

**CARING FOR NEWCOMER COMMUNITIES AND THEIR DATA:
AN INQUIRY INTO INTERDEPENDENCE IN INFORMATION PRACTICES**

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Abstract

Nation states increasingly manage peoples' movements across borders using data analytics, automated systems, and algorithmic technologies. Once individuals begin living in a new country, governments continue to collect, analyze, and share data about their immigration and settlement process. In Canada, newcomers are often asked for data about their personal experiences and identity in order to receive access to services from community-based organizations and government agencies. Experimental uses of data can have harmful effects because of mistakes, misrepresentations, and misunderstandings which can jeopardize fundamental human rights and international responsibilities to care for migrants. Informed by previous work on the harms of datafication, this inquiry focuses on questions of care. In particular, what are current information practices and alternative visions of how newcomers' data should be cared for ethically? The research reported here aims to learn from a diversity of groups' ethical perspectives and experiences of stewarding immigration data as they seek to respect newcomers' capabilities and wellbeing.

Methods involved 14 semi-structured interviews with individuals in groups supporting immigration and settlement, for which conversations were hosted over 10 months during the COVID-19 pandemic. Interviewees include settlement service providers, migrant justice activists, immigration researchers, government staff, and designers of digital systems and services oriented towards newcomers. The dissertation examines participants' stories of "data care" and recurring themes which characterize their labour. Interviewees provide accounts of conflict, confusion, compromise, and, at times, coordination with their peers in similar and different groups. Groups linked by their labour with data are therefore understood as

interdependent, because their information practices influence one another and newcomers. Findings can be employed by governmental and non-governmental actors to identify links and tensions in their labour with newcomer communities' data. Contributions offer points of discussion and decision making for organizing the stewardship of communities' data in support of activities such as advocacy for migrant justice, immigration research, policymaking, service provision, and the design of information technologies. The inquiry conceptualizes groups supporting newcomers as part of an interconnected web, who by understanding one another's ethical perspectives and practices may coordinate and strengthen their acts of care.

Lay Summary

Nation states are increasingly adopting digital technologies and data analytics to manage immigration and settlement. Yet many groups have raised concerns about the uses of migrants' data. This project investigates how newcomer communities' data should be cared for, creating space to recognize the diversity of ethical views and interdependency of groups serving and supporting newcomers to Canada. Interviews with service providers, government staff, immigration researchers, migrant justice activists, and designers of digital systems and services revealed experiences of confusion, conflict, compromise, and, at times, coordination in their work with newcomers' data. Despite commitments to caretaking, this inquiry found that there is not widespread agreement amongst involved groups about how to realize their commitments in the implementation of information practices. Reflections from the project point towards the need for negotiation among groups navigating caretaking for communities across a range of practices, roles, and responsibilities.

Preface

This dissertation reports on original intellectual work of the author, Saguna Shankar. Interview research activities received ethics approval from The University of British Columbia's Behavioural Research Ethics Board (H19–03947).

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Dedication

*For the vibrant communities and unceded territories
in which it has been an honour
for my family and me to live,
as uninvited guests,
migrants, and
newcomers.*

Chapter 1: Orienting to Ethical Questions of Caring for Newcomer

Communities and their Data

1.1 Lively Stories and Data?

After my undergraduate studies, I went on an extended trip with my father to places where he had grown up in southern India. On that trip we made a point to visit memorable places in the city of Bangalore – where he had climbed mango trees, had his own equivalent of snowball fights with overripe avocados he and his friends threw at one another, attended temple festivities, and as a teenager played music in a band covering the top hits of the day, American and British songs he had heard on the radio in the 1960s. To my mind, as a child when he had first told me these stories, the locations where they took place were not points on a map, but vivid settings for emotion, sights, and sounds. This research, however, is not primarily about his stories or my own. I take an interest in representations of immigration and the liveliness which they can animate or overlook. How may we recognize individuals who are migrants as agentic, moving, and changing, rather than fixed?

