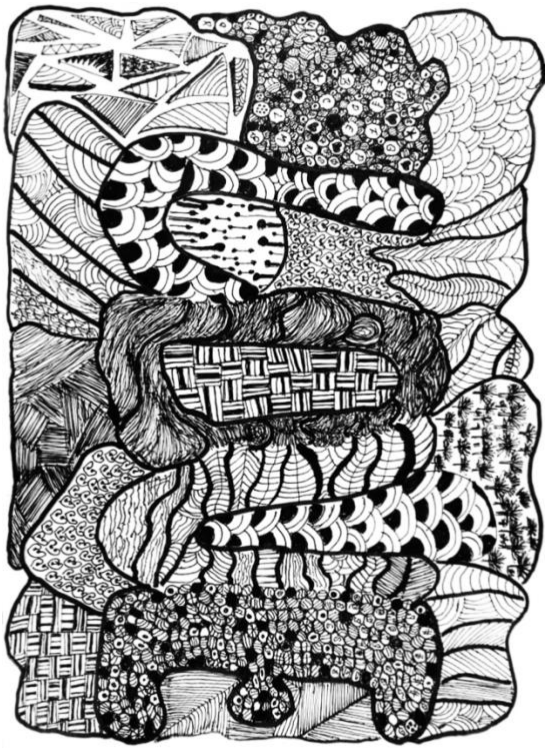

# Frictional Infrastructures

## An ethnography of compulsory digital self-reliance and collective access in the Danish Welfare State

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# Summary

Coercive approaches to digitalizing welfare provision in Denmark are based on the premise that increased automation and digital communication will reduce the need for in-person support and improve the quality of welfare services "for all." Yet, I examine how coercive digital-by-default welfare provision does not reduce the need for in-person support, or benefit everyone equally. On the contrary, digital mandates, forcing a diverse population to adopt standardized digital public infrastructures, accentuate the need for in-person support as they delegate public administration responsibilities and the labor of access to individuals, the family, and the third sector (volunteer organizations, advocacy organizations, non-governmental organizations, and non-profit organizations). This delegation of responsibility, and labor, puts pressure on citizens, the family, and the third sector because their access needs, knowledge, and labor are neglected. This delegation also produces inefficient services for those most marginalized, as it becomes more difficult to access welfare benefits.

In this dissertation I work with friction as a generative dimension of digital infrastructures and access. I examine how individuals and groups experience access to digital welfare in Denmark and how their efforts challenge individualistic forms of access and personal autonomy, imposed on them through self-service mandates. Friction as an analytical lens embraced in anthropology, intersectional design, and crip technoscience, makes it possible to learn from contradictions, conflicts, and design processes of slowing down or breakage. Through various research collaborations with disability rights representatives, activists, citizens, and organizations that support racialized, disabled, and marginalized groups, we have created the empirical data that underlies the dissertation's analysis. I claim that the obligation to be self-reliant through the adoption of digital self-service, which this dissertation explores as *compulsory digital self-reliance*, undermines citizens' dignity and self-determination, and produces frictional forms of access and inclusion, as well as new forms of unrecognized labor.

I introduce the concept of *frictional infrastructures* to illustrate how digital infrastructures can simultaneously include, exclude, move, connect, and create new forms of equality and inequality. This insight helps to reckon with an infrastructure's incompleteness, and thereby also the continuous potential to subvert oppressive forms of technology development and welfare governance.

# Resumé

Som et formelt, offentligt krav er danske borgere indenfor det seneste årti blevet tvangsdigitaliseret. Øget automatisering og digital kommunikation, der vil skabe besparelser og forbedre kvaliteten af velfærdsydelser 'for alle' er argumentet, der har drevet offentlig digitalisering. Denne ph.d.-afhandling viser, hvordan obligatoriske digitale velfærdstjenester ikke reducerer behovet for personlig støtte eller gavner alle ligeligt. Når befolkningen tvinges til at anvende standardiserede digitale offentlige infrastrukturer, så øges behovet for personlig støtte. Særligt fordi offentlige forvaltningsopgaver og arbejdet med at skaffe digital adgang uddelegeres til enkeltpersoner, familien og den tredje sektor (frivillige organisationer, velgørenhedsorganisationer, ikke-statslige organisationer, og nonprofitorganisationer). Denne delegering af ansvar og arbejde lægger pres på borgere, familier og den tredje sektor, fordi deres adgangsbehov, viden og arbejdsindsats bliver overset. Det resulterer desuden i ineffektive tjenester for de mest marginaliserede, da adgangen til velfærdsydelser besværliggøres.

Afhandlingen tager udgangspunkt i begrebet om friktion som en produktiv dimension af digitale infrastrukturer og tilgængelighed. Jeg undersøger, hvordan individer og grupper oplever adgang til digital velfærd i Danmark, og hvordan deres indsats udfordrer individualistiske former for adgang og personlig autonomi, der pålægges dem gennem selvbetjeningsmandater. Friktion som analytisk linse, anvendt tidligere indenfor antropologien, intersektionelt design og *crip technoscience*, gør det muligt at lære af relationerne mellem modsigelser og konflikter såvel som af nedbrud og opbremsning af designprocesser. Gennem forskningssamarbejde med handicaprettighedsrepræsentanter, aktivister, borgere og organisationer, der støtter racialiserede, handicappede, og marginaliserede grupper har vi sammen skabt den empiri, der ligger til grund for afhandlingens analyser. Jeg hævder, at kravet om at være selvbetjent - det, som denne afhandling undersøger som påtvungen digital selvstændighed - underminerer borgernes værdighed og selvbestemmelse og skaber friktion i

forhold til adgang og inklusion, samt resulterer i nye former for usynligt arbejde. Jeg introducerer begrebet modstandsskabende infrastrukturer (*frictional infrastructures*) for at belyse hvordan digitale infrastrukturer på en og samme tid kan inkludere, udelukke, bevæge, knytte sammen og skabe nye former for lighed og ulighed. Bidraget med disse kendetegn ved digital infrastruktur viser os vej ind i velfærdsstatens ufuldstændige teknologiudvikling, og derfor også, hvordan undertrykkende teknologiimplementering kan modarbejdes i stigende grad.

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This dissertation has been possible thanks to the invaluable support and care of my supervisors, colleagues, collaborators, friends, and family. You have helped me along the way when I experienced difficulties. You have lifted my spirit in times of doubt, you have listened when I needed someone to talk to, and you have given me the motivation and strength to believe in myself and in my project. I would like to begin by expressing my deepest gratitude to Brit Ross Winthereik, my main supervisor. She believed in me and my abilities to carry out this research project and has given the care and freedom I needed to explore questions of access and equity through critical disability theory, ethnographic methods, and art-based research methods. I would also like to thank Thorben Simonsen, who was my co-supervisor for two years. He gave me invaluable tips and practical advice to write this dissertation.

Furthermore, I extend my heartfelt thanks to Baki Cakici, who replaced Torben as my co-supervisor in the last year of my PhD project. Your feedback, support, ethics of pace, practical tips for writing, and passion for the arts and critical engagement with Science and Technology Studies have enriched my work and motivated me greatly. It was also extremely rewarding to co-author an article with you. Likewise, I am grateful for the experiences of co-authorship with Brit Ross Winthereik, Sisse Finken, Frederik Gybel Jensen, Leif Hemming Pedersen, and Jesper Bentil Holten. Writing with you was a wonderful experience and I have learned and continue to learn so much from you.

When I started my PhD, I realized very few scholars in Denmark were doing intersectional and disability justice research applied to the study, design, and development of digital infrastructures. Thanks to the Bevica Foundation, I have met researchers in social work, architecture, design, media studies, organizational studies, disability studies, and more, who have been an essential support to inform my research with critical disability theory and disability justice frameworks and knowledge. I thank all the members of Bevica's Universal

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This project was also possible thanks to many research collaborations. I want to thank members of the SOS project for all the events, seminars, online meetings, and workshops that we experienced together. It has been a pleasure to exchange ideas with you and get to know you. A special thanks to Annika Bergviken, Carl Erik Moe, Elin Thygesen, Irina Papazu, Katherine Stacey Brown, Margunn Aanestad, Michala Høg Daimar, Mikaela Åberg, Mona Lundin, Søren Skaarup, and Åsa Makitalo. I also want to thank the advisory board of the project Jeannette Pols, Ingunn Moser, Neil Selwyn, Sampsa Hyysalo, Mikkel Flyverbom, and Naja Holten Møller.

I want to acknowledge Anna De Boer for inviting me to conduct research at a Danish public library and for her advocacy work ensuring that people receive help in Denmark when accessing welfare services, in person and via digital infrastructures. I also want to thank the organization *Landsforening af Værestededer* and the project manager Marika Sabroe, for their support and collaboration. Your advocacy work has informed my research and shaped my ethics of pace. Furthermore, I want to thank Mac Allan, Ann M. Steengård, Annemarie Andreasen, Inge Hansen, Sofie, and Tina-Lykke Dannerfjord for collaborating with me in the making of comics. It was a pleasure to meet you.

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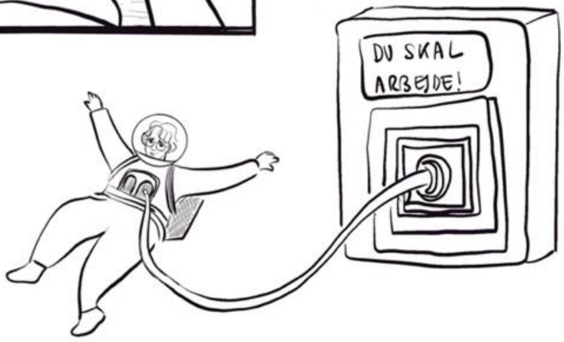
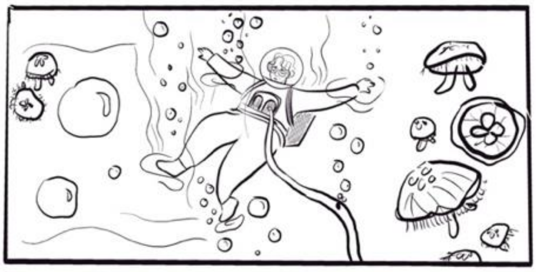
# Part 1. Frictional infrastructures

Every single day for 7 years, the municipality has been in control of my life.

Each time a notification arrived from the digital post system, and every time the sound chimed, my heart leapt into my throat.

I've felt the weight of expectations I couldn't meet...





...struggling to surpass them, then sinking back and fighting once more.

The pressure is suddenly gone.

I have become an early retiree. But the process was not easy.

There were question marks regarding my needs and abilities until I finally received a fair case assessment.

If you're not ill when you enter the system, you might end up getting sick. Some caseworkers in the municipalities lack the knowledge to handle vulnerable individuals with care and respect.

## 1. Introduction: The Frictions of Digital Self-Service

On a spring day in 2022, I visit the official website of the Danish Agency for Digital Government. The site is available in Danish and English. I select the English version to explore how the Agency presents the Danish Public Sector to English-speaking audiences. Here, I find a video with closed captions.[1] I press play and watch. Sci-fi electronic music overlays fast-paced cuts of moving images that show people in charge of the digital public sector in Denmark. The music and the style of the video reminds me of a suspenseful documentary, or perhaps an advertisement for the latest electronic technology. Light-skinned employees of different ages wearing business attire present the Danish public sector as a story of success. The employees are interviewed both in a television studio and walking around upscale office spaces. Some offices have tall views of Copenhagen's skyline. One office wall is covered in post-it notes organized, in what seems to be, different lanes of a user journey (a visual tool used to design the experience of a service or product). This scenario is juxtaposed with the story of a young white woman, a citizen, who is traveling on public transport, scrolling the landing page of the government website borger.dk (citizen.dk) on her smartphone. She is on the escalators of Copenhagen's brand-new metro infrastructure while the voice of an Agency for Digital Government employee says: "The Danish Public Sector isn't confined to an office with limited opening hours." Further along in the video, another employee working at the Agency, a woman with short brown hair in her 40s, smiles and explains: "One of our biggest successes is the national digital post system. It was made mandatory in 2014, and that push meant that almost everyone uses our digital public services today." Once the video communicates that the adoption of digital public infrastructures is mandatory, and that "90 percent" of the population

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[1] The video is available at https://en.digst.dk. Last accessed January 23, 2024

uses them, a blonde woman in her 40s (the Head of Digital Public Services) explains that the main goal of the public digital solutions is to "enable citizens to *help themselves*" [emphasis added]. The video goes on for a couple more minutes to communicate that more accessible and user-friendly digital public solutions will "improve welfare, reduce paper for businesses, and enable the green transition."

I describe parts of a video made by the Danish Agency for Digital Government while it was overseen by the Ministry of Finance, but in 2023 the Agency was moved under the jurisdiction of a newly established Ministry for Digitalization and Equality. This change followed the election of a new government and an increase in public awareness on the exclusionary effects of coercive digital mandates in Denmark affecting approximately 22 percent of the population (Agency for Digital Government, and Local Government Denmark 2021). The message of this video is an example of what sociologist Susan Leigh Star defines as an infrastructure's master narrative. A master narrative is a "single voice" that speaks "from the presumed center of things" (Star 1999, 384). Through the Agency's master narrative used in this video, and in Danish national digital strategies (The Danish Government, Danish Regions, and Local Government Denmark (2022; 2016; 2011), we can begin to identify the technological imaginaries and normative values embedded in the Danish state's particular approach to digitalizing welfare infrastructures.

The video's storyline illustrates that government authorities frame technology development as a seamless and depoliticized solution to social, economic, and environmental problems. This is what scholars in the field of Science and Technology Studies (STS), such as Sally Wyatt (2008), define as *technological determinism*. STS scholars have critiqued technological determinism as a tendency for policymakers, researchers, and technology developers to assume that any kind of technological project leads to social progress. A presumed neutrality, however, obscures the unequal distribution of power in society and in the sociocultural context in which technological development is embedded:

> One of the problems with technological determinism is that it leaves no space for human choice or intervention and, moreover, absolves us from responsibility for the technologies we make and use. If technologies are developed outside of social interests, then workers, citizens, and others have very few options about the use and effects of these technologies…If technology does indeed follow an inexorable path, then technological determinism does allow all of us to deny responsibility for the technological choices we individually and collectively make and to ridicule those people who do challenge the pace and direction of technological change. (Wyatt 2008, 169)

Wyatt's critique of technological determinism is helpful as an entry point to my dissertation because it enables me to summarize how the Danish digitalization success has framed coercive digital mandates and infrastructures as beneficial and smooth for an unmarked "all". Yet, this promise of ease hides real-life implications for how democracy, social justice, and the well-being of a heterogenous population is sustained in the absence of choice. Namely, what seems to legitimize the master narrative of Denmark's digitalization success is an intentional disregard of any *friction* existing as a product of coercive digital reforms (exemplified by 20 percent of the population who reports experiencing barriers to fulfil their rights and access essential services due to digitalization)[2]. Offering the concept of *frictional infrastructures*, I understand

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[2] I am thinking of friction as a force or power; alternation and contrast that can create harm or a beneficial traction or adhesion; it is a generative inherent dimension of infrastructures from which we can learn about their politics and how they are implemented, maintained, reconfigured, or redefined over time (Guma 2022). Anthropologist Anna L. Tsing (2006) has written about friction with regards to her ethnography in the rainforests of Indonesia and the reshaping of the landscape across local and global differences. As Tsing writes: "Cultures are continually coproduced in the interactions I call "friction": the awkward, unequal, unstable, and creative qualities of

friction as an inherent dimension of infrastructures to produce forces of motion, power, beneficial conflict, traction, or adhesion. STS scholars have studied for decades infrastructures such as information systems, railroads, water systems, and other socio-technical systems including national borders, and apartheid systems of racial classification (Bowker and Star 2000; Narita 2023; Star 1999). A master narrative of success solely focusing on seamless and standardized digital transformation, disguises important lessons and realities from the ground as communities and citizen representatives critique, subvert, reject, mend, and redefine infrastructures in generative and frictional ways: critiquing its components, violent practices, politics, and norms. Friction as an analytical lens enables us to learn from contradictions, conflicts, and processes of slowing down or breakage; it helps us reckon with an infrastructure's incompleteness (Guma 2022) and the continuous potential for change (Korn and Voida 2015).

Building on crip technoscience scholars (Hamraie and Fritsch 2019), generative frictional relations with technology include acts of tinkering with technology, non-compliance, and non-use, which reimagine and critique systems and infrastructures that do not welcome difference, or that intentionally or inadvertently produce harm or precarious living conditions. Ignoring friction as a quality of infrastructures and processes of digital transformation is problematic because it ignores important critiques and acts of resistance towards norms and politics embedded in technological implementation and adoption. It is no secret that governments and corporations have an interest in collecting citizens' data. This goal is particularly explicit in Danish digital policies when the word *tilgængelige* (accessible) also refers to accessing citizens data (Digitaliseringspartnerskab 2021, 116). As increasingly more

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interconnection across difference" (243). Crip technoscience scholars in STS have also worked with access as involving friction; as a concept that encourages researchers to study the tension inherent to access, as both an opportunity for connection, and an attack (Hamraie and Fritsch 2019; Fritsch 2016).

areas of life are digitally mediated, questions of digital resignation[3] become ever more important to address (Draper and Turow 2019; Jørgensen 2021; Bagger et al. 2023).

Digital mandates and infrastructures also pose questions on how coercive measures to digital adoption marginalize or stigmatize those who either *cannot*, or *choose not to*, engage with digital technologies when interacting with state authorities. With regards to the latter, Wyatt (2003) has explored how governments and even scholars have persistently problematized *informed, voluntary rejection of technology* as an individual deficiency in need of fixing. In Wyatt's view, however, unanticipated uses of technology, as well as non-use can be studied as valuable practices that can help researchers understand norms and agendas underlying the promotion of certain technology, and how they conflict with individual and collective values, desires, and ways of being in the world (Wyatt 2003; Oudshoorn and Pinch 2003). Furthermore, the explicit desire to build a nation of self-reliant individuals that "help-themselves" poses questions for how relations of interdependence can be recognized and designed in ways that foster belonging, and work against the stigma associated with being helped.

In understanding why people tinker with or resist technology, infrastructural norms and power can be challenged. In this way, while the notion of frictional infrastructures can be a helpful term to analyze infrastructures that harm or neglect a diverse population's needs, there is an important case for thinking of frictional infrastructures as part of a generative intervention. From intersectional protocols that advance accessible events (Sins Invalid 2017), practices of image description and multimodal communication (Coklyat and Finnegan 2023),

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[3] Draper and Turow define digital resignation as "the condition produced when people desire to control the information digital entities have about them but feel unable to do so." (2019, 1825)

to the rejection of *disability dongles*[4] made to erase disability culture and identities (Jackson, Haagaard, and Williams 2022), unanticipated uses and rejections of technology are valuable in examining "world-building and world-dismantling practices by and with disabled people and communities that respond to intersectional systems of power, privilege, and oppression by working within and around them." (Hamraie and Fritsch 2019, 4–5).

## 1.1. Studying Individual and Collective Experiences of Access to Digital Welfare

Considering friction as a key dimension of infrastructures, in this dissertation I explore how individuals and collectives experience access to digital welfare in Denmark. Informed by an ethnography conducted from March 2021 until June 2023, which engaged disability rights advocates, activists, and organizations supporting racialized, disabled, and marginalized populations, I claim that the obligation to be self-reliant through the adoption of digital technologies—what this dissertation explores as *compulsory digital self-reliance*— undermines citizens' dignity and self-determination and produces *frictional forms of access and inclusion*, as well as new forms of unrecognized labor. The issue I grapple with in this study is the problematic normalization of coercive strategies aimed at achieving widespread technology adoption, while also fostering a population of compliant, self-reliant individuals.

As I explore in the chapters of the dissertation and four articles, ideals surrounding technology adoption and self-reliance in the Danish welfare state are rooted in individualistic notions of personal autonomy and access (Mackenzie 2019; Mingus 2017a). Individualistic frameworks of autonomy and access are problematic because they tend to obscure the systems of power and privilege in which autonomy (Tronto 1993) and access (Hamraie and Fritsch

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[4] Disabled designer and activist Liz Jackson defines Disability Dongles as follow: A well-intended elegant, yet useless solution to a problem we never knew we had. Disability Dongles are most often conceived of and created in design schools and at IDEO (Jackson, Haagaard, and Williams 2022).

2019; Fritsch 2016; Titchkosky 2011) are negotiated in practice. Seeking an alternative framework, I turn to the calls and concerns of critical access scholars, disability activists, and civil society organizations, in Denmark and abroad, that shed light on the politics of coercive digitalization and self-reliance and its social and material consequences. I do so through the analysis of situated and frictional forms of *critical knowing-making* (Hamraie and Fritsch 2019; Hamraie 2017). Critical knowing-making is a concept developed by critical access scholar Aimi Hamraie to analyze designed infrastructures, built environments, or artifacts, and the knowledges that enable and tinker with them.

### 1.2. Friction and Compulsory Digital Self-Reliance

In recent years, Danish civil society organizations have pointed out that mandatory digital infrastructures, often named by government authorities and corporations as digital self-services, infringe upon citizens' rights and access needs because many digital services fail to cater to the diversity of the population (Ældre Sagen and Epinion 2023; LEV 2022). For example, as public administration processes increasingly undergo digitization, disability rights organizations, like the Danish Association of the Blind, have cautioned that disability access and web accessibility are either overlooked, or implemented late in the design of public digital infrastructures and services (Stentoft 2021). Other independent organizations, such as the Danish Institute for Human Rights, support these critiques, as they report on numerous municipal websites that have not complied with web accessibility guidelines, or offered multilingual content, which are essential for disabled and migrant populations to navigate a digital-by-default public sector (Faye Jacobsen 2017). Civil society organizations have therefore challenged claims made that the Danish digital public sector and its coercive approach to technology adoption is exemplary or a case of success, such as in the statement made by disability advocate and Blind digital accessibility consultant, Jesper Bentil Holten:

> The UN [United Nations] has named Denmark the World Champion in digitalization, but we are not good enough at including everyone in society. It is a societal problem that we do not have more focus on inclusion and accessibility when developing new digital solutions. (2021, my translation)

In cases where citizens do not have the resources or capabilities to use digital technologies, civil society organizations have also documented that accessing welfare benefits or basic services has become increasingly more difficult. For example, the newspaper *Hus Forbi*, advocating for the rights and well-being of marginalized and unhoused populations, illustrated in a citizen petition in 2021, how the lack of in-person cash withdrawals offered by Danish banks have created new barriers for people to access their cash benefits. As the organization writes:

> [Unhoused] and socially vulnerable people are disconnected from having access to their own money. Access to cash withdrawals becomes more difficult as banks, financial institutions, and banking centers, which have a monopoly on public benefits, become cashless and rely on ATMs; ATMs that require a debit card, which many vulnerable people find difficult to obtain. (Struve Nielsen 2021, my translation)

As digital infrastructures in both the public and private sectors fail to meet the diverse access needs of the population, and as in-person services are downplayed, civil society organizations and community members are increasingly taking on the responsibility of providing digital, administrative, and legal support so that regardless of income, digital literacy, disability, or language, individuals and collectives can claim their rights and access essential services. This is the case of Danish lawyers providing free legal aid who are grappling with banks that discriminate against unhoused and vulnerable populations who are impacted by the erasure of in-person cash withdrawals (Stenbroens Jurister 2022). The work of these lawyers illustrates that digital-by-default policies displace the responsibility for access provision to the individual, the family, volunteer organizations, or non-governmental organizations (NGOs). Consequently, those who encounter services that do not meet their access needs increasingly depend on the third sector (relatives, charity organizations, advocacy groups, NGOs, or volunteer groups) to navigate through public and private digital infrastructures.

The state's delegation of increased responsibility and access provision to the third sector puts pressure on individuals who do not have safe social networks. Volunteer organizations assume new responsibilities and labor, without the power and inside knowledge that government and corporative organizations and employees have in order to support and control the conditions of access. This reality has been documented in Denmark by government authorities in a report titled *Digital Inklusion i det digitaliserede samfund* (Digital Inclusion in a Digitalized Society). In this document, local and state authorities report how relatives, disability rights organizations, libraries, citizen representatives, care professionals, and public servants experience many challenges when supporting citizens whose access needs are neglected (Agency for Digital Government and Local Government Denmark 2021). According to the report between **17 to 22 percent of the population** living in Denmark is digitally vulnerable (*digital udsatte*) and "the figure may be higher if one includes sudden and particularly difficult life situations of those who normally manage on their own. In addition, there are many relatives helping, who also face obstacles in the digital universe" (Agency for Digital Government and Local Government Denmark 2021, 11, my translation).

### 1.3. Finding Alternatives to Compulsory Digital Self-Reliance

Because atomistic frameworks of personal autonomy and access fall short to meet the diverse needs of the population, alternative theoretical frameworks that encompass a political and relational view of personal autonomy and access are urgently necessary. Drawing upon intersectional feminist scholarship (Hamraie and Fritsch 2019; Mackenzie 2019), I explore the concept of *interdependence* as a valuable lens to acknowledge how humans are inherently embedded in relations of dependency and care (Tronto 1993). As disability justice activist Mia

Mingus writes when critiquing the Myth of Independence, prevalent in atomistic and individualistic concepts of autonomy and access:

> The myth of independence is the idea that we can and should be able to do everything on our own and, of course, we know that that's not true. Someone made the clothes you're wearing now, your shoes, your car, or the mass transit system you use; we don't grow all our own food and spices. We can't pretend that what happens in this country doesn't affect others, or that things like clean air and water don't bound us all together. We are dependent on each other, period. The myth of independence reflects such a deep level of privilege, especially in this rugged individualistic capitalist society and produced the very idea that we could even mildly conceive of our lives or our accomplishments as solely our own. (2017a)

Interdependence as a framework allows me to grapple with both oppressive and liberatory contingencies of being in the world, while considering relations of care and its politics. A relational and political framework of autonomy and access better examines how individuals and collectives experience and practice access in material-discursive relations. By attending to individual and collective forms of access, I examine how, in practice, coercive digitalization conflicts with individual and collective needs. Conducting a study in Denmark, I offer ethnographic insights that contribute to imagining more liberatory forms of access. As Mingus points out:

> Access for the sake of access is not necessarily liberatory, but access for the sake of connection, justice, community, love, and liberation is. We can use access as a tool to transform the broader conditions we live in, to transform the conditions that created that inaccessibility in the first place. (2017a)

Having conducted a multisided ethnographic study in Denmark, I draw upon my collaborations with organizations and citizens who have been negatively impacted by inaccessible digital infrastructures, and who are actively working towards more accessible forms of welfare provision and digital citizenship. Rather than defining *access to* and *the use of* digital technology and welfare services as neutral, self-evident goods, I build upon the work of critical access scholars engaging with crip technoscience (Hamraie and Fritsch 2019; Williams 2019; Shew 2020, 2023; Angelini et al. 2023) to explore the frictional relations in which individuals and collectives of different social positionalities, appropriate, resist, or reject values and norms perpetuated by technological development. A key theoretical contribution of this dissertation is developing the concept *compulsory digital self-reliance* (a pervasive goal within neoliberal welfare discourse, digital mandates, and digital inclusion projects), and critique ideals of independence and individualistic views of personal autonomy and access. I inform my theoretical framework with epistemologies and methodologies advanced by disabled, Mad, Queer, trans, Black, Indigenous, people of color (QTBIPOC) and I borrow the term *collective access* to pose as an alternative to compulsory digital self-reliance (Mingus 2010; 2018; Hamraie 2013; Berne et al. 2018; Piepzna-Samarasinha 2018).

My dissertation is article-based and includes four publications that contribute to the study of digital accessibility, digital welfare, and inequity in the fields of anthropology, STS, and design. In the following sections, I introduce relevant digital mandates and public digital infrastructure in Denmark, my positionality, and research questions. Following thereafter, an outline of the state of the art, my methodology, and contributions. The final section of the dissertation includes four research articles in their post-print or pre-print versions.

### 1.4. Digital Mandates and Public Digital Self-Service in Denmark

To understand more concretely what is mandatory in Denmark and how it affects the everyday life of citizens, it is helpful to briefly revise critical infrastructure and regulations implemented by the state in the last decade. Since 2010, citizens in Denmark have been mandated to use an electronic identification infrastructure called *NemID*. This infrastructure is connected to a citizen's civil registration number (CPR nr.), their personal password, and a code card. NemID

(Figure 1) was developed for the state by Nets, a tech company that builds digital solutions for the financial sector.

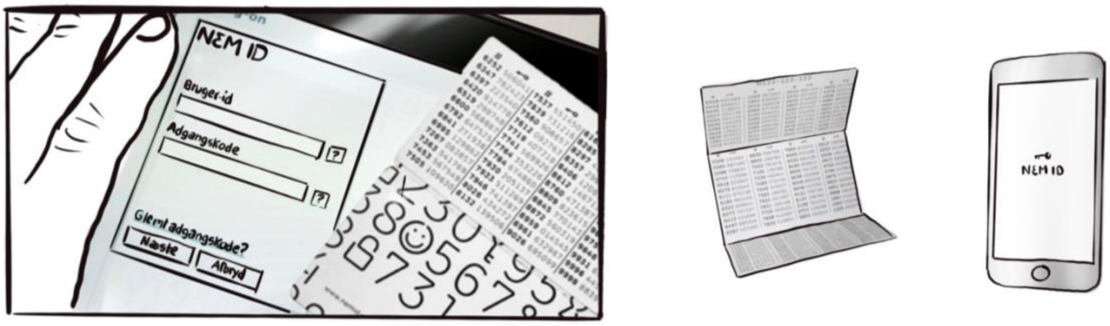

Figure 1: Two vignettes show parts of the infrastructure NemID. To the left, a hand holds a tablet that displays the login page asking for a user ID and a password. On top of the screen there is a physical code card printed with 148 one-time codes. To the right, the open code card floats beside a smartphone displaying the NemID logo.

NemID has been essential to access services such as, public digital self-services (tax, online health records, applications for welfare benefits), insurance, or online banking. In 2021, NemID was replaced by *MitID*. The Agency for Digital Government announced two reasons for the new system. First, in 2021, NemID’s contract was nearing its end, and public procurement regulations in Denmark stipulate a time limit for public-private contracts. Second, NemID did not meet international security and identification requirements (Kingo and Aranha 2023); thus, authorities argued the need for a safer system. Within the financial sector, MitID was already discussed as a relevant tool for countering money laundering (Finans Danmark 2020).

Nets won the tender to develop MitID, which is owned through a public-private partnership between the Agency for Digital Government and the advocacy organization of Danish financial institutions, Finans Danmark. To access public and private digital services, citizens can use an app, a code display, a code reader, or a chip, all of which are part of the MitID infrastructure (Figure 2). Through the app, users have the option to use biometrics (fingerprint, face recognition or iris scan) to authenticate their identity (Kingo and Aranha 2023).

Figure 2: MitID infrastructure. A collage of photographs available on the website mit.dk shows a young woman walking her bike while holding her smartphone. Her screen displays the blue and white interface of MitID's mobile interface. Next to this is an image of an oval-shaped black plastic device displaying a numeral code of six digits, a rectangular audio code reader connected to headphones, and a white device (MitID chip) that enables login via USB, Bluetooth, or NFC chip wireless communication. These devices are meant for people who struggle to remember their passwords, or who have low vision.

The authentication methods were conceptualized by the Agency for Digital Government in collaboration with civil society organizations, including disability rights organizations, through the Agency's digital inclusion network. However, when MitID was implemented in 2021, organizations advocating for disability rights criticized Nets and the Agency for Digital Government for testing the accessibility of the MitID infrastructure and its migration procedure too late in the design process. Additionally, disability rights organizations found significant accessibility flaws in the mobile app upon its roll out (Dreiager 2021), and cybersecurity scholars critiqued MitID for posing security threats (Kingo and Aranha 2023). Disability advocate and web accessibility specialist Jesper Bentil Holten made the following analogy of the design process in an article in the newspaper, *Jylland-Posten*:

> It’s a bit like building a house, declaring that you’re ready to move in, and only then inviting the fire inspector, and discovering that there are flammable materials used in the roof covering. (2021, 7, my translation)

In addition to the electronic identification infrastructures of NemID and MitID, many public administration procedures have been transformed into mandatory digital infrastructures— what policymakers and government officials refer to as “digital self-service solutions”. Since 2012, a series of four regulatory reforms have mandated citizens to use digital infrastructures to apply for welfare benefits or carry out public administration tasks, such as webforms to apply for housing or cash benefits (Schou 2018). In addition to digital self-services, regulation concerning digital communication from 2014, requires citizens from the age of fifteen to communicate with the authorities digitally through a Certified Mail System (CMS) called Digital Post. This system was initially developed by a company called e-Boks.

At the time of writing this dissertation, the digital mail infrastructure can be accessed via four different interfaces, including via borger.dk (citizen.dk, or officially translated as Life in Denmark), a government website managed by the Agency for Digital Government that offers citizens personalized content related to digital public administration. Additionally, citizens can access digital post through an app with the same name. Citizens who wish to access digital communication sent by private organizations, such as financial institutions or insurances, can access digital post through two privately owned, and free, interfaces: e-Boks, owned by Nets and PostNord (postal service), and mit.dk (note that, despite the similar name, this interface has little to do with MitID), owned by a technology company called Netcompany (Figure 3).

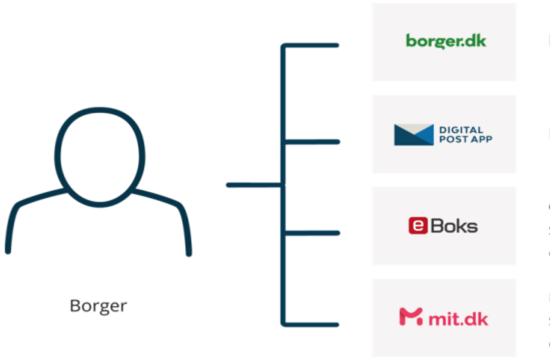

Figure 3: An illustration made by the Agency for Digital Government outlining different digital post systems. A simple line represents a citizen connected to the platforms borger.dk, Digital Post app, e-Boks and mit.dk.

Citizens who do not have the resources or capabilities to use digital post can choose to opt-out of the digital post mandate. To do so, citizens can request an exemption at their local citizen service center. According to publicly available official guidelines, citizens can opt-out of digital post if they have a “cognitive disability”, “physical disability”, if they “do not own a computer” in their own home, if they are “registered residing outside of Denmark”, if they “have low Danish language skills”, or do not have “access to the internet” (Agency for Digital Government 2019, 10-11). Citizens are not required to disclose why they need an exemption, yet the ability to opt-out relies on the discretion of municipal caseworkers (Faye Jacobsen 2017).

Even though citizens have the option to request an exemption from mandatory digital post, opting out of digital post does not automatically grant citizens an exemption from digital self-service. In this regard, the Danish Institute for Human Rights reported in 2017 how exempt individuals using regular mail have been required to justify their exemption from digital self-services each time a public administration task necessitated the use of digital infrastructures. Authorities overseeing various public administration processes have retained the authority to determine whether a citizen could complete an application or procedure through non-digital means, making *universal* exemptions exceptionally challenging (Faye Jacobsen, 2017).

With the growing prevalence of digital-by-default services and coercive approaches to technology adoption in the public sector, exemptions from digital post have not protected citizens' rights and access needs. Policy discourses and hegemonic ideology framing coercive digitalization as either *necessary* or *inevitable*, ultimately downplays, and underfunds, in-person services as a complementary form of access. From a strategic point of view, the authorities' framing of a digital-by-default society as an inevitable force, outside of their control, supports the promotion of a compliant digital self-reliant population:

> We live in a society that is not only thoroughly digitalized but where development is fast-paced and doesn't take a break. Digitalization and its consequences have become a condition, whether one is exempt from Digital Post or not. (Agency for Digital Government and Local Government Denmark 2021, 2, my translation)

As of 2023, politicians have increasingly focused on addressing challenges associated with a digital-by-default approach in the public sector. In this way, as I complete my dissertation, policymakers and the public authorities are acknowledging, to some degree, their own technological determinism, and are critically engaging with questions of equal rights and access. Critiques towards technological determinism in the public and private sector in Denmark have also gained momentum, particularly following a series of articles published in 2022 by the newspaper *Politiken*, in which journalists Jakob Sorgenfri Kjær and Kristian Ib shed light on issues, such as discrimination in digitalization, critiques made by civil society organizations, and right protection claims made by the legal think tank Justitia.

Articles published by the newspaper revealed how banks discriminate against people lacking digital skills or Danish language proficiency, and how citizens with low digital skills have lost access to entitled benefits. Additionally, the issues of digital-by-default welfare provision and its exemptions have also been addressed politically for the first time in 2023, following a significant regulatory amendment implemented by the Minister for Digitalization and Equality, Marie Bjerre. The amendment states that citizens who choose to opt-out of digital post, are entitled to an alternative when a public authority defaults to digital service delivery. As the Agency for Digital Government states on its website:

> The legislative change is intended to address the challenge for citizens who are exempt from Digital Post. It eliminates the current practice of requiring them to justify their need for an alternative to self-service every time they must interact with the public sector where self-service is mandatory. As of June 1, citizens only need to inform the authorities that they are exempt from Digital Post when contacting them for any official matters. (2023, 6, my translation)

### 1.5. Positionality

Building new knowledge comes with positions of power and privilege. My research methods are informed by scholars who recognize their social positionality, reflect upon their relative positions of power and privilege, and who amplify the knowledge of communities that have historically been subject to violence, discrimination, and misrepresentation, within academia and within society at large (Collins 2022; Bailey 2015; Hamraie and Fritsch 2019). My analytical approach is intersectional (Crenshaw 1989; Carbado et al. 2013). I acknowledge interlocking systems of domination, differential positionalities and identities, and opportunities for cross-movement solidarity and coalition. Turning to the words of Dorothy Roberts and Sujatha Jesudason:

> [Acknowledging] that all of us have multiple identities and by including all of those identities in the organizing process, intersectionality in practice can be a powerful tool for grappling with differences and uncovering shared values and bridging frameworks. This process provides a basis for collective action and a model for alternative social relationships rooted in our common humanity…Intersectionality as a theory and practice for social change can, and should, be used as a critical tool in struggles for social justice that seek to include us all. (2013, 325)

In the context of digital welfare provision in Denmark, I am interested in understanding how people, in differential positions of power and privilege, experience access to digital welfare and coercive digital mandates. The questions I ask, and the theories and methods used are influenced by my positionality and social justice commitments as a scholar with a particular bodymind[5] (Price 2015), history, and social location in the world. In cultural anthropology, one's own positionality refers to one's placement and social location in a particular environment (Nemer 2022). In this regard, I write and conduct research from my privileged position as a PhD fellow affiliated to a Danish public university, the IT University of Copenhagen. I hold race, gender, age, and class privilege as a light-skinned, middle-class cis immigrant woman in my early thirties. My lived experiences of disability and trauma inform my research philosophy, social justice commitments, and my interest in crip epistemologies and methods, which embrace the diversity of human experience, and celebrate disability experiences, cultures, and epistemologies, through multimodal communication and non-normative ways of being in, and reconfiguring, the world and academia (Mills and Sanchez 2023).

