of augmentative and alternative communication (AAC) (Light & McNaughton, 2014), due to cerebral palsy. As he cannot speak with his voice nor control his arm and finger movements, Thomas communicates through other means, usually with the help of a translator who knows him well. Since early childhood, Thomas acquired the symbol-language, Bliss, named after its Austrian developer, Charles Bliss (1949). After World War II, Bliss created an easy to learn international auxiliary language, inspired by Chinese symbols, aimed at supporting world peace by easing communication among different linguistic communities. Although Bliss symbols never achieved their intended function, from the 1960s the symbol language became increasingly popular within AAC for people with learning and communication difficulties (Okrent, 2009). When you cannot communicate with your own voice, and your body resists using sign language or the like, communication is often done by means of pointing at characters or symbols with the parts of your body that you can control.

In Thomas's case he is in full control of his eye movements, and partly his head movements. Clearly for AAC users, the actual speed of pointing at letters, words or symbols is absolutely of the essence, to be able to engage in complex meaning production and dialogue.

For Thomas, Bliss has the potential for much faster communication than, for example typewriting. Bliss consists of more than 300 symbols, which can be combined in a variety of ways, and enables the construction of complex, abstract, and multivocal expressions. According to special educator, Elisabeth (informant), Bliss is the only AAC language that allows for real linguistic creativity. Further, she claims that acquiring Bliss or other AAC languages must be understood as equally complex learning processes as acquiring a second language. Consequently, she maintains that AAC users should be considered bilingual, like in the case of Thomas (Foss, 2002a, p. 16).

Embodying Bliss since childhood: Thirteen years old, Thomas wrote a crime novel with the assistance of his teacher, using a head torch pointing at Bliss symbols on various Bliss tables. Today, Thomas's main medium for communication is a larger Bliss table (about 1.2 × 0.7 m), organised in a coordinate system, with categories of symbols grouped into coloured fields. The way he operates the table is by pointing with his eye movements, helped by a human translator. First, he points out a coloured field, then a number along the X and the Y axis, finally circling down to the actual symbol, or a predefined combination of symbols. Since the symbols are subtitled in Norwegian (or whatever written language), the translator can communicate with Thomas without knowing Bliss, and then read the stated meaning for Thomas to reject or confirm. Obviously, this form of communication is not very fast compared to ordinary speech, but with a trained translator who knows Thomas well, and hence helps by predicting half-stated sentences to speed up communication, it is quite impressive how quickly he manages to formulate statements, jokes, and allusions. As a fieldworker with no former experience with this type of communication, Espen tried to communicate directly with Thomas, deciphering his eye-pointing at the Bliss board. After a bit of trial and error, they managed to communicate directly fairly well, due to the intuitive coordinator system and the Norwegian subtitles, however not as fast as with experienced translators.

Smart house and smart digitalisation? Thomas lives in a so-called smart house that he controls with a high-tech wheelchair, named Rolltalk. He can move around the house by himself, and the Rolltalk enables control of

certain electronic devices, such as lights, curtains and the stereo (Thomas is a Metal fan). Rolltalk also has a message system, which allows making simple prerecorded oral messages like, 'I am thirsty'. This works by navigating a hierarchical menu system, visualised on a monitor on the front of the Rolltalk, where a pointer ticks around headers/symbols in a monotonous fashion. When the pointer is on the right spot, Thomas clicks by knocking his head at a sensor in the neck support of the chair, and the next menu opens. This is quite efficient for Thomas to express basic needs, and to control certain functions in his house. However, when Thomas tried out similar technology on a word processing PC (pointing with a reflector sticker on his forehead at the hierarchical menu system for choosing letters) it was dreadfully slow in comparison to the much faster and dynamic use of the Bliss board + translator.

At the time, his technical assistant and computer teacher asked if Thomas would like to try out Bliss on the Rolltalk. He explained that it would be good if Thomas could 'communicate using normal speech'. Thomas replied teasingly, 'OK, considering I have been a guinea pig for everything new (technology) my whole life'. Thomas explained that his motivation was to 'speak a bit more directly with people who cannot use the Bliss board'. As Thomas now was in his mid-twenties, he was also eager to write a new novel. He explained, however, that it takes a lot of time with the Bliss table and that he would need a devoted translator + secretary, and his existing helpers did not have the time to assist with this. So, if the Rolltalk could speed up writing without a Bliss translator it would be helpful. Thomas's father, on the other hand, explained that he hoped having Bliss on the Rolltalk would give Thomas 'his own (digital) voice'. Thomas's computer teacher also emphasised that Thomas could probably benefit from 'finding pride in mastering advanced technology'.