When I began exploring Library and Information Studies, I learned that efforts for critically examining and transforming practices with many communities' belongings (data, information, knowledge, and stories included) was ongoing work. I was reminded of family members who had been asked to produce records of their lives which did not exist, to correct inaccurate government-issued documentation, and to materialize data on their ancestry and affiliation. Much of this data seemed to summarize a life so much more simply than stories ever would. The documentation that family members had needed to produce to navigate the world had seemed

unavoidable, documentation for which strangers were endowed with power to decide whether or not an individual may come and go, or access some service, space, or support. I felt that others' decisions made about my family members' documentation of identity and migration status were difficult to understand, even though these decisions seemed to have been crucial at times in helping family members leave places which were no longer hospitable to them – whether Iran after the revolution of 1979, or India after partition in 1947. So began my interest in how consequential migrants' data could be in defining their opportunities.

1.1.1 Matters of Migrants' Data, Rights, and Wellbeing

My experiences of moving and travelling before graduate school also pointed me towards these interests. Just after the trip to India with my father, I spent a year working in the Middle East. After moving to Doha, Qatar, I began to hear examples of how migrants' data – including personal health information, such as whether a woman was pregnant – were regularly collected and documented by employers and the government. At the time, I was working in a school in the city of Doha, where I was a temporary migrant myself.

To provide a sense of what Doha was like at the time, some background: In a competition held in 2010, Qatar had won the bid to host the FIFA World Cup in 2022. For the next twelve years, preparations for development and future tourism contributed to a vast demand for workers from beyond the small nation's borders. From August 2012 to 2013, migrants were arriving in the country at a rate of approximately 20 individuals every hour, resulting in a 10.5% growth in Qatar's population (Amnesty International, 2013). When I arrived in the country in August 2013,

all around the city were signs that the government was funding immense infrastructure and building projects to prepare for the World Cup.

On September 25, 2013, *The Guardian* ran an article entitled “Qatar’s World Cup slaves: World Cup construction ‘will leave 4,000 migrant workers dead’” (Pattisson, 2013). The local news on the *Al Jazeera* television station, news reports from *The Guardian*, and scholarly research revealed the extent to which violations of migrant workers’ wellbeing were leading to their injuries and deaths (Iskander, 2021). News media reported on migrant workers’ families, sharing images of grieving mothers and fathers holding photographs of their sons who had travelled to find work in Qatar, but would never return home to Bangladesh, Egypt, India, Nepal, Pakistan, the Philippines, or Sri Lanka (Amnesty International, 2013). The devastating losses communicated in these reports, and the data that they were based upon, presented a dramatically different migration story than mine, as I lived comfortably in a pleasant apartment provided by my employer.

From my living room I could look out to the accommodations of neighbours on my block, close to the centre of the city. In front of the building where I lived was another tower. This tower had corridors and parts of its roof open to the elements. It faced the heat of the day and caught the sand that blew by. From their workwear, I surmised that residents living in the building opposite spent few hours indoors between hours of work on construction sites. The residents’ living situation opposite seemed much more open to the eyes of passersby. It offered much less privacy and protection than the building I lived in, which was fully covered and insulated from the extremes of the climate. Around me were workers like myself who were visitors to this country.

Yet, my view of my neighbors' lives was limited. From my window, I could not see that some individuals were being forced to work for 12-hour stretches, returning to single rooms in which employers expected a dozen people to sleep – conditions I learned about through investigative journalism and research (Pattisson, 2013). These investigative reports made systemic problems more widely perceptible. Workers' stories and statistics on workers' suffering helped to focus attention on labour issues that individuals and humanitarian agencies could care about, and could communicate about. Reports did not generate measures for accountability or a plan for reforms; what these reports did suggest, however, was a connection between the use of data and the moral rhetorics around transnational immigration and migrant labour. Throughout my year working in Doha, reports continued to be published that revealed the horrific exploitation of workers. Reports disseminated evidence based on data collection and analysis by journalists and humanitarian non-governmental organizations, reporting that continues to this day (e.g., Amnesty International, 2013; Iskander, 2021; Pattisson, 2013).