As a PhD researcher member of the SOS project (abbreviation for "Infrastructures for partially digital citizens: supporting informal welfare work in the digitized state"), I have been responsible for providing ethnographic insights into the project regarding individual and collective experiences of access. I have done so by attending meetings and seminars where I have given academic presentations on what I have learned. At these meetings, I have discussed my findings with government officials and representatives from the Danish Agency for Digital Government, and colleagues at the Center for Digital Welfare at the IT University of Copenhagen. I have also been invited to give talks at digital inclusion seminars organized by local authorities. Through these occasions, I have shared stories of oppressive and liberatory forms of access that civil society organizations and citizen representatives have communicated to me. In sharing what I am learning throughout this study, I have advocated for the

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[5] Disability scholar Margaret Price offers the concept bodymind in critical disability studies to explore how body and mind are interlaced in exploring experiences of access, pain, and desire. Physician Gabor Maté, who has written about the physical implications of traumatic experiences, also identified the bodymind as a conceptual unity coined by neuroscientist Candace Pert (2022, 39).

consideration of disability cultures, relevant anti-discrimination laws, and intersectional theories as critical for participatory design and research.

## 2. Research Questions

Considering the context of coercive digitalization in welfare provision in Denmark and my interest in how individuals and groups experience access to digital welfare, my study poses the following research questions**:**

1. *How do individuals and collectives experience access to digital welfare in Denmark?*
2. *Whose experiences are privileged by the implementation of mandatory digital infrastructures and self-service in Denmark?*
3. *How can practices of access, developed by individuals and communities impacted by mandatory digitalization, inform policy and design decisions?*

## 3. A Multi-Sited Ethnography of Access to Mandatory Digital Self-Service

As a multi-sited ethnographic study, I conducted fieldwork across four different sites. I want to briefly outline the communities and organizations I partnered with, and general reflections and learnings from these collaborations.

### Site 1. A Counseling Space for Neurodivergent Families

When principal investigators of the project defined this PhD study as a part of the SOS project, they established a counseling space for neurodivergent families as a key partner and ethnographic site. This space is publicly funded and offers free counseling to children between the ages of six and seventeen who are experiencing social or familial conflicts, or who refuse to attend school. The counseling team is interdisciplinary. Counselors are educated as teachers, pedagogues, social workers, or psychologists.

Initially I was supposed to spend most of my time following counselors and families within this space to understand how families and counselors navigate public digital self-services. When I began the project in January 2021, I met with counselors and managers of this space, and we soon learned that shadowing families experiencing difficult life situations could trigger re-traumatization by being surveilled on an ongoing basis. In other words, ethnographic research could risk disrupting their counseling, safety, and well-being.

Even though we agreed not to move ahead with our initial fieldwork plan, two counselors wanted to be interviewed to share their frustrations and thoughts about public digital self-service. The counselors also recommended two families who also wanted to share their user experiences of public digital self-services, via an interview in-person. In the Spring of 2021, I visited the offices of the counseling space and interviewed the counselors. After conducting their interviews, each of them drove me to visit a family who had agreed to meet me. For safety and consideration, Covid-19 tests were carried out before meeting in person, and families were provided, in advance, with information about my project as an easy read document, as well as a photo of me.

The participants were two single Danish mothers in their 40s who were parenting neurodivergent children (diagnosed with attention deficit hyperactivity disorder, ADHD). One mother was also diagnosed with ADHD. During the interview, we discussed some of the challenges and benefits of digital self-services. What I learned from spending time with the counselors and two families was that parents and counselors were struggling to help teenagers navigate digital self-services. If teenagers did not check their digital post, parents and counselors had to use the infrastructures on their behalf to make sure they accessed important information in time. This meant that parents sometimes used their children's NemID or digital post and knew their children's passwords. Regulation concerning NemID forbids parents or guardians from impersonating their children, yet through conversations with counselors and families, I learned this was necessary to avoid missing important information. As legal scholar Sofia Ranchordás explain (2021), digital public administration is not forgiving, and mistakes can cost people their benefits or even lead to sanctions. I also learned that digital communication sent by the authorities often included legal and specialized jargon that made certain family members feel insecure or alienated, even if they were proficient Danish speakers.

Even though the family members I met where digitally savvy (they used computers, phones, and tablets daily in their jobs and free time) and spoke Danish fluently, increased digital communication forced family members to rely on help to interpret and respond to the authorities for fear of doing something wrong, or interpreting public letters incorrectly. In this regard, counselors explained that in addition to providing emotional support to families regarding trauma or family conflicts, they often helped guardians and teenagers understand and navigate digital communication sent by the authorities. Misinterpreting official correspondence could lead to dire consequences. For example, counselors explained that some parents receiving counseling had lost the guardianship of their children after local caseworkers deemed them unfit for parenting.

When interviewing counselors and family members there were also examples of digital public infrastructures that simply did not work as expected, such as public websites that repeatedly took counselors or parents to a 404-error page, or digital post letters that arrived in their inbox in the middle of the night, disrupting sleep and causing anxiety (Figure 4). Based on the interviews, I learned that guardians who were users of social support felt digital public infrastructures were an added layer of work and burden on top of their difficult family situations and intricate bureaucratic encounters with public authorities.

Figure 4: A comic strip I made based on interview data composed of three panels. The first panel shows a young woman in her living room, calmly browsing through the digital post system e-Boks. In the second panel, the screen of her smartphone receives a notification indicating a new message in her e-Boks at 4:00AM. The third panel, at 6:00 AM, shows her waking up in bed, reacting to the notification on her phone.

To learn more about why families experienced the public sector as increasingly more bureaucratic, I began to read about civil society's critiques of welfare provision with regards to disability and mental health. In this process, I learned about the grassroots movement *enmillionstemmer* (OneMillionVoices), a group led by disabled people and their families who protest right violations, bureaucratic inefficiency, and increased surveillance experienced by disabled and chronically ill citizens in Denmark (OneMillionVoices 2021). Through international appeals and national protests, the movement echoes the concerns which counselors and family members shared with me. This encouraged me to follow social media and public engagements of the movement, as well as invite members of the movement to collaborate. In my data analysis, I include interview data with two members of OneMillionVoices.

### Site 2. A Public Library Supporting Racialized Communities

In June 2021, I spent three weeks observing the efforts of library employees leading digital inclusion projects at a public library in Copenhagen. An employee working at the library discovered my project on my university's blog and wrote to me on LinkedIn to offer the possibility for a research collaboration. The library employee stressed that many citizens using the library's facilities depended on librarians to communicate with government authorities, private organizations, or to apply for welfare benefits, because infrastructures were not accessible to these library visitors.

The activities I observed were aimed to assist primarily racialized groups, categorized by the library employees as refugees and "non-western migrants and descendants" who lacked fluency in Danish language, public administration knowledge, or computer skills. Library employees funded interpreter services, and several employees were multilingual descendants of migrants, speaking Urdu or Arabic. This enabled library employees to establish trusting relationships with citizens who spoke these languages and who shared similar family histories. At the library, I discovered that individuals with low digital skills, unable to speak Danish fluently, relied on family members, library employees, or volunteers to communicate digitally with the public authorities and private organizations. Digital public letters and online forms are primarily in complex Danish legal language.

During the Covid-19 lockdown, adults who could not be helped by library employees in-person had to rely on their children or partners to handle official correspondence, including the administration of healthcare records, welfare benefits, or online banking errands. When I interviewed citizens who occasionally relied on family members, citizens expressed that seeking help at the library provided a safer alternative. The support library employees offered, allowed them to regain their privacy and autonomy which they felt was lost through digital-by-default services. However, at the library, I learned that relying on help and public computers put individuals at risk of data misuse, privacy breaches, or unbalanced power relations, as not all citizens had a safe community and care networks. Due to risks associated with data breaches and misuse, library employees and volunteers had to disclose a clean criminal record to work or volunteer at the library. Most library employees also had taken short educations in local public administration that enabled them to provide help with inside knowledge of relevant regulations regarding welfare provision and public administration. These measures were articulated by the service manager of the library as necessary to offer qualified, safe support.

Challenges associated with mandatory public digital self-service were, however, not just limited to language barriers or the lack of knowledge concerning digital public administration. Elderly citizens, fluent in Danish, but who were novices in using computers and the web, also expressed vulnerability, as many relevant public and private services were exclusively online. Elderly citizens with low digital skills racialized by library employees as, either "Danish" or "non-western", described the library's services as a critical service to apply for welfare benefits (Figure 5). The support of the library was also an opportunity for visitors to learn how to use computers and smartphones to communicate with family members living abroad.

Figure 5: Drawing from fieldnotes at digital guidance activities hosted at the library. A young woman from Syria sits at a table at the library using a laptop. A library employee stands next to her and helps her resolve questions,

while an interpreter sits at the table to translate Arabic to Danish, and vice versa. Everyone wears a face mask to prevent the spread of Covid-19.

To battle social isolation that some visitors experienced, library employees dedicated time to teach citizens from various backgrounds, how to use public and private digital self-services and offered free coffee and tea. In most cases, employees or volunteers guided citizens through the step-by-step process of applying for welfare benefits or communicating with authorities. Despite the library's impactful activities, a year after my fieldwork, the initiatives were discontinued due to a restructuring of the library's role within the municipality. This situation illustrates how local initiatives that were critical in assisting marginalized citizens were affected by local political undervaluing of this kind of specialized support.

### Site 3. The Danish National Association of Drop-in Centers

During the first months of my PhD project, I was contacted by a project manager at the National Association of Drop-in Centers (Landsforeningen af Vaeresteder) on LinkedIn. Marika Sabroe invited me to interview users of the digital drop-in center (*det digitale værested*), a private Facebook group created during the Covid-19 lockdown by Sabroe and the association, to help users of physical drop-in centers who could not meet in person due to the spread of the virus. I conducted thirteen interviews on the phone. In addition, six users joined me in a study where we co-produced comics and image descriptions about their experiences using the digital drop-in center and public digital infrastructures (Carreras and Winthereik 2023). This collaboration enabled us to make multimodal narratives on the importance of disability expertise, respect, and relations of care and safety in digital and in-person interactions (Figure 6).The collaboration also shed light on how users of physical and digital drop-in centers relied on the association to learn how to access and use digital technologies or navigate frictional encounters of (dis)respect, care, and violence when interacting with public authorities (online and in person).

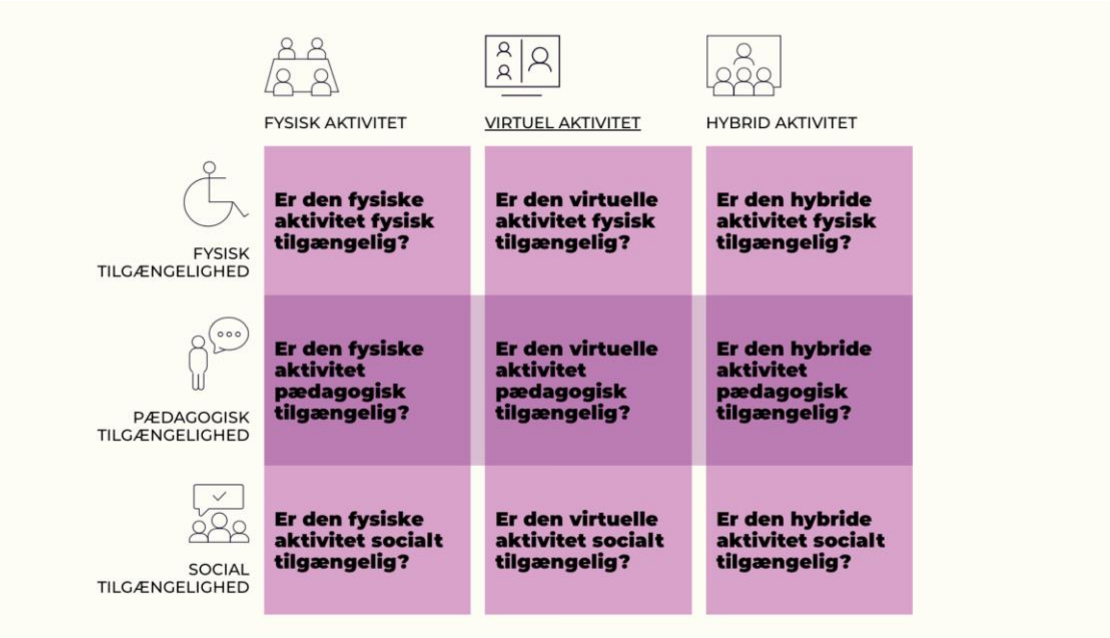
Figure 6: Comic made with Inge Hansen in Carreras and Winthereik (2023). A line drawing of Inge knitting with three friends online. Inge is the narrator of the story: "I am 60 years old, and I come from a small island in

Denmark. I used to deliver mail by bike. Now I am a retiree. I have lost vision in both of my eyes, but I can still knit. When I communicate with the authorities, my husband helps to ensure there are no mistakes on the screen. It is important to have a community when experiencing difficult life situations. As a drop-in center user, I organize weekly meetings with eight others for mutual aid. During our knitting sessions, we confidentially share and discuss our difficulties and sorrows."

### Site 4. Digital Inclusion Events Organized by Government Authorities or Advocacy Organizations

Over the course of three years, I attended thirteen events organized by public authorities and civil society organizations dedicated to digital inclusion. I learned that digital inclusion is a concept or practice that means different things depending on who is using or practicing it. From my observations, I noticed how employees working at the Agency for Digital Government often referred to digital inclusion as solely technology adoption of mandatory public digital infrastructures. In creating network meetings with citizen representatives, including organizations representing racialized, aging, marginalized, and disabled people, the Agency communicated the new digital infrastructures put in place, and provided updates, and changes with regards to digital strategies. These sessions resembled information meetings in which the authorities primarily presented insights on new upcoming systems and changes. In this way, the goal of the meetings was primarily to keep as many citizen representatives informed, so that representatives could create guides and communication materials for citizens to adopt and use mandatory digital infrastructures.

However, when I spoke with disability rights advocates, municipal employees, or advocacy organizations participating in these events, they described digital inclusion as a broader commitment to social justice. For disability rights organizations, digital inclusion was about the inclusion of disabled people in the design of digital technologies across the public and private sector—from education to the labor market, entertainment, culture, and the built environment. At a workshop in the municipality of Albertslund, disability advocates and citizen representatives discussed social, physical, and digital access as interwoven commitments (Figure 7). Inspired by a spokesperson from SUMH (*Sammenslutningen af Unge Med Handicap* or Association of Young People with Disabilities), access was discussed not only for the sake of social inclusion, but also as a way to ensure people with disabilities thrive and feel a sense of belonging across social, digital, and physical contexts (Figure 7).



| | FYSISK AKTIVITET | VIRTUEL AKTIVITET | HYBRID AKTIVITET |
|---|---|---|---|
| FYSISK TILGÆNGELIGHED | **Er den fysiske aktivitet fysisk tilgængelig?** | **Er den virtuelle aktivitet fysisk tilgængelig?** | **Er den hybride aktivitet fysisk tilgængelig?** |
| PÆDAGOGISK TILGÆNGELIGHED | **Er den fysiske aktivitet pædagogisk tilgængelig?** | **Er den virtuelle aktivitet pædagogisk tilgængelig?** | **Er den hybride aktivitet pædagogisk tilgængelig?** |
| SOCIAL TILGÆNGELIGHED | **Er den fysiske aktivitet socialt tilgængelig?** | **Er den virtuelle aktivitet socialt tilgængelig?** | **Er den hybride aktivitet socialt tilgængelig?** |

Figure 7: Matrix of accessibility created by SUMH in Danish. The matrix consists of three rows and three columns. Reading from left to right, the columns represent physical activity, virtual activity, and hybrid activity. Reading from top to bottom, the rows represent physical accessibility, pedagogical accessibility, and social accessibility. The first row, addressing physical accessibility, encompasses three questions that can be summarized as one: Are the physical, virtual, and hybrid activities physically accessible? The second row poses three questions, summarized as: Are the physical, virtual, and hybrid activities pedagogically accessible? The third and final row asks: Are the physical, virtual, and hybrid activities socially accessible? (Accessed at https://sumh.dk/vi-goer/tilgaengelighed/matrix)

The different ways in which government authorities and civil society representatives discussed digital inclusion, helped me learn how, on the one hand, some government representatives adopted medical models of disability, problematizing disabled people through individualizing frameworks of access (Kafer 2013). On the other hand, disability rights advocates and representatives adopted a social model of disability, widely used in anti-discrimination law to critique the social and infrastructural barriers that oppress disabled people and render some ways of being and moving in the world as misfitting (Garland-Thomson 2011).  Those who adopted a social model, often limited questions of inequity to a single axes analysis, leaving out questions of how class, gender, race, and sexual oppression intersect in experiences of access and disability (Hamraie 2013). This was the case of one event where disability rights and racial justice were presented as incompatible, or competing, agendas. To which I asked myself silently: where is the solidarity for our racialized disabled peers?

Government authorities who advanced a social model of disability also promoted inclusion through a neo-liberal framework, in which disabled people could be included and enact self-determination if they were capacitated (Fritsch 2015) to be productive citizens (i.e., if they could have a job). This approach to inclusion is tied to national digital inclusion projects in which capacitating racialized and disabled people to be productive is framed as a key goal of digital literacy projects. Whilst promoting labor participation is not necessarily a detrimental goal, limiting questions of inclusion and access to labor participation can be problematic. This neo-liberal framework has been well examined in critical disability studies as a tool for governing and constructing norms about whose lives are worth taking care of under biocapitalism, white supremacy, and ableism (Fritsch 2015). Limiting inclusion to labor participation is highly problematic as it can debilitate and dehumanize persons who cannot meet the expectation to be productive.

As a necessary alternative, crip theory and activism invites anti-eugenics, anti-capitalist, and anti-ableist politics, in which disability is framed as desirable and one's productivity or inclusion in the labor market does not compromise one's worth or sense of belonging (McRuer 2006; Johnson and McRuer 2014). Crip politics is increasingly emerging in advocacy, scholarly, and activist spaces in Denmark (Dahl and Dammeyer 2023; Eric 2023), however, crip ways of understanding access to digital welfare are yet to be more explicitly explored within digital inclusion spaces led by Danish government authorities and academics. What struck me the most from attending various digital inclusion events was that I never witnessed organizers arranging live caption services, sign language interpretation, or explicit protocols for image description. All events were in Danish, even when some participants attending these events were not speaking the language. Moreover, most of the participatory exercises that I witnessed were primarily visual, using post-it notes and paper. These kinds of exercises were not accessible to blind, or low-vision, participants unless they were assisted by others in the room.

Accessibility within these events was limited to the presence of ramps and wheelchair-accessible restrooms (although there were instances where even restrooms were not accessible). Across online, hybrid or physical events, organizers individualized access. Participants, in particular screen-reader users, were given slides in advanced by the organizers but practices of multimodality (organizing participation through different modes or enabling hybrid participation) were persistently lacking. When I shared these observations with organizers, I was often told, "there's no deaf person participating" or "people get their slides in advance". The most common response was "we will consider this next time", but I did not notice my suggestions being implemented in future events. Even at events organized by my university, I had difficulties convincing event organizers to enable hybrid access so that those who needed it could attend from home (it is important to note, we have all the equipment necessary to host hybrid events). As I observed practices of inaccessibility by government authorities, I was faced with those same practices happening within my university.

## 3. State of the Art

In this section, I outline key discussions regarding the development of welfare in Denmark and how it relates to wider scholarly discussions about digital welfare provision and inequity through technological innovation. This section also provides an overview of theories within comparative welfare studies, critical disability studies, science and technology studies (STS), and intersectional feminist scholarship that have been used to critique neo-liberal approaches to welfare and inclusion.

### 3.1. The Politics of Welfare Provision

In recent years, a growing body of literature in the social sciences has examined the ways governments in the Global North and Global South, implement digital technologies in the delivery of public services and in practices of state control and surveillance (Jørgensen 2021; Khera 2019; Eubanks 2018). Across different geographies and socio-political contexts, scholars increasingly warn that people who experience intersecting forms of oppression across the axes of class, race, sexuality, gender, disability, nation, and other markers of domination, are subject to increased state control, discrimination, and inequality in digital societies (Bell 2023; Nemer 2022; Heeks 2022; Morris et al 2020; Eubanks 2018).

The organization of welfare provides insights into the ways access to services and social protections are structured to serve different segments of the population, and how it produces various forms of social stratification. In examining how welfare provision is delivered through digital means, it is also possible to study ideologies and norms that underpin the design and organization of access to social security and public services, and conceptualizations of citizenship, nation, and democratic participation in digital societies (Isin and Ruppert 2015; Schou 2018).

Drawing upon welfare studies scholar Esping Andersen (1990), I define the welfare state as a system of institutions that aims to protect the health and well-being of its citizens, whilst also producing different forms of social order and inequality. Based on Andersen's work, three welfare regime classifications can help us address how welfare states organize access to social security: the social democratic, liberal, and conservative (1990). Comparative welfare scholars interested in understanding different welfare regimes argue that different welfare states show characteristics from these classifications. Yet, as welfare states evolve in increasingly neoliberal capitalist societies, it is important to understand how political reforms change the living conditions and entitlements of citizens over time, especially with regards to increased partnerships between the state and private organizations.

After the Second World War, welfare reforms in Denmark have evolved to characterize the Danish model as a social democratic welfare state, based on universal access to public services and generous social support (Greve 2004)[6]. The state's generous support to citizens is contingent on the population's high labor-force participation because social provision is primarily funded through taxation. This is what political scientists refer to as the *welfare and work regime* (Goodin 2001). Until the early 1990s, comparative welfare scholars have studied the Danish welfare state as primarily providing generous social security when citizens need it. Childcare support has contributed to the inclusion of women in the labor market. In addition,

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[6] Even though Denmark is often portrayed as an exemplary social democracy and welfare state (Abrahamson 2019), it is important to reckon with its colonial and eugenic past (Hansen 1996). Numerous scholars have written about Denmark's violent forms of state power, including slave trade (Hernæs 2016), eugenics (Hansen 1996), and state violence towards the Greenlandic Inuit, the indigenous peoples of Greenland (Derksen 2022).

financial benefits for students, elderly care, and universal access to healthcare and education have been noted abroad as exemplary forms of sustaining the well-being of citizens (Abrahamson 2019).

In Denmark, entitlements have historically been based on legal residence or citizenship. However, the universality of the Danish welfare state has decreased as neoliberal reforms have reconfigured the Danish welfare state through means- and obligations-based welfare access (Schou 2018), and through the rise of discriminatory policies and bureaucracy. For example, pensions, or early retirement, have become more reliant on a citizen's participation in the labor market (Abrahamson 2019), thus, individuals who have not been able to work due to a disability or chronic illnesses are increasingly underserved by the commodification of welfare benefits. As Peter Abrahamson explains:

> In Denmark, the only poor are those on public support. Rather than integrating poor people back into mainstream society, modern 'poor laws' deliberately marginalize vulnerable citizens and penalize them by demanding that they comply with all kinds of activities and behaviors in return for the 'poor relief' they receive such as attending classes, undergoing practical instructions, sheltered employment or job training and so forth. (2019, 4)

In addition, the state has increasingly embraced public-private partnerships as neoliberalism has permeated the organization of public institutions. For instance, employers offer health insurances for the faster treatment of their employees, creating inequality in healthcare access (Greve 2004). The increased reliance of labor-force participation, in addition to means- and work-tested approaches to social security have resulted in the deterioration of living conditions of disabled and racialized populations, whose access to welfare has become more difficult, dehumanizing, and bureaucratic (Kjær 2022; Falster and Ringø 2023; Abrahamson 2019).

Despite these changes, the Danish state continues to be responsible for managing and providing social security. In contrast, the United Kingdom, and the United States (liberal welfare regimes) provide minimal social provision. Liberal regimes are marked by high levels of commodification and means-tested assistance that often produce stigma amongst welfare claimants. In conservative welfare regimes, social rights are attached to class, religion, and status. Austria and Italy, for instance, have been studied as conservative welfare regimes (Esping Andersen 1990, 27).

Whilst the classification I present is helpful, these typologies serve primarily as an orientation to understand the particularities of the Danish welfare state in relation to other welfare regimes. As Jannick Schou reflects: political reforms in the past decades have changed the universalistic, social democratic model of the Danish welfare state from a *rights-based model* to an increasingly *obligations-based* and *individualized* regime (2018, 9). Disability scholars and political scientists increasingly refer to the Danish welfare state as fitting into a competition or austerity state in which those who are not active in the labor market and who rely on social provision are *discouraged from* or *penalized for* relying on the state (Abrahamson 2019; Kjær 2022). Neoliberal ideals of self-reliance and productivity (being active in the labor-market) have permeated recent welfare reforms and political discourse that were previously approached through a social democratic lens.

Focusing on the implementation of national strategies mandating citizens to serve themselves via public digital self-services, Schou analyzes how welfare and digital reforms in combination are marginalizing those who can’t meet the prerequisite of being self-reliant, productive, digitally savvy citizens:

> [Digitalized] forms of citizenship not only add new layers of normative expectations and conditionality, but also act as *instruments of stratification* [emphasis added]. This reinforces growing trends towards greater inequality and social exclusion and puts into question the equalizing function often imagined to be at the core of social citizenship. (2018, 76)

Schou's analysis is helpful to understand how digital mandates that force people to adopt digital public infrastructures is reinforcing the individualization of access to welfare. Through his dissertation, Schou demonstrates how neo-liberal ideology, digital-by-default welfare provision, and coercive methods to technology adoption produce forms of citizenship that reinforce existing social inequalities and social exclusion. However, whilst Schou's work is essential to understanding the relation between welfare reforms and digital reforms in welfare provision in Denmark, Schou leaves questions of power and privilege in the design, access, and use of digital infrastructures and welfare services largely unaddressed. As the following section will argue, intersectional feminist scholarship is helpful to attend to questions of power and privilege as essential to understanding historical processes of exclusion and oppression. Furthermore, how unequal power structures are reinforced and sustained through welfare reforms, neoliberal ideology, and technological development; changing the conditions that restrict who can access and benefit from digital-by-default welfare provision.

### 3.2. Power and Privilege in the Danish Welfare State

When focusing on the development of the Danish welfare state and ideals of self-reliant productive citizens, questions on the quality of life for those who can't meet these expectations, or who do not have equal access to digital technologies, welfare services, education, democratic participation, and the labor market, are of extreme relevance. According to sociologist Peter Abrahamson, Danish welfare reforms in the past decades have played an important role in pushing racialized, disabled, and low-income welfare recipients into poverty and dehumanizing living conditions (2019). Disability scholars Emil Falster and Pia Ringø have examined how austerity measures and stigma towards citizens reliant on welfare provision in the Danish welfare state has led to the deterioration of living conditions of disabled youth and their families (2023).

According to Black feminist scholar Patricia Hill Collins, the question of *nation* in relation to systems of domination such as race, class, gender, or disability, requires more scholarly attention (2022). Collins defines nation as "a collection of people who have come to believe that they have been shaped by a common past and are destined to share a common future" (294). This belief, Collins explains, is nurtured by common cultural characteristics such as language, customs, a well-defined territory, and closer ties within members of the nation, than with outsiders. Nationalism is then a political ideology that is expressed by any group that self-defines as a distinctive people or nation (2022). In Denmark, nationalist ideology, marked by racism towards migrants who are racialized as so called "non-western migrants" (*ikke-vestlige indvandrere*) and ableist public discourse that defines disabled people as too costly or the "cuckoo's nest" (Falster and Ringø 2023), is setting the boundaries of nation and nationalism that exclude racialized and disabled people from a common vision of welfare and nation.

An intersectional analysis is helpful to understand how within these patterns of inclusion–exclusion, individuals experience different levels of privilege and power, especially with regards to access to welfare. Studies on the digitalization of welfare in Denmark indicate that those who are active in the labor market, have resources, and can assimilate Danish values, language, and digital technologies are positioned at an advantage (Schou 2018; Madsen, Lindgren, and Melin 2022). Yet these studies do not address the systems of power that sustain these forms of stratification through an intersectional analysis, nor they examine the norms that underpin conditional forms of digital or social inclusion. In this regard, comparative welfare studies, migration studies, and critical disability scholarship can provide us with insight.

### 3.3. Tracing Racism and Ableism in Who Gets to Access Welfare.

Against the backdrop of increased migration in 2015, more conservative and libertarian-dominated governments in the Danish Parliament have reduced provisions for people immigrating to Denmark by imposing strict requirements and discriminatory immigration policies, with the aim to guard access to welfare and *deter* low-income "non-western" migrants from *moving to* or *staying in* Denmark (Lindberg 2022). Refugees, asylum seekers, and people under family reunification programs have been severely targeted by discriminatory policies in recent decades (Bech et al. 2017). Moreover, migration scholars have documented an increase in rights violations and dehumanizing treatment of migrant populations in Denmark at detention and deportation centers (Lindberg 2022). Migration scholars and human rights organizations have also critiqued Danish authorities for the forceful confiscation of asylees' jewelry upon arrival (Bech et al. 2017, 9), the pervasive surveillance and policing of migrants, the enforcement of a "ghetto law" that discriminates and punishes racialized people in urban areas (Eika, Blankholm and Suárez-Krabbe 2019), and poor healthcare access provided to asylees at deportation centers (Suárez-Krabbe, Lindberg, and Arce 2018).

Scholars and activists have documented the poor living conditions of asylees in deportation centers, showing how people are deprived of medical care, even when asylees are disabled, chronically ill, or have cancer. This situation leads to premature death and human suffering (Suárez-Krabbe, Lindberg, and Arce 2018). The crowdfunded comic called Kærshovedgård Stories (Figure 8), made by a group of neighbors, former residents, teachers, and artists called Små Broer, raises awareness of these human rights violations.

Figure 8: Graphic Novel by Dora Gents and Erlend Sandøy about the living conditions of people living at Kærshovedgård deportation center, Denmark (2022). Courtesy of the artists made in collaboration with residents

of Kærshovedgård deportation center. Find more stories on Instagram: kaershovedgaard_stories or the graphic novel *Kaershovedgaard Stories* (2023). The drawing explains through text and images: "Since the residents of the camp don't have public health insurance (the yellow card is denied), are denied the right to work (a broom signifying work is crossed over), receive very little money or no money (a bill slips through a person's hand), the responsibility for their health lies with the system that placed them there (a deportation center resembles a prison). And we believe that both the doctor's oath and human rights are being broken when these people's right to medical care is violated."

The problems represented in *Kaershovedgaard Stories* are also present in studies written by migration scholars, who shed light on how Danish politicians and policymakers employ racial classifications, such as "non-western migrants and descendants" (*ikke vestlig invandrer og efterkommere*), fostering public discourses that are steeped in racism and xenophobia. This discourse specifically targets, criminalizes, and marginalizes individuals classified as non-white or Muslim, who are marked as deviant from a western, Christian, and Danish hegemonic norm (Eika, Blankholm and Suárrez-Krabbe 2019; Lindberg 2022). These kinds of classifications not only permeate public debate and migration processes, but also influence changes in welfare reforms and bureaucratic processes. For example, on 13 October 2023, Danish parties including the Social Democrats, the Moderates (center party), Venstre (liberal party), and the Danish Folk Party (national conservative party), passed a new welfare reform that forces some cash benefit recipients *(kontanthjælpmodtager)* to a mandatory job duty of 37 hours per week. Targeting "non-western women" (*ikke-vestlige kvinder*), proponents of the reform agreed that welfare claimants on cash benefits would be forced to "useful jobs" (*nyttige jobs*) such as washing clothes or cleaning public areas in order to access benefits (Beskæftigelsesministeriet 2023). As the Minister of Employment, Ane Halsboe-Jørgensen, put it when the reform was implemented:

> In Denmark, everyone who can, should work and support themselves. It is both fair and most dignified for the individual. It involves both rights and responsibilities. Immigrants, especially women with non-western backgrounds, should feel that they have something to contribute and make a difference. That they have something to get up for in the morning. We are now ensuring this through a work obligation. (Beskæftigelsesministeriet 2023, 9, my translation)

This reform has been criticized by trade union representatives for explicitly targeting and discriminating against impoverished migrant women, as well as increasing the precarity of service jobs, and local bureaucratic processes in public administration (Højlund 2023). Another example is the difficulties that descendants of migrants experience to obtain a Danish citizenship, even when they are born and raised in Denmark. In 2021, the Danish Institute for Human Rights published a report titled *Fremmed I eget land?* (Foreigner in your own country?). The report (Garly Andersen et al. 2021) outlined how descendants of migrants with origins outside Nordic regions, and who have been born and raised in Denmark, must apply for Danish citizenship on par with migrants who have moved to Denmark as adults. In addition, the authors reflect on how the strict requirements imposed can discriminate against racially marginalized disabled youth who may not be able to fulfill language, knowledge, self-support, or employment requirements (Garly Andersen et al. 2021).

These intricate bureaucratic processes not only call into question discriminatory practices enacted by the state but also impact how applicants feel. Based on interview data with 22 interview participants (11 of whom were born in Denmark) people impacted by these policies "[grow] up with a sense of belonging to Denmark", however this "citizenship process [makes them] question their Danishness and…feel unwanted by Danish society" (13). Discriminatory and exclusionary policies to access welfare services or to apply for Danish citizenship, combined with the dehumanizing treatment of refugees and asylees, not only challenge hegemonic discourses of the Danish welfare state as exemplary and "universal for all", but also center the importance of considering how Eurocentric, ableist, and white supremacist nationalism, in combination, *target* social groups who increasingly experience more precarious and stigmatizing living conditions.

With regards to disability and welfare provision, neoliberal discourse and reforms have also put pressure on people who have access to, and rely on, disability benefits. Especially after 2007, the state enforced a reform of local and regional governance in which the responsibility for specialized social services was transferred to Denmark's current 98 municipalities (Kjær 2022). This restructuring in combination with the financial crises of 2008 and subsequent welfare reforms, have led to the loss of specialized knowledge, and to the reduction of disability-centered services. Municipal budgets handling the maintenance of daycares, schools, and long-term care institutions have underfunded institutions specializing in providing care and support to disabled people. Austerity measures have led to the rise of new civic movements such as the disability rights movement *enmillionstemmer* (OneMillionVoices), a citizen group that protests the underfunding of specialized services and violence towards disabled people in Denmark. OneMillionVoices has appealed to international human rights bodies to denounce the Danish state's limited protection of human rights (OneMillionVoices 2021).

OneMillionVoices has documented how the lives of disabled people have deteriorated putting people's personal autonomy, liberties, rights, and lives at risk through neglect, market logics of care and welfare, dehumanizing practices of surveillance, and forced institutionalization (3–4). As social work scholar, Bjørg Kjær (2022), explains when reflecting on the movement and the Danish welfare state: "While the key institutions of the welfare state have been preserved, they have been *hollowed out*, existing as more or less *empty shells* that *no longer ensure the legal rights of vulnerable groups* [emphasis added]." (6)

Concerns regarding the quality of life, rights, and dignity of racialized and disabled people have been discussed by independent rights organizations as well. In 2021 the Danish

Institute for Human Rights reported that disabled people's living conditions have not improved in the past decade, and access to education has deteriorated, as fewer disabled people complete an education (Steffensen and Frandsen 2021, 15). The report also shows that generally more people experience discrimination with regards to "age, gender, ethnicity, disability, long-term health illness, mental disabilities, religion, sexual orientation, appearance, height, weight or partner/child/parent disability" (10). In addition, the report raised awareness on how approximately 6000 people a year (between 2011 to 2020) have been forcibly institutionalized in psychiatric institutions, often with the use of belts and the forceful administration of medication. With regards to ethnicity, the institute found that persons racialized as non-western had 40 percent more chances of experiencing this kind of institutional violence in comparison with those racialized as white Danes, from 2012 to 2021 (13-14).

Considering the evolution of the welfare state with regards to disability, Kjær (2022) discusses that it may be more fitting to describe the current welfare regime as a neoliberal austerity state in which the distinction between productive and non-productive citizens (those active in the labor market and those who are not) invokes new modes of valuing, serving, or neglecting individual and collective rights and needs. Examining the intersections of disability and race, critical disability scholars argue that neoliberal biocapitalism and modern eugenics can put at risk racialized and disabled people, for whom flourishing and living a self-determining life becomes increasingly more difficult as bodies are valued under nationalist, white supremacist, patriarchal, classist, colonialist, imperialist, neoliberal, and ableist logics (Fritsch 2015; Puar 2017). In this regard, anthropologists and STS scholars advocating for intersectional approaches to knowledge production and policymaking argue for the importance of understanding institutional forms of ableism because they intersect with other systems of domination. Within the context of interlocking forms of oppression, American attorney, and disability activist Talila Lewis provides an insightful definition of ableism:

> A system of assigning value to people's bodies and minds based on societally constructed ideas of normalcy, productivity, desirability, intelligence, excellence, and fitness. These constructed ideas are deeply rooted in eugenics, anti-Blackness, misogyny, colonialism, imperialism, and capitalism. This systemic oppression that leads to people and society determining people's value based on their culture, age, language, appearance, religion, birth or living place, 'health/wellness', and/or their ability to satisfactorily re/produce, 'excel 'and 'behave'. You do not have to be disabled to experience ableism. (Working definition by @TalilaLewis, updated January 2022, developed in community with disabled Black/negatively racialized folk, especially @NotThreeFifths)

### 3.4. Ableism and Digital-by-Default Welfare Provision

In recent years, since the implementation of mandatory public digital infrastructures in welfare provision in Denmark, civil society organizations have raised awareness of the increment of bureaucratic processes and accessibility barriers to welfare amongst low-income, aging, disabled, and racialized populations due to digitalization (Ældre Sagen and Epinion 2023; Struve Nielsen 2021; Faye Jacobsen 2017). Paradoxically, digital policies have promised "a more cohesive and efficient public sector that creates value for individuals and for businesses" (The Danish Government, Danish Regions, and Local Government Denmark 2016, 14). But this promise has been unattainable for those needing welfare services the most, and for those who experience disability, class, race, and nation oppression.

As digitalization has increased the barriers that marginalized and vulnerable populations experience to access both private and public services, civil society organizations, relatives, and care professionals admit the need to bend the rules of self-services to help welfare claimants who do not have the means or capabilities to use digital infrastructures and services (LEV 2022). This is the case of parents who have children with developmental disabilities. Parents and care professionals have raised awareness of how they must use the electronic identification of disabled children and adults in order to help them apply for welfare benefits, or access their money, now that most administrative tasks are delegated to citizens. In bending the rules of self-service, which often involve sharing passwords and personal information with relatives illegally (current regulation forbids sharing one's password and username), the state is increasingly delegating the responsibility and labor of access-making to informal networks of care (the family, volunteers, charity organizations, advocacy groups, and other non-governmental organizations).

The delegation of public administrative tasks to the third sector echoes liberal or conservative states, in which individual resources, status, religion, and class play a greater role in who gets access to welfare. For example, in the United Kingdom, human-computer interaction (HCI) scholars that use ethnographic methods have observed how food banks and other volunteer organizations meeting vulnerable groups in person are increasingly helping marginalized individuals, especially to apply for benefits in the context of digital-by-default welfare provision (Coles-Kemp et al. 2020; Morris, Coles-Kemp, and Jones 2020). HCI scholars warn that digital-by-default welfare provision does not simplify access to benefits for those who are most vulnerable, but rather, it increases the complexity of public administration processes (because citizens are expected to do more administrative tasks and be more resourceful to "help-themselves"). In other words, digitalization does not erode the labor of digital administration but instead pushes it towards the private sphere and third sector. This is what e-government scholars Christian Østergaard Madsen and colleagues refer to as turning citizens into accidental caseworkers (2022).