Refusing the digitalisation of Bliss: After a period of trial and error of digitalising Bliss from the analogue eye-pointing Bliss table to the Rolltalk hierarchical head-clicking menu system, Thomas said, 'No, I don't want to try out Bliss on Rolltalk anymore'. Why this sudden resistance? According to one of his helpers, Thomas was afraid that a possible consequence might be that the old analogue Bliss table would be taken away from him. The digital could potentially replace the analogue, instead of being a supplement. Later during fieldwork, Espen realised that Thomas cannot see the Bliss symbols when using the Bliss board with an interpreter. Placed on the lap of the translator, the board is normally too far away for the eyes to catch

the small symbols on the large board, two or three meters away (he sitting in his wheelchair and the interpreter on a chair at a distance). However, having embodied the Bliss board since childhood, Thomas knows the position of each symbol by heart, like touch typing on a keyboard without looking down. His body just knows where to 'click' in the weave of meaning. In other words, the efficiency of the Bliss board cannot be understood without considering Thomas's embodied eye-pointing manoeuvring of it, a profound component of his ability to communicate and engage in social interaction.

Following the assemblage approach, Thomas and the analogue Bliss board, together with the translator who also predicts from half-formulated meaning, become a cooperating unit that together constitute his articulation, or voice, in dialogue with others. Accordingly, Thomas was afraid that the well intentioned, techno-optimistic strive towards digitalisation of the analogue Bliss table to the digital logic of Rolltalk, based on ideas of normalisation, eventually could have the effect of his losing the old Bliss board. The hierarchical menu system of the Rolltalk could not by any means match the relative speed and dialogical flexibility of the assemblage of Thomas, his embodied eye-pointing, the Bliss board, and phrase-guessing human translator who obviously also serves an important social function in his lifeworld. Such a simple digitalisation of his silent yet highly visual voice would potentially set him back many years in his ability to communicate. Thomas was, nevertheless, not able to articulate the details of this potential marginalisation in the name of digitalising communication under a normalisation regime. He could only resist (Scott, 1987).

The Monsters of Standards and Orderings of Normality

In Norway, the overall strategy for including the disabled is normalisation: 'A normalizing care means that disabled will be able to lead a life much like other people' (Tøssebro, 1996, p. 9). This strategy springs from a critique of the former reductionist notion of disability as a trait within the individual. Accordingly, policy focuses on the 'co-operation between individual traits, surroundings and particular situations' (Molden, 2012, pp. 15–26). Nevertheless, such a normalising strategy seems to be trapped in a Catch 22 situation. Amongst others, the sociologist Ingunn Moser (2005) argues how this constitution of disability is doomed to fail, that is, it produces

unintended marginalisation. Working towards inclusion by normalising through compensatory technologies will always leave the user with a *lack* of independence, seemingly as opposed to a certain normal:

> In this way, normalization contributes to the reproduction of the differences and asymmetries that it seeks to escape and undo. In this sense, normalization itself cannot succeed and neither can policies and welfare services that build on the principles of normalization. (Moser, 2005, p. 678)

Moser builds on the argument by Susan Leigh Star in *The disembodied mind* (1991), in which standardisation on the basis of a statistical normal inadvertently creates a monster. Standards enable and create order and standards for people with statistically average bodies and subjectivities. These are individuals who act 'autonomously' according to the deeply manifested, normative modernist idea of a disembodied mind. This widespread Western ideology of the person claims that an autonomous person is independent of her surroundings, material as well as social, being able to think and make choices independent of the body (Bauman, 1997; Star, 1991; Taylor, 1989). Star argues that standards made for a statistically average person mask the actual dependence of all people upon bodies, technologies, and other people, hence representing the notion of a disembodied mind. However, those who fail to measure up to these standards are systematically cast as the *other*, given that the expression of their dependence is doubly amplified. Not only are they perceived as *dis*abled because they deviate from the statistical norm, but also the visibility of their dependence on either humans or non-humans, helpers and technology, amplifies the contrast to the statistically normal, seemingly independent subject.