I had seen individuals working at construction job sites all hours of the day as I bussed through the city on the way to and from the school where I worked. As visitors without the right to stay, I knew we had something in common, but on the whole we had vastly different experiences of living and working; I spent my days working indoors with air conditioning, access to fresh water, and washrooms.

At the school where I worked, I talked with women who were employed as domestic workers. These women, referred to by some staff as “maids” in the school, were present early and late.

One of the women I got to know sometimes dropped by the library or took a few moments to talk with me in the hallways on our breaks. One day we talked about what it was like living in Doha, the places we had moved away from, and our families. She told me about her family in the Philippines who she was supporting. She mentioned that she was living in one room with seven other women who worked domestic jobs in Doha. Her experience was shared in passing. At first, I did not know how to respond. To hear about her cramped living space was a moment of reckoning. What her sharing of her experience – and what may by some be understood as a “point of data” about how little room and resources she had to herself – did for me was help me begin to pay more attention to the inequities of migrant labour, and to question my complicity as a beneficiary of her work and my responsibilities as a fellow worker.

If the data and stories of migrant workers’ experiences had not been gathered and shared through news media and conversations over work breaks, worker exploitation may have been obscure to me. That is, it seems to me that wider international attention, advocacy for justice for migrant workers in Qatar, and action on human rights was not inevitable. Information practices with migrants’ data and stories played a role. Our modes of representing one another are potentially instrumental in how we may or may not care about collective issues.

I left Doha at the end of the school year in 2014 to pursue graduate studies. In the years since then I have been interested in studying the ethics of information and technology use in relation to migrants’ wellbeing, a focus which frames this dissertation research.

1.2 Introduction to this Inquiry

As I saw in Doha, data and stories can be leveraged by academics, journalists, and humanitarian agencies to call for greater attention to immigration processes. I knew I had been affected by what I saw and heard in my conversations, daily routines, and news media reports about migrant workers in Doha. I had a sense that attitudes towards migration and settlement can be shaped by the information we, as individuals, migrants, or researchers, have about it as a lived experience and ongoing global process.

Yet, immigration data practices are more complicated, conflicted, and at times chaotic, than what I had seen in Doha. Since then, I have learned that immigration data and stories are not only used to draw attention to human rights concerns – and immigration data and systems are employed by a wider range of actors than I initially noticed. Groups such as the International Organization for Migration, for example, provide a bird’s eye view of mobility, showing that there were 281 million international migrants in the world in 2020, or 3.6 percent of the global population, data which are shared through annual reports and data portals (McAuliffe & Triandafyllidou, 2021). Governments and humanitarian agencies are considering how to leverage digital data and systems in their work to coordinate immigration. To organize their policies, programs, and services, government and humanitarian actors are implementing emergent techniques in their efforts to understand patterns that relate to the causes, experiences, consequences, and needs associated with peoples’ movement across borders (e.g., Guberek et al., 2018; Kaurin, 2019; Latonero et al., 2019). The Canadian government has also adopted some digital techniques to manage migration, as provinces link settlement service databases and populate biometric systems with migrants’ data (CIC Research & Evaluation, 2015; Government of Canada, 2015).

Data collected from migrants and about immigration are critical not only in influencing how migrants can be understood by their neighbours or by nation states, but are also critical in how the identities of migrants are represented and how they are (dis)empowered to represent themselves. Through my inquiry into immigration data practices in this dissertation, I join scholarly conversations on data practices within social services and governments' provision of programs for the public (e.g., Browne, 2015; Eubanks, 2018; Karusala et al., 2019). As this area of research has suggested, the rapid adoption of new techniques with data and systems in social services are racked by assumptions about efficiency and effectiveness, even as these technologies may in some ways help to grapple with the bureaucratic structures for which the same data or documentation may be requested again and again from individuals seeking health care or social services. The adoption of new data analytic techniques and technologies during crises may be appealing to governments and non-profits since design, assessment, and use can be outsourced to corporations, data scientists, or design firms (Eubanks, 2018). The outsourcing of data work and technologies may also be made with the unrealized promise of greater resources and time for governments and non-profits to grapple with immigration issues, as has been found in other governmental and social services contexts (e.g., Dourish & Gómez Cruz, 2018).