The obfuscation of labor that scholars unveil in digital-by-default welfare provision is not new to STS and HCI scholars. For decades, scholars in the social sciences and computer science have critiqued technological determinism and the unrecognized labor that maintains infrastructures (Star and Strauss 1999). These scholars have argued that technology developers often neglect the labor that is needed to maintain and repair socio-technical infrastructures (de La Bellacasa 2017; Star and Strauss 1999). These studies draw parallels between the exploitative approaches of labor in technology development and wider global and local care chains (Tronto 1993). When the labor of maintenance or care is neglected, there is a risk that such labor would be either devalued, outsourced, or made invisible, and, in doing so, reproduce extractive approaches to labor and power hierarchies locally and globally (Heeks 2022).

An example of exploitative forms of labor in the name of automation or digitalization is the way artificial intelligence projects promoting effectivity obscure data work performed by groups in lesser positions of power, such as, the undervalued and exploitative labor carried out by people in Global South for companies and projects controlled in the Global North (Heeks 2022). Within local contexts, power hierarchies also influence that digital technologies and infrastructures facilitate dominant and privileged groups to perform exploitative labor upon less powerful groups, such as platform workers (Heeks 2022; Floros and Jørgensen 2022).

In the context of welfare provision through digital infrastructures, the Danish state increasingly promotes automation as a solution to cut costs in public administration. However, in doing so, the state falls into the same logics that big tech companies uphold, outsourcing maintenance and access labor to either individuals or civil society organizations. Madsen and colleagues illustrate this situation as they reflect on how digital self-services in welfare provision force citizens to increasingly take on tasks that were previously the responsibility and expertise of caseworkers:

> Digital self-service affects citizens by endowing them with a new role and tasks that caseworkers previously performed. This shift requires citizens, like the traditional caseworker, to acquire new digital and administrative skills to perform the tasks in question. Those citizens who are willing and able to do so are rewarded through increased insight into and faster administration of their errands. The citizens who are not capable, on the other hand, end up in a difficult situation where they are involuntarily expected to act as their own caseworkers and may miss some benefits to which they are legally entitled. (2022, 9)

As the authors illustrate, in dire cases, welfare claimants who do not access help in time or have the resources to be their own caseworkers experience sanctions or even lose welfare benefits. This outsourcing of administrative responsibility and labor increases the precarity of welfare claimants, especially when their access needs such as accessible design and accessible support are neglected. As Morris and colleagues conclude in their study of food banks as spaces that unofficially sustain digital-by-default welfare provision:

> Digital-by-default does not replace the mess of poverty with simplicity and ease for those in poverty, but it does render that mess invisible to the state. That mess is relocated to unofficial spaces of welfare, such as food banks, *who seek to work in ways which return dignity and agency to individuals* [emphasis added]. In doing so they are a vital component of the overall system. Acknowledging and designing for the mess of poverty in digital welfare systems is potentially an important means of reducing digital barriers, rebuilding a sense of self-efficacy and increasing service accessibility and inclusion. (2020, 31)

The extraction of labor that the state enacts when delivering welfare through digital-by-default provision must be explored in relation to access and design. This relation is important as broadening access via accessibility and user-friendly design might not be sufficient to address the ways in which individuals and civil society organizations are exploited in the name of digitalization and effectivity. For this matter, studies interested in digitalized welfare provision must explore access beyond the assumption that access is neutral and a self-evident good. Drawing on STS and critical access scholar Kelly Fritsch (2016), the etymology of the term access reveals its frictional character, as both an opportunity to connect and an opportunity to attack. Within this dual meaning, we can identify the tension of certain processes of inclusion, as one becomes a part of an unjust system (3).

### 3.5. Access as Friction

Coercive forms of digital welfare provision call for the analysis of access as a frictional site (Hamraie and Fritsch 2019; Fritsch 2015) and of technological development as embedded in systems of domination. More than 30 years of literature in the social sciences has documented the ways social and digital inequalities are interconnected (Helsper 2021). A critique of digital divide scholarship has been that intersectional questions have not been appropriately addressed, as well as policymakers' and technology developers' assumption that technological adoption is always beneficial (Heeks 2022). Questions of access to and use of Information and Communication Technologies (ICTs), beyond the dichotomies of information "haves" and "have nots", have been productive within digital divide scholarship to understand social, economic, cultural, and political dimensions of technology implementation and adoption (Selwyn 2004). In this regard, research in critical disability studies and STS can trace how the unequal distribution of access and power replicates through technology adoption (Costanza-Chock 2020; Ellcessor 2016; Goggin 2016; Adam and Kreps 2006; Watling 2011).

Moreover, scholars drawing upon, and advancing, critical theories of race and disability have illuminated the ways digital technologies evoke frictional and political relations that can perpetuate systems of domination, yet at the same time be appropriated by oppressed groups through acts of resistance (D'ignazio and Klein 2020; Nemer 2023). Critical disability scholarship concerned with the frictional dimensions of access to welfare provision show how disabled people relying on welfare benefits become subjects or objects of bureaucratic governance (Kafer 2013; Titchkosky 2020). Disability scholars have illustrated the ways experiences of access in asymmetrical relations of power with the state can imply an experience of violence, through, for instance, forced intimacy:

> Forced intimacy is a cornerstone of how ableism functions in an able-bodied supremacist world. Disabled people are expected to 'strip down 'and 'show all our cards 'metaphorically in order to get the basic access we need in order to survive. We are the ones who must be vulnerable—whether we want to or not—about ourselves, our bodyminds and our abilities. Forced intimacy was one of the many ways I learned that consent does not exist for my disabled Asian girl bodymind." (Mingus 2017b, 3)

Forced intimacy in welfare provision and social work often materializes as the forceful disclosure of one's personal history and health records in exchange for being eligible for financial or disability support. This processes often involve dynamics of re-traumatizaton as people are forced to recount difficult moments in their lives repeatedly in order to obtain the help they need (Yatchmenoff, Sundborg, and Davis 2017). Disability scholars also reflect on how these bureaucratic processes inflict harm on people requesting support, as welfare claimants are subjected to gradations of debility and capacity according to labor-market and racist logics (Fritsch 2015), and to definitions of disability to "qualify" for support (Kafer 2013).

In Denmark, disability activists have documented how disabled people requesting care support at home are subjected to unanticipated visits from municipal caseworkers that surveil them with a stopwatch as they bathe or use the toilet (OneMillionVoices 2021, 4). These procedures are based on the authorities' distrust of citizens and exemplify inhumane measures of how much care or support people are entitled to receive. As the movement clearly outlines in an appeal to The Council Commissioner for Human Rights:

> Monitoring can take place…anywhere from a couple of hours up to 14 days (potentially longer), where the person with a disability is monitored up to 24 hours a day and in all situations of their daily life, including bathing, using the toilet, and sleeping. This inhumane and degrading practice is currently becoming more and more common, with more and more municipalities adopting these invasive and inhumane methods. (2021, 4)

Forced intimacy not only pervades institutional practices, but also the ways data are collected. Social science scholars have shed light on how digitalized welfare access is premised on the exchange of the datafication of personal information, which can lead to digital resignation: "the absence of user resistance despite widespread unease toward datafication" (Bagger et al. 2023, 1). However, for those who can access and use digital technologies, communicating digitally with public authorities can be a way to regain some control over one's casework or privacy, and become a way for welfare claimants to retain their dignity or agency. As Madsen and colleagues (2022) note in their study of digital self-service, applying for welfare services online can enable anonymity if people can indeed use the digital infrastructure from home. Yet, the authors express concerns as not all citizens have the skills and resources necessary to navigate administrative tasks on their own, especially during stressful life situations.

Another important aspect of access that is often omitted from digital divide discussions about digital inequality is the way access is regulated and theorized. In the context of Denmark, despite clear policies aiming to force all citizens to use digital infrastructures in the public and private sectors, there is less attention towards the protection of citizen's digital and service accessibility needs. Indeed, web accessibility guidelines, such as the Web Content Accessibility Guidelines (WCAG), have been included in early policies regarding the design and purchase of information technology systems (Ministeriet for Videnskab, Teknologi og Udvikling 2007). However, legal protections and practical approaches to enforce that private tech companies and public authorities make accessible websites and mobile applications have only been implemented since 2018, with the transposition of the Web Accessibility Directive (EU Directive 2016/2102) to the Danish law (Danish Institute for Human Rights 2018, 12).

When examining the timeline of digital reforms in Denmark, the directive has arrived considerably late. The electronic identification system NemID was first implemented in 2010, and in 2012 policymakers decided to make digital self-services the default way for citizens to communicate with public authorities. The late implementation of digital accessibility regulation in Denmark has put at risk the accessibility rights of disabled people, who have not been sufficiently protected, as public sector services became digitalized. For example, the Danish Institute for Human Rights (2018) found that five years after public digital self-services became mandatory, *less than 57 percent of municipality websites analyzed* by the institute fulfilled the WCAG standards in its 2.0 version (12).

The Danish Institute for Human Rights also found that relevant information offered online, via municipal websites and self-service webforms, was only available in Danish and not in relevant minority languages (Faye Jacobsen 2017, 53). Municipal authorities and citizens have had to rely on Google Translate or limited access to interpreter services, which can incorrectly translate specialized jargon, and consequently lead to administrative errors that penalize welfare claimants. Considering the strategic goal of limiting in-person support and the lack of multilingual digital content, those who are not fluent in Danish have been at a considerable disadvantage when interacting with public authorities and digital public infrastructures.

Moreover, in the past decade, practical recommendations to design accessible infrastructures for disabled people and migrants have been vaguely mentioned in national digital strategies with no mention of multilingual content, nor practical approaches to universal design or web accessibility principles that are essential for digital and service accessibility (The Danish Government, Danish Regions, and Local Government Denmark 2022; 2016; 2011). The lack of intersectional and disability-centered digital policies also reflects a general lack of education and courses in Danish universities dedicated to digital and service accessibility within information technology and design educations. At the time of writing this dissertation, there are no master's or bachelor's degrees or single courses in Denmark that specialize computer scientists or designers in universal or intersectional design, nor digital or service accessibility through intersectional approaches that address gender, class, disability, nation, or race oppression.

Overall, the lack of intersectionality and disability-centered courses in Denmark shows how very few practitioners educated in Denmark have access to knowledge that can support the making of accessible digital products for the diversity of the population. Some electives or courses in higher education in Denmark may collaborate with disability organizations or include readings on digital accessibility or intersectionality (feminist theories applied to design and gender studies are notable examples), yet the inclusion of this kind of knowledge is minimal for a country that is heavily digitalized, and in which digital access plays a crucial part to accessing public services. Other countries in Scandinavia such as Norway, have developed full degrees on universal design, such as Oslomet's masters degree program in *Universal Design of Information and Communication Technology (ICT)*. This example is relevant for academics, policymakers, and practitioners in Denmark. As critical disability scholars have traced, these kinds of educations are important for the development of policies and design practices committed to social justice. As Aimi Hamraie explains in their book *Building access: Universal design and the politics of disability*:

> Legal mandates for accessible design did not solely emerge from activism, nor were independent living movement ideologies prevalent among architects. Rather codes and their enforcement materialized from new fields of research and the social relations between experts who prepared the ground in which new forms of accessibility would later grow and flourish. (2017, 131–32)

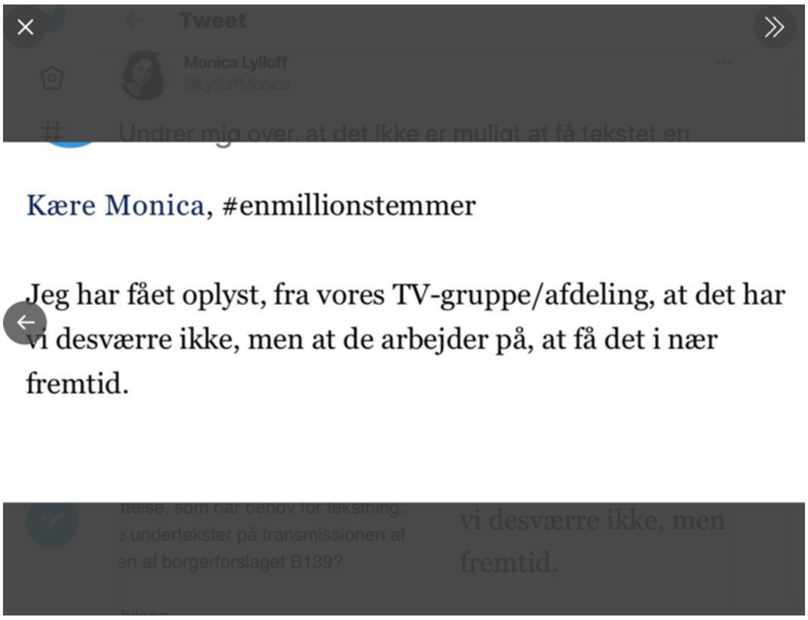
The work of Hamraie has shown how movements in design advanced by historically oppressed groups have been essential for the development of epistemic movements in "privileged sites where knowledge is produced" (2017, 132). As they explain, civil movements and epistemic activism within new fields of knowledge and research have been essential in the context of the United States, for the development of new ways of understanding belonging and justice through legal protections and design practices that challenge and resist hegemonic and exclusionary forms of world-building, knowledge production, and social participation.

When referring to the legislative landscape in Denmark, it is interesting that even though Denmark ratified the United Nations Convention on the Rights of Persons with Disabilities in 2009, legal protections ensuring that private and public organizations provide accessible digital infrastructures and services continue to be largely neglected (Danish Institute for Human Rights 2018). Intersectional disability scholars and disabled activists are critical of web accessibility standards and of anti-discrimination laws, because they can create a passive approach to accessibility, in the form of automated checklists, in which organizations aim to comply with regulation but do not actually invest in designing services and products with communities who need them (Costanza-Chock 2020). However, web accessibility standards or anti-discrimination laws are a first step towards web equality (Adam and Kreps 2006; Ellcessor 2016).

In the quest for web equality, Alison Adam and David Kreps explain that digital accessibility, as an ongoing goal, requires that technology developers go beyond compliance and automated-centered approaches to, instead, "[involving] disabled people much more directly in the design and testing of web sites" (2006, 227). In 2021, the disability rights movement OneMillionVoices defended a citizen petition presented to the Danish Parliament (citizen petition B139). The movement requested the restructure of the disability area from being a responsibility of the municipalities to becoming a responsibility of either the Danish regions or the state. The movement argued that, given that Danish municipalities had made incorrect rulings in approximately 50 percent of cases regarding disability benefits, the municipalities did not have the expertise to be responsible for disability-related benefits or services. As the citizen petition stated: "A large group of people with needs for assistance increasingly experience having benefits taken away, or being denied services that they require and are entitled to under the Service Act" (Folketinget 2021, 2, my translation).

One of the spokespersons from the movement, a lawyer and parent, Monica Lyllof, asked the Danish parliament to provide live captions for the digital broadcast of the petition live-streamed on a digital TV channel owned by the parliament. Citizen petitions are generally broadcasted online so that citizens can access them and follow along. Because the Danish state has no sufficient legal protections for digital access of digital media, the technical team broadcasting the event denied members of the movement who are d/Deaf or hard of hearing, of live captioning or any interpretation of the event. Web accessibility standards offer practical approaches for the captioning of live retransmissions. However, the law at the time did not oblige public authorities to provide captions. Consequently, the digital broadcast of the citizen petition, which was about the lack of legal protections for disabled people, was not accessible to members of OneMillionVoices who needed captions. This situation could have had a different outcome, if the broadcasting team and politicians would have been willing to address accessibility, and consider the recommendations proposed by OneMillionVoices and D/deaf and hard of hearing citizens.

Monica Lyllof tweeted about the situation, and together with an accessibility consultant that I had interviewed some days prior to this event, we drafted relevant accessibility guidelines, explaining why it was essential that the citizen petition was interpreted with sign language and live captions. Members of the movement proposed multiple interpreter services that could have been hired for about 1000 DKK (130 euro) an hour. To our greatest regret, the technical team of the parliament argued that they had no resources to cover the interpretation, but that the team would consider this in the future. An employee responsible for broadcasting the citizen petition wrote the following to Monica Lyllof, which she later posted on twitter (Figure 9).



Tweet

Monica Lylloff

@LylloffMonica

Undrer mig over, at det ikke er muligt at få tekstet en

Kære Monica, #enmillionstemmer

Jeg har fået oplyst, fra vores TV-gruppe/afdeling, at det har vi desværre ikke, men at de arbejder på, at få det i nær fremtid.

Figure 9: Screenshot of Monica Lyllof's correspondence with the TV team that denied live captions (2021). Transcript: Dear Monica, #OneMillionVoices, I have learned from our TV-group/department, that we unfortunately don't have [live captions], but we will work on it, so that we do in the future. (my translation)

Members of the group might have organized ways to interpret the retransmission at home, yet this situation is illustrative of how digital access without appropriate legal protections or a willingness to incorporate knowledge from populations in lesser positions of power, can restrict who gets to benefit from digitalization. Against this backdrop, scholars in Denmark have reflected how despite the law of anti-discrimination in the labor market from 2004, and outside of the labor market from 2018, disabled people's rights are not fully protected because politicians have consistently rejected the possibility to implement the UN CRPD in the Danish law (Furu 2022, 67). In other countries like the US, a stronger history of resistance through civil disobedience and cross-movement civil rights activism has comparatively contributed to stronger legislation such as the American with Disability Act (ADA), epistemic activism in academia (Hamraie 2017), or intersectional disability movements such as Disability Justice (Hamraie 2017; Piepzna-Samarasinha 2018).

### 3.6. The Matrix of Domination and Digital Inequity

Scholars committed to intersectionality and social justice argue that for individuals and communities to benefit from technological development and policymaking, interlocking systems of oppression and inequity need to be addressed in research, policymaking, and technological development. As Ellen Helsper writes in her book *The Digital Disconnect: The Social Causes and Consequences of Digital Inequalities*:

> If societies are fundamentally unequal, and some have more power than others to shape their own and other's lives, and if people are socialized to accept the unequal status quo, then digital opportunity will still mean and unjust social reality. (2021, 193)

Even in countries that offer high connectivity, the unequal distribution of resources and power can perpetuate social and digital inequalities. Denmark is an example of this situation as policymakers continue to promise social, economic, and environmental progress through technological development while omitting the links between class, nation, race, disability, or gender oppression. Against this backdrop, intersectional scholars have documented the value of identifying and examining power relations and differential positions of power and privilege as a way to identify opportunities for cross-movement solidarity and community-led innovation (Roberts and Jesudason 2013).

Black feminist scholar Patricia Hill Collins provides an insightful intersectional analysis of what she coined as the *matrix of domination*, an interlocking system of oppressions that operates and evolves in situated contexts through four distinct domains of power: the structural, disciplinary, hegemonic, and interpersonal (2022, 394). Through these four distinct domains, Collins illustrates the way Black women's subordination in the United States has been sustained through the organization of institutions, policies, bureaucratic procedures, surveillance, as well as the dominance of racist, classist, and sexist ideology that has excluded Black women to exercise full citizenship rights. An important concern for Collins is the way systems of power operate in the ways Black women perceive themselves and experience interpersonal forms of violence.

Acknowledging that individuals are positioned in differential relations of power and privilege within a located matrix of domination, Collins argues that oppressor-oppressed relations require an in-depth analysis that goes beyond constructing Black women, or other subordinated groups, as either victims or heroes. Collins instead proposes a politics of empowerment focusing on the opportunity individuals and collectives have for fostering social justice through marginalized epistemologies, self-definition, and collective forms of liberation. Collins writes:

> The existence of Black feminist thought suggests that there is always choice, and power to act, no matter how bleak the situation may appear to be. Viewing the world as one in the making raises the issue of individual responsibility for bringing about change. It also shows that while individual empowerment is key, *only collective action* [emphasis added] can effectively generate the lasting institutional transformation required for social justice. (2022, 366)

Like Black feminist resistance and epistemology in academia, and within social justice movements, crip scholars and activists addressing the intersections of gender, sexuality, race, disability, and nation, have advocated for an ethics of empowerment rooted in collective forms of liberation and crip ways of being, knowing and making (Johnson and McRuer 2014). Intersectional disability movements such as Design Justice have been fruitful to develop design and activist movements that address interlocking systems of oppression through collective forms of access (Piepzna-Samarasinha 2018; Hamraie 2013; Mingus 2010). An example is Hamraie's exploration of collaborative and multimodal methods in research and design to map accessibility barriers (2018). The performance project Sins Invalid led by queer, disabled people of color also explores artistic and activist projects that address collective forms of access and representation of queer disabled people of color in ways that foster and flourish collective liberation.

The publication *Crip Authorship: Disability as Method* edited by Mara Mills and Rebecca Sanchez also compiles methods and epistemologies that center disability access and intersectional struggles across different formats and ways of producing knowledge that include plain language, image description, decolonial approaches to participatory research and art-based research methods. The term crip in this work is used in a similar way as the term queer: an anti-assimilationist position that reclaims a historically pejorative term as a political identity in which disability is celebrated (McRuer 2006). Crip theory and technoscience also frame disability as a site of resistance against compulsory able-bodiness/able-mindness, and challenges medical models that aim to cure or eliminate disability, and interlocking systems of domination (McRuer 2006; Kafer 2013; Dahl and Dannemayer 2023; Hamraie and Fritsch 2019). These approaches amplify the knowledge and creativity of disability cultures and communities that have historically been marginalized in privileged sites of knowledge production. In this way, offering alternative epistemologies and methods that can support explorations of design, community-led innovation, and social change.

### 3.7. Community-Led Innovation and Extraction

Given the importance of social justice in knowledge production and design, in the past decade design scholars have explored community-led approaches to designing digital technologies, environments, and services (Costanza-Chock 2020; D'ignazio and Klein 2020, Escobar 2018). Anthropologist Arturo Escobar defines design as the everyday practices of tinkering and reconfiguring the socio-technical world (2018). In democratizing design ontologically, scholars and designers have expanded design spaces beyond the traditional fields of study and the normative approaches to whose expertise are valued within existing hierarchies of knowledge and practice:

> As design moves out of the studio and the classic design professions (industrial design, engineering, architecture, and art) and into all domains of knowledge and applications, the distinction between expert and user/client breaks down" (Escobar, 2018, 25).

Undoubtably, people-centered, and participatory approaches to design have been popular and explored in fields such as architecture, service design, and interaction design. In Denmark, participatory design movements, prompted by labor unions, have been noted abroad as exemplary (Frauenberger et al. 2015). Yet, it is important to note that a recurrent critique of design approaches using terms such as "co-creation", "participatory", "people-centered", "inclusive", "community-based" or "universal" has been that practitioners and researchers continue to fall into "performing" inclusion or sustainability, whilst perpetuating colonial or extractive approaches to knowledge-production, design, and participation. Extractive approaches to design are marked by the designer's or researcher's ongoing neglect of asymmetrical power relations, accountability, and shared authority in the processes and methods used to collaborate (Costanza-Chock 2020). Colonial approaches to design and knowledge production are also marked by imposing hegemonic western ways of knowing and designing in the Global North onto communities in the Global South (Mills and Sanchez 2023).

HCI scholar Morgan Ames 'study of the One Laptop per Child program is an illustrative example of how technology developers from the United States imposed the adoption of their computers and socio-technical imaginaries on a population of children in Paraguay, without involving them and understanding their desires, needs and culture (2019). With regards to disability design, HCI scholars Cynthia Bennet and Daniela Rosner illustrate the performative and extractive dimension of participatory design attempts in their study of empathy exercises in design processes used by an established design studio. As the authors examine, designers that use empathy exercises and the expertise and creativity of disabled people, fail to center first-hand experiences of disability and credit their collaborators (Bennett and Rosner 2019). As an alternative, Bennett and Rosner propose practices of *attunement,* where designers and participants of different social positionalities and embodiments can build partnerships based on respect, shared authorship, and accountability. In their own words, to make "room for an affective partnership that may help designers destabilize and reimagine imposed boundaries (e.g., between categories of 'disabled 'and 'designing 'or 'designer 'and 'user')" (2019, 10).

STS and critical disability scholar Ashley Shew critique the disempowering effects of design for disabled people led primarily by non-disabled designers and engineers who impose their worldview and ableist norms onto disabled people and the technologies they build:

> The crux of the problem is that AI designs, like other technologies meant to address disability issues, are often spearheaded by people not deeply embedded in the disability community—people who simply imagine what it might be like to be disabled or elderly rather than base their design on the experiences and needs of real disabled people. (2020, 49)

Exploitation, or even harm, also materializes in research projects where researchers or designers involve marginalized communities in their projects without a consideration for economic remuneration. Intersectional disability scholar Moya Bailey (2015) examines this issue as she explores ways to remunerate the contributions of Black trans women with whom she collaborates. In doing so, Bailey reflects on the extractive practices of researchers who use digital content available online in social media platforms without appropriate consent or remuneration. A commitment to community-led innovation, proposed by design justice scholarship, crip scholars and activists, can advance intersectional approaches to access-making that grapple with political contexts of domination (Hamraie and Fritsch 2019; Mills and Sanchez 2023).

HCI and crip scholars Katta Spiel, Eva Honecker, and Rue Mae Williams (2022) study the ways researchers engage in misrepresentation and violence when describing neurodivergent collaborators through deficit models of disability. From the authors' standpoint, as neurodivergent readers, they reflect on the harmful implications of research that involves neurodivergent adults and children in design and innovation projects that use dehumanizing and harmful language and approaches that undermine the collaborator's agency and dignity. They point out the perpetuation of ableism and systems of oppression within knowledge production. With regards to web accessibility, disability rights activist and podcast host Judy Heumann discussed with digital accessibility consultants Kate Kalcevich and Carrie Morales the ways technology companies extract labor from disabled people to create accessible technology. Their conversation illustrates the importance of protecting the working conditions of disabled people in accessibility and inclusion programs within the tech sector, which often rely on the free expertise of disabled people (The Heumann Perspective 2022).

As these examples illustrate, negotiations of whose expertise, decision-making power, and lived experiences count as valuable are in constant dispute with interlocking systems of domination and technological innovation that promotes community-led, or people-centered approaches. For this reason, activists and design justice scholars claim the important of social justice commitments such as the "Nothing About us Without Us" moto, developed by racialized disabled people in South Africa. This slogan underlies the importance of design, social innovation, and policy driven by communities who are directly affected by design, social innovation, and policy and whose knowledges and experiences have been historically silenced, exploited, or marginalized (Piepzna-Samarasinha 2018).

Critical disability scholars also highlight movements in design such as universal design (UD). UD is a movement rooted in architecture and the work of Ronald Mace, an architect and wheelchair user who pioneered the development of principles to design built environments for the diversity of the human experience (Hamraie 2017). Importantly, critical disability scholars have examined how UD projects have often promoted western, neoliberal, and neutral "design for all" approaches that have left intersectional questions of race, colonialism, sexuality, disability, gender, nation, or class oppression unaddressed in practice. Neutral approaches to the design of architectures, infrastructures, and technologies risk the consideration and design for only dominant subject positions (Hamraie 2013).

As a response, the work of critical access scholars and design justice scholars, in particular scholars linking feminist technoscience with crip studies, has been helpful to understand power structures, ideologies and norms that sustain interlocking processes of oppression and resistance (Hamraie 2017; Hamraie and Fritsch 2019). Design justice scholars argue that universal, people-centered, and participatory approaches to research and design must be examined in the ways in which power and accountability are distributed within and beyond the collaboration. As Sasha Contanza-Chock argues in her chapter *Design Practices: "Nothing About Us Without Us"*:

> Design justice proposes a shift in the unaccountable and deeply inequitable state of affairs in design practice at several levels, including toward a more inclusive professional design workforce, as well as recognition of and resources for community-led, Indigenous, and diasporic design practices. This requires work at many levels, from micro to macro, from individual design projects all the way up to transnational standards bodies. (2020, 100)

### 3.8. Disability Justice and Interdependence

Local and Global intersectional movements within the academy and activism are valuable epistemic sites that can contribute to theoretical understandings of frictional relations within digital technologies and welfare provision. Epistemologies and methodologies within intersectional feminist thought, crip technoscience, and disability justice that consider race, gender, disability, nation, class, and other relations of oppression and resistance are valuable to advance more equitable, accessible, and socially just digital societies. Within recent intersectional feminist scholarship, a growing body of crip scholars are centering the theoretical and methodological contributions of disability justice as a movement, led by queer disabled people of color (Mills and Sanchez 2023; Piepzna-Samarasinha 2018).

Disability justice activism and thought have advanced the importance of relational understandings of personal autonomy and access through the concepts of interdependence and collective access (Mills and Sanchez 2023; Hamraie 2013; 2017; 2018; Hamraie and Fritsch 2019). A shift towards intersectional and relational theories of autonomy and access are valuable to address the *capacity* and *status* of individuals and groups to enact self-determination. In acknowledging a relational and frictional view of autonomy and access, feminists and crip scholars challenge liberal problematizations of dependence as an undesirable condition, and argue that acknowledging a human need to rely on others or care for others is essential to designing more accessible, sustainable, and just worlds. As feminist political scientist Joan Tronto reflects: “While not all people need others ’assistance at all times, it is part of the human condition that our autonomy occurs only after a period of dependence, and that in many regards, we remain dependent upon others throughout our lives” (1993, 162). Feminist relational autonomy theorists and disability justice activists similarly shed light on how ideology that advance individualistic ideals of autonomy and access obscure the ways structural, institutional, social, material, and interpersonal relations sustain unequal power structures, inaccessibility, and domination (Mingus 2010; Mackenzie 2019).

Through the myth of independence, some forms of *interdependence* are normalized, or obscured, as independence, whilst others are problematized as dependence. Access to care labor and assistive technology are illustrative examples. A single parent working full time who can afford the services of a caretaker, may be framed as independent under a neoliberal capitalist logic. Single parents who cannot afford childcare and who need to rely on the state, neighbors, or family members, on the other hand, may be framed as dependent. But in both scenarios the need for care is equal. Similarly, a person with low vision who can afford the use and maintenance of assistive technology, such as glasses or digital technology, can be framed as an independent computer user, whilst those who cannot afford technology, may be rendered dependent for relying on help to use the computer. The status of being independent is contingent on a particular view of the market as a place where people can purchase their independence, either as a service (labor) or commodity (technology).

In the same way market logics influence the dichotomy between those who are rendered independent and dependent, neoliberal forms of welfare and digital inclusion configure some citizens as self-reliant and others as problematic "dependents" (Tronto 1993). Consider how digital inclusion programs, or digital divide literature, promotes training individuals in using and adopting digital technologies. This form of digital inclusion presumably "solves" inequality of access by transforming individuals and encouraging them to bear the labor and costs of using digital technologies. In other words, digital inclusion programs under a neoliberal capitalist logic, first and foremost produce consumers of digital technologies. Within this framework, those who can afford the use and maintenance of technology and can acquire the skills presumed to be needed to become self-reliant computer users, gain the status of being independent.

On the other hand, those who cannot acquire the skills or afford the technology are framed as dependents and costly—in need of inclusion or care work by others. To be included is then to be capacitated or disciplined into embodying a particular ideal of a self-reliant consumer or user; to be excluded is to be problematized as a cost or subject in need of "improvement". The implications of framing access and dependence as problems that need to be solved through the market and technological development are dire. Individualizing autonomy and access facilitate what Tronto describes as *privileged irresponsibility* (1993, 146): those who enjoy more privileged positions in society do not need to recognize or can ignore that their needs are being met more than others. In this position there is no need to challenge the power relations that position them at an advantage.

This is also a trait of neoliberal societies in which individuals are made responsible for their own security (Mackenzie 2019). As a result, relations of collective responsibility and solidarity risk being replaced by relations of individual responsibility and “othering”, where those unable to keep up with individualistic ideals of independence are configured as a burden, or logistical problem “to take care of”. As crip scholars and disability justice activists theorize, the individualization of access is violent and disempowering. It can enhance asymmetrical power relations, feel dehumanizing, and ultimately lead to more unequal and hostile societies (Mingus 2017; Shew 2023).

Through a relational view of autonomy and access proposed by intersectional feminist scholars, it is possible to devise collective and cross-movement solidarity. Rather than framing dependence as a problem, and technology adoption and the market as the solution to dependance, disability justice invites us to embrace a crip politics that “helps us understand how technoscience can simultaneously be entangled with global networks of domination and also provide opportunities for kinship and connection” (Hamraie and Fritch 2019, 12). Interdependence, as an analytical and political tool, offers the possibility of alliances and solidarity that are not based on logistical or charitable models of care, perpetuating asymmetrical power relations. Collective access, instead, emerges as a practice of collective liberation across different positionalities and lived experiences. Access in this way is configured as an opportunity to connect and attune to one another.

# 4. Methodology

To study how individuals and collectives, in different positions of power and privilege, experience access to digital welfare in Denmark, I conducted an ethnographic study across four field sites: a local counseling space for neurodivergent families; a public library supporting racialized communities with digital self-service; a digital drop-in center on Facebook moderated by The National Association of Drop-In Centers; and digital inclusion events organized by the public authorities or advocacy organizations. Each site required different methodological and ethical considerations, which I will describe in the following sections.

## 4.1. My Approach to Ethnography

Ethnography is a widely used method in studies of society and culture, science and technology studies (STS) and related fields, such as computer-supported collaborative work (CSCW) and human-computer interaction (HCI). Employing an open-ended approach to qualitative research, ethnographers conduct participant observations, interviews, and build trusting relationships with the communities they seek to learn from and write about. Ethnography, as a unique approach to data collection, differs from other forms of qualitative research by emphasizing an open-ended exploration of everyday practices. Ethnographers examine the relationship between what interlocutors say they do, and what they practice.

Ethnography allows for reflexivity, enabling researchers to acknowledge their participation and intervention in the social context they study. Intersectional researchers across STS and HCI have employed ethnographic methods to investigate the politics of science and technology. These studies, such as by Nemer (2022), Suchman (2016), and Rosner and Ames (2014), have contributed to design principles and ethical debates which have significantly shaped my methodological orientation and research interests. Specifically, my focus lies in using ethnographic methods to examine power structures within knowledge production and experiences of access to digital welfare in Denmark.

### 4.2. Ethnography and the Unequal Power Encounter

As an approach to qualitative data collection and analysis, ethnography originated in the nineteenth century within the field of western anthropology (Hammersley and Atkinson 2007, 1). In the early days of ethnographic research, European anthropologists would travel to territories in the Global South and write about specific communities and cultures from an outsider perspective. Most of these projects documented communities in the Global South through an imperialist and colonialist gaze and position of power. Scholars have also shown the relations between eugenic projects and anthropology in the nineteenth century (Hansen 1996). The history of anthropology and its connections to colonialism and eugenics has prompted contemporary ethnographers to be critical of its legacy. As Talal Asad explained in the late 70s: “We are today becoming increasingly aware of the fact that information and understanding produced by the bourgeois disciplines like anthropology are acquired and used most readily by those with the greatest capacity for exploitation” (1973, 16).

Historically informed ethnographers committed to social justice, grapple with the legacy of western anthropology and ethnography, which has contributed to the hegemony of Eurocentric Western epistemologies and colonial power (Allen and Jobson 2016; Fúnez-Flores 2022). To counter systems of domination, misrepresentation, and violent forms of knowledge production today, decolonial and intersectional ethnographers study and partner with communities in the Global North and Global South, addressing the colonial, ableist (Durban 2022), and imperialist legacy of the field, its theories, and its methodologies. This body of work informs my ethnographic approach, as some of the communities I invite to participate in this project experience racial discrimination, ableism, poverty, stigma, and state control.

Reckoning with ethnography as an intrinsically unequal power encounter has enabled me to address ways to reflect upon my own biases and privileges. It has helped me find ways to share authority and avoid falling into disempowering, or extractive research collaborations. Decolonial and intersectional theory is valuable in my project as it helps challenge the researcher-researched dyad by proposing a more equitable and collaborative research partnership (Hong 2021). Questions on who takes part in research projects, and how collaborators are credited, or how they benefit from research are therefore essential dimensions (Wernick 2023).

My PhD project is part of the SOS project. This has meant that initially my study was defined within a traditional researcher-researched dynamic. Given my interest in finding ways to share authority, I addressed within the first months of this project, ways to share authority and find relations of reciprocity while I planned my ethnography with collaborators. My ideas and considerations were received with an open mind by my supervisors. Members of the SOS project and partners were flexible and supportive of my methodological choices.

### 4.3. Gaining Access to Different Field Sites

During the initial months of my study, I was in dialogue with the principal investigators (Brit Ross Winthereik, Margunn Aanestad and Åsa Makitalo) and partners of the SOS project, including representatives from a counseling space for neurodivergent families and the Agency for Digital Government. Through several meetings, we discussed how to carry out the project. These partnerships were established before I joined the project and, as I began to negotiate access to conduct fieldwork and interviews, we decided that the counseling space (the initial primary site of this study) was not a space for observations due to the vulnerability of families using these services, especially during the Covid-19 pandemic.

As I described in the introduction, I conducted four interviews and visited the counseling space's facilities for one day, but I did not intervene further in this social context in order to reduce any harm my presence could cause to families who need the services. With regards to our partnership with the Agency for Digital Government, and based on open dialogue with employees working at the Digital Inclusion division, we initially decided that I would primarily focus on conducting participant observations at their digital inclusion network events. Given the SOS project's research goals, and my focus on understanding individual and collective experiences of access from the perspective of citizens, we decided it was relevant to engage more directly with civil society organizations than with the Agency. (Another approach could have been to study the work practices of the Agency for Digital Government, this could be an idea for a separate PhD project.)

Given that my main research site, the counseling space, exposed certain risks to the well-being of its users, I found other spaces in which I could conduct fieldwork that would benefit those involved. Through our university's blog, I described our project and posted information about my study on social media to reach out to organizations. The communications department of my university was very supportive, in particular Jari Kickbusch, who wrote a blog post about the project. Through LinkedIn, Kickbusch's post reached two project managers, one from a public library (*Biblioteket Frederiskberg*), and another from the National Association of Drop-in Centers (Landsforeningen af Vaeresteder). Both Anna de Boer (working at Frederiksberg library, at the time) and Marika Sabroe (project manager at The National Association of Drop-in Centers) offered me the possibility to establish a research collaboration.

In anthropology, they would be considered *gatekeepers,* as they facilitate the possibility for me to be part of their activities and meet citizens that the institutions supported. The project managers were also part of the Agency's network for digital inclusion and are both advocates for more inclusive approaches to digitalization. As we became partners and I learned about their work supporting marginalized people, the project managers were involved in shaping my methodological approach, providing advice with regards to the accessibility and safety (language or access points for virtual and physical meetings). The project managers were also supportive in helping me find ways to interview users of digital guidance services at the library or within the digital drop-in center, in ways that would not be harmful or intrusive.

Following principles from decolonial and participatory action-research, I designed interviews or observations in collaboration with library employees and employees working at the National Association of Drop-in Centers. When deciding how and where I would collect data (field notes or interviews), I involved citizens using the services of the library or the association. Because these spaces support racialized, marginalized, or vulnerable communities, such as people experiencing social anxiety, state surveillance, or discrimination, it was essential to attend to respectful language and relations of reciprocity to avoid reproducing stigmatizing language through my research. In this regard, I actively sought to mirror my interlocutor's language and rejected terms such as *research subject*, and instead referring to my interlocutors as *research collaborators* (Hong 2021; Green 2015; Bailey 2015). In addition to considerations with regards to language and agency, I also prepared and planned my study by drawing on harm-reduction approaches to research and the principles of reciprocity, attunement, multimodality, and flexibility.