In other words, an ideology of normalisation leading to independence may in fact lead to the opposite, while creating a threshold impossible for some to overcome, and therefore perhaps would not even be desirable in the first place. We argue that such a normalisation strategy might be especially problematic in a digital society, as there is a strong political, techno-optimistic drive towards digitalisation and compensatory technology (Coyne, 1999), coupled with the ideology that technology is a good in itself, as well as a neutral means of compensating for deficiency. However, returning to Feenberg, whether new technologies lead to further exclusion of marginalised groups by tightening the normal, or whether the conditions

for this normality should be challenged, expanded, or relativised through democratic interventions from below, are empirical questions.

There is no doubt that new technologies give Thomas and other mobility and speech impaired people wonderful opportunities to gain more independence and enhanced agency. Nevertheless, the story of Thomas demonstrates the potential dangers of a biased techno-optimistic strive for the digitalisation of welfare technology, where the main narrative is that digitalisation is a neutral means of enhancing welfare and independence, and thus an intrinsic good and a goal in itself (Tøndel, 2018). Thomas's embodied knowledge of eye-pointing with the Bliss board can, in Feenberg's perspective, be understood as alternative rationality, alternative to the hegemonic technoscience of the time. Thomas's micropolitical resistance to further digitalisation of the analogue Bliss table shows that he is caught up in a marginalised power relationship. Users of whatever technology is existential for them to communicate do have knowledge about the specific socio-material entanglements through which they become, but may not always be able to express this. Refusing the analogue dimension of communication in feedback processes is consequential for meaning. The idea(ology) that you can create less friction through streamlining digital communication technology potentially undermines people's ability to communicate in the first place. The ability to perform communicative acts is reduced.

Assemblage theory allows us to see behind the praise of welfare technology and digitalisation, digging into the mundane complexities of the human-nonhuman assemblages that enable agency. Perhaps social workers, performing public policy as street-level bureaucrats with their clients, as well as being part of their intimate actor-networks, should be elevated as significant advocates and translators of the tacit and embodied alternative rationalities of their service users in design-use processes of new technologies. In the perspective of assemblage analysis, technology is not a 'thing', and is hence much more plastic and dynamic than what appears when black-boxed as a neutral means. The following story of Jon may be an example of that.

'I Am not Disabled': Jon's Story

Like Thomas, Jon was born with cerebral palsy, however he finished high school and masters several computer languages. He has developed several

of his own assistant tools, which he also sells through his own company. A few years after fieldwork, Espen invited Jon to his university for a lecture on rehabilitation. After watching the mentioned ethnographic film, a student asked Jon how he experienced being disabled. Jon retorted, 'I am not disabled'. The students seemed confused and asked him to explain. He replied, 'Disability is when you have lost an ability that you used to have'. From infancy, Jon has needed assistance to eat, dress, move, communicate, etc. Through hard work, education, and developing his own bespoke assistance tools, Jon has been able to expand his sociotechnical agency massively. At the same time, he is very aware of his dependence on both technology and assistants, which he knows how to acknowledge and appreciate.

Amongst other technical aids, Jon has developed the communication tool PhoneTalker that allows him to speak on the phone with friends or even strangers without having a human interpreter present. The main reason stated by the AAC users in this study for not wanting to always have an interpreter, is the need for privacy. Nevertheless, as emphasised earlier, the interpreter plays an important role in speeding up the communicative labour of struggling bodies by guessing half-stated phrases. So how can one digitalise the highly analogue function of the interpreter, bearing in mind that a good established relationship between user and interpreter is important for both quality and speed of translation?

Though there are different solutions for machine guessing programs, fieldwork revealed that users seldom choose this function when communicating digitally. Even though machine guessing can reduce the number of tabs you need to push, this function does not seem to reduce the overall speed of communication. According to Fredrik (informant), a specialist in AAC and new media, the reason is that the user may lose concentration, given that their gaze and attention are divided between typing and the visual prediction being suggested on the screen. When typing speed is initially slow, these breaks in concentration can be decisive. More time and energy are spent getting back into sentence building again, and remembering 'where' you are in the sentence. Hence, what is gained by saving a few tabs is lost in digital prediction.

Jon, Thomas, and other AAC users report similar findings in relation to machine prediction. However, with his 'double education in wheelchairing and programming', as he phrases it, Jon has found a temporary solution for himself. He realised he could use an auditive intersection for machine

guessing, allowing him to keep visual focus on typing on the keyboard with his headstick.