This inquiry is furthermore motivated by studies of shifting social practices with information and technologies (e.g., Hui et al., 2017; Lanzara, 2016; Orlikowski, 2000; Winner, 2020). As Agre (1997) has said, “computing has been constituted as a kind of imperialism; it aims to reinvent virtually every other site of practice in its own image” (p. 131). Given the inherently human, fallible nature of technologies and our interactions with them, ethical and practical questions are

important to ask, particularly as the technologies become more powerful, ubiquitous, and hidden (Kaczmarek et al., 2020). This line of inquiry has emerged over several decades in information studies, science and technology studies, and critical data studies (boyd & Crawford, 2012; Friedman & Nissenbaum, 1996). Scholars have begun to develop concepts such as *datafication* to describe the growing use of big data sets to discern patterns, construct models, and predict activities about numerous aspects of life (Lycett, 2013; Van Dijck, 2014). This dissertation draws on these foundations to study the use of data and information technologies to study and support newcomers in Canada.

To guide this research, I draw upon analytical resources from information studies, specifically the concept of information practice. I employ the concept of *information practice* to better understand the activities and the relationships of individuals and groups who interact with newcomers' data. Information practices encompass how people use tools to create, access, collect, manage, make sense of, and share information to meet their own and others' needs (Anderson, 2007; Díaz Andrade & Doolin, 2018; Dourish & Anderson, 2006; McKenzie, 2003; Nathan, 2012; Olsson & Lloyd, 2017; Talja et al., 2005). There is growing evidence that individuals have different understandings of how data, information, and tools, and data-driven technologies, should be used (e.g., Bansak et al., 2018; Díaz Andrade & Doolin, 2018; Gomez, 2016; Guberek et al., 2018; Newell et al., 2018; Talhouk, Vlachokyriakos, et al., 2017). By investigating how decisions are made with and about newcomers' data, groups linked by migration and settlement may be understood as navigating shared information practices across different roles. To this end, I examine how information practices offer unique and growing opportunities to *care for* current and future members of Canadian society.

1.3 Scenes of Shifting Information Practices

If we take note of signs of shifts in the uses of immigration-related data and technologies, we might ask what those changes look like in practice in a local site. In a series of short narratives, in the following scenarios I consider perspectives of actors who may be affected by these sociotechnical changes. Discussions of emergent uses of data and technologies often focus on intended capabilities and potential, tending to report less on effects for certain groups and the future or unintended uses of those systems beyond our immediate purview. Systems and tools referred to in these scenarios are based on evidence of their development either in Canada or in other countries, while the situations are imagined. Examples of these data-oriented systems and tools are referred to later in this chapter and the next chapter.

These snapshots invoke the style of *value scenarios* (Nathan et al., 2007). Scenarios envisage connections between actors through three scenes at borders, within research labs, and in service settings. These short narratives follow individuals in different roles – newcomers, academics, and service providers, respectively – who may be linked by immigration data and systems with which they interact.

1.3.1 Scenario 1: Technologies of Identity and Governance at Borders

Each day, countless travelers' journeys are documented through information monitoring systems at nation state borders. At each border, digital tools gather and verify the identities of travelers. Data collection and document inspection are required steps for legitimate crossings. After a trip from her home country to Canada, a young woman arrives at a Canadian airport. She is aware

that her likeness is being captured by cameras running facial recognition tools which feed into policing and security databases. As a political activist, she is used to noticing signs of state surveillance in her home country. While at the airport, she notices some of the more conspicuous technologies at check points that she must pass through, while other technologies are less obvious or even hidden. Scans of her fingers, iris, or face must align, proving a match with corresponding information in official records. Through a Reddit thread, she read that some countries' immigration officials are experimenting with the use of DNA testing and records held by ancestry websites to determine migrants' identities and nationalities. She is uncertain about what exactly a border agent can pull up on their screens, whether they might even search for her social media profiles linked to her activist work back home. As she waits in line to be interviewed by a border security agent, she wonders whether she could be legally asked to complete a DNA test, required to hand over her mobile phone, or otherwise detained. If these requests are made, she feels as if she will have no other option than to comply. Her personal data may be taken without much choice. Her rights and others' responsibilities are unclear.