### 4.4. Attuning and Forging Research Partnerships

Because I am interested in understanding how individuals and collectives of different social positionalities, bodyminds, and ways of being, experience access to digital welfare, it was essential for me to delve into intersectional disability culture and multimodal communication advanced by crip activists, scholars, and artists. This involved a considerable amount of preparative work to learn about accessible and respectful research practices. I started by familiarizing myself with the Web Content Accessibility Guidelines (WCAG)—technical guidelines helpful to create accessible digital content and documents. I took an online course created by the W3C Web Accessibility Initiative (WAI) in cooperation with the United Nations Educational, Scientific and Cultural Organization (UNESCO) Institute for Information Technology in Education (IITE) called *W3Cx: Introduction to Web Accessibility.*

I had no prior experience with principles and practices of web accessibility. This free course available online helped me learn about relevant web accessibility principles, adaptive strategies invented by disabled people to navigate the web, and relevant assistive technology such as screen readers. Additionally, I explored local and international disability communities, respectful language (in both Danish and English), adaptive and activist practices in technoscience, accessible pedagogy and research, trauma-informed research and design, and multimodal communication in practice, such as the projects *Disability Visibility*, *Alt-text as Poetry,* and *Art Beyond Sight*. Acquiring this foundational knowledge (and continuing to learn from disability activism and scholarship through both social media and academic communities) has aided me in conducting participant observations, interviews, and collaborative projects while attuning to different research collaborations, spaces, and bodyminds.

Conducting this study has entailed a process of both professional and personal transformation. Informed by crip epistemologies (Johnson and McRuer 2014) and the situated knowledges of those who have agreed to collaborate with, and welcomed, me, this learning process has helped me reflect upon my own relations to disability identity and community. While I had been exposed to art-based counseling and disability-led community spaces in Spain (where I grew up), I was not part of Danish activist circles, or international scholarly and activist spaces, which advance intersectional disability movements. Early on in my project, I reached out to scholarly and activist spaces in Denmark and abroad. Two spaces, in particular, helped me design my research. First, an online summer school, Digital IDEAS, held by the University of Michigan, and moderated by Marie Olson in 2022. This community of scholars opened a world to me of alternative pedagogies, virtual participation, live captions, image description practices, art-based research methods, and intersectional disability communities. Being part of this summer school, I learned of the importance of community guidelines, frameworks of access as acts of love and solidarity (Mingus 2018), and the importance of check-ins during online meetings or seminars.

I was confronted by my own conflicts with regards to my social positionality and research commitments, as I attempted to describe myself visually for the first time, and grappled with ways to articulate my disability, racial, and gender identity. Secondly, the space of the Bevica Foundation’s ’Universal Design PhD and postdoc network has informed my design of methodologies. Being part of this network, I was able to meet disability scholars and activists in Denmark who helped me find relevant literature and reports by civil society organizations. I also found a community of disabled, crip, queer, and non-disabled allies who shared a commitment to disability and social justice. Participating in their seminars, I could compare practices of access and different ways of talking about disability, tracing how disability activism in the United Kingdom and the United States was informing, or conflicting with, crip activism and solidarity in Denmark. For example, most disability activism in Denmark is predominantly middle-class, white, and heteronormative, which meant that the intersections of race, class, disability, sexuality, and gender were sometimes unacknowledged within disability rights spaces. The network provided a space in which I could discuss these observations with other scholars who share an affinity for intersectional forms of access and social justice. In the process of preparing to conduct research that was accessible and respectful, I was surprised to find that web accessibility and disability culture had been largely absent from institutional diversity and inclusion debates in Danish universities.

As I sought PhD courses on web accessibility or disability culture, I learned quickly that there were no such courses available in Denmark. Regrettably, diversity and inclusion projects in higher education in Denmark have often focused on individualizing access and framing questions of access through a single axis framework of gender (binary) inclusion. In seeking allies across Danish universities, I met anthropologist and diversity specialist Valeria Borsotti, who was writing her PhD dissertation about this issue, but within the context of computer science educations in Denmark. In her dissertation, Borsotti attends to how racist, ableist, and heteronormative language and humor pervades university contexts in Denmark and creates unsafe spaces for marginalized students and faculty who are confronted with sociotechnical artifacts, such as ableist language, offensive songs, and inaccessible and sexist toilets (Borsotti and Bjørn 2022).

Given the landscape within academic circles, together with colleagues from the ETHOS lab and the technologies in practice research group, I helped to co-organize two PhD courses in which we collaborated with crip and decolonial scholars and disability advocates in Denmark and abroad.[7] These interventions were essential to designing my methodology and research philosophy, as I was able to share my doubts and thoughts, and learn from crip and decolonial scholars and activists who participated in these learning activities.

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[7] We organized a course called *Feminist and Postcolonial STS* with Anne-Sofie Lautrup Sørensen, Caroline Anna Salling, Simy Kaur Gahoonia, Katja de Neergaard, Katrine Meldgaard Kjær, and Rachel Douglas-Jones. We invited Michelle Murphy, Baki Cakici, Brit Ross Winthereik, Laura Na Blankholm, Katrine Meldgaard Kjær as guest lecturers. For a second PhD course, *Critical Participatory Research and Design*, co-organized with Lara Reime, Camilla Vesterberg Christensen, and Joanna Saad-Sulonen, we invited Laura Forlano, Jesper Bentil Holten, Katrine Meldgaard, Katta Spiel, Joanna Saad-Sulonen and Line Henriksen as guest lecturers.

### 4.5. Multimodality, Shared Authority, and Remuneration

The etymology of the word 'ethnography' reveals the combination of the Greek words *ethnos,* denoting "people" or "nation", and *graphia,* signifying "writing". An ethnography involves the practice of writing a description of a people. It is an analysis of situated lived experiences, social practices, norms, power relations, discourses, conflicts, and cultures. In addition to writing, many ethnographers have explored the creation of multimodal and collaborative ethnographies through films, contact movement, sound productions, photographs, or drawings (Hong 2021; Balasubramanian 202; Dix, Kaur, and Pollock 2019; Pink 2011). Seeking collective forms of knowledge production, as opposed to individual ones, and blurring the divide between researchers and those being researched, differs from ethnographic multimodal explorations, which do not aim at collaboration, but rather explore or submit to technological novelty (Takaragawa et al. 2019). As visual anthropologist Emily Hong explains, even in cases where collaboration is promoted, some multimodal projects can fail to address the asymmetries of ethnographic collaborations by failing to share authority and credit (2021).

Multimodal ways of producing knowledge that aim at respectful and reciprocal partnerships have inspired my research design. I use drawings and image descriptions as a way to analyze experiences of access and disability in my individual analysis, as well as in analytical partnerships with research collaborators (Carreras and Winthereik 2023). These explorations enable me to share my analysis with research collaborators, or engage in writing or drawing projects to share authority and power, and work towards open-endedness and multivocality (Hong 2021). Furthermore, multimodality was essential to creating consent forms that were accessible to different collaborators. For example, I prepared forms that were either accessible through screen-readers, or I made easy-read documents for collaborators who preferred plain language and visual information (Figure 10).

Tak fordi du vil du deltage i et kort interview om dine oplevelser med at bruge digitale teknologier!

Jeg hedder Barbara. Jeg er studerende ved IT-universitetet i København. Jeg er en del af en forskningsgruppe, der hedder SOS projektet.

Jeg undersøger, hvordan borgere får hjælp fra kommunen gennem digitale teknologier: NemID, Borger.dk, Digital Post, Aula eller andet.

I interviewet vil vi snakke om nogle billeder og om dine oplevelser ved at bruge digitale teknologier.

Interviewet kan vare 15 , 30 eller 45 minutter. Du bestemmer hvor langt interviewet skal være.

Jeg vil allerførst spørge dig, om jeg må lydoptage vores samtale. Det vil hjælpe mig med at huske det, vi har talt om, og skrive om det, du bestemmer. Jeg vil bruge citater uden dit navn på offentlige kommunikation samt publikationer, der giver forslag til forbedring af digital kommunikation lavet af det offentlige.

Figure 10: Consent form page 1 of 4. The form was reviewed by the legal department of my university. Inspired by Easy Read documents made by the organization ChangePeople.org, I created this consent form as an alternative to the existing text-heavy form. Visual ease is not accessible to all collaborators but having this format was helpful when introducing the project to certain collaborators who preferred alternatives to lengthy text documents. The visual form summarizes different parts of the interview through colorful and simple illustrations and plain Danish language (font size 14 points). There is a photo of Barbara, and of the Atrium of the IT university of Copenhagen, a modern building made of glass, to offer a more personal context.

I spent time planning with research collaborators how to gain access to different social contexts that I was interested in understanding better. I decided with research collaborators how I would conduct interviews or participant observations, where I would not conduct observations, and where I would not audio record interviews. This meant that the micro-ethics of the study were contingent on the context and individual preferences of each collaborator. Research collaborators whom I spent time with creating comics and image descriptions were remunerated financially for their contributions. Collaborators were also invited to be co-authors of the comics that I created with them (Carreras and Winthereik 2023).

In hindsight, it would have been better if all the people I interviewed and collaborated had been financially compensated, especially in cases where participants experienced financial difficulties. However, this is not yet a common practice at the IT University of Copenhagen, and it was not anticipated by the SOS project or myself as a key dimension at the outset of my study. Another way to plan the project could have been to adopt a critical participatory action research (CPAR) approach, where grassroots organizations that offer critical digital and in-person support to citizens, such as local drop-in centers and grassroots citizen groups, could have received financial support to lead a research project in collaboration with us, the researchers. Laura J. Wernick explains:

> At its best, CPAR is research that is rooted in and led by those most affected by the issue being researched. It fundamentally shifts power from the outsider (e.g., an academic, government organization, or policy institute) to the insider—those who know and experience these systems. Collective action is embedded in all parts of the research: naming the problem or issue; developing the research questions and methods; using the data collection (qualitative, quantitative, autoethnography, photovoice, etc.) to say we are here, this is our story, these are our lived experiences; and building power. (2023, 102)

A financial scheme following a CPAR for research is not yet common practice. Scholars primarily rely on the individual credit and prestige that funding projects provide to secure a long-term position within the university. Sharing resources with grassroots organizations outside the university challenges the neo-liberal ways in which the university and research are financed. Against this backdrop, one way to balance how knowledge is commodified and individualized is to budget for the financial compensation of research participants or collaborators in marginalized positions, as partners. This setup might be more viable within the current financial models at play. In doing so, it shares authority and resources with collaborators and avoids exploitative forms of free labor. These considerations are especially important in cases where people under the poverty line, or disabled people, are asked to test designs and inform the making of patented software without meaningful credit nor remuneration. At the time of writing, the Agency for Digital Government has a panel of citizens that volunteer to test public digital infrastructures made with the private sector (for which I recently signed up). The existence of discrimination towards marginalized communities in the labor market require us to think of this kind of volunteer labor critically.

### 4.6. Autoethnography and Writing Collaborations

In addition to research collaborations, my analysis also draws on short autoethnographic fieldnotes about my experiences of using mandatory public digital infrastructures, or of participating in digital inclusion conferences. Autoethnography enabled me to reflect in writing about my social location and participation in the field, how it made me feel, what I found surprising or relevant, and what I found difficult to understand (Muncey 2010). Following feminist and crip scholars who use autoethnography (Forlano 2017), writing autobiographical accounts during fieldwork was valuable to situate my role and affective responses in producing knowledge, as opposed to trying to hide behind a promise of disembodied, neutral objectivity (Haraway 1988). My drawings and image descriptions also communicate these dimensions, as I chose how to represent situations during participant observations.

At times during fieldwork, I wrote down my experiences of participating in digital inclusion conferences and encountering difficulties to access mandatory digital infrastructures in public administration. Writing reflections about my experiences of attending digital inclusion conferences was insightful to reflect upon different social, affective, or material barriers that research collaborators and I similarly encountered, even from differential positions of power and privilege. In the third article of this dissertation *Towards Digital Accessibility*, my co-authors (Jesper Bentil Holten, Leif Hemming Pedersen, and Frederick Gybel Jensen) and I used autobiographical excerpts from our work practice to discuss and theorize digital accessibility in Denmark as a social justice commitment. Through this writing collaboration we mixed ethnographic and autoethnographic accounts based on our work practices to find a common vocabulary to discuss digital access in the Danish context from the perspective of media studies, speech therapy, disability rights advocacy, and crip technoscience. This writing collaboration was helpful to understand digital accessibility in the Danish context, as it is a topic that has not received enough scholarly and political attention within Denmark (Carreras et al. 2023). Writing this article was also a way to build alliances with disability scholars in other fields, as well as disability advocates in Denmark.

Writing short autoethnographies was also valuable when I attended a digital inclusion network meeting organized by the Agency for Digital Government on 26 April 2022, where a designer developing the electronic identification system MitID explained to a room full of citizen representatives that only weak citizens, *svage borgere*, were experiencing difficulties to "migrate" to the new system during that period. At the time, the roll out of the system had been criticized by advocacy organizations and journalists for being confusing and for putting pressure on relatives, civil society organizations, public libraries, and citizen service centers that were helping many citizens to obtain MitID. Initially, only persons with a Danish passport and smartphone with Radio Frequency Identification (RFID) could obtain MitID from home. People without a Danish passport or a smartphone that could not scan the RFID tag on their passports had to request in-person support. Because I am an immigrant with permanent residence, and I do not have a Danish passport, I had to wait for a letter from my bank to arrive at my digital post (e-Boks) before I could book an appointment at the citizen service center to obtain the MitID. The designer's remark at the digital inclusion event, referring to people like me as "weak", struck me as an example of how discourses promoting the individualization of access can obscure infrastructural barriers while creating deficit labels and shame on an individual level (which I experienced first-hand during this meeting).

This experience, in combination with articles by critical disability scholars on the individualization of access and its affective consequences, prompted me to pay attention to the ways research collaborators subverted or submitted to deficit labels within digital inclusion debates. This became an important dimension to the study of digital welfare. Considering my active participation in the field asking questions and participating in different events and social contexts, writing memos, or short autobiographical texts, have been key for me to document and account for my representational power, privileges, ethical commitments, conflicts, affective responses, and biases.

## 4.7. Ethnographic Data

My analysis draws on semi-structured interviews, informal conversations recorded as fieldnotes, fieldnotes produced during participant observations, collaborative writing projects, comic-making workshops, and archival materials collected between January 2021 to June 2023. To manage and store the data which I collected or co-produced with research collaborators, I have followed the General Data Protection Regulation (GDPR). I also made sure to inform collaborators about my project and asked for consent to use their statements or data in this dissertation, at conferences, in articles, or presentations. In cases where I could record interviews, the transcripts are pseudo anonymized and stored securely, adhering to university guidelines. Below I provide an overview of key participant observations (Table 1) and key research collaborators.

***Table 1 Overview of Participant Observations***

| Date | Description | Organizer | Hours |
|---|---|---|---|
| March 2021 | Virtual Digital Inclusion Network Meeting | The Danish Agency for Digital Government | 2.5 |
| June 2021 | Virtual Web Accessibility Network Meeting | The Danish Agency for Digital Government | 1 |
| June 2021 | Digital Inclusion Activities | A Danish public library | 34 |
| June 2021 | Digital Public Sector Conference | Local Government Denmark | 5 |
| March 2022 | First Digital Inclusion Conference | The Danish Agency for Digital Government | 7.5 |
| April 2022 | Digital Inclusion Conference: *The Way Forward* | The Danish Association of the Blind | 3 |
| April 2022 | In-Person Digital Inclusion Network Meeting | The Danish Agency for Digital Government | 6.5 |
| October 2022 | Public Debate: *The Digital Underclass* | Danish Newspaper, Politiken | 3.5 |
| November 2022 | Citizen-Centered Digitalization Workshop | The IT University of Copenhagen and the Danish Institute for Human Rights | 3.5 |
| May 2023 | Workshop on Digital, Social, and Physical Accessibility | Albertslund Municipality | 3 |
| May 2023 | Workshop on Digital Inclusion: *National Principles made by civil society organizations and public authorities* | The Danish Agency for Digital Government, The Danish Regions, and Local Government Denmark | 7 |
| June 2023 | Virtual Web Accessibility Network Meeting | The Danish Agency for Digital Government | 1.5 |
| June 2023 | Conference *Everyone is talking about digital inclusion – now we must find the solutions* | Dansk IT | 5 |
| | **Total hours spent** | | **83** |

*Table 2. Overview of Research Collaborators*

| Participants | Number |
|---|---|
| Digital Accessibility Consultants working with the Danish Agency for Digital Government | 4 |
| Representatives from the Danish Association of the Blind | 2 |
| Library Employees creating and managing Digital Inclusion Activities for racialized communities | 5 |
| Citizens assisting digital inclusion activities at the library and requesting interpreter services | 4 |
| Library Volunteers supporting citizens with the use of digital technologies | 2 |
| Interpreter working at a Danish public library speaking Danish and Arabic | 1 |
| Lawyers providing free legal aid | 2 |
| Members of OneMillionVoices (disability rights movement) | 2 |
| Public Counselors supporting neurodivergent families | 2 |
| Parents using counseling services | 2 |
| Users of the digital drop-in Center | 12 |
| Seller of the newspaper *Husforbi* and advocate for the rights and wellbeing of homeless people | 1 |
| Project manager of the digital drop-in center and the National Association of Drop-In Centers | 1 |
| Lawyer at *Ældre Sagen* (The Dane Age) | 1 |
| Digital consultant working for the public sector | 1 |
| **Total collaborators** | **42** |

## 4.8. Data Analysis

Analyzing ethnographic materials involves different levels of abstraction and relational work. Ethnographers make sense of what they learn and write about through existing theories and concepts (deductive approach), or by creating concepts from their data through interpretative abstractions (inductive approach). As feminist grounded theorist scholars reflect (Clarke, Friese, and Washburn 2017), the analysis of ethnographic materials often combines inductive and deductive approaches because researchers arrive at their analysis with pre-existing knowledge and experiences that influence the choice of concepts, focus, questions, and frameworks. My approach to data analysis involved an abductive process in which concepts have guided my analysis, yet I remained open to the concepts and themes that I developed as I read and interpreted ethnographic material or discussed concepts and findings with research collaborators. Coding and collecting data, as a process, has been iterative until I could more concretely define what my empirical data was a case of.

### *4.8.1. Coding data Iteratively on Nvivo*

Through an iterative process I compiled and thematically coded archival materials, fieldwork summaries, or fieldnotes, drawings, and interview transcripts on Nvivo, a software for qualitative research analysis. My coding process followed a step-by-step coding process inspired by Lichtman's comprehensive guide (2013):

1. Line-by-line open coding: reading materials and labeling data through "In vivo" codes (taking a word or phrase from the transcript/report as a code) or more abstract coding. For instance, I labeled a sentence from a report by civil society explaining increase discrimination towards disabled people under the code "increased hostility towards disabled people".
2. As I gathered different materials and added them to my Nvivo file, organized in folders by author or site, I revisited my codes and removed redundancy—merging codes that signified similar concepts. In this process I also began to draw relations and organized codes under categories. For example, I organized codes such as "web accessibility", "user involvement", and "safer space" under the category of "service accessibility".
3. As I added new reports, interviews, maps, comics that I drew with collaborators, or findings from observations to my Nvivo file, I revised my codes and categories. Here

I began to focus on issues present across different sites such as “importance for in-person support”.

4. Reading literature about feminist relational autonomy, crip technoscience, and intersectional disability studies helped me to revise grounded codes and categories and create themes that could help me define what my data was a case of in relation to existing scholarly discussions. Some of the themes I created in this process are: “autonomy alliances”, “service accessibility”, “digital accessibility”, “compulsory digital-self-reliance”, “unforgiving infrastructures”, and “digital competent citizen”.

This process helped me develop concepts and lay out situated ways in which different actors develop theories and practices of access.

### *4.8.2. Making comics and image descriptions*

In the process of coding my data, I kept asking: what is my study a case of? What are collaborators feeling and struggling with the most, and what needs my attention? As I went through my data, codes, and interviews with collaborators, I began to draw stories about access, focusing on the affective dimensions of access. At the library, I had already used drawing to visually document how groups of people used a computer to carry out a public administration task collectively, as opposed to doing so individually. The act of drawing was helpful in my fieldwork to document my observations, which I could later revise and describe in writing. This approach was also a valuable alternative to taking photographs—less intrusive than, and it kept the identities of people I met through fieldwork anonymous.

Having been an illustrator for a long time, drawing as an analytical method was generative and in tune with the way I think and lay out ideas. There are equally meaningful experimentations available for those who find non-visual information more generative

(Ballestero and Winthereik 2021), as I have witnessed with my fellow researchers who use sound recordings or experiment with different genres of writing as alternative forms of analysis. In my case, however, using art-based research methods during fieldwork were generative to focus not only on the practices I witnessed, but also on the relational and affective responses that fieldwork evoked in me and my collaborators. To seek ways to speak of very painful experiences with compassion and care, and to highlight moments of solidarity, joy, and pride.

Within my interviews or field notes not all relations of access were experienced as liberatory or promoted self-determination. Some relations of access felt intrusive, painful, and disempowering. This was the case at the library, counseling space, or drop-in center where collaborators explained to me that asking for help to use digital self-services could make them feel vulnerable, as not everybody had a trustworthy network or family configuration. Drawing enabled another way to express a range of emotions that came with different experiences of access. Drawing these stories also helped me realize the importance of image description when I began to share these comics with blind colleagues and friends. Writing image descriptions asked me to be critical of my choice of words and representational power (Bennett et al. 2021). It also invited me to seek collaborative forms of image description (Figure 11)

Figure 11: Comic made with Ann M. Steengaard. A line-drawn comic shows Ann, a plus-size woman with big eyes and curly hair. Her skin is light. She wears comfortable clothes and big square glasses. A Lino print with a leaf pattern begins the story, which is titled *Hope*. Ann's hands are creating a Lino print with the same leaf pattern. This pattern comes to life and swirls around Ann as she looks forward. A text reads, 'I'm Ann, a curious 49-year-old woman who loves violet and green. Thanks to the digital drop-in center, I discovered that I am still capable of doing many things. I can still put my knowledge and creativity to good use. I realized that my complex mind isn't the only one in the world and that I am perfect just the way I am in my imperfect body. 'There is an image of Ann on a video call with other people using the digital drop-in center. A group of seven people of different ages appear on a screen. They all seem very attentive to what Ann is saying. On the video call, Ann is asking, "Ready for Lino printmaking?" In a different moment in time, Ann is closing her eyes and breathing calmly. We see a drawing made by Ann: a labyrinth drawn by her that resembles various crochet and knitting patterns. A closer view of

Ann's big, bright eyes shows that she is hopeful and confident. Her facial expression communicates tenderness and joy.

## 5. Summary of Articles and Contributions

In the following sections, I will summarize the articles included in this dissertation and my contributions to the study of individual and collective experiences of access to digital welfare. Finally, I will conclude with a discussion of my dissertation and future work. In this section, I offer an overview of the articles featured in this dissertation (Table 3), along with a summary highlighting their contributions to the study of access to digital welfare within the fields of STS, HCI, and anthropology. In the second part of this dissertation, you will find the articles in their pre-print versions in English.

***Table 3. Overview of Articles***

| Title | Research questions | Main analytical focus | Publication status |
|---|---|---|---|
| **Autonomy Alliances and Data Care Practices** | How are library employees and users of their services experiencing access to digital welfare and mandatory digital self-service? What are the barriers that individuals and collectives experience when interacting with public authorities digitally? | Individual and collective practices and experiences of access with a focus on interdependent forms of personal autonomy. | Conference proceeding published in *IFIP International Conference on Human Choice and Computers* (2022) |
| **Toward Digital Accessibility: Disability Culture and Social Justice** | How can researchers, policymakers, designers, and technology developers pursue digital accessibility, guided by disability culture and justice, rather than solely committing to web accessibility as a burden with which to comply? | Interdependent experiences of access in situated, social, and material relations across disability rights advocacy, speech therapy, and digital media use in the Danish context. | Peer-reviewed book chapter published in *Universal design: interdisciplinary perspectives in theory and practice* (2022) |
| **Narrating Digital Access, Trauma, and Disability through Comics and Image Description in Denmark** | How are users of digital or physical drop-in centers experiencing access to digital welfare and mandatory digital self-service? How can we analyze these experiences in collaboration with users through relations of reciprocity and respect? | Individual and collective experiences of access within the digital or physical drop-in centers and citizen-state encounters. | Peer-reviewed journal article published in *Medical Anthropology Cross-Cultural Studies in Health and Illness (*2023) |
| **Frictional Access: The Figure of the Digital Competent Citizen in the Danish Welfare State** | What norms and values underpin the figure of the digital competent citizen as a discursive tool for governance? And how do individuals and collectives submit or subvert these forms of subjectivation and power? | A comparison of discourses and representations of citizen subjectivities in policy documents, digital inclusion activities and counternarratives by civil society and citizens. | Under review for the journal *Catalyst: Feminism, Theory, and Technoscience*. |

### Article 1. Autonomy Alliances and Data Care Practices

The first article in this dissertation examines the role of a Danish public library in supporting racialized communities through mandatory digital self-service and digital communication. The article's main research questions are: *How are library employees and users of their services experiencing access to digital welfare and mandatory digital self-service? What are the barriers that individuals and collectives experience when interacting with public authorities digitally?*

The study is based on a collaboration with library employees who invited me to conduct observations and interviews at the library while they worked to support, what they referred to as, "ethnic minorities" or "non-western immigrants". To write this article, I collaborated with Associate Professor Sisse Finken. This collaboration stemmed from a seminar in which we discussed my ethnographic materials and analysis in relation to literature about digital citizenship. Our analysis is based on archival materials, fieldnotes, drawings, and interviews that I collected and wrote over a three-week period. In total I interviewed five library employees and two volunteers who assisted citizens at the library. Additionally, I wrote field notes based on conversations or short interviews I had with citizens using the library's services. Over the course of three weeks, I shadowed different activities at the library that employees referred to as digital inclusion, or digital guidance projects.

Through informed consent, I observed activities at the library's facilities and at two social housing apartment buildings where library employees provided step-by-step guidance to citizens applying for welfare benefits or communicating digitally with public authorities. Library employees had built a network of collaborations across the municipality, aiding health professionals, teachers, and caseworkers at the job center who met citizens that need help with digital self-service, but who did not have the time to assist. Citizens experiencing difficulties to communicate with public authorities or to use digital self-services were advised by job center employees or caseworkers to visit the library. Library employees built a collaboration with social housing organizations to help individuals and families who experienced difficulties with mandatory digital self-service by offering digital guidance near them, in the common area of two social housing buildings.

Drawing on feminist relational autonomy theory and the thematic analysis of ethnographic materials, the article offers the concept of *autonomy alliances* to describe how library employees, interpreters, citizens, and their relatives collaboratively subvert digital infrastructures which do not meet the access needs of these citizens visiting the library, such as in-person guidance and multilingual content. As mandatory digital infrastructures that library employees encounter failed to accommodate the access needs of these citizens, library employees designed activities that accommodate to citizens 'need for in-person support and language interpretation in Urdu, Arabic, Spanish, or Tigrinya.

Library employees hired at the library spoke minority languages such as Arabic or Urdu, in this way transforming the library as an institution that welcomes language diversity. Highlighting a fieldnote that narrates the experience of a citizen we name Ana, the article explores how an online application for housing subsidies that defaults to Danish public administration jargon, can constrain Ana's self-determination to take decisions through informed consent. With the assistance of an interpreter, her son, a relative, and a library employee, we describe how Ana applies for housing subsidies in her language, ensuring she has time to ask questions and clarify specialized language appearing on the online form.

The article provides qualitative insights into how the design and organization of digital welfare provision can limit citizen's self-determination, especially when user imaginaries do not account for migrant and non-native speakers who need to interact with a myriad of digital self-services. The work of the library exemplifies how digital self-service and digitalization do not eliminate the need for in-person support. Instead, the library as a site to explore individual and collective experiences of access to digital welfare underscore the importance of in-person assistance.

Moreover, the library's efforts show how mandatory digitalization, without careful consideration for the necessity of in-person support and service accessibility, places strain on both library employees and citizens. The funding for interpreter services and in-person guidance is contingent on financial and political decisions at both the municipal and national levels. In fact, a year after I conducted this study, the library's initiatives supporting racialized and migrant communities in the studied municipality ceased operation. This cessation was a result of a political restructuring of the library in which local politicians and a new service manager deemed digital inclusion activities no longer relevant to the library's mission.

Carreras, Barbara N. and Sisse Finken. 2022. Autonomy Alliances andData Care Practices. In *Human Choice and Digital by Default: Autonomy vs Digital Determination*, edited by David Kreps, Robert Davison, Taro Komukai, and Kaori Ishii, 47–57. Cham: Springer International Publishing. https://doi.org/10.1007/978-3-031-15688-5_5

### Article 2. Towards Digital Accessibility: Disability Culture and Social Justice

The second article included in this dissertation is a book chapter published in *Universal Design: Interdisciplinary Perspectives in Theory and Practice* (2023). This peer-reviewed publication stems from a collaborative study with PhD fellows Frederik Gybel Jensen and Leif Pedersen, members of the Bevica Foundation's Universal Design PhD and Postdoc Network, and with disability rights advocate Jesper Bentil Holten, who holds an executive position at the Danish Association of the Blind. The study's primary research question is: *How can researchers, policymakers, designers, and technology developers pursue digital accessibility guided by* *disability culture and justice, rather than solely committing to web accessibility as a burden with which to comply?*

As a collaborative writing project, we draw on autoethnographic and ethnographic materials concerned with interdependent experiences of access in situated, social, and material relations across disability rights advocacy, speech therapy, and gaming in Denmark. The article draws on relational autonomy theory and crip technoscience to examine situated and relational experiences of access to digital welfare and digital technologies. The article contributes to international and national discussions on universal design by de-centering digital access as a static goal or logistical problem, often constructed within frameworks of web accessibility compliance and automated tests. Instead, we explore through empirical materials, access as a contested, political, and relational experience that involves the leadership of those most impacted by inaccessible services, infrastructures, and products.

Methodologically, the article proposes an interdisciplinary writing collaboration which bridges advocacy work and research, concerned with questions of digital accessibility and disability access. In the Danish context, we discuss how digital inclusion and web accessibility practices by the authorities, fail to consider disabled people and disability rights organizations as key decision-makers and stakeholders in the digitalization of public and private services. Based on collaborative analysis, we selected three empirical examples to theorize a relational view of digital accessibility and its implications for social justice. The first empirical example involves the experiences of Jesper Bentil Holten as a participant in digital inclusion network meetings organized by the Agency for Digital Government. His autoethnographic account, illustrates that, despite open dialogue during the design and development process of the personal identification system MitID, disability rights organizations were only included late in the design and testing of the infrastructure. This compromised its accessibility and put pressure on disability rights organizations, which had to produce guidance materials for their members on such short notice.

The second empirical example is an autoethnographic account of Frederik Gybel Jensen, a speech therapist and researcher at a Danish hospital. Through his work of supporting people who experience aphasia, we reflect on the importance of relational autonomy in providing accessible communication in healthcare. His account serves to explore not only the political and social involvement of disabled people in practices of access-making, but also the importance of social relations of recognition and respect in facilitating accessible and meaningful communication. A third empirical example draws from a participatory study conducted by Leif Pedersen in collaboration with David, a gamer who has visual and physical disabilities. Analyzing social relations of respect and disrespect, which David experiences playing video games with others online, we discuss how social relations of recognition are as important as technical accessibility features in software and hardware. Upholding the importance of situated knowledges and disability cultures explored across different empirical materials, we argue for the need to approach digital accessibility as an ongoing commitment to value disability expertise and center social justice.

This book chapter is intended for researchers and professionals interested in interdisciplinary perspectives on universal design. The chapter was written in English and translated to Danish. The book was first published in 2022 in Danish as an open access publication. The English translation of the book is in the process of being published. In this dissertation, I share the English pre-print version accepted for publication.

Carreras, Barbara N., Frederik Gybel Jensen, Jesper Bentil Holten, and Leif Pedersen. 2023. Mod digital tilgængelighed: handicapkultur og social retfærdighed. In *Universelt design:*

*tværdisciplinære perspektiver i teori og praksis*, edited by Anne Kathrine Frandsen, Inge Storgaard Bonfils, Leif Olsen. 73-96. Aalborg: Aalborg Universitetsforlag.

### Article 3. Narrating Digital Access, Trauma, and Disability through Comics and Image Description in Denmark

The third article derives from a research collaboration with the National Association of Drop-in Centers. In collaboration with five users of a digital drop-in center and one user of a physical drop-in center, we created comics and image descriptions about their experiences of using the digital drop-in center and interacting with public authorities. The research questions are: *How are users of digital or physical drop-in centers experiencing access to digital welfare and mandatory digital self-service? How can we analyze these experiences in collaboration with users through relations of reciprocity and respect?* I co-authored this article with my main supervisor Brit Ross Winthereik. Research collaborators contributing to the making of comics and image descriptions were financially compensated and credited for their contributions to the article. Collaborators also had the possibility to review the article and provide feedback over the course of the research collaboration.

Drawing on graphic anthropology and practices of image description advanced by disabled scholars, artists, and activists, we propose a collaborative process of making comics and image description as one way to explore disability expertise in medical anthropology and studies of access to digital welfare. Together with research collaborators, and informed by critical disability theory, the visual and textual narratives served as an open-ended and multivocal analysis of relations to respect and disrespect in digitally mediated and in-person interactions. Comparing feelings of access intimacy (Mingus 2011) with feelings of forced intimacy (Mingus 2017b), we explore how collaborators experience access as an opportunity for connection, domination, or subversion.

Attending to experiences of disrespect and control enacted by the authorities, we outline the importance of safer spaces and relations of respect that the Association explores in practice, through their approach to social work, mutual aid, and community building. The article critically addresses the assumption that access to welfare services is a self-evident good by examining the ways systems of domination, such as neo-liberalism or ableism, play into harmful forms of access in digitally mediated or in-person citizen-state interactions.

Carreras, Barbara N., and Brit Ross Winthereik. 2023. "Narrating Digital Access, Trauma, and Disability Through Comics and Image Description in Denmark."*Medical Anthropology* 42, no. 8: 787–814. https://doi.org/10.1080/01459740.2023.2267164

### Article 4. Frictional Access: The Figure of the Digital Competent Citizen in the Danish Welfare State

Co-authored with my co-supervisor Baki Cakici, this article explores the figures of the "digital competent citizen" and "the digitally challenged" as these are articulated in digital inclusion debates. We draw upon the analysis of a mix of ethnographic materials. Our data include reports and visual communication written by the public authorities, media articles written by disability rights advocates, fieldnotes produced at digital inclusion events organized by the authorities, interviews with digital accessibility professionals working for the state, and citizens who are members of advocacy organizations defending the rights of marginalized populations including unhoused, disabled, aging and racialized communities residing in Denmark.

The article asks: *What norms and values underpin the figure of the digital competent citizen as a discursive tool for governance? And how do individuals and collectives submit or subvert these forms of subjectivation and power?* Analyzing archival materials, interviews and fieldnotes through thematic coding, we explore the critical concept of *compulsory digital self-reliance* to describe how the figure of the digital competent citizen serves as a prescriptive ideal of a citizen, which obscures the labor of access in welfare provision.

In summary, the term “digital” pointed us to technoableist discourse in which citizens and the nation are empowered by technological adoption, while some citizen subjectivities are devalued along axes of race, disability, age, nation, technology use, and class. The term “competent” pointed us to how ideals of competence are interwoven with one’s ability to avoid relying on help. In this context, interdependent relations are devalued and framed as problematic. This contributes to obfuscating how access and competence are relational. Finally, the term “citizen” pointed us to the ways in which self-determination and efficiency, of certain citizens, is contingent on their ability to fit cultural norms, as public services and institutional practices are made digital. Offering a second concept, frictional infrastructures, we argue that focusing on sites of conflict and dissent are generative for critiques of a system that depends on penalizing instead of embracing difference.

Carreras, Barbara N., Baki Cakici. Frictional Access: The Figure of the Digital Competent Citizen in the Danish Welfare State. Under review. Catalyst: Feminism, Theory, Technoscience.

## 6. Discussion and Contributions

Coercive approaches to digitalizing welfare provision in Denmark are based on the premise that increased automation and digital communication will reduce the need for in-person services and improve the quality of welfare services "for all." Yet, the articles included in this dissertation examine how coercive digital-by-default welfare services do not reduce the need for in-person support or benefit everyone equally. On the contrary, coercive digital-by-default welfare provision accentuates the need for in-person support as it delegates public administration responsibilities to individuals, the family, and the third sector (volunteer organizations, charities, non-governmental organizations, interest organizations, non-profit organizations)This delegation of responsibility and labor puts pressure on citizens, the family, and the third sector because their access needs, knowledge, and labor are neglected. This delegation also produces inefficient services for those most marginalized, as it becomes more difficult to access welfare benefits. This is problematic as digitalization is promoted under the guise of effectivity. Furthermore, when digital policies assume access to digital technologies and welfare as depoliticized, claims to include an unmarked "all" obscure the structural conditions that sustain interlocking forms of exclusion, exploitation, and marginalization.

Technological innovation in Denmark continues to neglect the needs of marginalized populations, in combination with increasingly more discriminatory and commodified approaches to welfare inclusion and citizenship. Digital self-services risk accentuating social inequalities by only serving those who can fit into (and afford) the ideal of a Danish, young, individualistic, active, well-educated, and non-disabled individual. If policymakers, researchers, technology developers, and government authorities digitalizing the public and private services truly desire an equal and socially just society, they must acknowledge that current digital inequalities are linked to discriminatory policies, discriminatory social attitudes, and discriminatory infrastructures. To "solve" digital exclusion with digital inclusion and technology adoption is only a remedy for some. Failing to recognize this relation only leads to further stigma, relations of labor extraction, and responsibility delegation, as families, community members and civil society organizations struggle and work hard to sustain dignified living conditions for those in the most vulnerable social and financial conditions. In the following sections I address the dissertation's main research questions and unpack these claims further.

*RQ 1: How do individuals and collectives experience access to digital welfare in Denmark?*

Access, as the process of being included or being excluded, is contested and experienced differently within differential positions of power and privilege. Through a close examination of the intersections of nation, race, class, gender, and disability oppression in the Danish welfare state, it is possible to examine how mandatory digital self-service produces conditional forms of inclusion, and perpetuates historical and contemporary forms of exclusion and discrimination. To be included under the regime of digital self-service mandates is to assimilate and submit to nationalist and ableist norms, technological determinism, language homogeneity, unrecognized care labor, and a neoliberal framework of personal autonomy that relies upon technology adoption and labor market participation. To be excluded is to be marked as deviant from the hegemonic norm and thus rendered an object of assimilation, or a "burden" to the family and the third sector. Compulsory digital self-reliance thus leads to frictional sociotechnical infrastructures that undermine the status and capacity of individuals to enact personal autonomy if they fail to assimilate.

Through the critical concept of compulsory digital self-reliance, my main argument is that the individualization of access and the promotion of technology adoption as a neutral self-evident good, obscures processes of digital resignation, conditional inclusion, and extractive labor in which citizens are made to be their own caseworkers, and advocate for themselves and their loved ones without having the power and resources to do so freely. Far from being liberatory or promoting well-being and belonging, those who interact with the welfare state the most, experience this system as increasingly more disempowering and hostile. This is especially the case for marginalized, disabled, and racialized populations who are subject to modern poor laws, increase in social discrimination, increased state surveillance, and who encounter more barriers to access public and private services due to inaccessibility.