Jon prefers his own innovations, rather than similar tools on the market. His knowledge as a speech impaired wheelchair user, and as a computer programmer, has implications for his communicative agency and his ability to influence a material-expressive order. For example, Espen has been amazed several times by how Jon, despite the difficulties inherent in his communicative work, manages to establish good communications with other people, and to draw their attention. A tactical aspect of Jon's communicative practice relates to an apparently technical detail in the PhoneTalker program. During a user convention (1999) neither Espen nor the other professionals present understood this 'detail', which Espen would later experience as having communicative value. In the aftermath of the user convention, the people in the previously mentioned multidisciplinary state-run service division wondered why Jon had chosen to equip his self-developed PhoneTalker with a microphone in the room. Even though the digitalised voice is wired directly to the phone line, without detouring via the room, to get the best possible sound quality. At first, we did not understand why Jon would complicate this excellent solution for verbal distance communication with a microphone that only conveyed wordless spatial sounds and general noise.

The answer was demonstrated when Kjersti and Anne called Jon a few days after the convention to see how the phone voice worked over a distance. After some rings we heard his familiar voice saying, 'Hey, this is Jon', followed by a chuckle. When Kjersti and Anne asked what he thought about the convention, he retorted that it was good, though somewhat limited when it came to demonstrating and testing technology. As the only computer programmer at the convention, he had not learned very much new, though he appreciated the social part of it. When Jon deactivates the hearing prediction program during the phone conversation to avoid confusion, the conversation partner needs to be patient while he letters out the sentence using a headstick on the computer keyboard. After a while it became quiet on the other side of the line, and we got the impression that Jon wanted to end the conversation. Kjersti and Anne said, 'Bye', and were about to hang up. Then we heard clicking noises on the other end of the line. Jon wanted to say more. The microphone conveyed the clicking of the tabs on his intentionally chosen 'old' IBM keyboard, which makes relatively loud clicking sounds. Jon's 'intonation' made his conversation

partners understand that the conversation was not over. These sounds gave the listeners a signal not to intervene while writing sentences, or to end the conversation before he was done. Handling the keyboard with his headstick takes time, and his insistence on the sound of the keyboard underscores his intentions.

Both Jon and Espen have, during and after fieldwork, communicated several times via telephone and PhoneTalker. One evening Espen called Jon, and an assistant answered the phone. Jon was having supper and the computer was off. The assistant translated Jon's pointing at his analogue letterboard on his lap, instead of turning on PhoneTalker (to spare time rebooting). Usually, Jon and Espen have a good tone and dialogue. However, this evening Espen did not experience talking with Jon at all. The interpreter's voice dominated Espen's attention, and hindered direct conversation and the personal connection they usually had via phone. A few days later Espen called Jon back. This time he answered himself via PhoneTalker, and they had a longer conversation. When Espen asked why he chose to use PhoneTalker with a microphone in the room in addition to the digitalised voice, he said, 'You need to hear me', followed by a humorous chuckling. Even though Jon's digitalised dialect from western Norway is monotonous, without varying nuances of tone or strength, Espen could make out, given the microphone-mediated 'room noise', how his wordless voice emphasised the last word: ME. The 'room noise' included his non-verbal voice, the intensity of his typing on the computer, and his bodily movements in the squeaky wheelchair, constituted an analogue complement to his digitalised voice. This gesture of sound allowed Espen not only to hear and sense Jon's verbal meaning construction, but also his emotional state.

This is one of several self-experienced examples of how the 'room noise' becomes a central part of the message in the telephone conversation with Jon, communicating both the digital and the analogue. Given the previous, failed interpreter-mediated telephone conversation, Espen became acutely aware how non-verbal body sounds contributed to sensing Jon's presence more firmly and directly than any assistant or digitalised voice could mediate. Jon's communicative prosthesis, creating an assemblage of the PhoneTalker software, a text-based interface, the digitalised male western Norway dialect, a microphone recording room noise, the embodied wheelchair, the telephone, a forehead pen, and an old school IBM keyboard, makes possible interpreter free, long-distance, personal communication. This form of communication is not purely written or oral,

verbal or non-verbal, technical or organic, rather it is a combination of all the aforementioned elements.