1.3.2 Scenario 2: Linking Data at the Research Lab

Within a lab at a large public university, a lead researcher works with her collaborators to clean, organize, and link parts of a large data set on immigration. The data set was drawn from dozens of different sources which include: local government records on housing, policing, and health; anonymized detentions and deportations reported by the Canadian Border Services Agency; landing records of arrivals in Canada; the census; and, a nationwide database that tracks the provision of settlement services.

The research team aims to create a new data visualization tool which can be used to facilitate more evidence-based learning about immigration and settlement. The team wants to use their new visualization tool to investigate intersections of demographics and experiences, such as gender, race, and educational background of newcomers settling in particular neighbourhoods. The research team envisions that the data visualization tool could also help local municipal governments to become more aware of the shifting dynamics of the city's population, and potential interventions in support of longstanding and recently settled communities.

As the research team considers how to design the data visualization tool, they consider some of the ways the tool may be used. The visualization tool may be employed by various audiences such as members of the public, policymakers, service providers, and the organizations on the frontlines of working with newcomers. The research team intends for the visualization tool to help members of the public better understand newcomers who are their neighbours. The visualization tool is also seen to hold promise for academics and journalists, who could use it to counter misinformation and anti-immigrant rhetoric. In addition, the lead researcher hopes that when a policymaker wants to know more about local trends in migration, she will be able to point them to the new tool.

Once the data visualization tool has been prototyped, the research team runs into questions about who may have the resources to host and maintain it. The research team has limited remaining grant funds for the project, which they decide to direct towards making the tool accessible on a publicly available website for at least the next few years. The lead researcher finds that her team may need to rely on a private company in another country to make the tool accessible to the

public in this way. Building a tool to understand public immigration data may, for the moment, need to depend on distant private infrastructures for data storage and access, web hosting, and upkeep.

1.3.3 Scenario 3: Using Digital Data and Systems in Service Settings

A settlement service provider attends an event promoting a newly released data visualization tool developed by the lead researcher and her team (detailed in Scenario 2). He has mixed feelings about the tool, but is interested in drawing insights from the data to inform the development of services. He is also curious because he has noticed a growing interest in immigration data that he creates or collects. Several people have been reaching out to him, including local government staff and immigration researchers at the nearby university. These individuals have been asking for access to records that he creates while he is working with newcomer clients. When he returns to his office, he questions where the data he inputs into databases will be used if he shares it with others. He often collects newcomers' personal information about their incomes, family situations, and reasons for migrating. He uses this information in their best interests to make decisions about their eligibility and needs for services. He is aware that other staff also gather newcomers' personal data to complete intake forms and assessments, and to track outcomes of their work. During a conversation with his colleagues, he voices concerns that service providers are being pressured to share data about their work and the people they serve. Even if he uses data in newcomer clients' best interests, he is not sure if others would do the same.

1.3.4 Reflecting on Shifting Practices: Directions for the Research

In the above scenarios, a range of individuals participate in data collection, management, and use. I suggest that these individuals' practices with data and technologies may link them together, as they each navigate issues to do with immigration and settlement. Tensions may arise between the values of individuals and organizations with divergent interests, for example, in open data, accountability, dignity, independence, privacy, self-determination, transparency, safety, security, or international cooperation. The activities of a newcomer, their service provider, and a researcher might possibly influence one another, yet these interactions can be challenging to perceive when they are mediated through digital data and systems.

Scenarios were based on my readings about the types of immigration data analytics and technologies which were being implemented – as legal scholars and information researchers called for caution and some even suggested a moratorium on new immigration technologies until their human rights impacts could be assessed (e.g., Achiume, 2020; Kaurin, 2019; Latonero et al., 2019; Molnar & Gill, 2018).