Against this backdrop, individuals and collectives across the public and third sector find ways to create more equitable forms of welfare provision through rights claims and relations of mutual aid and respect, outside of the official spaces of welfare provision. Within family and volunteer networks, some individuals become non-compliant by working around or against the rules of self-service, sharing passwords to personal identification systems, such as MitID, in order to receive help, or provide help to those who need to access public and private services. Under compulsory digital self-reliance, digital inclusion projects carried out by government authorities and civil society organizations participate in promoting technology adoption as a citizen duty, and assume digitalization as an inevitable force. Yet, at the same time, local initiatives challenge ideals of self-reliance in practice through collective forms of access, drawing attention to the importance of social justice, service accessibility, and relational forms of autonomy.

*RQ 2: Whose experiences are privileged by the implementation of mandatory digital infrastructures and self-service in Denmark?*

Coercive forms of technology adoption are detrimental to contemporary democratic societies because they ultimately serve to constrain citizens' self-determination, especially those in lesser positions of power and privilege. Even though civil society organizations representing marginalized citizens are participant of the digitalization of public and private services, their labor and expertise continues to be peripheral in key policymaking, design, and technological development processes. As a result, digital self-service primarily serves neoliberal goals in which market and financial interests are prioritized over citizens' rights, liberties, and well-being. Compulsory digital self-reliance not only reinforces systems of oppression, such as capitalism, racism, or ableism, but also undermines relations of mutual aid, respect, and solidarity. Interdependent relations are perceived as denoting “weakness” and individuals are blamed for not being able to be productive and self-reliant. The implications of this development are political, social, and affective as individuals unable to fit into the ideal of a digital competent citizen are subject to rights violations, penalization, disrespect, social isolation, shame, and stigma.

*RQ 3: How can practices of access, developed by individuals and communities impacted by mandatory digitalization, inform policy and design decisions?*

Across the four articles within this dissertation, I have argued for the importance of centering marginalized knowledges of access, what Aimi Hamraie calls “access-knowledge” (2017). If we desire to build equitable and just digital societies, it is essential that policymaking and design processes are led by those most impacted by social injustice and discrimination. In doing so, it is important that policymakers, researchers, and practitioners involved in digitalization processes critically address hegemonic norms and systems of power that underpin current approaches to knowledge production and technological development. Within academic contexts, it is thus necessary that researchers partner with civil society organizations and grassroots movements who represent racialized, marginalized, gendered, and disabled groups, so that research concerned with digital accessibility and welfare provision accounts for interlocking systems of oppression and amplifies the knowledges and experiences of communities impacted by inequity and oppression.

In partnering with civil society organizations or grassroots initiatives, it is important to be critical towards projects that promote being participatory whilst engaging in extractive forms of knowledge production that only benefit researchers, technology providers, or government authorities. Harm-reduction approaches are essential so as not to conduct research where re-traumatization can occur. Furthermore, remunerating, and crediting research collaborators is key so that collaborators' contributions are not extracted or used for the benefit solely of researchers. Researchers engaging in participatory projects must share authority with research collaborators in marginalized positions and approach their partnerships through intersectional and decolonial approaches that grapple with power asymmetries, and foster ways to build reciprocal relations beyond research goals.

It is essential that digital inclusion projects move beyond ideals of compulsory digital self-reliance, as they limit who can benefit from technological innovation. A more productive approach is to regard practices of access as frictional, interdependent of political, social, material, and affective relations. Beyond conditional forms of inclusion or access, which can feel disempowering, I argue that there is immense value in learning from organizations and social justice movements that foster relational forms of autonomy and access. Attending to relational forms of access can help us explore ways of attuning to the diversity of ways in which people move, communicate, and belong. A relational view of access and autonomy also calls for digital inclusion initiatives that foster ways to protect and advocate for social projects and movements that foster belonging, equity, recognition, and freedom from discrimination and domination.

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# Part 2 : Collection of Articles

# Article 1. Autonomy Alliances and Data Care Practices

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**Abstract.** Recent studies focusing on the digitalization of welfare provision draw attention to digital infrastructures that produce new forms of social inequality and disempowerment due to inaccessibility. Against this backdrop, we study the practices of a Danish public library in supporting citizens with digital applications for welfare benefits. Through a grounded theory approach to data collection and analysis, we draw on ethnographic materials and Catriona Mackenzie's multidimensional analysis of autonomy to conceptualize autonomy alliances and data care practices. These are collective efforts that attempt to subvert inaccessible and autonomy-undermining public digital infrastructures. Drawing on a relational view of autonomy, we examine how certain design choices can constrain citizens' personal autonomy and equal access to welfare services. For this reason, we discuss the importance of studying political decisions affecting the design and organization of digital welfare services, as well as the local practices that compensate for discriminatory design choices through social inclusion and a commitment to equity.

**Keywords:** relational autonomy, digital welfare, public library, equity, digital inclusion, inaccessibility.

## Introduction

Across science and technology studies, human-computer interaction, and related fields, a growing body of literature is tracing and critically attending to how governments digitalize the provision of welfare services. These studies indicate that public digital infrastructures can create new citizen responsibilities [1], render citizens' needs and affective interactions invisible to the state [2], fail to comply with web accessibility guidelines [3], demand new skills [4, 5], reinforce or produce exclusion [6], or undermine citizen's personal autonomy and data rights [7, 8]. Also, a crucial concern in these studies, is how digital infrastructures used in welfare provision can constrain the citizen's capacity to enact personal autonomy and have control over data collection, and decisions taken in relation to such datasets [7–9]. In this vein, Velden et al. explore a relational [10] and socio-material understanding of autonomy that articulates how different actors enact, negotiate, and constrain citizens' personal autonomy [11]. As the authors argue, a relational understanding of autonomy can be generative to trace how technological actors, such as information and communication technologies, promote or hamper citizens' personal autonomy and rights.

Against this backdrop, we draw on an ethnographic study conducted at a Danish public library to explore how library employees support citizens with digital applications for welfare benefits. Through this study, we reflect on wider national concerns voiced by civil society organizations in Denmark regarding present social inequalities produced by inaccessible mandatory digital infrastructures [12, 13]. When unfolding the work of the library, we conceptualize autonomy alliances and data care practices as collective efforts performed by frontline workers and community members to promote citizens' self-governing agency when navigating autonomy-undermining digital infrastructures. Bridging our analysis to design justice [14] and critical disability literature [15], we reflect on the value of studying grassroots projects, that compensate for exclusionary design choices in digital welfare provision.

In what follows, we first provide a brief overview of Catriona Mackenzie's multidimensional analysis of autonomy to study socio-material relations promoting or undermining autonomy. We outline the value of exploring personal autonomy in digitalized versions of welfare provision as a collective responsibility, rather than solely as a matter of individual traits, resources, or skills. Second, we contextualize mandatory digital self-service in Denmark and outline our grounded and ethnographic approach to data collection and analysis, including our ethical and data protection considerations. Third, we analyze ethnographic materials collected at a Danish public library. Throughout our analysis we develop autonomy alliances and data care practices as concepts to think with when exploring exclusionary digital infrastructures. Lastly, we conclude our paper by discussing how choices in the organization and design of public digital infrastructures are political and have both enabling and disabling effects. In conceptualizing autonomy alliances and data care practices, our paper draws attention to a local initiative that subverts and reimagines more equitable and accessible versions of digital welfare.

## Theorizing Relational Autonomy

Drawing on the work of feminist philosopher Catriona Mackenzie [10], a relational understanding of autonomy can be generative to recognize people's different positionalities, interdependence, and liberties in the study of welfare provision. When reflecting on individualistic notions of autonomy, found within neoliberal political discourse [1, 10], Mackenzie argues that only paying attention to individual behaviors and traits, is insufficient to account for how social inequalities and systems of power influence a person's opportunity to live a self-determining life. For this reason, she draws on feminist relational autonomy theory, committed to social justice, to unpack how social discrimination and inequalities influence a person's opportunity to enact autonomy. Drawing on her multidimensional analysis of autonomy we focus on Mackenzie's three conceptual and interdependent dimensions: self-determination, self-governance, and self-authorization [10, 16] that we find helpful as sensitizing concepts [17] and starting points in our analysis.

First, Mackenzie outlines self-determination, explored as a status, in which she draws attention to external structural conditions, often regulated by the state, namely freedom and equal opportunity. For example, anti-discrimination laws or political and personal liberties are important structural factors influencing the status of a person in being a self-determining agent. Equal access to goods and opportunities, and freedom from domination and discrimination are therefore paramount [10]. Second, Mackenzie outlines self-governance, explored as a capacity, in which she identifies internal agential conditions for autonomy such as the capacity to enact choices that cohere with one's own values, commitments and identity [10]. Importantly, rather than conceiving self-governance as an isolated capacity of individuals, she considers the interdependencies between interpersonal and social relations and how these constrain and enable people's self-governing agency. With the example of projects helping women in abusive relations or drug rehabilitation programs, Mackenzie argues that social scaffolding efforts must respect people's agency and facilitate participation and dialogue. In this vein, the third conceptual layer is self-authorization. Through this notion, Mackenzie draws our attention to social relations of recognition and oppression that produce self-evaluative attitudes, e.g., self-respect and self-esteem, that influence how people enact personal autonomy.

Through Mackenzie's multidimensional analysis of autonomy, we have briefly outlined the social and interpersonal factors we are interested in analyzing and unpacking empirically in the study of a Danish public library supporting citizens with digital applications for welfare benefits. In what follows, we first contextualize current concerns on digital inequalities in Denmark and why a public library is an insightful space to study digitalized versions of welfare provision. Second, we delineate the methodological orientation and ethical concerns of the study.

## Empirical Setting’s Background

In the context of Denmark, and since the early 2010s, applications for welfare benefits have been transformed into mandatory online forms as “self-service” digital infrastructures [18]. Due to the increasing lack of in-person support and the inaccessibility of websites and mobile applications provided by the authorities, civil society organizations and the Danish Institute for Human Rights have raised concerns regarding discrimination and digital inequality affecting diverse groups [13, 19, 20]. Whilst disability rights organizations have been vocal about the lack of web accessibility compliance across public sector websites and mobile applications [19–21], organizations representing minority communities have raised concerns regarding the lack of in-person services and accessible communication [13, 19].

What these concerns illustrate is that increasingly, more welfare benefits are delivered via digital self-service infrastructures that fail to meet citizens’ diversity. In this regard, recent statistics indicate that approximately 20 percent of the population is “digitally challenged” [12]. As we are interested in the tension between inaccessible digital infrastructures and the authorities’ categorization of some citizens as digitally challenged, we use ethnographic methods [21, 22] to explore the work of a Danish public library financing and developing learning and support activities for diverse citizens who encounter accessibility barriers. Due to the diverse ways in which public libraries support citizens across Denmark, our empirical materials are specific to the library and municipality of study and cannot be generalized. As other researchers indicate, policymakers have tasked public libraries with the responsibility to support citizens in using and adopting public digital infrastructures, yet not all libraries have accepted this responsibility, and support varies across Denmark's 98 municipalities [18].

### Methodological Orientation and Research Ethics

In the summer of 2021, the first author conducted fieldwork at a Danish public library in Copenhagen as a part of her PhD study mapping formal and informal work, supporting citizens who encounter inaccessible public digital services in Denmark. The use of ethnographic methods in this study allows us to map and analyze situated practices and social relations [22, 23] involving citizens, digital infrastructures, and library employees. Over the course of three weeks, the first author spent 34 hours conducting observations and writing detailed fieldnotes on a physical notebook. Further, she conducted 6 semi-structured interviews on-site with library employees and volunteers. To include citizen perspectives and remain mindful of their time and privacy, she took notes of what citizens wished to share with her through informed consent. Information that directly identifies citizens has been modified or pseudo anonymized (e.g., name, age, nationality). Our approach to data analysis and collection draws on feminist grounded theory [24]. This involved a series of situated and ongoing coding exercises through the software NVivo in combination with monthly discussions reflecting on the main themes emerging from the data. While analyzing data, the first author was in dialogue with research participants through follow-up emails or via short additional interviews.

The first author designed her study according to the General Data Protection Regulation and created consent forms that clearly explained the purpose of the study and provided relevant legal and contact information to research participants. Furthermore, she followed government guidelines during fieldwork to maintain adequate physical distance with citizens to prevent the spread of Covid-19.

## Digital Inclusion at a Danish Public Library

Since 2013, employees and volunteers with diverse educational backgrounds (public administration, library science, digital project management) organize myriad activities dedicated to digital inclusion for teenagers, adults, and seniors, with diverse ethnic backgrounds and citizenships. Library employees explained that their approach to digital inclusion is influenced by their own interpretation of the Danish tradition of Folkeoplysning (public education) that dates to N. F. S. Grundtvig, a pastor and an important figure in modern Danish national identity [25]. As the Head of Section for Service and Materials explained:

> “The Folkeoplysning tradition is the DNA of public libraries. And the library's approach to citizen service and digitalization is thus to use the tradition of Folkeoplysning as a supportive method. We contact and support citizens who have had a hard time in the new digital reality. There are many who feel they are left behind at the gate and cannot hop on the train. We have learned that there are many more who are digitally challenged than we anticipated. There were also digitally well-functioning citizens who had problems because the digital solutions were so difficult to understand at first. This applies, for example, to the online application for housing benefits (boligstøtte), which was virtually impossible to figure out. Therefore, in 2013 it made sense to take on functions such as NemID, Digital Post , and online banking. But for the library, it was also important to offer help beyond citizen service tasks. Here I am thinking of digital everyday challenges that you as a citizen must master to function in a society. So, when we said yes to taking on the tasks, it was important for the library to help set a new inclusive agenda.” (Own translation, July 2021.)

Through Folkeoplysning, across interviews, library employees described digital inclusion as an integral activity of the library committed to helping citizens participate equally in all aspects of a digitalized society. This responsibility was apparent in practice through different activities, in which citizens were taught how to use digital infrastructures and were helped to apply for welfare benefits step-by-step. Public organizations such as the Agency for Digitization or the national network of public libraries had previously showcased their activities as exemplary to other libraries across Denmark. This meant the library's work had been recognized on a national level. However, library employees voiced concerns regarding the difficulties they experienced in providing feedback when digital infrastructures were inaccessible or lacked key functionalities. As one library employee explained:

> "Giving feedback is a very opaque process. Especially when it comes to who to contact, you can feel like a drop in the ocean. For example, at a public digitalization conference I approached an IT consulting firm that designed a digital solution for immigrants. I asked them: 'may I give you some feedback on your solution because it works really poorly'. And of course, they said 'yes!' and they seemed interested. I told them that the solution was only available in Danish, but users of this service speak many other languages. I also told them that it was impossible to log out. When I helped different citizens, it was difficult to help more than one person on the same computer [..] And then I wrote a private message to one of them again on LinkedIn a year later, but I have not heard back from them." (Own translation, June 2021).

During observations it was apparent that public digital infrastructures, useful to immigrants who recently arrived in Denmark, were in Danish by default. Furthermore, many application forms required that citizens used a computer, while most citizens requesting assistance at the library could only afford a mobile device. Library employees also admitted that some websites were not intuitive or lacked functionalities, as the example above illustrates. Difficulties in providing feedback meant that even though the library was recognized for its work on a national level, it was difficult for the library to influence the improvement of digital services. Considering these challenges, library employees found other ways to help citizens, namely through collaborations across the municipality.

This was the case of an activity called *Hverdagsrådgivning* (Everyday Counseling). This weekly "digital guidance project", as library employees called it, lasted two hours and was visited on average by 13 to 16 citizens each week. Everyday Counseling was financed and organized in collaboration with an organization offering counseling and learning activities to families with an ethnic-minority background or refugee status. To advertise Everyday Counseling, library employees explained they had joined many local events organized by representatives of minority communities and offered digital assistance outside the library: at the local health center, in social housing areas and at local schools. A manager at the library also explained the importance of hiring employees who had similar backgrounds and mother tongues to underrepresented citizens needing help. In addition, the library offered the services of interpreters in e.g., Urdu, Tigrinya, and Arabic. Interpreters were physically present at the library and, in exceptional circumstances, library employees could be supported by an interpreter speaking other languages on the phone. This option, however, was limited due to budget constraints.

### Autonomy Alliances and Data Care Practices at Everyday Counseling

The atmosphere at Everyday Counseling was friendly and the architecture of the building provided different common areas where citizens could sit at their computers. The library had 10 laptops that citizens could borrow if they did not own a computer. Many citizens spoke more than two languages and had various levels of digital and Danish language skills. In what follows, we bring to the forefront one ethnographic fieldnote where we meet Ana, who recently arrived in Denmark and urgently needs assistance to apply for housing benefits (boligstøtte in Danish).

#### *Ana's Application for Housing Benefits*

A library employee [a man in his 30s], carrying a Lenovo laptop, introduces me to a citizen who like me, speaks Spanish as her mother tongue. I say hello in Spanish. Ana smiles and tells me where she is from, she has been living in Denmark for just a few months. I inform Ana about my research, and she agrees to participate in my observations. The library employee takes us to a quiet area, in an open space, close to the music and films section. We sit at a free desk. Luckily, this area of the library is not in use while we are here. I sit opposite Ana and the library employee because they are going to interact with different digital interfaces and Ana will type various usernames and passwords. Now, the library employee positions his laptop in front of Ana, and then proceeds to make a phone call. Meanwhile, Ana explains to me that her job counselor referred her to the library because she needs to apply for housing benefits, but she has not yet completed her Danish language course. She voices embarrassment for not being fluent in Danish. I quickly tell her it took me more than a year to learn Danish, and I admit feeling insecure about my Danish sometimes. We smile at each other and then the library employee addresses Ana in Danish. I try to translate: "he says that he is calling an interpreter who speaks Spanish." The library employee turns on the speaker function and the interpreter addresses Ana in Spanish. The interpreter kindly explains to Ana that information shared on the phone is confidential, and that the sole purpose of the translation is to help her with the application. Ana nods and while looking at the library employee, she communicates with the interpreter she understands.

First, Ana is asked to log in her Gmail, Digital Post, and an online application for housing benefits through the website borger.dk (citizen.dk). The library employee guides Ana through the process. Ana is told that she is responsible for typing her information correctly, and logging in different systems with her username and passwords. The library employee reads aloud information on the screen step by step, and the interpreter translates carefully, finding the correct terms, so that Ana understands what she needs to type on different interfaces. While Ana logs in the online form, the library employee explains that her income is automatically shown on the screen, and that she needs to verify if the data are correct. Ana must also disclose the square meters of her home and other information such as the names and personal identification numbers of her children who live with her. The library employee reassures Ana by saying, “great, let’s take a look at the next question!” […]. During the application, Ana needs to attach her rental contract. She then opens her Gmail on the library’s laptop. When Ana finds her contract, the librarian asks for permission to download the document to the library’s laptop. He promises to delete it later. He then quickly helps her attach the file to the online application. Each step of the way, the library employee describes what he is doing, and the interpreter translates accordingly. Ana also asks questions when she is in doubt. In the process of applying for housing subsidies and going through the form, the system asks for her son’s online signature and the disclosure of his income. Ana explains her son is over 18 years old. The library employee explains Ana, through the interpreter, that her son must sign the application and disclose his income for Ana to be able to complete the application. As Ana’s son is not present at the library, Ana gets nervous and decides to call her son. He does not reply. Ana tries to text him while the library employee and interpreter wait patiently in silence. In the meantime, the library employee reviews the application. After a couple of minutes, Ana receives a message from her son. Ana explains that her son has logged into the application, disclosed his income, and signed the application digitally with his NemID. After some minutes, Ana and the library employee browse through the application and the library employee asks her to press send. Then he explains to Ana she will be notified via Digital Post once the application is reviewed. The interpreter on the phone says goodbye to the library employee and wishes Ana good luck. We spent approx. 40 minutes together. (Fieldnote, June 2021)

Through this ethnographic fieldnote, we follow a situation in which design decisions materialize as constraints and collective resistance. Ana, her son, the library employee, and the interpreter, support each other to complete the application. Within the space of Everyday Counseling, we observe different examples of autonomy alliances that promote Ana’s self-determination, self-governance, and self-authorization, despite the limitations of the online form that does not meet her needs and automatically collects data about her. Ana and her helpers collectively reconfigure the application from being intended as a screen-based service, to being a service based on social relations of recognition. Instead of problematizing Ana's language skills, Everyday Counseling problematizes the online form as insufficient to meet Ana's communication needs. In this way, promoting Ana's self-governance, to take decisions that are her own, in her language, and through informed consent.

Ana, the library employee, and the interpreter exemplify different care relations. These are noticeable through small gestures, such as waiting patiently while Ana tries to communicate with her son on the phone or by anticipating what the online form will ask her. Care is enacted when the library employee articulates aloud what he is doing, while asking for consent and having the interpreter translate what he is saying. Through these collaborative practices, Ana and her helpers enact subtle digital care practices in which Ana is supported in providing consent and modifying data that are collected about her within the possibilities of different digital interfaces.

When reflecting on the online form's default language, small design decisions can ration who benefits and who is constrained by an online application that is necessary to access welfare services. As Sasha Costanza-Chock notes [14], default language settings are important design choices that privilege certain groups over others. Non-native speakers, of different backgrounds, continue to be problematized in Denmark as "digitally challenged" by virtue of not speaking Danish well enough [12]. However, we argue, the work of the library reformulates "being digitally challenged" as a result of digital infrastructures that fail to meet citizens' diverse needs.

### Subverting Individualistic Ideals of Citizens and Fostering Equity

As Hjelholt and Schou unfold in the Danish context [26], policy discourses influenced by neoliberal values in recent digital reforms have constructed ideas of citizenship based on self-responsibility, individual autonomy, and citizen homogeneity. As we have learned through the work of one Danish public library, these dominant discourses have materialized in digital infrastructures that erase citizens' diversity and do not meet the needs of citizens visiting the library. Furthermore, design decisions in digitalized versions of welfare provision enable and constrain citizens' data rights and access to welfare benefits. When digital inclusion solely focuses on honing people's skills, and the authorities and companies making digital infrastructures are not held accountable for their design choices, citizens can experience rights violations, and dire financial and emotional consequences. As critical disability scholars continue to voice, discriminatory values and attitudes in technology development reproduce social inequalities and stigma [27]. For this reason, it is increasingly important to trace how digital inequalities and social inequalities configure each other [28] and impact people's self-determination, self-governance, and self-authorization.

The library, as a site to explore these dimensions of autonomy, unveils different ways in which digital welfare services can be repurposed and supplemented in meaningful ways. However, our study indicates library employees are not powerful enough to finance their activities in isolation or influence the design of mandatory digital infrastructures on a national scale. For this reason, it is important to reflect on wider systemic inequalities and political decisions that govern how citizens can exercise their rights and easily claim welfare benefits.

## Conclusion

Through Catriona Mackenzie's multidimensional analysis of autonomy and ethnographic materials generated at a Danish public library, we have described how citizens and library employees attempt to subvert autonomy-undermining online applications through autonomy alliances and data care practices. These grounded concepts help us make sense of collective efforts tackling inaccessible and mandatory digital infrastructures. In providing qualitative detail to situated practices at one Danish public library, we draw attention to local initiatives that can help us reformulate the questions we ask and the values we embed in the digitalization of welfare provision and digital inclusion projects. Importantly, whilst local efforts can compensate for discriminatory design, future research should explore more directly how public authorities can be held accountable for political and design choices gatekeeping universal welfare benefits. Drawing on social justice orientations to design [14, 15, 29], we believe it is increasingly important to ask: What organizational and design choices constrain certain people from experiencing the benefits that digitalization promises? And how might we repair such choices collectively so that digitalization fosters equitable relations and addresses people's differences, interdependence, and liberties?

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# Article 2. Towards Digital Accessibility: Disability Culture and Social Justice

Barbara Nino Carreras, Jesper Bentil Holten, Frederik Gybel Jensen,
and Leif Hemming Pedersen

## Introduction

Despite the long history of design innovation driven by disabled people, disability activism, and non-discrimination policies (Blanck, 2014; Hamraie, 2017; Hamraie & Fritsch, 2019; Lifchez & Winslow, 1979) many countries in the European Union continue to neglect the right to digital accessibility for people with disabilities  (Ferri & Favalli, 2018). When designers create digital technologies that neglect the lived experiences of disability or the existing approaches to designing accessible services or communication, social inequalities experienced by people with disabilities are reproduced (Shew, 2020). Therefore, as researchers, policymakers, governments, and technology developers across the globe increasingly implement digital infrastructures in education, the labor market, health care, and other public and private services, the relationship between social and digital inequalities needs to be carefully examined in the practice of design and "access-making" (Hamraie & Fritsch, 2019).

The history of disability activism in the United States and beyond, and its intersections with design, shows us the various ways disabled people have hacked and reconfigured digital technologies and the built environment in creative and meaningful ways, in order to reclaim disabled people's full and equal participation in society, and embrace the diversity of ways in which people move, communicate, and experience the world (Blanck, 2014; Fritsch et al., 2021; Hamraie, 2017). In doing so, these forms of transformative justice have rejected medical models of disability and ableism that wrongly consider certain bodies, minds, and ways of being as normal and worthy, while devaluing or marginalizing others (Fritsch et al., 2021; Kafer, 2013). Subverting ableism in material and social relations, disabled people and allies have proposed alternative politics and epistemologies that center the expertise, creativity, knowledge, and lived experiences of people with disabilities (Hamraie & Fritsch, 2019). Notably, slogans such as "Nothing about Us Without Us", first used by South African disability rights groups in the 1980s (Hubrig, 2020; Piepzna-Samarasinha, 2018) have reclaimed the involvement of disabled people as key stakeholders in policymaking, politics, knowledge production, and design.

Reflecting on the transformative power of intersectional disability activism that aims to subvert ableism and other forms of discrimination based on race, class, gender and other axes of social marginalization, scholars in the United States have traced the development of design movements informed and led by civic movements such as Universal Design (Hamraie, 2017) or Design Justice (Costanza-Chock, 2020). Curb cuts—small ramps built into the curb of pavements— are one prominent example of a design intervention in urban space that stemmed from disability activism led by wheelchair users. Whilst the first examples can be traced back to the 1940s in Kalamazoo, Michigan, from a petition by Jack H. Fisher, a lawyer and disabled veteran, curb cuts gained traction during disability activism and civil disobedience of the 1960s and '70s (Hamraie, 2017). As Hamraie reminds us, the history of curb cuts is rooted in the protests of disabled activists and allies who remade the material world to include wheelchair users in public space by smashing sidewalks with sledgehammers or pouring cement to create curb ramps (pp. 95–103).

Considering the ways in which access-making can be a site of "political friction and contestation" (Hamraie & Fritsch, 2019, p. 10) and prompt alternative forms of knowledge and practices led by disability cultures and communities, we provide examples in this chapter from advocacy work, speech therapy, and participatory qualitative research that can help designers and technology developers consider how digital access is contested and negotiated in situated, social, and material relations. Echoing crip technoscience scholars and disability justice activism (Hamraie & Fritsch, 2019; Mingus, 2010), our empirical examples, described in the following sections, argue for a political commitment to recognize the expertise and knowledge of disabled people in all phases of design projects, as well as the recognition of people's interdependence. The chapter, thus, calls for an understanding and practice of access beyond logistics or legal compliance, and for a collective social responsibility to make sure our world sustains diverse ways of being, communicating, and caring for one another (Mingus, 2010).

To build these arguments, our chapter zooms in on Denmark, a state that has heavily invested in digitalizing its public and private sectors, while neglecting disability access, often deemed as an afterthought by Danish disability rights representatives. Moving beyond issues of legal compliance to web accessibility guidelines we thus ask: how can researchers, policymakers, designers, and technology developers pursue digital accessibility, guided by disability culture and justice, rather than solely committing to web accessibility as a burden with which to comply?

To explore this question, we are inspired by feminist philosophy and Donna Haraway's concept of situated knowledge (Haraway, 1988) that responds to objectivism in knowledge production and proposes a politics of locating, positioning, and situating knowledge (Haraway 1988, p. 589). This framework helps us unfold the importance of anchoring knowledge production in "particular lives, circumstances, and histories of practice" (Rosner, 2018, p. 49). Given that we, the chapter's co-authors, come from very different fields of study and practice, we also draw on Inge Marie Lid's (2014) work on Universal Design as an interdisciplinary practice that argues for the need of exchange and collaboration across different fields and epistemological positions. This chapter provides a methodological contribution to the study of digital accessibility via our collective writing process bridging theoretical and empirical knowledge from critical access studies, advocacy work, speech therapy, and media studies.

## Bridging Knowledge between Different Academic Fields and Advocacy through Co-Authorship

This writing project began when Bevica Fonden's Universal Design Network invited PhD members, working on digital accessibility, to write a chapter for this anthology. Because digital accessibility is a matter of concern in both academia and industry, Barbara, a Colombian-Spanish PhD student part of the network, decided to ask Jesper to co-author this chapter. Jesper is a Danish disability advocate that collaborates with the Danish Agency for Digital Government as an Executive Member at the Danish Association of the Blind. As a blind person, Jesper has many years of experience using assistive technologies and working on web accessibility. He also supports blind people and persons with visual impairments in the use of assistive technologies, such as screen-readers and braille technology, to navigate the web or digital content. Barbara met Jesper during her ethnographic work at a digital inclusion network meeting, organized online by the Agency for Digital Government. At the event, Jesper was vocal and critical about the lack of inclusive design in the Agency's development of a new digital public infrastructure called MitID (a mandatory e-ID solution necessary to access public and private digital services in Denmark). Drawing upon his advocacy work at these meetings, Jesper unfolds in this chapter how the late inclusion of the Danish Association of the Blind in the design process of MitID led to inaccessibility and exclusionary design. Jesper describes the necessity to think about social and digital inclusion in all phases of any given design process, as well as the full, rather than partial, involvement of representatives of disability communities in digitalization projects.

In addition to Jesper's involvement, Frederik, a Danish PhD student working as a speech therapist in a Danish hospital, also joined the project to discuss how digital design can be informed by the intersection of lived experiences of disability and specialized knowledge within speech therapy. Frederik outlines the importance of existing knowledge and strategies developed in collaboration with persons with cognitive and communication disabilities within speech therapy, as well as the importance of communication partners and practices of mutual recognition, such as respecting people's intellect, creativity, and agency regardless of how they communicate.

Leif, a Danish PhD student in media studies, contributes to the project with a third perspective on digital accessibility. Leif collaborates with a gamer who has visual and hand-motor impairments. In this chapter, Leif discusses digital accessibility centered on his interlocutor's identity as a gamer, for whom digital accessibility is a complex matter. Technical solutions and affordances that might make certain video games more accessible from a practical perspective can, in contrast, be the basis for social exclusion and disrespect. This insight, as well as the interlocutors adaptive and resistive strategies, based on support by his gamer community, underscores the need to consider social justice problems—not only technical access issues—within design development.

These three divergent contexts of situated knowledge help us discuss the importance of disability culture and social justice across different disciplines and work practices within the Danish context and beyond. Our collective writing process began in Spring 2021, when we met to discuss examples of digital inaccessibility within the Danish public and private sectors. During several meetings via Zoom over the course of a year, we identified the empirical examples described above, which are based on autobiographical accounts or generated through ethnographic methods (Hammersley & Atkinson, 2007). Writing together across academic disciplines and advocacy work prompted us to find a common language and format that could speak to both specialized and non-specialized audiences.

In what follows, we first introduce three empirical examples narrated by Jesper, Frederik, and Leif. Each section was first written independently by each author and later edited by all of us through a series of writing workshops, both in person and remotely. The names of research participants are pseudonymized, and personal information identifying research interlocutors has been modified according to General Data Protection Regulation in Danish research.

## Exploring Digital Accessibility through Situated Knowledges

### The case of MitID: Incongruity between Web Accessibility Legislation and the Lack of Inclusion in the Design of a Public Digital Infrastructure

Narrated by Jesper Holten

Since the Web Accessibility Act came into force on September 23, 2018, the Danish Agency for Digital Government has been responsible for supervising web accessibility compliance within their Digital Inclusion Division. This effort ensures that public authorities are familiar with legal requirements for web accessibility and have access to relevant information to comply with the Web Content Accessibility Guidelines (WCAG) —a requirement for the procurement of public Danish digital infrastructures since 2008 . In addition to web accessibility, the Digital Inclusion Division also works to establish dialogue with civil society organizations, public libraries, citizen service centers, and the financial sector. In this effort, the Digital Inclusion Division has been tasked with the responsibility for ensuring inclusive dialogue with civil society organizations and NGOs that represent disability rights, including the Danish Association of the Blind.

In the first months of 2020, the Digital Inclusion Division invited civil society organizations to discuss MitID (MyID, in English) a new mandatory digital infrastructure (or e-ID) necessary to access public and private digital services, such as applications for welfare benefits and online banking. The development of MitID was an opportunity for disability rights organizations to be involved in the design of a critical infrastructure made by the authorities in collaboration with a private company, and the financial sector. For disability rights representatives, it was paramount that inclusive and accessible design would be an integral part of the development process of MitID. However, even though web accessibility was specified in the public procurement and development of MitID as a digital solution, actual provisions for ensuring compliance with web accessibility guidelines were not sufficiently enforced.

Even though the Digital Inclusion Division, comprised of public servants hired at the Agency for Digital Government, facilitated comprehensive and meaningful dialogue via online meetings during the first lockdown in 2020, civil society representatives were not involved directly in the design process of MitID; they were not included in testing its mobile application early on, nor asked to partake in design decisions of the digital infrastructure on desktop or mobile devices. Most of the conversations between civil society organizations and the Digital

Inclusion Division were concentrated on disseminating communication about MitID. These meetings were helpful for civil society representatives to learn about the infrastructure and identify different accessibility needs of diverse citizen groups. Yet this approach was insufficient to influence the design of MitID.

Even though disability rights organizations, including the umbrella organization Disabled People's Organizations Denmark and The Danish Association of the Blind, were invited to discuss which authentication instruments, such as a code display, should be used, representatives of Blind and partially-sighted persons were not involved in the core design of MitID's app and web components, nor where we involved in the practical process of migrating users from the former NemID (EasyID) infrastructure to MitID. The design and migration process were controlled by Nets, the company who won the tender to develop MitID for the state. Furthermore, even though I repeatedly voiced concerns about web accessibility and inclusive design, genuine monitoring and quality control of the product components were only conducted six weeks before the system launched in the Summer of 2021.

The inclusion of the Danish Association of the Blind occurred very late in the design process. Thus, when we were involved to test MitID, several usability flaws, as well as lack of compliance with WCAG became apparent. In addition, the lack of comprehensive information about MitID hampered the design of guidance materials and accessible training for the use of this new digital infrastructure, which the Danish Association of the Blind had to develop for their members at short notice. This process illustrates a lack of consideration for making digital solutions universal, inclusive, and accessible, as well as a lack of recognition of disabled people's knowledge and expertise of web accessibility and inclusive design. Had the development phase involved a more inclusive approach, MitID would be of higher quality today: truly accessible to the diversity within our society.

Civil society organizations representing people with disabilities could have informed MitID's design by testing it and providing feedback over the course of its development, rather than after it was developed. Involving members of disability communities in decisions relating to all the components of MitID would have enabled a truly inclusive process and provided insights to create alternative infrastructures for those citizens who are not able to use digital technologies, such as elderly citizens who have low digital skills, or individuals who rely on help to communicate with the authorities due to cognitive or communication disabilities.

### A Relational Approach to Accessible Communication for Persons with Aphasia

Narrated by Frederik Gybel Jensen

Considering the way in which Jesper argues the importance of involving members of disability communities in the design of a public digital infrastructure, Frederik outlines the importance of inclusion in the design of meaningful communication for people with aphasia, a language disability. This case is crucial for the discussion of digital accessibility in Denmark, as authorities have made digital communication mandatory and thus, creating access for people with communication and cognitive disabilities is urgent. Through Frederik's account, he exemplifies how digital technologies can be meaningful for people with aphasia, however, he describes how contextual and personal factors influence accessible communication, and how people with aphasia, healthcare professionals and relatives, need to work together to communicate in meaningful and dignifying ways.

### *Aphasia and Meaningful Communication*

Following brain damage from, for example, a stroke, people can experience a variety of disabilities depending on the location, type, and severity of the brain damage. A stroke can cause physical disabilities like paralysis, or invisible disabilities like cognitive disabilities (Blanck, 2014). Stroke survivors can experience language and communication disabilities. Aphasia, a language disability, can impact a person's ability to speak and understand language, but also make it difficult for people to write and read. Aphasia can manifest in many ways. In the past, aphasia was primarily understood as a language disorder that impacts a person's functional language level. Rehabilitation was contingent on the level of language loss in relation to brain damage. However, this has changed over the years in Denmark. Today, speech therapists are increasingly aware of the need to understand and recognize the lived experiences of people with aphasia as key to inclusive rehabilitation.

In a digitalized society like Denmark, suddenly experiencing aphasia can have implications on the way people access public services. As more areas of healthcare are mediated through technology, it will become necessary to explore how people with communication and cognitive disabilities who rely on assistive communication, can enact personal autonomy, feel included, cared for, and respected. Sometimes people with aphasia communicate online with the help of a relative or an assistant. Assistive and augmentative communication (ACC) technologies, such as digital pictograms or software that aids spelling, can also assist people with aphasia in their everyday communication. As speech and language therapists, we increasingly explore and study ways to use digital technologies to aid communication between people with aphasia, their loved ones, and healthcare professionals.

Thanks to available studies on meaningful communication, speech therapists are increasingly committed to engage persons with aphasia actively in their rehabilitation process, and in their use, selection, and adoption of ACC (Kagan, 1998). However, digital technologies are not necessarily the optimal solution. There are other forms of communication, such as physical pictograms, that can be used in meaningful ways to aid people with communication or cognitive disabilities. When people with aphasia do not have access to specialized support and accessible communication, the affordances of a digitalized society can become a barrier. This could be the case when people with aphasia interact with platforms needed to access health care that do not provide alternatives to text-heavy information (by offering, for example, digital or analogue pictograms, simplified language, or text-to-speech-functions). For this reason, web accessibility, assistive technologies, as well as specialized support to access different communication aids around public digital services are imperative, especially when the interaction between patients and healthcare professionals is digitalized.