Analog/digital Assemblage: The Sound of Disability

> Conceptually, the notion of 'differently constrained lives' defines not only 'lives with disabilities,' but *all* forms of life in relation to an impossible 'non-constrained,' 'non-disabled' state. As all lives are subtractions from an ideal state, each life needs to be considered as a 'singular life' with singular constraints, which means that in the gradations of constraints it is no longer a question of 'the normal' set against 'the abnormal,' but one of a specifically constrained position within a given multiplicity.
>
> —Berressem, 2017, pp. 30–31

As Berressem argues in the above quote, in the vast multiple variations of the human condition we are all constrained in various degrees and ways. What is interesting is how we deal with these constraints. Becoming independent for Jon and Thomas requires an intense interaction with various types of technologies, as well as human helpers, and their paths are 'differently constrained lives'. Understanding their cases through assemblage analysis draws our attention to the fact that ignoring, reducing, or eliminating the analogue dimension of communication in the feedback process might influence the homeostasis of a fragile independence. *You need to hear me*, Jon emphasises.

Digital technologies might be helpful in maintaining the desired independence of Thomas and Jon, but they might also destabilise this very same independence, as central components of what becomes lost in digital translations. As such, we argue that there is a need for ethnographic data to be sensitive to technological innovations that streamline digital communication at the cost of the analogue. Thus, design processes should begin from 'below', and in concrete everyday practices, to ensure that the various effects generated are desired from the user's standpoint. Jon's story demonstrates that when *alternative rationality from below* is incorporated into technical design, sociotechnical agency may be enhanced in ways that exceed the brute ordering of 'the normal', allowing for elegant combinations of both

the digital and the analogue. Thomas's story likewise shows the potential dangers of unintended marginalisation, if such rationality is not taken into account within a techno-optimistic normalisation strategy in the name of digitalisation.

The rapid digitalisation of the welfare state may, however, relativise the orderings of normality in terms of communication, and create new possibilities as well as barriers, for people with both standardised and non-standardised bodies and subjectivities. The physically disabled may participate through digitally mediated arenas in ways that were unthinkable a few years back, while the non-disabled may experience exclusion from social arenas and digitalised welfare services in new ways. In other words, new forms of sociotechnical agency will emerge in digital society (Feenberg, 2017, p. 4). In *Abilism: The causes and consequences of disability prejudice* (2020), Michell Nario-Redmund reminds us that about one in five people qualify as disabled, being born into or becoming disabled during their lives. Restrictive environments have been a central feature in disabled peoples' fight for rights. Free and unrestricted access to public places and educational facilities have been important in addressing disability prejudice. Changes to our welfare state infrastructure through digitalisation impact both the built environment and the legislative landscape in which abilism unfolds (Nario-Redmond, 2020, p. 352). Thus, we need to be attentive to how digitalisation influences the ability to communicate.

Becoming independent is not simply a question of personal satisfaction. It is also a question of realising the potential of inclusive citizenship (Lister, 2007). Ruth Lister argues that there are many ways of practicing citizenship. Disability activism is one, through which disabled people '… struggle for full, equal and accessible citizenship and for the right to be different citizens' (2007, p. 54). To realise their potential and build an inclusive citizenship for speech and mobility impaired citizens like Jon and Thomas, we need to be attentive to how they can express themselves, and how they want to express themselves.

For Jon, personal autonomy is the bottom line, expressed through his own becomings with various technical solutions and everyday practices. He is self-normalising, in that he identifies with the Norwegian community of working taxpayers. However, rather than simply passively reproducing norms for individuality and similarity, he is constantly engaged in negotiations relating to norms. He actively uses technology to realise himself and his identity. In one example, Jon demonstrates one way of conducting

negotiations about his otherness. Espen visited Jon in a rehabilitation centre, where Jon stayed from time to time. A nurse came into the room and asked if he wanted supper. Jon said he would love to have some, and started to explain how he wanted to be fed. He asked for only half-filled, small, sturdy glasses, if not things tended to be bloody messy. Understated was the fact that his uncontrollable jaw muscles could easily break a glass. The nurse interpreted Jon's hand-pointing at his analogue keyboard, and it was evident that Jon saw that the nurse became stressed by all the necessary adjustments, and the various risks of spilling food, and blood. Jon noticed, and commented jokingly, 'You see, I am just a little bit odd!' The nurse laughed and left the room, now more at ease.

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