### *Accessible Communicative Situations as Collective Care and Respect*

Persons with aphasia that I have met through my research and practice often need support to communicate. They may need help to speak, understand, read, write information, and express themselves. Some people with aphasia need more help than others. When speaking to a doctor, or relaxing at home with their loved ones, people with aphasia can benefit from adapted communication and support from a communication partner or significant other. There are a range of developed methods that can help communication partners support people with aphasia. For example, Communication Partner Training (CPT) programs can help relatives and others learn how to facilitate meaningful communication. Specialists in this domain use the analogy of a language-wheelchair-ramp to describe to relatives and healthcare professionals how to adapt their mindset to facilitate accessible communicative situations. Within speech therapy, we often encounter that conversation partners can hamper meaningful communication when they neglect to acknowledge individuals' intellect. To make explicit how social relations influence accessible communication, in the following section, I narrate an example from my own work experience:

### ***Words on my white pages***

After experiencing a stroke, Peter awakes in a hospital bed; he is a 61-year-old man from Denmark who works as a lawyer in a metropolitan area. The stroke has damaged his brain, leaving Peter unable to walk and talk as he used to. His right arm is paralyzed and when he writes with his left hand the letters seem out of order. When Peter talks, he can say single words, and sometimes short sentences, but often those words and sentences do not make sense in the context of a conversation. When I enter the room, Peter is visibly frustrated while his wife speaks to him. Anne, Peter's wife, expresses frustration with her husband's difficulty to "remember their children's names". She is angry, distraught, and pressures her husband to try to name the things in the room: a bed, a TV, a mirror. Peter tries; he mutters words, but not the ones his wife expects. Peter suddenly closes his eyes, turns his head away from his wife, and remains silent. Following a short conversation with the couple I quickly realize that I need to find ways to support their communication and mutual recognition. Both for the sake of supporting Peter's confidence in his communicative abilities and intellect after the stroke, but also so that both Anne and Peter can understand Peter's communication needs. My impression is that Peter understands almost everything. But he finds it difficult to verbalize and write words. To help Peter, I follow Aura Kagan's (1998) Supported Conversation for Adults with Aphasia (SCA), a speech therapy method based on acknowledging a person's agency, intellect, and competences, whilst revealing them in conversation. First, I pull out a small white booklet with clear white pages, and a black sharpie I carry around. I slowly begin to write keywords as

I speak, tracing my conversation with Peter, so that he can return to what I have said at any time. When I ask Peter a question, I provide a few written possibilities. For example, I write three different hospital names, and he points to the one we are in. In that way, I know he understands where we are. I also ask Peter how many children he has and provide different numbers on the white pages. He points to the correct number. At one point Peter agitates his hands, gesturing to me to turn back the pages, and points toward a keyword we used earlier in the conversation: the hospital's name. He seems to want to know more about why he is here. Pointing at words and numbers is Peter's current way to communicate and take control of the conversation. In addition, I can try to read Peter's emotions by paying attention to his facial expressions and body language. Supporting him requires me, and others, to continuously offer a space for him to lead the conversation and create the right tools and communicative environment.

This specific example from my everyday practice as a speech therapist illustrates the complexity of supporting meaningful communication among persons with aphasia, as well as the asymmetrical power relation that requires careful balancing from communication partners and people in Peter's social circle. Zooming in on speech therapy for people with aphasia and its relation to environmental and social factors, we can reflect on the importance of understanding lived experiences of disability to provide accessible services and communication – both in person and in digital forms. People with aphasia need specialized support that reflects their individual needs and respects people's agency and intellect regardless of how they communicate. There is great potential in digitalization when drawing upon available research within speech therapy, that centers the lived experiences of people with communication and cognitive disabilities. In this way, designing accessible communication does not need to be led by technological determinism but rather by a careful examination of the diversity of ways in which people communicate and rely on social and material relations to thrive and belong to the communities of which they are part.

## Beyond Technical Access: Digital Games and Social Recognition

Narrated by Leif Hemming Pedersen

After exploring the importance of social relations in fostering accessible communicative situations for people with aphasia from the perspective of Frederik, the following section investigates the social implications of design and use of digital technologies. This section shifts our attention from public services to private products, such as digital games. Our intention with this third perspective is to illustrate how private organizations also partake in the way people with disabilities enjoy digital technologies and shape their identities in a digitalized society. In what follows, Leif explores digital accessibility in online gaming via a think-aloud interview with a 29-year-old gamer referred to as David. This section highlights digital technologies as entangled in social relations, and the importance of examining social experiences of disability (Beeston, 2020) and their relation to identity formation and personal autonomy (Mackenzie, 2019).

### *David's Player Experiences*

On top of David's shelf in his living room, four figures are on display: two of them portray the hooded assassins from the video game Assassins' Creed; the third figure is a half scale replica of the bionic underarm of the character Snake from the video game Metal Gear Solid; and beside Snake, David showcases a character called D.Va, dressed in her pink mesh suit, from the video game Overwatch.

Like the family pictures on David's wall right next to the shelf, these figures also say something about him. Clearly, he likes these figures and the fictional universes from which they come. But also, he likes these characters because they relate to something he enjoys doing: playing digital games on his computer and PlayStation. These figures exemplify that equal access to mainstream culture and activities are important for building and maintaining our identities (Beeston 2020). However, accessibility in gaming still requires improvement. For David, the issues of accessibility and gaming are interwoven with his disabilities and his social circle. Since birth, David has experienced hand-motor and visual disabilities, which he refers to as "my things in my hands and eye", without mentioning disability terms specifically. Due to his way of seeing and moving, he employs adaptive strategies to play his favorite games. While he adapts the games to his comfort and abilities, he also negotiates how to build social relations online.

For David, both the perils and pleasures of gaming revolve around his connections and experiences with other players. David is an early retiree who spends a lot of his time volunteering at a local sports organization and visiting his mother several times a week. But it is in his online community, via the gaming platform Twitch, that he builds and keeps contact with many of his friends. Like many gamers, socializing is one of the primary reasons for David to play (and watch) digital games. And at times, it is even his friends that help facilitate the game's accessibility for David. But social relations are not his only motivation to play. As David says, the two primary things that make digital games more accessible are his PlayStation controller and his friends.

David's preferred device for gaming is his PC, but he finds it much easier to use his PlayStation controller instead of his computer mouse and keyboard. The combination of his PC and

PlayStation controller is therefore David’s favorite setup. Especially when he is playing First-Person Shooter (FPS) and Multiplayer Online Battle Arenas (MOBAs) games. However, David also explains how not all games are designed for controller use. And, even if a game offers the option, the logistics of adapting the game to the controller can be cumbersome, especially when the design of the game has not prioritized the controller as the default device. Nevertheless, David has found adaptive strategies to play online games with friends. But such adaptations are not always well received among other players. As he explains, when games reveal the kind of device he is using, or if gamers notice he is playing with controllers due to specific character movements, it can lead to bullying. In David’s own words: “They get pissed off (…) Then you are called a fake gamer”. In addition to hardware adaptations, other design features can also be a subject of controversy online. On David’s Twitch channel, gamers can see that he often slows down the player or camera speed. When this kind of adaptive strategy is received with disrespect, it is David’s gamer friends that enable him to experience digital accessibility:

> [David]: “They back me up, support me and understand my problem. So, they don’t get angry as such. I mean, they can get a little angry for fun: ‘No! Shit, you didn’t hit,’ or ‘it sucks that you hit like shit.’ And then: ‘Oh, you have your problem’. And then we talk a little and then we laugh, but it’s kind of... We laugh at the problems I have. We use it as a joke.”
> [Leif]: “Is it okay with you? Do they use a good tone?”
> [David]: “Yes, some of them know exactly how far they can go. And there are some who have crossed my boundaries, and then we just talked about it.”

While this conversation indicates that certain competitive gaming norms can take place safely and comfortably, David’s account shows how the expectations of gamers who do not understand David become less of a barrier when he is supported by his friends. When David plays team-based online games, he makes sure that at least two or three of his friends are there to avoid others “kicking him out”. This is often combined with turning off the voice-based chat function, blocking unfamiliar team members in the chat, and using an external chat function, such as Discord, as a safer space to discuss the game. In these situations, David's friends become a "social buffer" (Beeston 2020, p. 122) against hostility from other players.

David's experiences as a disabled gamer supported by his adaptive strategies and friendships underline how digital inaccessibility can be identity fracturing, whilst digital accessibility can be identity affirming. When designing accessible games, it is crucial to build relations and interactions based on the social recognition of difference. Game developers need to move beyond "checklist style engineering approaches" to accessibility (Power et al., 2018), which are certainly beneficial in developing design functionalities, but fail to grasp the ways in which disabled gamers might flourish online. Reflecting on the relationship between accessibility and identity in online games, thus, leads us to argue for disability knowledge and culture to influence game development. If the gaming industry embraces the lived experiences of disabled people more widely, we wonder, what kinds of fictional figures will stand on top of the shelves of the future generations?

## Embracing Disability Culture and Justice

In this chapter we have explored three different contexts that inform the study of digital accessibility: 1) the development of the Danish public digital infrastructure, MitID, and the implications of only partial involvement of disability rights advocates in its design; 2) accessible communication facilitated by speech therapy in healthcare for people with aphasia; and 3) accessible online gaming supported by adaptive strategies and social relations and recognition. These three empirical examples describe ways in which people with disabilities can partake in, or be excluded from, the digital age.

Through Jesper's account of the development of MitID, we describe how, despite the available knowledge on digital accessibility within advocacy work and disability culture, the involvement of disabled people in MitID's design process was partial. Meaningful involvement in design processes requires that technology developers and other important stakeholders recognize people with disabilities as key users, experts, and decision makers. As disability scholar Ashley Shew has argued, often lived experiences of disability, disability culture, and activism informing design innovation are neglected in technology development projects (2020). As she writes: "Tech designers' reliance on their imagination of what it is to be disabled keeps the focus on individual functioning and limitation, rather than addressing the larger context — the poor infrastructure and social stigmas that work against the full participation of disabled people in society." (p. 49).

In contrast, by embracing existing disability culture and history, technology development can center the lived experiences of disabled people as designers, makers, and knowers (Hamraie & Fritsch, 2019). However, as critical access scholar Aimi Hamraie reminds us, universal design projects are not neutral, but political (2017). Even if we embrace existing disability culture and history in design processes, it is crucial to critically attend to the norms and politics that influence how and who is involved in or excluded from design or access-making projects . In this regard, Frederik and Leif's examples show that people cannot be seen as isolated individuals but rather as interdependent social beings with situated lived experiences and diverse communication and access needs. Building on these examples, we echo disability justice activism that understands individuals as always embedded in social and material relations, and reminds us that access is better understood as a collective, rather than individual, responsibility that encompasses intersecting identity group affiliations across race, class, gender, disability, income, and more (Hamraie, 2013; Mingus, 2010).

Considering a multiplicity of lived experience and the practice of design as building social and material worlds (Costanza-Chock, 2020), acknowledging people's interdependence can be a generative principle to create worlds that sustain our differences. Drawing upon the work of feminist philosopher Catriona Mackenzie, we can thus argue that design projects should always acknowledge and work towards, what she calls, relational autonomy, which recognizes that "our individual identities are constituted by interpersonal, familial and social relationships and intersecting social group memberships and through processes of enculturation into specific linguistic, political and historical communities" (Mackenzie, 2019, p. 146).

Our analysis exemplifies how digital accessibility is not only a matter of technical access, but also a matter of social justice and social recognition, and that digital projects in the public and private sectors need a strengthened focus on collective forms of access (Mingus, 2010; Hamraie, 2013). Digital accessibility, just as other forms of access-making in the built environment, is not a static goal or checklist, but could be better conceived as a project of social justice that is constantly negotiated in socio-material relations. As technologies are entangled in many aspects of everyday life, such as education, welfare provision, the labor market, or cultural production and consumption, people with disabilities need to be involved as key stakeholders in digital design projects, so that existing social inequalities and discriminatory attitudes experienced by people with disabilities are not reproduced through digitalization.

As a methodological contribution, we also offer a written collaboration that attempts to bridge advocacy work and research. Rather than solely interviewing accessibility consultants and disability rights representatives, scholars must engage in collective writing projects where valuable knowledge within advocacy work can engage in conversation with academic research, recognizing that much of the flexibility that digital technologies provide today is in great part a result of disability activism and disabled people (Blanck, 2014). Thus, we hope this chapter will inspire technology developers and researchers to truly embrace disability cultures, histories, and expertise as outlined through this writing collaboration, and by many other scholars and activists cited in this chapter who are committed to collective access and disability justice.

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# Article 3. Narrating Digital Access, Trauma, and Disability through Comics and Image Description in Denmark

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**ABSTRACT**

Anthropologists explore sequential art, particularly comics, as an accessible medium to co-produce knowledge about trauma and disability with research collaborators. However, practices of image description developed by blind scholars and artists need to be integrated into these projects to ensure visual studies are accessible. Collaborating with sighted service users of drop-in centers in Denmark, we reflect on the process of creating comics and image descriptions about their experiences with digital access, trauma, and disability. By analyzing insights from both drawing and describing images, we propose this method in medical anthropology as one way to build research collaborations that embrace disability expertise.

**KEYWORDS**

Denmark; digital access; disability; drop-in center; graphic anthropology; image description

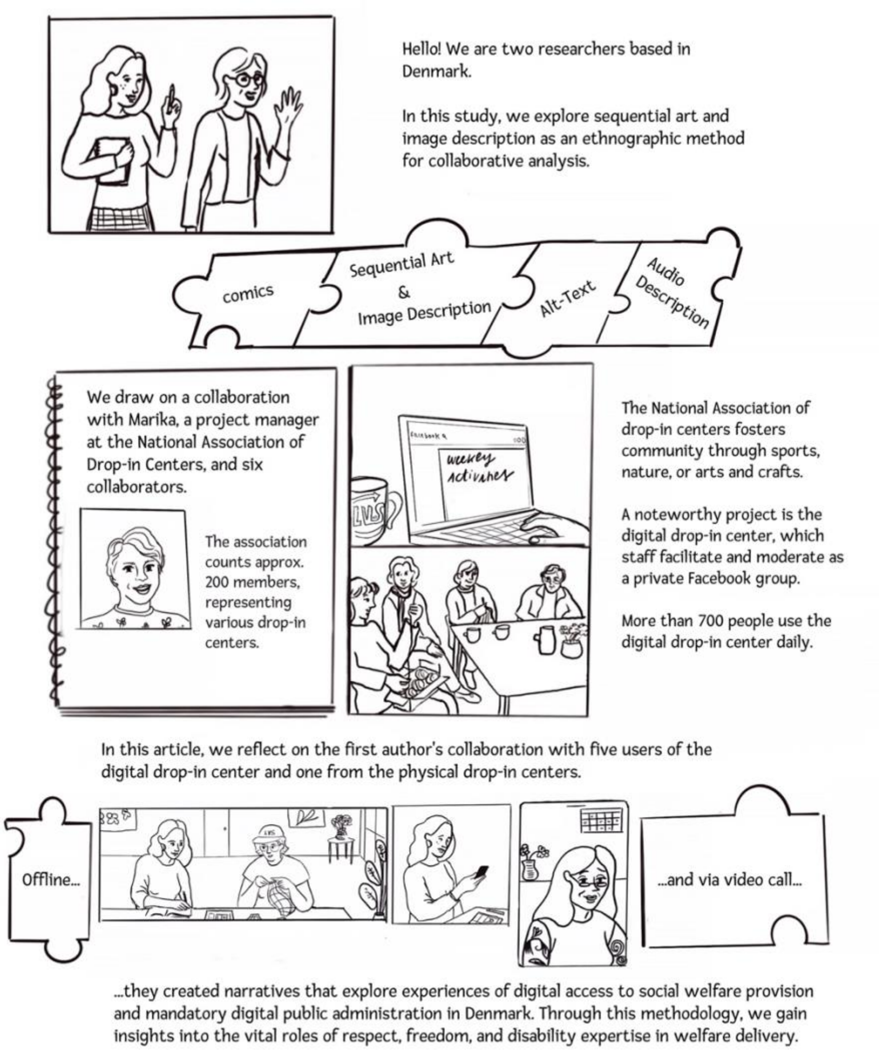


*Figure 1 An audiographic introduction with alt-text and audio description.*

*Audio descriptions available on Soundcloud: https://on.soundcloud.com/oy84c*

Qualitative researchers, including medical anthropologists, are increasingly interested in exploring accessible research methods that enable the active and equal participation of marginalized individuals and communities in knowledge production. Multimodal methods in participatory research center the diversity of human experience and are valuable in exploring more accessible ways of producing knowledge. Alternative ways of conducting fieldwork and attending to disability access are crucial commitments to forge research collaborations with people with disabilities and reconfiguring the field of anthropology as a more welcoming space for disabled scholars (Durban 2022). Such relevant methodological explorations in recent years are: contact movement as an ethnographic method (Balasubramanian 2021), critical accessibility mapping (Hamraie 2018), digital remote access (Johnson 2022), sign language as embodied critique (Spiel and Angelini 2022), image description (Coklyat and Finnegan 2023; Kleege 2016, Kleege and Wallin 2015), and the co-creation of drawings (Santamaría et al. 2020), comics (Logie et al. 2023), or graphic novels (Dix et al. 2019; Venkatesan and Murali 2019). Through these multimodal explorations (Figure 1), scholars have advanced the development of research methods committed to social justice and disability access. This approach to multimodality is distinct from critiques of technology neutrality in anthropology (Takaragawa et al. 2019). The primary objective of the multimodal is to amplify the expertise of diverse bodyminds for knowledge production through the adoption of different perceptual and communication modes (Coklyat and Finnegan 2023).

Building on the importance of collaboration in ethnographic projects and the work of blind artists and scholars who encourage the description of images in visual projects (Coklyat and Finnegan 2023; Kleege 2016), this study explores the first author's co-creation of comics and image descriptions with users of a digital drop-in center in Denmark. This is a private Facebook group helping more than 700 members who identify as drop-in center users, vulnerable people, trauma survivors, mental health service users, people with disabilities, or people who experience social isolation. The digital drop-in center (*det digitale værested* in Danish) is managed by employees working at the National Association of Drop-in Centers in Denmark (*Landsforeningen af VæreSteder*), a non-governmental association that functions as an interest organization advocating for the rights and well-being of drop-in center users across the country. The association also supports the maintenance of physical drop-in centers in Denmark, which are led and maintained by social workers, private organizations, church organizations, and drop-in center users (Kaltoft et al. 2009).

The Association has approx. 200 drop-in centers across Denmark. Drop-in centers or *væresteder* (a place to be) are daytime public facilities that offer social support and social activities to people experiencing substance abuse, marginalization, and social isolation. Some drop-in centers also offer food and a warm place to be during the day. During the first Covid-19 lockdown in 2020, a project manager at the association, Marika, created the digital drop-in center on Facebook in response to the closing of physical drop-in centers across the country.

*Figure 2. An audiographic illustration about the moderation of the digital drop-in center.*

Since then, Marika and her colleagues manage the group and organize weekly activities for its service users (Figure 2), even though physical drop-in centers are open. According to Marika, the group has enabled a rapid aid response in cases where members have been at risk of self-harm. Furthermore, the digital drop-in center has helped people who wish to build community through arts and crafts, sports, and nature, but are either far away from a physical drop-in center or experience social anxiety. The association sets out to challenge stigma and stereotypes that people using the physical or digital drop-in centers face, whilst also supporting users to improve their well-being and self-esteem (Kaltoft et al. 2009).

Our collaboration with the association is part of a larger research project, in which we study collective forms of access in the context of mandatory public administration in Denmark. In collaboration with the association and drop-in center users, we narrate stories about the digital drop-in center and access to public services. In what follows, we review literature exposing the significance of decolonial and disability-centered research in medical anthropology and the value of sequential art and image description in research collaborations. In this section, we provide a brief review of how comic artists and blind experts have translated a print medium into different modalities (via multimedia digital content, text, audio, or touch). We then introduce our research scope and collaboration with the association and drop-in center users, and present the study’s framework, before delving into an analysis and reflection of the first author’s collaboration with six research collaborators.

## Forging Research Collaborations

Feminist and decolonial scholars using ethnographic methods advocate for research collaborations that shift the traditional “researcher/researched” dynamic into an equitable and reciprocal partnership (Bailey 2015; Green 2015). A call for equitable collaborations in ethnographic studies primarily responds to a history of colonialism in anthropology (Allen and Jobson 2016) in which researchers from the Global North, in privileged and powerful positions, have misrepresented, silenced, or othered Black, Brown, and Indigenous people or other intersecting and marginalized identities, such as disabled people (Durban 2022).

To address a history of colonial research in the social sciences and the humanities, critical scholars have argued for the importance of building research collaborations (Hong 2021;

Bailey 2015) informed by decolonial methods, relations of reciprocity and intersectionality (Nemer 2022). These approaches enable researchers to reflect on their positions, as well as on historical forms of oppression and inequality that affect research collaborations, individuals, and communities at the intersection of race, disability, gender, class and other axes of identity formation and social marginalization (Crenshaw 1989, Collins 2022).

Scholars adopting a decolonial, intersectional, and feminist practice propose to 1) share control over a research project, 2) build trust with collaborators, 3) mirror language used by collaborators, 4) foster relations of reciprocity beyond research interventions, and 5) financially compensate and credit individuals and communities involved in research (Bailey 2015). In addition to reconsidering how collaborations take place and are maintained, critical disability scholars (Hamraie and Fritsch 2019; Shew 2020) and disability anthropologists (Durban 2022; Hartblay 2020) have argued that studies of disability must center disabled people's first-hand experiences and knowledge. This call stems from critiques of ableism in research studies (Durban 2022), in which disabled people and other marginalized communities have been studied as research *subjects*, but not regarded as agents in their own lives, or as researchers, *experts* or key research collaborators (Spiel et al. 2022; Bailey 2015; Durban 2022).

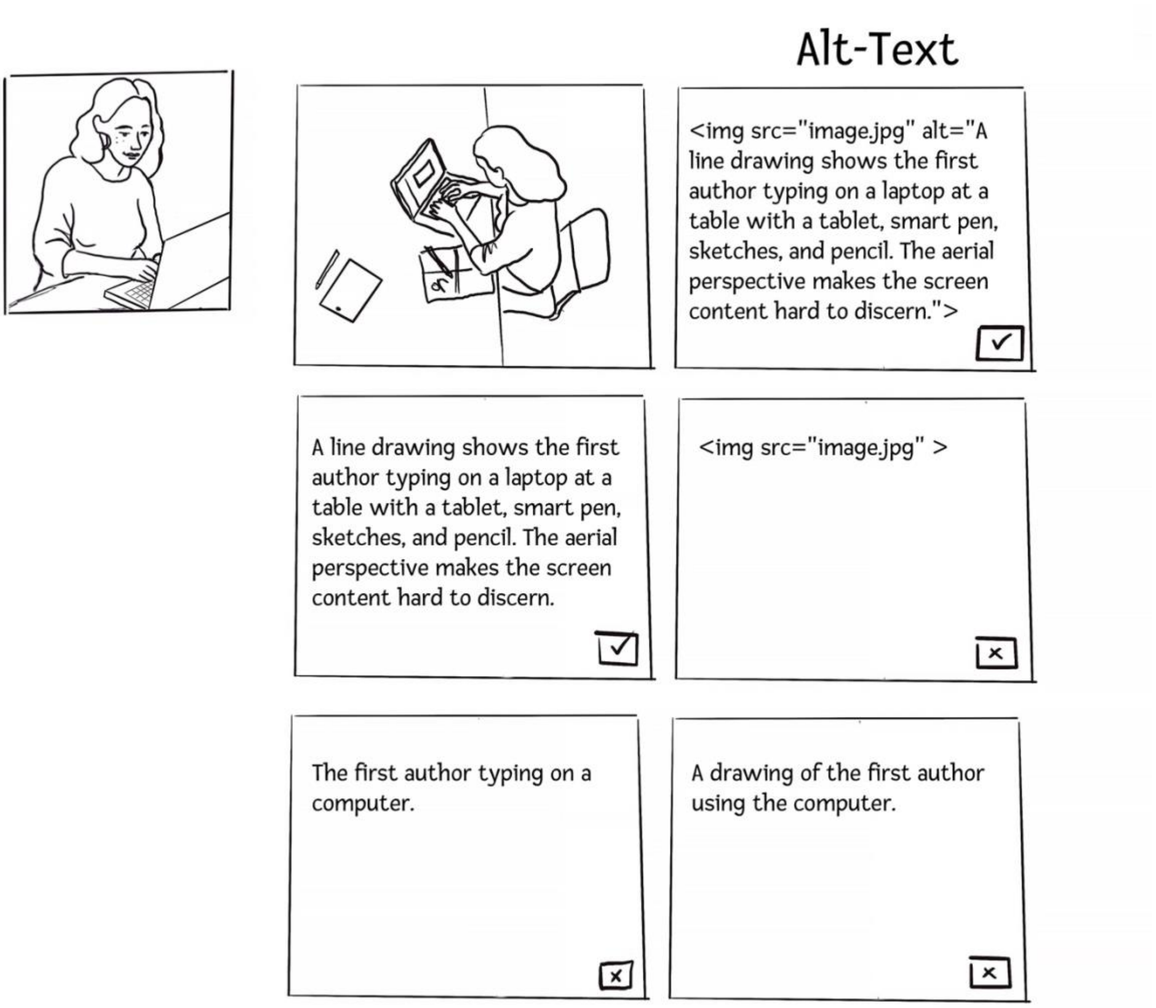
## Multimodal Storytelling and Image Description

In recent decades, decolonial and disability anthropologists have emphasized the importance of multimodality and accessibility in the way we produce and disseminate knowledge. In this regard, multimodal storytelling in anthropology has gained recognition to amplify marginalized perspectives and explore research collaborations. For example, researchers have used camera-based art (Green 2015; Hong 2021) or graphic storytelling (Dix et al. 2019) to amplify the expertise and experiences of racialized groups experiencing trauma, violence, or discrimination.

Regarding the exploration of disability, illness, and care, researchers, and creators, making drawings and sequential art as a collaborative method, have been recognized in fields such as graphic medicine or graphic pathography. The field of graphic medicine has largely dealt with themes such as disability, illness, health care discourse, and mental health (Green and Myers 2010; Holmes 2013). These explorations have been productive in centering the experiences and knowledge of people who are experiencing illness, trauma, or disability.

Whilst making or studying sequential art are valuable ethnographic methods, visual research can risk leaving many people behind when it fails to pay attention to current practices of image description for blind and low vision readers and collaborators. As camera-based and graphic narratives continue to flourish within and outside of anthropology, it is important to pay attention to scholars and artists interested in visual culture and disability justice that practice image description and multimodality (Fritsch et al. 2021; Thompson 2018).

With regards to visual methods, blind scholars are advancing image description as an integral part of visual culture and production – from digital content to films, and artworks in museums. Informed by this work, comic artists have begun to explore multimodal storytelling that experiment with touch, sound, and text-based media. Addressing the importance of image description, in this study we explore the practice of writing alternative text and recording audio descriptions as two crucial elements of a collaborative comic-making process.



<img src="image.jpg" alt="A line drawing shows the first author typing on a laptop at a table with a tablet, smart pen, sketches, and pencil. The aerial perspective makes the screen content hard to discern."> ☑

A line drawing shows the first author typing on a laptop at a table with a tablet, smart pen, sketches, and pencil. The aerial perspective makes the screen content hard to discern. ☑

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The first author typing on a computer. ☒

A drawing of the first author using the computer. ☒

*Figure 3. an audiographic story about alt-text.*

Alternative text or alt-text (Figure 3) is a type of written description or metadata of digital images that is translated by screen reader software to a synthesized computer voice or to a digital braille display (Coklyat and Finnegan 2023). Screen reader software is commonly used by blind, low vision, or neurodivergent people. Most digital tools today enable the writing of alt-text in Word documents, Google docs, PDFs, PowerPoint Presentations, web development software, and many social media platforms (e.g., Twitter and Instagram). In recent years, scholars committed to disability access have discussed the importance of alt-text in academic publications published online across different fields (Bennett et al. 2021; Williams et al. 2022). Research that focuses on creating informative and poetic alt-text (Coklyat and Finnegan 2023) is pertinent for anthropologists who include figures in their publications to enhance the accessibility of their visualizations.

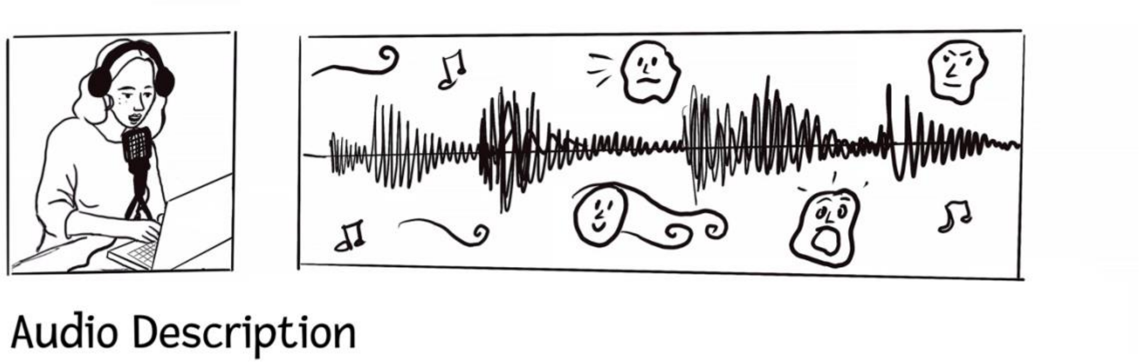

*Figure 4. Recording audio descriptions.*

Whilst informative alt-text is necessary in academic publishing, blind scholars discuss that audio description (Figure 4) is essential for the accessibility of theatre, films, and other visual narratives (Kleege 2016). Similarly, blind experts working with comics artists argue that accessible sequential art benefits from being translated into rich audio description, which integrates oral storytelling, voice actors, and sound effects to create an equivalent immersive experience for blind and low vision audiences (Sousanis and Beitiks 2023).

Disability scholar and creative writer, Georgina Kleege, argues for the importance of audio description. She explains how this modality should be integrated from the outset of a creative project and produced by individuals or teams making visual art. This ensures that the message and aesthetic elements of the work are not lost in translation and are incorporated into the description (2016). Our methodology draws inspiration from examples of multimodal sequential art, or comics that integrate accessibility from the outset of a creative process, such as *Embodied* (2023), an audiographic project crafted by low vision artist Rae Lanzerotti, and the MIT Magazine article Comics Beyond Sight (Sousanis and Beitiks 2023).

Having discussed the importance of sequential art in participatory research and the essential role of image description, our attention now turns to our collaboration with six sighted collaborators who use the digital drop-in center and a physical drop-in center in Denmark. In conjunction with comics and image descriptions created with them, we have developed additional comic spreads and image descriptions that contextualize these stories. This is an attempt to form a cohesive overarching narrative that can stand alone as an informative multimodal webcomic. The audio descriptions are narrated by the first author and voice actors.

## Mandatory Digitalization and the Digital Drop in Center

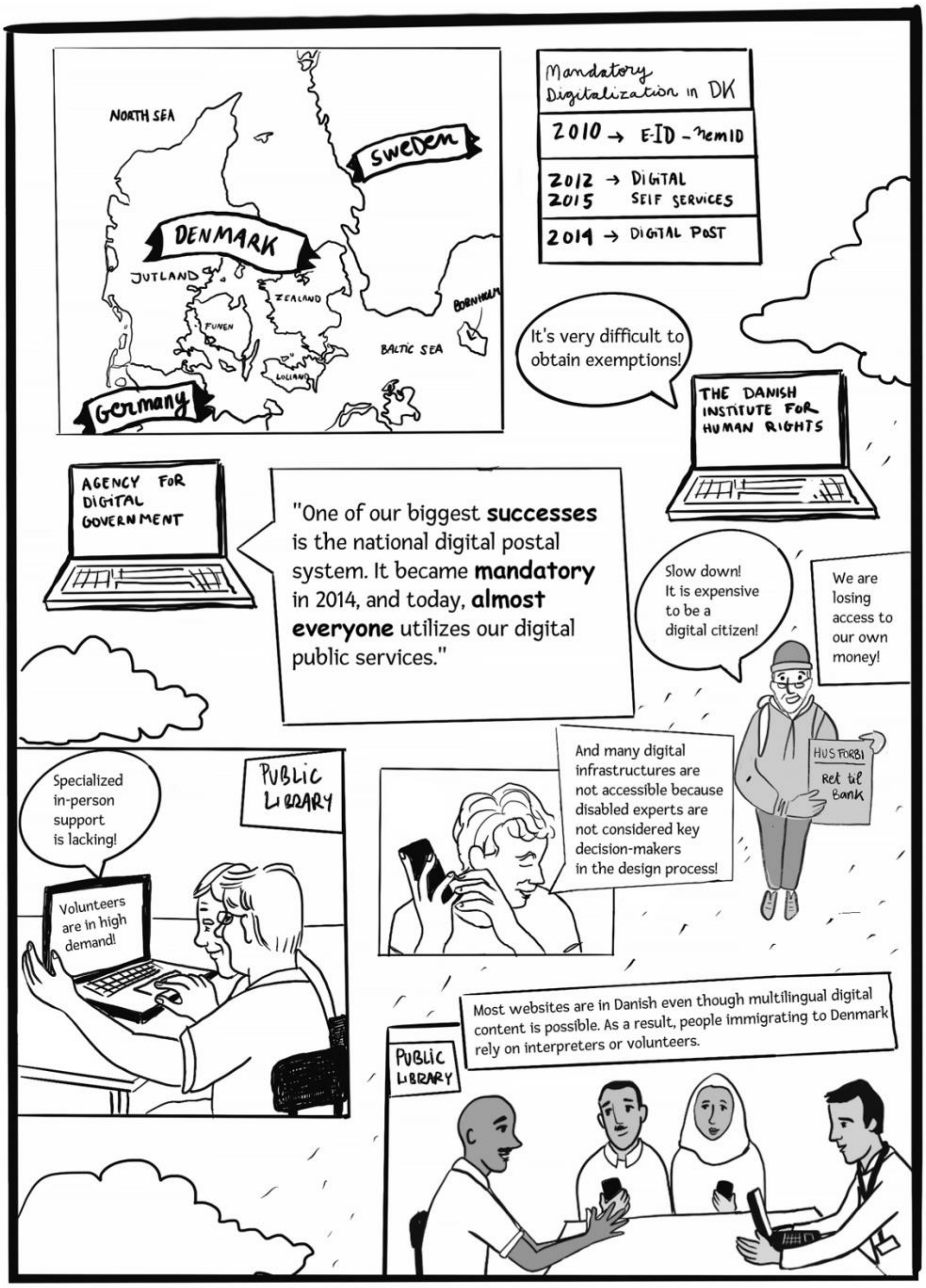

*Figure 5. Multiple perspectives on mandatory digitalization.*

Over the last decade, Danish policymakers and politicians have implemented a series of laws that enforce citizens to use digital technologies to perform a myriad of public administrative tasks and to communicate digitally with the public authorities. So-called "digital self-service solutions" in the form of data-driven systems presented as mobile apps and webforms, have become pervasive in the Danish public sector. Citizens residing in Denmark have been able to ask for an exemption from mandatory digital communication (*digital post* in Danish) in cases where a citizen has “a disability”, “low Danish language skills”, “low digital skills”, “is homeless” or is unable to afford “a computer, tablet, or broadband connection” (Faye Jacobsen 2017). This exemption can apply to any given digital self-service solution implemented in public administration procedures (e.g., early retirement, applying for housing subsidies, or changing one’s general practitioner).

However, in practice, the Danish Institute for Human Rights reported in 2017 that such exceptions have been difficult to obtain because citizens have had to justify the need for an alternative each time a public administrative task implied using a digital self-service solution. Furthermore, the institute found that the authorities agreed that municipalities would not communicate the concept of exception clearly on their websites, to encourage citizens’ adoption of digital self-services (Faye Jacobsen 2017:35-38). Given that exemptions have been approved by municipal employees and are based on their discretion, the institute concluded that obtaining an alternative to digital self-service could become “purely illusory” (38), and thus the institute recommended liberalizing these mandates to accommodate the needs of people who could not use these infrastructures for various reasons. These include 1) not being able to afford the technology, 2) having low levels of digital literacy, 3) experiencing language barriers, or 4) encountering inaccessible design.

In this context, as policies and institutional practices may force citizens to “help themselves” (Schou and Pors 2018), scholars argue that mandatory digital self-service has created an “administrative burden” on citizens, especially for those who rely on social welfare benefits (Madsen, Lindgren, and Melin 2022). In addition, the roles of frontline workers and their relations with citizens have changed. As Pors and Pallesen suggest (2021), due to digital policies and laws, frontline workers at citizen service centers have become responsible for “educating" citizens in the use of public digital infrastructures, while their responsibility for resolving administrative matters with citizens has been downplayed.

Against this backdrop, a report written by the Danish Agency for Digital Government and Local Government Denmark (2021) acknowledged that individuals experience intersecting forms of inaccessibility based on age, education, income, citizenship status, race, nationality, language, and disability. In this regard, interest organizations emphasize that citizens’ service accessibility rights are violated when authorities design digital infrastructures that are inaccessible, and thus, discriminatory, and do not offer support. Inaccessibility articulated by civil society organizations is a consequence of 1) the absence of formal in-person support provided by the authorities and private organizations delivering critical services to citizens (Ældre Sagen and Epinion 2023, 2), the insufficient involvement of advocacy organizations in the design of digital public infrastructures, and 3) the lack of multilingual digital content across public sector websites and digital webforms (Faye Jacobsen 2017).

To better understand this situation, the first author conducted a multi-sited ethnographic study (Marcus 1995) from January 2021 to May 2023 engaging with communities and individuals affected by mandatory public digitalization. As part of this study, we discuss a collaboration with the National Association of Drop-in Centers, which started in March 2021. Marika, a project manager working at the association reached out to us after reading about our project through our university’s blog. She invited the first author to interview users of their digital drop-in center.

As digital communication and self-service have become either mandatory, or difficult to opt-out of, the project manager explained that individuals unable to use or afford digital technologies relied on volunteers, friends, or family members to establish communication with the authorities, or to apply for entitled welfare benefits. Some users who did not own a smartphone, or were experiencing homelessness, also reported encountering difficulties to access welfare benefits and their own money because banks were reducing the availability of in-person cash withdrawals.

We believed it was extremely important to talk to members of the digital drop-in center to learn about their experiences. The multiple barriers that Marika described related to digital divide literature, which maps different levels of barriers (Helsper 2021), such as 1) material access (cost and availability of devices and infrastructure), 2) digital skills and individual engagement, and 3) structural inequalities that do not allow marginalized communities to benefit from digital public administration (Eubanks 2018).

Once we agreed to collaborate, the project manager and her colleagues facilitated the recruitment of 13 persons who volunteered and consented to participate in a semi-structured interview. The first author conducted and recorded these interviews, except for five instances where fieldnotes were made instead, as per the research collaborators' request. Maintaining flexibility in the study's approach was paramount to building trust and ensuring shared control with research collaborators. With input from the project manager and collaborators, we decided to conduct the interviews on the phone. This approach allowed us to prevent the spread of Covid-19. Collaborators also expressed that a phone call was a comfortable way to meet the first author for the first time.

In addition to the interviews, we invited collaborators to produce comics and image descriptions with the first author based on their interview data. Half of the interview participants participated in a one-on-one workshop. Those who did not engage expressed not having the time when we conducted the workshops. To recognize the contributions of collaborators, we gave them a gift card of their choice, worth two hours of the first author's salary. Considering most participants experienced social anxiety, we designed the collaborative workshops as one-on-one sessions lasting one hour in a space they found comfortable. Mindful of their time, the first author asked participants if she could contact them again once the comics were finalized to receive a final approval.  Regarding authorship, most participants consented to be acknowledged for their contributions, while one collaborator preferred to remain anonymous. Regarding the collaborators' preferences, two workshops took place online through video call, and four were held in person in May 2023, at the main offices of the National Association of Drop-in Centers. The first author and her collaborators are sighted. One participant, Inge, disclosed having lost sight in both eyes.

The participants' demographics were similar, with most being early retirees with disabilities living in small towns in the West and Southwest of Denmark. Most interview participants reported having one or more visible or invisible disabilities and identified themselves as Danish, white, aged 30 to 65. Nine participants identified as women, and three as men. Gender and age diversity in this study correlates with reports by the association showing that cisgender women are overrepresented in the digital and physical drop-in centers. Furthermore, according to the association, 78 percent of digital drop-in center users are between the ages of 35 and 64. In what follows we present our findings and reflections of the collaboration.

## Stories from the Digital Drop-In Center

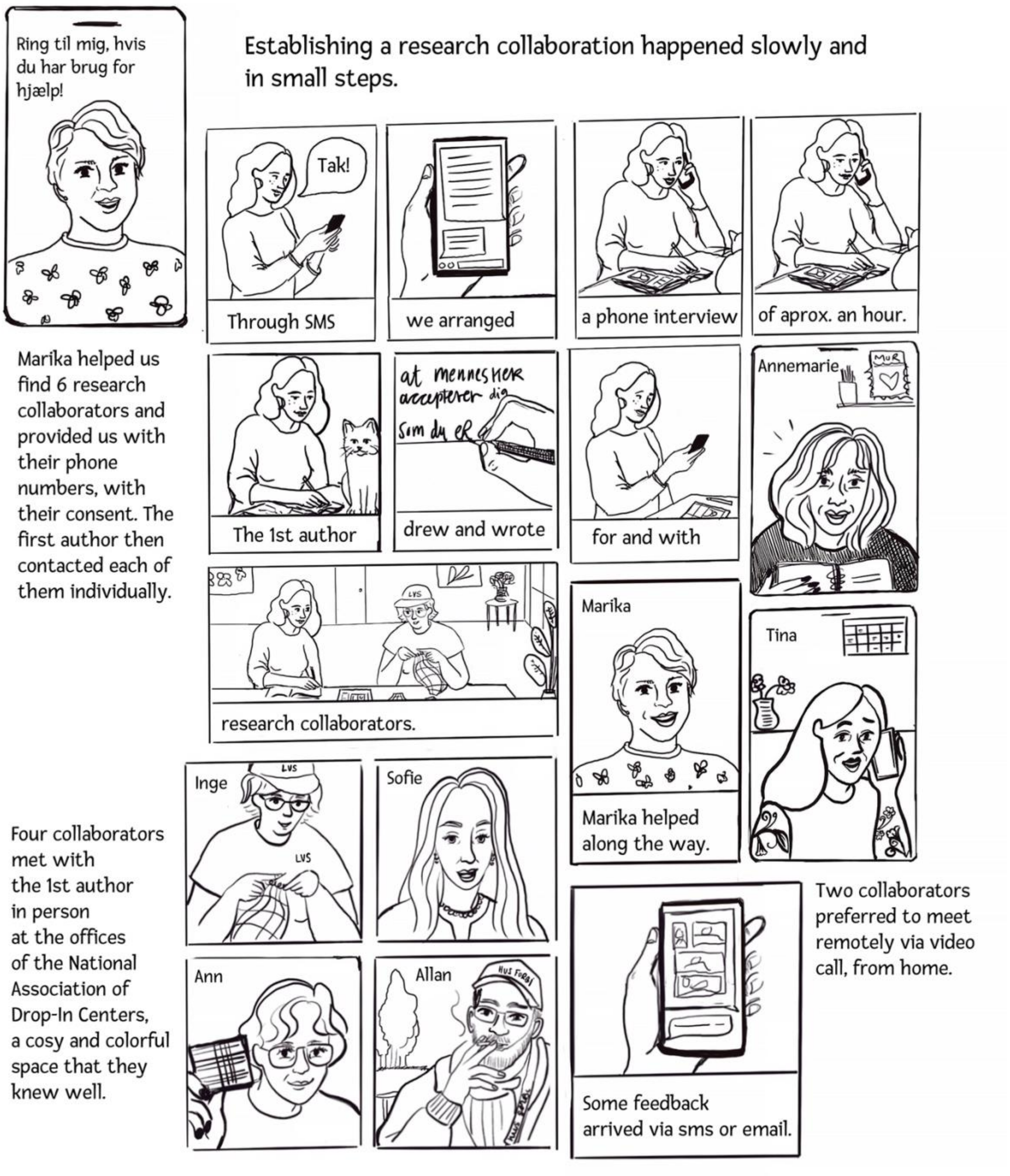

*Figure 6. Our methodology briefly explained.*

The first author, who is a researcher and illustrator, began to draw comics based on interview data and later wrote image descriptions which prepared her to discuss with the collaborators aspects of the interview which needed clarification, or follow-up questions (Figure 6). The process of discussing image descriptions prompted the first author to learn how collaborators preferred to describe their gender, racial, and disability identities.

In line with the project *Alt-text as Poetry* created by disabled artists Bojana Coklyat and Shannon Finnegan, it was essential to explore how people prefer to be described. As the artists argue: “assumptions about someone’s identity can be harmful, and omitting portions of a person’s visage can be a kind of erasure.” (2023:284). We decided to ask our collaborators directly how to best draw and describe them to sighted, blind, and low vision readers.

Drawing, as opposed to taking photographs or filming, enables anonymity within a truth-fiction spectrum (Dix et al. 2019). In addition, the act of drawing and slowly thinking of what to represent enables a slower pace for the researcher and the collaborator to get to know one another. In doing so, we worked together towards collaborative narratives which actively avoid stereotypes, misrepresentation, and stigmatization. Building on the work of Georgina Kleege (2016), image description promoted a critical reading of the first author’s representations, as descriptions provided by collaborators could lead to changes and additions to initial sketches made before, or during, the workshop. The alt-text and audio descriptions also became integral companions of the visual narratives.

Sharing control over the narrative was made possible by choosing words and visual components together and giving space for a shared visual and textual language. An important finding specific to our study was that collaborators often used the word “user”, as opposed to “member of the group”, to emphasize the service the digital drop-in center provides. People who have a mental health diagnosis also preferred the term “psychologically vulnerable”, to emphasize the importance of caring and respectful interactions around them. In general collaborators also preferred to use the term *udsatte mennesker*, which can be translated as “vulnerable people”. This term was often used to counter the way violent social interactions, the job center, or the municipality positioned them at a disadvantage. On the other hand, the term also provided a sense of community among the collaborators, and a shared commitment to social justice.

In what follows, we outline findings from using comics and image description to explore experiences of digital access, trauma, and disability in the context of the digital drop-in center and mandatory digital public administration in Denmark.

### ***Building a Safer Space Online***

Collaborators use the digital drop-in center daily, with most of them participating in various social activities. These activities include group support sessions, diary writing sessions, remote bingo, cooking classes, remote walks, crochet, drawing, linocut printing, and knitting. Inge (age 60) and Ann (age 49), who are avid craft makers (Figures 7, 8, 9), proactively organized small activities, and meetups on Facebook Messenger. They expressed that these activities help them feel less isolated, more confident, and hopeful. In the following sections, we delve into the narratives that the first author created with them.

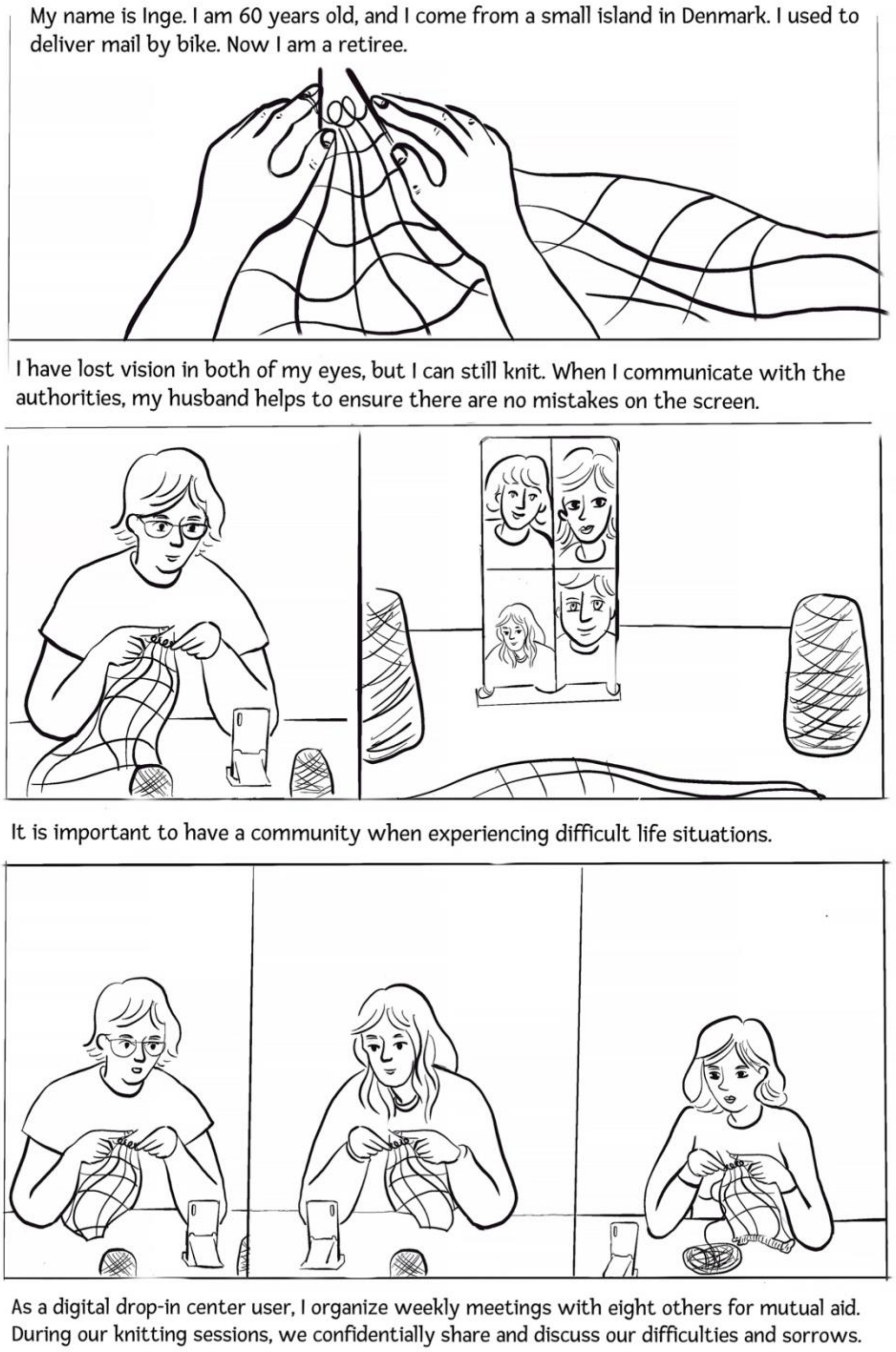

*Figure 7. Comic made with Inge Hansen.*

*Figure 8. Comic made with Ann M. Steengaard.*

*Figure 9. Comic made with Ann M. Steengaard.*

Inge (Figure 7) and Ann (Figures 8–9) enthusiastically organize activities and shared content within the digital drop-in center's Facebook group. When discussing the comics and image descriptions, we learned that their interactions primarily took place through Facebook

Messenger, the Facebook group's wall, private text messages, photos, images, emojis, and video calls. Inge also brought a foldable phone holder to the meeting, which the association had distributed to all members by post. With pride, Inge displayed and unfolded the white plastic holder allowing the first author to accurately depict its shape and how it holds her phone vertically. While showcasing it, she explained, "I can't see much on the screen due to my vision loss, but having this holder allows me to knit during video calls."

The collaborators were aware that the first author had never seen the group and wanted to give the first author a sense of what it looked like. Using image description as they looked at comments and messages from members of the group, collaborators would articulate what they valued. "The daily good morning greetings are really nice" Ann would explain. "And when someone is not saying good morning, staff from the association tag you to check you are okay. It's nice to have someone making sure everyone is well."

The group is exclusively open to people who are drop-in center users, people who experience social anxiety, or people who are far away from drop-in centers. These strict criteria ensure that only those who genuinely need the support and the community are granted access; researchers, journalists, and curious individuals are explicitly excluded. The project manager, Marika, and research collaborators consistently iterated the importance of these rules in creating a kind of "sanctuary" (*fristed*), where people can freely express their thoughts, build relations of trust, confidentiality, and respect, and seek assistance if necessary. Marika noted that some people in the group struggled with suicidal thoughts. Collaborators and Marika similarly explained that the intimacy of the group allowed for the prevention of self-harm, as people could ask for help early on, or check in on one another daily.

As we delved into narratives about the digital drop-in center, its boundaries, and protocols, we inevitably were reminded of the concept of "safer spaces". This notion has historically been advanced by activists, marginalized communities, and civil rights movements as spaces to congregate and counter violent and oppressive environments. To quote media studies scholar Ruth Deller, a safer space can be defined as a place that provides:

> (…) sanctuary and protection for victims of violence or respite and care for people experiencing a mental health crisis. It provides those struggling with addictions a place to share their experiences and support one another's recovery. (2019:228)

By using the term safer instead of safe, Deller reflects on how no social space can be a hundred percent free of harm. The possibility of mistakes, conflict, and harm is always present in social interactions. This is why trauma-informed social work, public health, and research use harm reduction approaches that acknowledge shared accountability and vulnerability in attempting to create safer spaces and relations of care (Mauldin 2023; Yatchmenoff et al. 2017). Discussing the drop-in center through the drawings and image descriptions with Inge and Ann was a productive way to analyze its boundaries and collaboratively reflect on what made the digital drop-in center safer.

According to most collaborators, the staff moderating the group and its clear community guidelines and boundaries were essential for them to feel safe and trust users of the Facebook group. Sofie (age 49) explained during the workshop how she saw social media spaces as harmful, yet simultaneously enjoyed the flexibility of the digital drop-in center in welcoming her need for privacy (Figure 10).

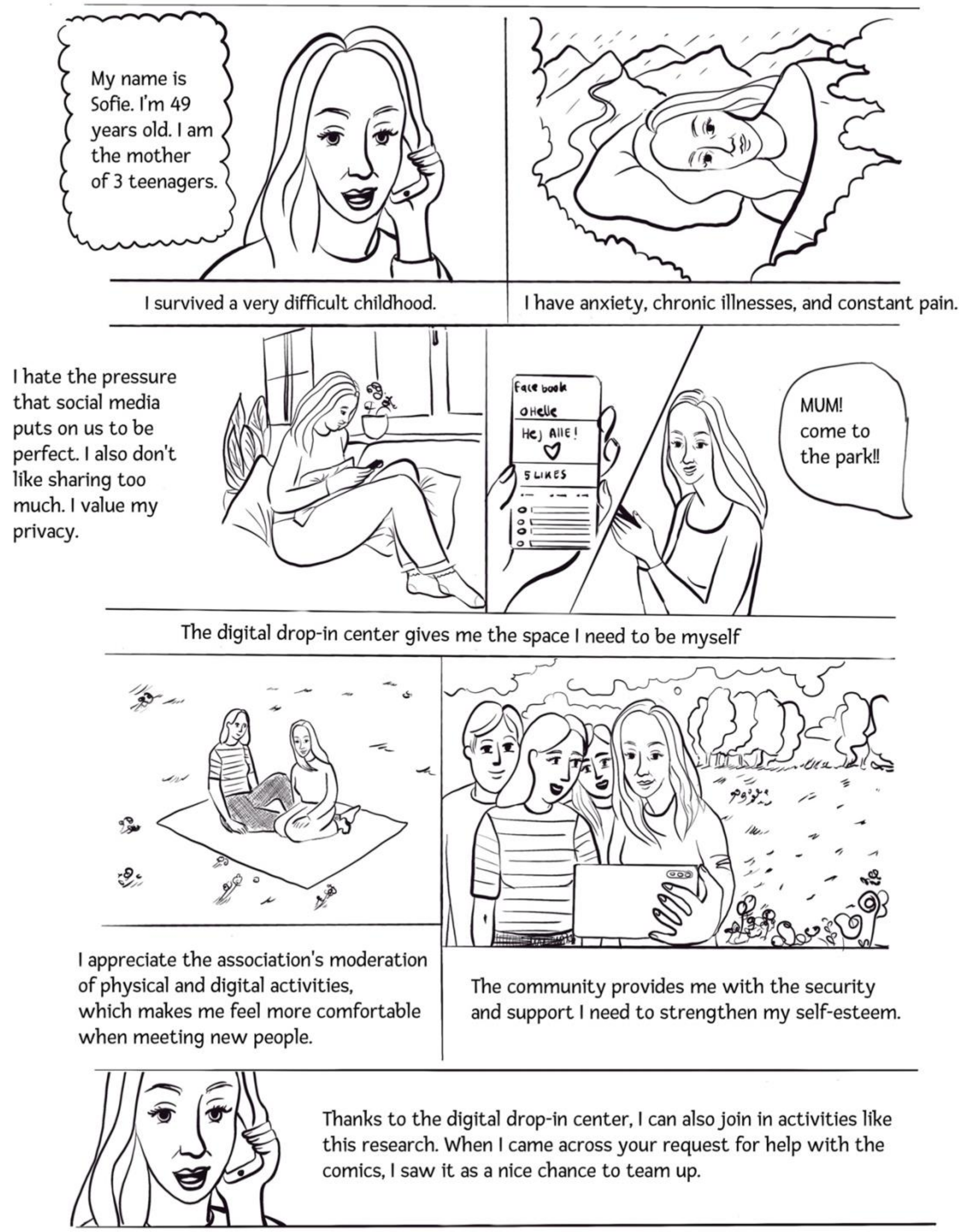

*Figure 10. Comic made with Sofie.*

### *Forging Relations of Respect and Care*

When asking Marika if the association was using the concept of safer spaces as a framework, we learned that the association was not directly building on the concept of safer spaces, as such, but were building on their own principles called “the small steps method”. Created by users, volunteers, and staff working in different drop-in centers, the small steps method was based on the idea of freedom, community, and respect, summarized by the association as follow (author-supplied English translation):

> Major steps don’t happen on their own, and a successful social effort must have an eye for the persistent and complex work of creating small steps, which are needed for greater changes. These small steps could be things like taking a shower, doing laundry, eating food, saying hello and goodbye, being seen and acknowledged, and experiencing respect. It can also be participating in group activities such as setting the table, cooking, going on a trip, being in a workshop, helping others, playing a game, being part of a football match, and discussing the day’s news stories. (Kaltoft et al. 2009:28)

### ***Access Intimacy***

In using the comics as a prompt for discussion, the first author could learn more about the way participants felt supported by the association. In conversation it was clear that the association played an important role in affirming our collaborators’ self-esteem through creative and social activities that created peer support and trust amongst members. For collaborators, it was essential that they were being understood for who they were, being greeted every morning, and that they felt people adapted to them as much as they were learning to adapt to other ways of communicating and being social. This way of building connection reminded us of the concept of *access intimacy* coined by disability justice activist Mia Mingus as the freeing feeling when someone gets your access needs (2011: para. 4). In her own words:

> Access intimacy is not charity, resentfulness enacted, intimidation, a humiliating trade for survival or an ego boost. In fact, all of this threatens and kills access intimacy. There is a good feeling after and while you are experiencing access intimacy. It is a freeing, light, loving feeling. It brings the people who are a part of it closer; it builds and deepens connection. (para. 9)

In the process of drawing and getting to know each other, it was also clear to us, that access intimacy was essential for the digital drop-in center to feel safer. Furthermore, access intimacy was something we could build into collaborations, by trying to learn from each other, as well as tell a story together in a way where participants feel respected, understood, and free.

### *Negotiations of Identity and Representation*

Conversations about image description of the collaborators' sense of selves were generative for getting to know each other. This process involved an exchange in which the first author would describe herself to exemplify what image description could sound like, and then collaborators would try describing themselves. In her self-description, the first author took inspiration from disability-led seminars organized by blind and disabled scholars, in which both appearance and positionality statements are used to describe oneself. She would say something like:

> I am Colombian and Spanish, my skin is light, but I prefer to describe it as olive skin, because I am biracial. I wear colorful clothes, big hoop earrings, and my hair is often curly. I move a lot and look a bit anxious at times.

Collaborators would respond with their own ways of describing themselves. These kinds of exchanges would often spark intimate reflections on the self, for both the researcher and her collaborators. Describing oneself would often lead to becoming vulnerable and sharing things that collaborators or the researcher didn't like about themselves, or things that they were proud of but could not be perceived just by looking at them. Most of the descriptions, except for one, were in spoken word, whilst the researcher took notes. Ann felt it would be best if she could have a couple days to think and write her own image description. The first author thought it was a great idea to try this method. The description arrived a couple days later as promised, via SMS. The description has been translated to English from Danish:

> Hi it’s Ann. I am a plus-size woman with a little bit of everything. I have blue eyes, curly short hair, sometimes in a dark violet shade. My parents kindly forgot to give me a kick in the butt, so I stopped growing at around 1.67 meters. I mostly wear jeans, either fitting snugly or currently the ones that are a bit loose from the calf down. And I just love when they have holes in them. As for tops, they can be in any color. I really like grass green, and violet/purple. But I am colorful, and the colors sometimes reflect my mood. I also enjoy wearing dresses on certain days, depending on my mood, the wind, and the occasion. I appreciate humor in a sweet and non-hurtful way. I am empathetic and open-minded. And I love to talk and laugh. I hope this gives a little picture of who I am as a person.

This exercise taught us that even though a researcher or artist can have the empathy and sensibility needed to portray others in respectful ways, to represent and tell something together was much more valuable for creating a shared vocabulary and understanding. Given that Ann found the collaboration enjoyable and mentioned liking to draw and write, Ann and the first author decided to combine her writing and art with the drawings as a kind of collage. Her description also informed the alt-text that the first author wrote, and later audio recorded. While Ann’s work became part of the comics and image descriptions. Not everyone wanted to be involved in all parts of the process. Other collaborators, for instance, preferred to discuss the comics and alt-text in conversation as opposed to reading and writing. One collaborator went through the language of the comic on paper to make sure all the details were correct.

Knowing that the narratives were initially anonymous was also important because it removed the pressure of being at the center of the story, which some participants felt. This was particularly relevant as certain collaborators were experiencing surveillance from the authorities and described a constant pressure of having to tell their stories and document their disabilities in public administration procedures in ways that felt intrusive. Surveillance mechanisms practiced by public authorities in Denmark have been well documented by researchers (Jørgensen 2021; Kjær 2022) and citizen representatives (OneMillionVoices 2021) in the past years. We tried to be careful not to force collaborators to feel pressured to share difficult personal stories.

To reduce harm and avoid activating a trauma response in collaborators by forcing participants to speak of difficult subjects (Yatchmenoff et al. 2017), the first author tried to focus on the digital drop-in center as an anchor to prompt descriptions of experiences of joy and belonging, so that collaborators would not feel sad or hurt by recalling solely negative or painful experiences. The first author also made sure to avoid overwhelming collaborators with questions, instead letting collaborators talk about what they felt was important to discuss during the interview or workshop. To do so, the first author would pose the following questions:

What do you like most about the digital drop-in center? Is there something that we need to tell that is not on the comics? What do you think is important to say or narrate about mandatory digitalization in the public sector? What do you think works and what do you think could be better?

### *Control, Discrimination and Disrespect as Inaccessibility*

When drawing and describing the comics with collaborators, the practice of using images and text to tell their stories enabled productive discussions about which words and images could best convey the emotions and internal conflicts they felt. When the first author interviewed and met research collaborators, many examples of control, forceful disclosure of their health and disabilities, and forced categorizations appeared in the narratives. The stories that collaborators described reminded us of what Mia Mingus (2017) defines as forced intimacy:

> Disabled people are expected to “strip down” and “show all our cards” metaphorically in order to get the basic access we need in order to survive. We are the ones who must be vulnerable – whether we want to or not – about ourselves, our bodyminds and our abilities. (para. 3)

Experiences of forced intimacy were a common issue brought up by collaborators. Especially in the case of Tina (Figure 11), who described being called lazy at the citizen service center when trying to opt-out of mandatory digital communication.

*Figure 11. Comic made with Tina-Lykke Dannerfjord*

*Figure 12. Comic made with Tinna-Lykke Dannerfjord*

The comics and the exercise of describing the visual and textual narrative based on Tina's interview enabled a focused discussion of different themes, such as issues of disrespect and power via digital technologies and in face-to-face interactions. Her story is an example of forced intimacy, as laws and bureaucratic procedures overrule her access needs and lead to experiences of humiliation. Tina further reflected upon how the discrimination she experienced was not new or prompted by digitalization. In her experience, discriminatory practices in public administration were commonplace before digitalization, as she had been repeatedly forced to disclose her disabilities and intimate information to obtain welfare benefits or get help.

Making the comics enabled us to learn that the digital drop-in center supports Tina and other collaborators to learn how to use digital technologies at their preferred pace: what disability scholars refer to as *crip time* (Kafer 2013). However, when communicating digitally with the authorities, Tina and other collaborators who participated in an interview felt overwhelmed by the administrative burden of deadlines and the expectation of being able to navigate bureaucratic jargon, lengthy legal information on digital letters, and the myriad of websites and apps that public authorities demanded them to use, with little to no official support.

### ***Lack of Disability Expertise***

Tina's story also exemplifies a key issue raised by collaborators in their narratives on digital public administration: the lack of knowledge of first-hand experiences of disability and accessibility. This is what Cassandra Hartblay (2020) refers to as disability expertise. Research collaborators expressed that staff working at the association and their peers in the digital drop-in center compensated for a societal and institutional lack of disability expertise. In this way, the drop-in center provided a space where collaborators' unique lived experiences were considered valuable knowledge that could inform the creation of accessible services and safer spaces (Figure 12). This validation contrasts narratives of citizen-state encounters (Figures 13–14).

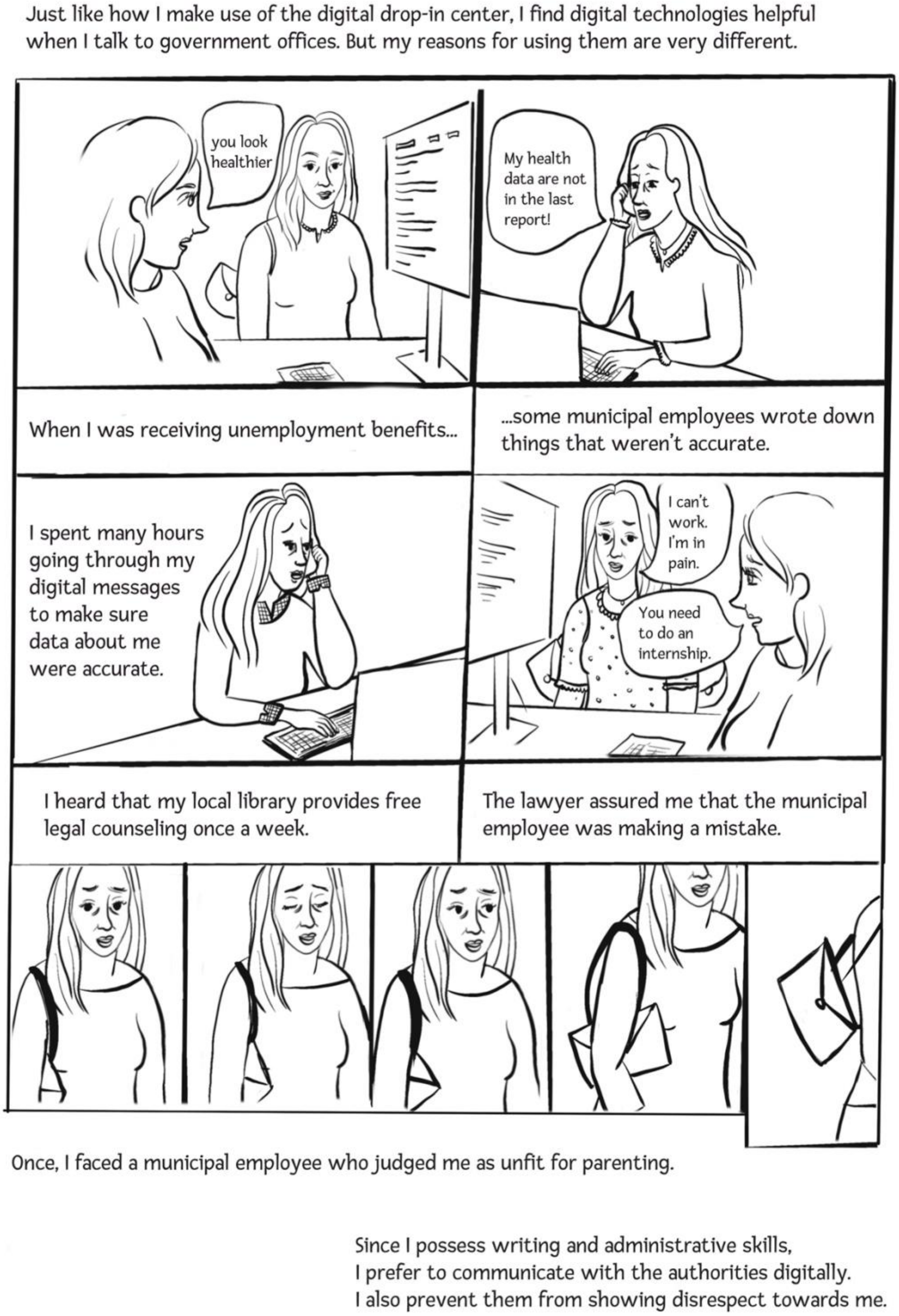

*Figure 13. Comic made with Sofie.*

*Figure 14. Comic made with Ann M. Steengaard.*

### *Unsafe Institutional Norms and Exceptions*

The experiences of forced intimacy, control, discrimination, and disrespect that collaborators mention in some stories are not isolated to the Danish context. Disability scholars have critically addressed how harmful neoliberal orientations to inclusion and welfare, in which a system of institutions and bureaucratic processes (Titchkosky 2020) problematize one's inability to work as not following the rules, imply certain ideologies on an individual's worth. As Kelly Fritsch explains:

> It is clear that questions of being legitimate and worthy disabled persons are wrapped up in neoliberal notions of inclusion in which someone can be included if they can be captured by market rationality. Bodies that are profitable – those that can be enhanced, marketed to, or incorporated into the labor force – are bodies that neoliberalism deems worthy. (2015:36)

Despite general distrust in municipal authorities, and experiences of harm and humiliation in connection with digital and in-person bureaucratic encounters, collaborators mentioned meeting individual caseworkers or counselors who disrupt the view of the municipality as an unsafe institution. This was the case when social workers visited certain collaborators in their homes (legally referred as "paragraph 85": a social worker supporting people with disabilities at home). Another example was brought up by Annemarie, who described her trusting relationship formed with a caseworker (Figure 15):

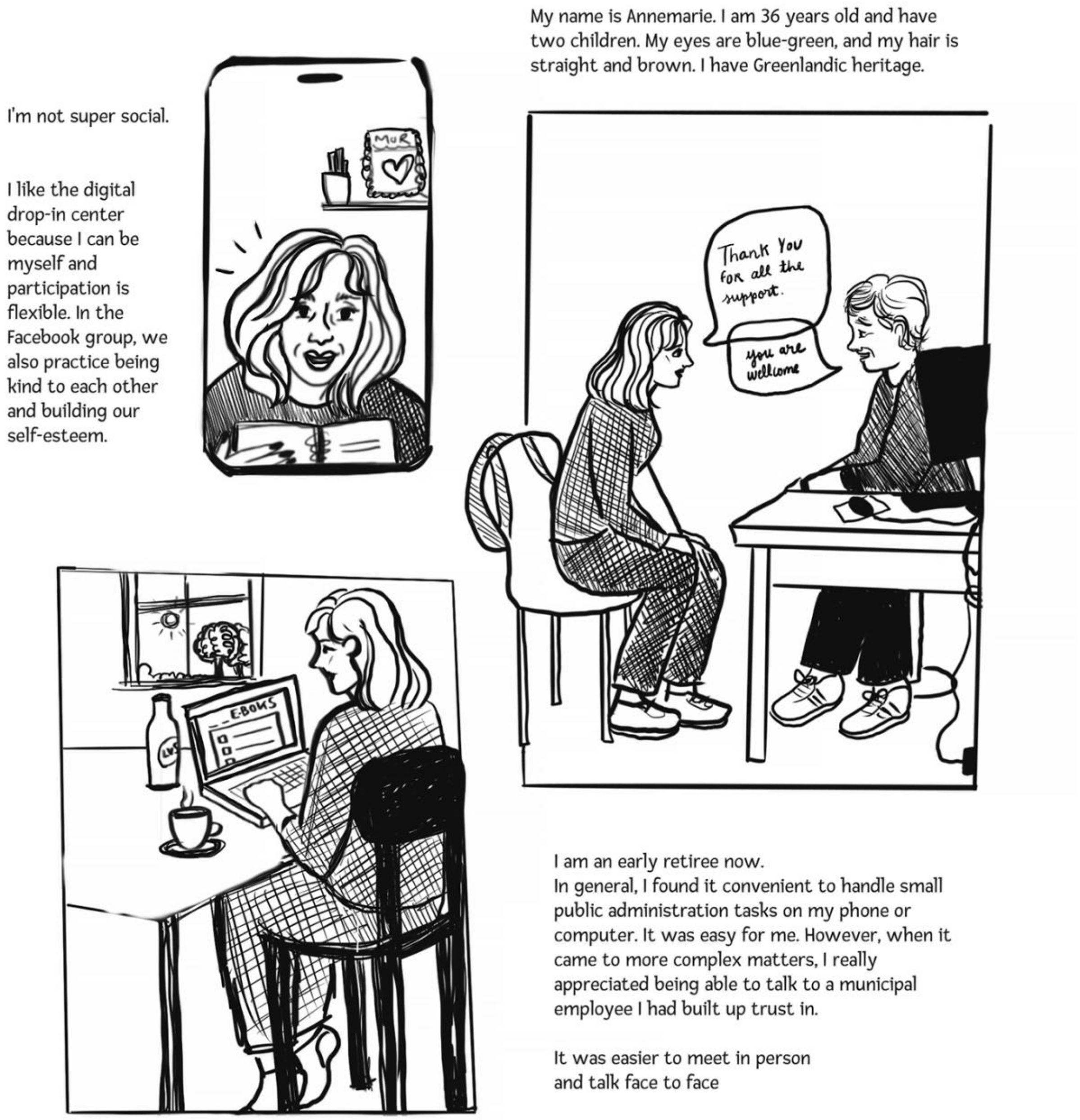

*Figure 15. Comic made with Annemarie Andreasen.*

The stories from the digital drop-in center show that digital remote access is beneficial when people have the resources and support to be part of safer digital spaces. Respect, relations of trust, access intimacy, in-person support, disability expertise, and freedom from control and surveillance are essential for digital spaces and interactions to feel safer and beneficial. As digital technologies are increasingly used to control and surveil populations, "mundane technologies" (Nemer 2022) such as a private Facebook group, can offer avenues for resistance, refuge, social connection, and liberation. Control and surveillance experienced by collaborators call for rethinking how digital and traditional forms of welfare services and digital platforms are delivered, regulated, and designed. As opposed to simply advancing technology innovation and digital safer spaces, the stories from the digital drop-in center show the importance of disability expertise and social relations of respect and care in welfare provision, as more services move online.

## Lessons from a Research Collaboration

In this study we developed research collaborations through encounters, both online and in-person. Through the making of comics and image descriptions with research collaborators we have explored drawing, writing and oral descriptions as a multimodal form of ethnographic analysis. Adapting our approach, based on ongoing discussions with our collaborators, highlights the importance of flexibility and shared authority. Financially compensating research collaborators and welcoming co-authorship or anonymity is essential to value the authority, time, labor, expertise, and well-being of people we invite to research projects. This demands that we budget for compensation as an integral part of ethnographic projects.

Importantly, we have learned that forging a mutually beneficial collaboration requires building trust slowly (Bailey 2015), fostering access intimacy, and being open to let collaborators know researchers on a more personal level. This approach is far from ever being perfect, and the possibility of harm is always present in social interactions and research projects within a history of ableism and colonialism, as well as in power asymmetries in academia and between researchers and collaborators. Decolonial approaches, disability expertise and trauma-informed approaches to research are therefore essential to navigate the vulnerability of these collaborations and the well-being of both researchers and collaborators of different bodyminds.

With regards to the study of the digital drop-in center and mandatory digitalization in Denmark, we have found that relations of care, respect, and safety are essential to facilitate access that allows for choice, rather than force (Mingus 2011; 2017), both in-person and in remote interactions. Drawing inspiration from insights offered by disability scholars, the etymology of the word “access” encompasses the duality of presenting both an opportunity to connect and a potential avenue for harm (Fritsch 2016; Hamraie and Fritsch 2019). Based on the narratives we have produced with collaborators; we have learned that digital technologies in social welfare provision exist within this duality.

Collaborators with social anxiety or physical disabilities, who have the financial resources to afford digital technology, can benefit from accessing communities and services remotely. Many disabled people benefit from disability communities online to build networks of mutual aid (Piepzna-Samarasinha 2018). However, it is crucial to remain critical of the costs of technology, and of technology providers that govern these digital spaces. Collaborators find mandatory digital public administration inaccessible, in many cases, due to discriminatory policies, institutional practices of control and surveillance, and interpersonal relations of forced intimacy. Therefore, values and norms embedded in digital infrastructures and institutional practices need to be critically evaluated by researchers, policymakers, and institutions.

In sum, online or physical safer spaces, such as digital or physical drop-in centers, offer a framework to transform harmful institutional practices in welfare provision, as well as research collaborations. Even though safer spaces are not sites for participant observations, as these spaces are a refuge for people who need them, collaborating with advocacy groups and community representatives advancing these kinds of spaces can help us imagine safer forms of digital and physical access in research collaborations, social work, and health care. As we learned throughout the collaboration, disability expertise is necessary to address harmful norms that permeate institutional and interpersonal social relations. To emphasize this last point, we conclude with a final narrative made in collaboration with Allan (Figure 16), a former sailor and now seller of the newspaper *Hus Forbi*, which advocates for the rights of vulnerable populations in Denmark. Allan underlies the importance of centering and amplifying marginalized forms of expertise in research and policymaking concerned with welfare provision and digital access.

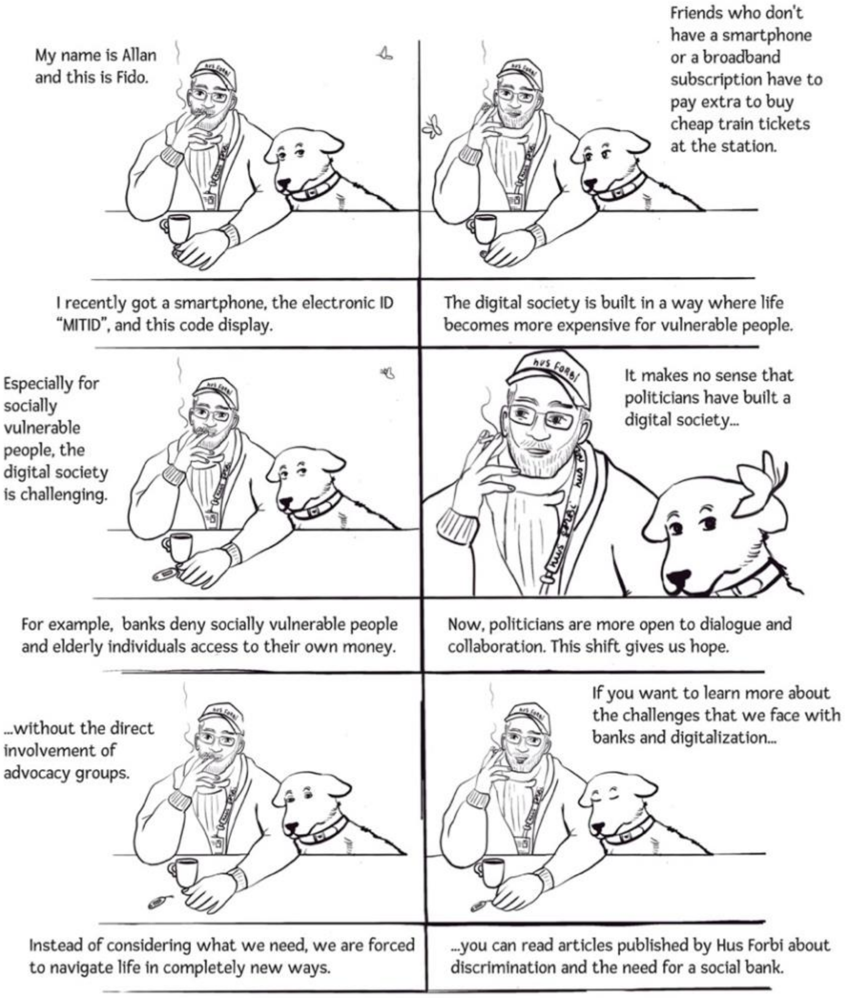

Figure 16. Comic made with Mac Allan.

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## Notes on contributors

Barbara Nino Carreras is a PhD Candidate in the Technologies in Practice research group and the ETHOS Lab at the IT University of Copenhagen. She draws upon theories from the field of critical disability studies, anthropology, and human-computer interaction.

Brit Ross Winthereik is a professor in the Division for Responsible Innovation and Design at the Department of Technology at the Technical University of Denmark. She works with theories from the field of science and technology studies and anthropology.

## Ethical approval

The study has been approved by the IT University of Copenhagen’s Research Ethics Committee. Reference: 2023 – 1767/2621534 (F2).

## Notes

1. Disability scholar Margaret Price coined the term bodymind to argue for the interdependence of body and mind in understanding experiences of disability, access, pain, and desire (2015).
2. Anthropologist Erin Durban in an article published in the journal American Anthropologist (2022) refers to ableism by citing attorney and disability activist Talila Lewis' ongoing definition: "a system of assigning value to people's bodies and minds based on societally constructed ideas of normalcy, productivity, desirability, intelligence, excellence, and fitness. These constructed ideas are deeply rooted in eugenics, anti-Blackness, misogyny, colonialism, imperialism, and capitalism. This systemic oppression that leads to people and society determining people's value based on their culture, age, language, appearance, religion, birth or living place, 'health/wellness', and/or their ability to satisfactorily re/produce, 'excel' and 'behave'. You do not have to be disabled to experience ableism." Working definition by @TalilaLewis, updated January 2022, developed in community with disabled Black/negatively racialized folk, especially @NotThreeFifths (2022).
3. Visual anthropologist Kai M. Green reflects on an ethnographic moment where one of their collaborators found the use of the term "subject" threatening (2015:190).
4. We use neurodivergent as a term to describe individuals who differ from neurologically typical people. Disabled scholars have used the term to center autism. Neurodivergence can also refer to people with learning disabilities, intellectual disabilities, Tourette's syndrome, dementia, bipolar disorder, and other identities that differ from neurotypical ways of being. (Rauchberg 2022:371)
5. The Danish Parliament passed a legislation intended to simplify the rules for exemption from mandatory digital self-service. This amendment, brought forward by Marie Bjerre, Minister of Digitalization and Equality, took effect on June 1, 2023, with unanimous support. The amendment facilitates that citizens who can opt out of mandatory digital post automatically have the right to an alternative to digital self-service (the law does not apply to court case portals and the private sector). Before this law, civil society organizations criticized mandatory digital self-service legislation as citizens who could opt out of the mandate had to justify a new exemption every time any given public administration task requested the use of a digital self-service.
6. The sites included: 1) a public library that supports racialized communities with communication with public authorities, 2) digital inclusion events organized by the Agency for Digital Government, inviting civil society organizations and representatives of public authorities to participate in networking activities, 3) a digital drop-in center on Facebook maintained by the National Association of Drop-in Centers, and 4) a municipal counseling space for neurodivergent families.

7. This information is accessible in an internal report created by the organization Pluss in 2022, which is titled: Evalueringsrapport: Det Digitale Værested.
8. The process of combining drawing and image description was inspired by a chapter on drawing as analysis, written by anthropologist Rachel Douglas-Jones (2021).

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# Article 4. Frictional Access: The Figure of the Digital Competent Citizen in the Danish Welfare State

Barbara N. Carreras and Baki Cakici

## Abstract

Digital technologies and infrastructures are entangled in all aspects of private, social, and political life in frictional ways. As governments use digital infrastructures to govern populations, frictional forms of citizen subjectivities and affective relations emerge. In this article, we attend to the figure of the digital competent citizen in the Danish welfare state and its ideological and normative values, which frame coercive technology adoption as both inevitable and desirable. Drawing on a mix of ethnographic materials, including digital strategies, and fieldwork engaging with individuals and collectives experiencing or witnessing inaccessible services and rights violations, we trace how the figure of the digital competent citizen and its deviant counterpart "the digitally challenged" are contested in material-discursive relations. Building on crip conceptualizations of access as friction, and STS critiques of processes of classification through information systems, we shed light on how the figure of the digital competent citizen obscures violent forms of welfare provision amongst those deemed deviant from the Danish, productive, self-reliant, non-disabled, and compliant norm.

## Keywords

Access, friction, Denmark, digital citizen, competence, crip technoscience, technoableism

## Introduction

> I am not a client, a customer, nor a service user. I am not a shirker, a scrounger, a beggar nor a thief. I am not a national insurance number, nor a blip on a screen. I paid my dues, never a penny short, and was proud to do so. I don't tug the forelock but look my neighbor in the eye. I don't accept or seek charity. My name is Daniel Blake, I am a man, not a dog. As such I demand my rights. I demand you treat me with respect. I, Daniel Blake, am a citizen, nothing more, nothing less. Thank you.
>
> (I, Daniel Blake 2016)

When film director Ken Loach received a British Academy Film Award for his film *I, Daniel Blake* in 2017, he addressed the film academy and expressed gratitude for "endorsing the truth of what the film says" that "the most vulnerable and the poorest people" are treated by the British government with "a callous brutality that is disgraceful", which "extends to keeping out refugee children that we have promised to help."[i] Far from fiction, as governments in Europe have implemented digital technologies to govern populations and national borders in the past decades, digitally mediated forms of state violence have materialized in already violent bureaucratic encounters between states and disabled, low-income, gendered, and racialized populations.

Democratic governments in Europe have adopted neoliberal reforms and exclusionary nationalism (Ayazi and Elsheikh 2017, 17–18), prioritizing financial incentives and exclusionary values over the well-being and flourishing of migrant populations (Narita 2023; Arce and Suárez-Krabbe 2018; Ayazi and Elsheikh 2017). In Denmark, modern poor laws are pushing migrant, racialized, low-income, and disabled populations further into oppressive and inhumane living conditions (Kjær 2022; Falster and Ringø 2023; Eika et al. 2019; Suárez-Krabbe and Lindberg 2019; Abrahamson 2019).

A key shift occurring in public administration in Denmark is that as welfare benefits and services are digitalized, and citizens are mandated to “help themselves”, citizens’ access to official in-person support is downplayed, and inequalities amongst those who can navigate a digital public sector, and those who cannot, widen (Pors and Pallesen 2021). On the one hand, digital-by-default welfare provision reinforces existing social inequalities when government authorities neglect the access needs of migrant, aging, racialized, low-income, and disabled citizens (Morris, Coles-Kemp, and Jones 2020; Coles-Kemp et al. 2020; Khera 2019; Schou 2018; Watling 2011). On the other hand, digital-by-default welfare provision penalizes citizens who do not wish, or cannot afford, digital technologies to become self-reliant (Watling 2011; Hjelholt and Papazu 2021; Wyatt 2005). As a result, citizens who cannot meet the expectation to help-themselves in public administration experience rights violations and increased difficulties to claim entitled welfare benefits, when in-person support is no longer available (Madsen, Lindgren, and Melin 2022; Coles-Kemp et al. 2020; Schou and Pors 2018).

Just like in the case of the fictional character Daniel Blake, who is denied disability benefits for not being “sick enough”, and having difficulties applying for jobs digitally, digital welfare infrastructures provide little to no flexibility for human needs or human error (Ranchordás 2021). Against this backdrop, we examine the figure of the “digital competent citizen” as it is configured in policies, reports, and discussed by individuals and collectives in Denmark. We ask: What norms and values underpin the figure of the digital competent citizen as a discursive tool for governance? And how do individuals and collectives submit or subvert these forms of subjectivation and power?

Our analysis follows the figure of the digital competent citizen across different ethnographic materials and explains its frictional relations with the welfare state in social, political, and affective contexts. We build on the work of crip technoscience scholars who call for the exploration of frictional access as a site that can grapple with the tension of how science and technology can both “produce and dismantle injustice” (Hamraie and Fritsch 2019, 3). Examining what we call *compulsory digital self-reliance* and *frictional infrastructures*, we argue that conceptions of digital competent citizens clash with the biographies, values, knowledges, and lived experiences of access of a diverse population.

## Method

In our examination of the figure of the digital competent citizen in the Danish context, we draw on ethnographic materials collected by the first author (from March 2021 to October 2023). Our data include reports and visual communication written by the public authorities, media articles written by disability rights advocates, fieldnotes produced at digital inclusion events organized by the authorities, interviews with digital accessibility professionals and citizens who are members of interest organizations advocating for the rights of marginalized populations (including unhoused, disabled, aging and racialized communities residing in Denmark). These ethnographic materials are part of the first author’s PhD project, a multi-sited ethnography engaging with civil society organizations and citizen groups negatively impacted by digital mandates in Denmark (forthcoming).

We analyzed our data thematically, through a grounded theory approach, moving from codes to categories, and concepts (Lichtman 2013). We chose ethnographic materials in which we identified configurations and representations of digital competent citizens, and their inverse, the digitally challenged citizens, that government authorities define in national policies and digital strategies. These concepts are *in vivo* codes directly taken from a digital inclusion report (Agency for Digital Government and Local Government Denmark 2021) that was presented at several digital inclusion events from 2021 to 2022. The detailed descriptions of the digital competent citizen and the digitally challenged, prompted us to organize our data across three categories, “digital”, “competent”, and “citizen”, to examine the interdependencies of these terms in our material.  To do so, we coded our material line by line and then created mind maps where we could draw relations between codes and these categories.

### The “Digital”

To reduce costs in public administration and to position Denmark as a digital frontrunner, Danish policymakers have encouraged the adoption of digital technologies and public digital infrastructures. Since 2012, citizens and residents of Denmark have been required to use digital systems to carry out public administration tasks or apply for welfare benefits. In 2014, a law on digital post[ii] mandated that all citizens from the age of 15 communicate with the authorities digitally (Schou 2018). Furthermore, Danish citizens and residents have been required to use a digital personal identification system called NemID (easyID) to log onto public sector web forms and carry out online tasks such as banking and shopping. NemID was replaced by a new system called MitID (myID) in 2023.

As a result of these technological interventions, Danish citizens and residents have been expected to acquire digital skills and use myriad public digital infrastructures when interacting with government authorities or applying for welfare benefits. The implementation of digital mandates has also resulted in the pervasive digitalization of public and private services which has downplayed citizen’s access to in-person support. Banks, for example, have reduced in-person cash withdrawal services, and many public authorities have set websites and webforms as their preferred access point. This development has been critiqued by interest organizations and human rights organizations for compromising the accessibility rights and service needs of unhoused, disabled, aging, and immigrant populations who encounter barriers to access welfare benefits and their own money due to digitalization (Ældre Sagen and Epinion 2023; Carreras and Finken 2022; Struve Nielsen 2021).

Against this backdrop, digital inclusion projects carried out by the Agency for Digital Government have primarily encouraged widespread technology adoption. Given that digital-by-default welfare provision expects citizens to have the skills to write digital letters, and have resources to find information on their own, public authorities have struggled to handle those who are unable to do so. As opposed to tackling digital inequalities on a systemic level (attending to the design of public infrastructures, the accessibility needs of a diverse population, and the design of holistic services that offer in-person support), the initial strategy has been to focus on transforming citizens individually through digital literacy courses and information campaigns. In our materials, we have located assumptions about access and use of digital technologies that is contingent on a citizen's individual capabilities, embodiment, and resources:

> "The digital competent citizen operates different user interfaces in public spaces, installs apps on his own phone, quickly switches between platforms and apps, remembers codes, and has an (intuitive) understanding of how the different devices talk to each other when, for example, he needs two-factor authentication. If something in the solutions requires it, the digitally competent citizen can switch to a PC, search for information, download and upload documents. Along the way, he can read and understand the written content, while distinguishing between relevant and irrelevant information. If the digitally competent citizen needs more help, he can express himself in writing and search and write to the appropriate authority in Digital Post or make a call, navigate through the phone menu to get to a person to whom he can formulate his question. The digitally competent citizen also has the prerequisites to 'troubleshoot' on their own, such as restarting their computer or using another browser. Finally, the digitally competent citizen has the prerequisites to constantly be able to decode and assess the content he or she is met with in the digital universe; Are the sources credible, do they communicate through the right channels, or is there anything that poses a risk from a security point of view? (Agency for Digital Government and Local Government Denmark 2021, 10, our translation)

> (…) 20 percent of Danes are challenged to varying degrees by the digital society, for example due to cognitive or physical disability, lack of digital or language skills. (The Danish Government 2022, 22)

As these excerpts illustrate, the status of being a digital competent citizen is interwoven with possessing individual characteristics such as having access to different devices, being a proficient writer and reader, and being able to decode information available online. When digital policies make individuals responsible for access, the social, institutional, and material barriers to equitable access remain in the background. The informed, voluntary rejection of technology is absent in presentations of digitally challenged citizens, while the notion of an individual deficiency for not adopting the technologies is often brought up in different materials.

Across different digital policies, a digital competent citizen is juxtaposed with that of a digitally challenged, and often, racialized one. Elderly, marginalized, and disabled citizens also tend to be classified as challenged. This view of technology and users, contrasts with literature in computer science, design, critical disability studies, and science and technology studies, all of which exemplify how the problematization of difference, in questions of access, omits structural factors embedded in the politics of design (Adam and Kreps 2006; Costanza-Chock 2020). Problematizing individuals and groups, while neglecting structural forms of power and inequity, also helps to frame digital technologies as both neutral and always desirable. This is what Sally Wyatt defines as technological determinism (Wyatt 2005; 2008).

Despite the goal to attain the widespread adoption of digital public technologies, civil society organizations and the authorities have reported since 2021 that approximately 20 percent of the population experience barriers to access public and private services due to digitalization

(Agency for Digital Government and Local Government Denmark 2021). In response, more digital inclusion initiatives have received state support to help citizens who are left behind.

As the digitalization of citizen-state encounters intersects with norms and values about who is considered to be the standard or ideal citizen, we identify the terms digital citizens and the digitally challenged as means of classifying desirable and problematic subjectivities. On this issue, critical access scholar Ashley Shew (2020) offers the concept of technoableism to attend at how the design and implementation of technologies can attempt to empower while also reinforcing discriminatory norms. The form of technoableism that we identify in our ethnographic materials, intersects with other forms of othering and oppression, in particular processes of racialization and stigma towards aging, unhoused, and low-income populations. This is tangible, as we attend to civil society reports raising awareness of the accessibility barriers that citizens experience due to the lack of in-person services and inaccessible digital interfaces (Ældre Sagen and Epinion 2023; Stentoft 2021; Struve Nielsen 2021). Technoableist norms are also visible in guidelines prepared by the Agency for Digital Government for local officials to decide whether citizens are eligible to ask for an exemption from mandatory digital communication with the authorities. The criteria unveil how impairments are equated to one's inability to use a computer. In this way, neglecting disability culture online:

> Exemption Criteria
>
> - Cognitive impairment, where the impairment prevents the person from using the Digital Post solution. For example, dementia, brain injury. It can also apply to older individuals who simply have difficulty remembering how to use, for example, NemID.
> - Physical impairment, where the impairment prevents the person from using the Digital Post solution. For example, blindness or paralysis that makes it difficult or impossible to use a computer.
> - Lack of access to a computer in their own home or residence. Lack of access to a computer includes the situation where the person does not have access to use a computer in their own home or residence (Agency for Digital Government 2019, 10, our translation)

Attending to technoableism and these opt-out criteria, help us identify the ways certain bodies are imagined as benefiting from digitalization, while others are not. In other words, technoableist policies produce and reinforce ableist rhetoric across different institutional and interpersonal relations. This became apparent as I (the first author), attended digital inclusion events where digital inclusion professionals and citizen representatives spoke of citizens' diversity across the ranges of functionality, using terms such as those [citizens] "who are well functioning", "those citizens who are digital", "those who are not", those citizens who are "weak", or those who are "difficult".

Within this framework, disabled people who adopt public digital infrastructures but encounter design flaws and inaccessible digital infrastructures challenge such binaries and unveil the ableist norms and structures that underpin them. As the Vice President at the Danish Association of the Blind, Diana Stentoft explained (2021) in an opinion piece, critiquing deficit labels used in digital inclusion discourse:

> "It is upsetting to be labelled an incompetent digital citizen. I am aware of relevant standards and technologies that can ensure my access to communication with my children's schools. So, why should I be burdened with an inferiority stamp? To effect some change in this situation, perhaps we could instead begin by demanding that those who provide digital solutions to the public sector ensure that these requirements are met. There are far too many instances where accessibility is considered as an afterthought, often only at the last-minute during development." (Our translation)

Stentoft's analysis of the valuation of different digital citizens is also tangible in the official reports concerning digitalization in Denmark. In the next section, we detail how the figure of the digital competent citizen is contrasted with the so-called digitally challenged.

### The “Competent”

The “digital competent citizen” defines a subject position of ideal individuals that contribute to making the public sector more efficient by becoming self-reliant. The “digitally challenged citizens” occupy the opposite position; they represent a problem that needs to be resolved, as they require assistance to participate in a digital society equally. Articulations of competence in this context are often interwoven with ideals of independence. To be self-reliant is to be competent; to need help is to lack competence to help oneself. This technoableist framework of self-determination and competence, however, comes into conflict with lived experiences of inaccessibility, where individual and relational factors are essential:

> Although the vast majority of Danes are digitally literate, there is still a group of citizens, such as the elderly and vulnerable, who find digital solutions challenging. The government will therefore strengthen efforts for digital inclusion by taking better care of those citizens and ensuring that they have equal access to our society. The public sector must be inclusive and the digitalization of society should always be community-centered. The right help and guidance must therefore be offered to digitally challenged citizens, as well as alternatives for those who are unable to use digital solutions. At the same time, persons who provide digital assistance must be better equipped to act as a trusted link between citizens and the public sector. (The Danish Government 2022, 21)

In the material that we have analyzed, there are repeated mentions of the difficulties caused by the inability to speak to someone in charge when technologies do not work. This problem is made visible in the acknowledgement that “persons who provide digital assistance must be better equipped”. Although the recognition of the problem might appear promising for more inclusive policies, it comes at the cost of re-affirming the “digital” as the unchangeable medium of state-citizen interactions; those who cannot use the systems must be provided with alternatives, and the support can be strengthened. Yet, the established norm remains to be self-reliant. The digitally challenged can then be understood as people who do not fit the expectations of the systems, but still want (or need) to use public services.

In the figure of the digital competent citizen, we find assumptions about how citizens and the state are engaged in a series of transactions; exchanges between the state and the competent subjects require less work, while transactions with less competent "digitally challenged" subjects require more work. It is worth noting that competence is a relational category, and one is competent in relation to a standard of competence. As we analyze definitions of what constitutes being challenged, digital inclusion discourse by the Danish Agency for Digital Government articulates competence with regards to fitting into very specific ideals of normalcy:

> Most residents in Denmark are comfortable with [the] use [of] digital technologies, but there are – and will likely always be – some people, who are digitally challenged. These groups include the elderly, people with disabilities, immigrants – particularly from countries with less-extensive public sectors – and other digitally-challenged people. (Agency for Digital Government 2023)

These kinds of statements reveal the ways in which state authorities engaging in digital inclusion projects define divides between "us" and "them". Boundaries clearly outlining a majority norm "most residents" and a minority that deviates from such norm. These divides articulated as clear cut are then blurred when disability activists and civil society organizations representing minoritized communities critique digital inequalities on a structural level. For example, during an interview with Stein Erik Skotkjerra, a Blind digital accessibility consultant, he explains the divide between being in and out of the systems, and the complexities of having to choose, when encountering inaccessible designs and lack of qualified support and flexibility:

> I think it's important that we think more holistically. That means being met by competent individuals. We also need to consider those who do not have digital skills right now. If you call the Danish public services due to issues with self-service, they will try to instruct you on using self-service instead of helping to solve the problem. Alternatively, you might be told that it can only be done on paper, but then you have to waive the use of E-boks. You cannot get help in the context where you are, so you have

> to choose. Either you are part of it, or you are not. So, you cannot choose both. (May 10, 2021)

One of the premises of digital public infrastructures in Denmark is that citizens must “help themselves” via so called digital self-services. In practice this means that tasks that were formerly the responsibility of civil servants are increasingly delegated to citizens via websites and online forms. For example, citizens are often recommended to find information about their cases and administrative duties on the web, instead of offering advice or guidance in person. This delegation of responsibility also extends to the social circles of citizens in cases where citizens alone cannot “help themselves”. Importantly, as citizens and their social circles are made responsible for accessing different parts of the public sector, technology developers and authorities define citizens’ actions and competences.

Even in cases where someone is willing to help others in their social circle, the kind of help that can be given is not straightforward, and the consequences for providing the wrong kind of help are left unclear. An example of this is found in documents where Nets, the technology provider for the personal identification system MitID, provides instructions for individuals that wish to help others (MitID 2023). The webpage titled "Help others with MitID" lists several actions that those offering help are not allowed to take, or how they must "look away" to not see codes that they are not supposed to see. The main concern of the document is that everyone should keep their MitID passwords confidential because those who help others are not "allowed to know" the password of the person they are helping.

Specifically, a subsection titled "You are not allowed to" begins with the statement: “You must not see or become familiar with the personal code for the one you help or support.” The reasoning behind the guideline is that such familiarity could lead to data misuse under the guise of helping others. At the same time, not being allowed to know the personal code of others does create difficulties for those who would like to help, because laws related to personal identification do not take such cases into account.

The instruction text is caught between two facts which are nearly impossible to reconcile with one another: It is against the law to use MitID that belongs to someone else for any reason, and MitID is obligatory to communicate with state institutions online. There exist ways to be exempted from MitID, but the criteria are strict, and many people are left in the hinterlands of the digital state, not exempt from the requirement but also unable to use it on their own. It is this reality that the document tackles: How to create guidance for those who want to help others, without advising them to break the law? The result is a list of vague guidelines: One is not allowed to see or become familiar with the personal code of anyone that they are helping. The phrasing contains an implicit acceptance that the code might be encountered in some other way than seeing the code being input, and the advice seems to indicate that one should try to forget the code where possible.

Even if forgetting were to be an option, we must return to the reasoning behind this guide: The short text does not bring up legality, or the possibility of committing a crime, but prohibits a set of acts without clear reason. Noting that digital infrastructures have been first and foremost implemented to cut costs in welfare provision, the contradictions present in this online guide illustrate the inefficiencies of delegating the labor of access to citizens, as opposed to providing infrastructures in which being helped by government officials and technology providers is welcomed. In the following section, we proceed by unpacking the figure of the citizen in relation to digitalization initiatives and rights claims.

## The “Citizen”

To unpack the significance of the word citizen in the “digital competent citizen” concept, we follow Isin and Ruppert (2015) in understanding citizenship to be realized through right claims. As a figure of politics, the citizen represents a subject position that can be simultaneously obedient, submissive, and subversive (Isin and Ruppert 2015, 31), and that these positionings are available to citizens in digital domains. In other words, for enacting the subject position of citizenship that we encounter in the “digital competent citizen” formulation, there is no distinction between digital rights claims and non-digital ones. Moreover, the citizen is only one among a variety of right-claiming subject positions. This distinction of citizens and other subjects is further complicated in our material as the Danish word for denoting citizens (*borger*) is sometimes used by our interviewees to refer to residents of Denmark. In either case, we interpret this formulation as referring to the right-claiming subject, regardless of their status as citizens of Denmark, citizens of other countries, or as refugees who have applied for recognition of status in Denmark. One such moment took place during fieldwork conducted by [the first author]:

As I (first author) conducted fieldwork at a public library, supporting racialized and aging populations with online job applications and welfare benefits, I realized that important online forms used by citizens with a refugee status were defaulting to Danish. Over an interview, I asked a librarian who had helped many citizens with digital forms, if translating them to relevant minority languages would help non-Danish speakers in their interactions with public authorities, and whether she had inquired about the possibility of making such infrastructures multilingual. The librarian acknowledged that she had tried to convince a digital company to translate their digital interface to different minority languages. However, to her regret, the company and authority in charge of the online form had not gotten back to her after she advised them several times to improve the form and translate it. Then she explained to me her reasoning why the form continued to be in Danish, which shed light on how the politics of othering in digital public administration permeate welfare provision on the ground:

> There is also some politics in it because, with the recent discourse about foreigners, no one wants to create a self-service solution in Arabic because the Social Democratic party will never agree to it, because then it would mean to service that group, so in digital solutions there is also stigma. Do you want the citizen to be self-reliant and that they can fend for themselves, or do you want them to be forced to use an app in Danish? This makes me think of what a citizen said to me today: "It's all in Danish, I have a hard time writing in Danish, I don't know the word, I don't know what to write even if I get it translated" and that means she can't navigate it because she doesn't know Danish. (June 28, 2021, our translation)

In this encounter, the lack of multilingual digital content reveals how individuals fluent in writing, speaking, and reading Danish are privileged[iii] by digital self-service infrastructures. This advantage, as the librarian reflects, must be examined in a political context where immigration policies are increasingly more strict and cultural assimilation, as well as labor market participation, have become a condition to be included in the Danish society (Eika et al. 2019; Suárez-Krabbe and Lindberg 2019; Abrahamson 2019). As public services are digitalized, institutional practices and digital interfaces reveal how the self-determination and efficiency of certain citizens is contingent on their ability to fit cultural norms. When citizens' lived experiences conflict with such norms, classifications between digital competent citizens and digitally challenged emerge discursively.

These kinds of classifications are tangible in digital inclusion discourses that aim to support citizens in adopting public digital infrastructures. For example, in a digital inclusion report published in 2021, digitally challenged citizens occupy a gradient of differences where racialized, gendered, aged, disabled, and marginalized populations are shown as “difficult” subjectivities, based on how difficult it is to "migrate them" to the (then) new national personal identification infrastructure MitID (Figure 1):

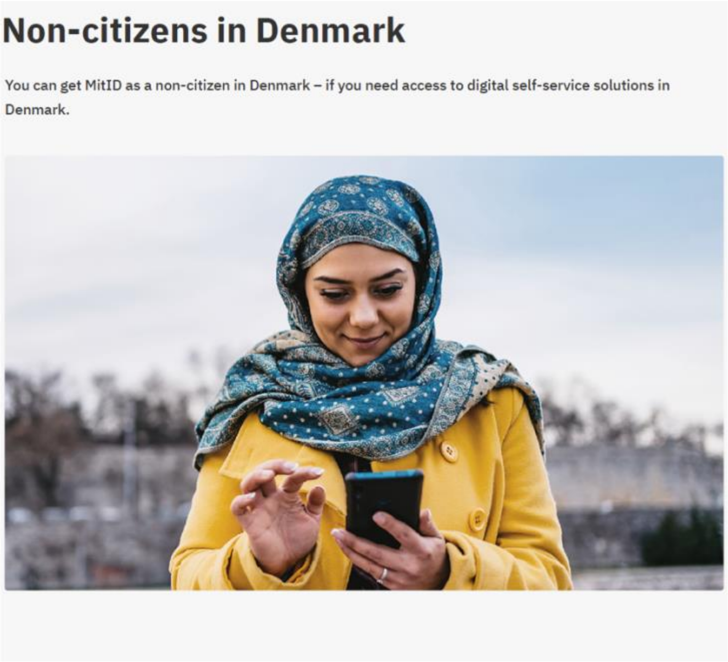
*Figure 1: A low resolution graphic shows a gradient of different citizen classifications in Danish with the title: Target groups for communication efforts and their communication needs (our translation). From left to right simple icons represent different citizen categories listed from a gradient to challenged (left) to easy migration (right). Those deemed more difficult are the socially vulnerable (282.000), elderly citizens above 70 years old (815.640, 16 percent), people with disabilities (123.000 psychological disabilities, 358.000 physical disabilities) and ethnic minorities (610.000). Those categories deemed easier are young adults (between 18 to 29 years old, approx. 942.230, 19 percent), adults (between the ages of 30 to 44, 1.054.000, 21 percent), middle aged adults (between the ages of 45 to 59, 1.188.930, 24 percent), and seniors (between the ages of 60 to 69, 663.720, 13 percent). In between those deemed most difficult and those deemed easier: teenagers (between the ages 13 and 14, 127.390, 3 percent) and youth between the ages of 15 and 17(184.320, 4 percent). The socially vulnerable category is represented by a drawing of a person with a beard and short hair. The category people with disabilities is represented via a drawing of a person wearing glasses. The category ethnic minorities is represented by the drawing of a person*

*wearing a headscarf. The socially vulnerable, people with disabilities, and ethnic minorities categories are highlighted in grey while the rest of the categories are highlighted in red. In the context of the report, grey signifies those who, to different degrees, need help. (Agency for Digital Government and Local Government Denmark 2021,13)*

The depiction of citizen subjectivities as forming a gradient from easy to difficult, shows whose citizenship is considered to signify smooth belonging, and whose citizenship is perceived as a challenge in the digital welfare state in Denmark. The representations involve both ontological and epistemological orderings; the former in explicating who makes up the population of Denmark, and the latter in how each group is to be engaged by state institutions involved in the transition from one digital infrastructure to another. In either case, the depiction problematizes individual properties of bodies and subjects instead of positioning exclusion and inaccessibility at infrastructural and societal levels.

When the first author asked government representatives, involved in writing this report, about the purpose of these classifications, they explained that these kinds of representations were necessary to communicate to different authorities and policymakers who needs help, and who is deemed challenged by digitalization. In other words, such representations were a tool to make previously unrecognized accessibility barriers visible at the state level. Using publicly available statistics and interviewing citizen representatives, the authors of the report aimed to raise awareness about the barriers many different segments of the population encountered.

While we recognize that the original purpose was to unveil a systemic problem, the classifications used for that purpose inadvertently reproduces a worldview in which racialized, disabled, low-income, and aging populations deviate from the norm. They also rank differences against one another; defining some differences as common, and others as marginal. We encountered another example of this type of depiction on the website mitid.dk, where a photograph of a feminine-presenting person wearing a headscarf was previously used to represent the group of non-citizens that must adopt MitID (Figure 2). Although the photograph was later removed from the website, it serves as a reminder of how classifications travel across platforms.



Non-citizens in Denmark

You can get MitID as a non-citizen in Denmark – if you need access to digital self-service solutions in Denmark.

*Figure 2: A screenshot from the MitID website shows a feminine-presenting person looking at their smartphone, smiling, and wearing bright, elegant clothes, a shiny wedding ring, and a blue headscarf covering their hair. The image's header reads: Non-citizens in Denmark. You can get MitID as a non-citizen in Denmark – if you need access to digital self-service solutions in Denmark. Accessed on May 26, 2023.* [*https://www.mitid.dk/en-gb/help/help-universe/non-citizens*](https://www.mitid.dk/en-gb/help/help-universe/non-citizens)

As the examples above show, digital strategies and digital inclusion discourse, aiming at widespread technology adoption in public administration, set new boundaries regarding who fits and holds a citizen status. Classifications of difficult subjects as logistical problems reveal whose right claims and access needs are anticipated: those who are deemed competent, easy, those who master the Danish language and those who can navigate legal and administrative tasks with the confidence of professional and competent public servants. This development is familiar to science and technology scholars who have studied the ways designers and developers mirror themselves in the imagined user of their designs (Lindsay et al. 2005). Classifications and gradients of problematic subjects reveal how policymakers, technology developers, and government representatives produce ontological and epistemological claims about who is considered a citizen, who is difficult, and who is marked as deviant.

More broadly, the past 20 years of digital policies in Denmark, and recent digital inclusion projects by state authorities, show that technology development and technology adoption contribute to defining citizenship, the nation, and nationalisms. As Black feminist scholar Patricia Hill Collins (2022) argues, a crucial dimension of domination is that of a nation: a system of power that intersects with other systems of oppression such as race, ethnicity, class, sexual orientation, gender, disability, and age. Collins defines nation as "a collection of people who have come to believe that they have been shaped by a common past and are destined to share a common future" (2022, 294). This belief, she explains, is affirmed by cultural characteristics such as a common language, customs, a well-defined territory, and closer ties within members of the nation, than with outsiders. The twin figures of the digitally competent citizen and the digitally challenged, reveal the normative values embedded in citizen classifications. These clash with the lived experiences of state subjects. In the following section, we discuss how such frictions can shed light on generative critique.

## Compulsory Digital Self-Reliance and Frictional Infrastructures

The digitalization of the welfare state has profoundly transformed citizen-state interactions in Denmark. What our analysis reveals is that digital-by-default welfare provision has changed how the very idea of citizen is conceptualized in relation to public services. Following Kelly Fritsch (2015), we find it productive to examine these changes in relation to how they simultaneously capacitate and debilitate citizens. This is particularly evident in cases where digital technologies, intended to streamline communication with state authorities, instead result in significant limitations on the possibility of communication and welfare support.

In the material we have analyzed, we explore how different subsets of the population are valued and problematized according to race, nation, class, age, and disability. The distinctions are expressed in the framings of the digital competent citizen as the ideal non-disabled, self-reliant, literate, Danish, western subject, and the digitally challenged as those deviating from that norm. In connection to this norm, questions of access are examined at the level of individuals, and issues of access are described as logistical problems to be solved through training and support. In the attempt to make the welfare state more efficient, citizen subjectivities are valued according to their likelihood in adopting new technologies. As such, we understand the result of these valuation practices as generating what we term compulsory digital self-reliance.

### ***Compulsory digital self-reliance***

Digitalization, as a goal of the Danish welfare state, results in the discursive formation of a homogeneous and compliant citizen subjectivity. This ideal citizen frames competence as one’s ability to refrain from asking for help. Conversely, those perceived as falling short of this ideal (due to not being able to "help themselves") become problem subjects; those who slow down the digitalization of the welfare state. Insofar as autonomy enters this formulation, it is understood not as the freedom to self-determination, but as being compliant: doing the work of access and taking responsibility for the digitalization of the welfare state at the individual level. This is what we term *compulsory digital self-reliance.* The concept helps us explain how coercive mandates discipline citizens into taking responsibility for their needs by adopting technology, whilst also promoting Denmark’s competitiveness as a digital frontrunner.

As a result, under compulsory digital self-reliance, citizens must comply with the norms and values of the digital welfare state. They must act, not according to their own beliefs and needs, but instead according to common desires and goals defined by the nation state. Coercive forms of digital adoption uphold technoableist norms where technological development promises autonomy and reinforces value systems on axes of race, nation, disability, class, age, income, and technology use. While our analysis has dealt primarily with the discursive dimension of these policies, the consequences have wider reach. Our ethnographic engagement with civil society organizations and citizen representatives indicates how the individualization of access also leads to experiences of humiliation, rights violations, inaccessibility, and even the loss of welfare benefits.

### ***Frictional Infrastructures***

A reoccurring instance across reports and documents published by state institutions is the narration of digital public infrastructures as seamless and apolitical. In contrast, the positions claimed by civil society organizations and citizen representatives describe such infrastructures as barriers and sources of conflict. Digital infrastructures can discriminate and violate rights. A notable example is the work of lawyers who provide free legal aid to citizens that experience inaccessible services and discrimination due to digitalization. Lawyers offering legal aid complain on behalf of citizens, making right claims and demanding justice. They challenge the conditions of compulsory digital self-reliance in material-discursive relations and shed light on structural forms of inequity and inaccessibility. As a lawyer providing legal aid to unhoused populations explains over an interview:

> “We witness that many people experience that their bank accounts get closed. Because of suspicious transactions. One of our clients experienced this as he received many payments for selling Hus Forbi, the newspaper, via mobile pay. We documented that this was not an illegal activity, and the bank rejected our appeal, they closed our client’s account. We can then appeal to the Danish Financial Complaint Board. Yet to appeal, you must pay 200 DKK and you can only pay online. But our client does not have a

> bank account. So, how should our client pay? We must pay for him. And it takes eight months for the appeal to be processed. This means that access to an appeal is very limited for the people that we help when a bank closes their account, because many of the people we help do not have money."

Drawing on Bowker and Star's (2000) formulation of *torque*, the lived experiences of individuals can clash with the classifications that govern their lives. In our materials, we observe how categorizations of citizens lead to discursive and material friction. The expectations of policymakers and state authorities regarding technology adoption are at odds with the expectation of citizens to be met with services that address their needs for help and flexibility. In this friction, we see a site of protest, dissent, and subversion that productively challenges technoableism.

At a discursive level, frictional infrastructures are exemplified by contrasting definitions of competence in which structural and individualistic frameworks of access come into conflict. At the level of lived experience, state subjects helping those in their social circles, and therefore working around compulsory digital self-reliance, generate a different form of friction; either through right claims that reject deficit labels, or by demanding qualified support and accessible infrastructures.

## Conclusion

Digital-by-default welfare provision has changed how the very idea of citizen is conceptualized in relation to public services in Denmark. Digital technologies have been deployed to streamline communication with state authorities, and yet, without choice and flexibility. This has resulted in significant access barriers and cases of injustice. Instead of reflecting on the limitations of coercive digital welfare provision and self-reliance—what we call *compulsory digital self-reliance*—digital inclusion discourse in Denmark is producing new modes of classifying difference and devaluing one's need for help.

In our analysis we have critically examined the components of the figure of the digital competent citizen, as an ideal citizen subjectivity, to shed light on how new forms of classification generate infrastructural friction. In summary, the term "digital" pointed us to a technoableist discourse in which the citizens and the nation are empowered by technological adoption, while some citizen subjectivities are devalued along axes of race, disability, age, nation, technology use, and income. The term "competent" pointed us to how ideals of competence are interwoven with one's ability to avoid relying on help. In this context, interdependent relations are devalued and framed as problematic. This contributes to obfuscating how access and competence are relational. Finally, the term "citizen" pointed us to the ways in which self-determination and efficiency, of certain citizens, is contingent on their ability to fit cultural norms, as public services and institutional practices are made digital.

While we recognize that the purpose of digital inclusion initiatives may set out to resolve digital inequalities, the classifications used to promote technology adoption inadvertently reproduce a worldview in which racialized, disabled, low-income, and aging populations are valued less. Namely because they deviate from the ideal norm. Offering the concept of frictional infrastructures, we argue that focusing on sites of conflict and dissent are generative for critiques of a system that depends on penalizing, instead of embracing difference

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[ii] The digital post system for communicating with the authorities is digital post which can be accessed via four distinct interfaces: borger.dk, the digital post app, mit.dk, and E-boks.

[iii] Sasha Costanza-Chock (Costanza-Chock 2020), a critical access scholar drawing on social justice movements in design, further explores how default language settings are important design decisions, and argues that these privilege certain groups over others.