As I found when writing the scenarios, distributed information practices associated with immigration and settlement can be difficult to conceptualize: Who is involved, and which sociotechnical infrastructures and systems are being used? What is the lifecycle of data as it is collected and used by actors seeking to learn about immigration and settlement as a matter of advocacy and activism, topic of research, policy issue, or lived experience? How are the data made to speak by, for, and with the groups negotiating migration? How are data sets produced to serve local, national, and globalized visions of migration?

Writing the scenarios brought about many questions for me, some of which direct my line of inquiry. Imagining possible changes in data practices raised the potential for myriad perspectives and approaches to generating, collecting, sharing, storing, and making decisions about migrants' data. The multi-group characteristics of shifting practices are a site for research about who is involved in these changes, how groups may or may not be aware of their interconnections with one another, and ways in which groups' local changes to their uses of data and technologies may have broader implications.

1.4 Visions of Data: Dominant Ideas, Concerns, and Experiments

Researchers have examined governments' moves toward digital data and emergent systems made in the name of optimizing public services or cost-saving gains (e.g., boyd & Crawford, 2012; Eubanks, 2018). These economic logics of neoliberalism strongly relate to the market-driven information systems environment which predominate in Canada and elsewhere. In this environment, corporations are sometimes relied upon to provide infrastructures of information access and use, and the same corporations frame their services as a public good while they are subject to limited regulation from federal governments (Noble, 2018). Technology corporations such as Amazon, Google, and Meta have been built upon the commodification of individuals' data (Hoffmann, 2018; Zuboff, 2015). The neoliberal logics of economics can shape communities' data into a resource for extraction. The arguments on which these logics rest introduce further problems elaborated in this section – these are problems relating to *separability*, *novelty*, *neutrality*, and *openness* of communities' data as dominant ideas. These

dominant ideas filter through the world of corporate design of information systems into the realms of government policy, programs, and services.

When thought of as a resource, data may be misunderstood as separable from practices through which it is collected, managed, stored, shared, interpreted, and used. Researchers have critiqued the notion of disembodied data, such as records of human voices used to train machine learning systems that are integrated into voice assistants, suggesting that documentation on the composition and cleaning of data should be paired with data sets (Gebru et al., 2021).

Disembodied data can be dangerous because it lacks a record of its origins, and the conditions and human actors who gave rise to its collection, creation, maintenance, cleaning, and continued existence.

Data-driven approaches have a long history, and ironically throughout this history they have been continually hailed as a *novel* way of knowing, making decisions, and solving problems, a contradiction that has been noted in previous research (Borgman, 2015; Elish & boyd, 2018; Lycett, 2013; Van Dijck, 2014). Statistics have been used in the enterprise of state-making for hundreds of years. The wealth of colonial nation states has been built in large part by systematically surveying and then stealing peoples, territories, and belongings under the doctrine of *terra nullius* (Dunbar-Ortiz, 2014). Through the calculated attempts at erasures of the presence of Indigenous nations and acts of enumeration, original peoples, their territories, and their belongings were mobilized into and out of territories by imperial rule (Browne, 2015; Smith, 2012). The Canadian multicultural settler state was made through violent enclosures (TallBear, 2019). The borders of modern colonial nation states have also been etched through

acts of enumeration of environments and peoples. While a fulsome analysis of the histories of imperial data practices and statistics are not within the purview of this project, these histories are in some ways forebears of the information practices studied in this work.

Over the last decade it has become common for policymakers and government actors (e.g., humanitarian aid agencies, government offices in Canada, China, India, Norway, Singapore, the United States, and elsewhere) to advocate for decision-making based on “big data” sets (Arora & Stevens, 2019; Molnar, 2019). When organizing asylum applications, social housing, or child welfare programs, data-driven systems are involved in decisions about attention, allocation, and selection (Molnar, 2019; O’Neil, 2017). Public and private partnerships were formed to develop these systems. Typically, these systems are introduced in contexts which operate with limited staffing and resources, assisting decision makers to compare between levels of need, risk, or vulnerability (e.g., Karusala et al., 2019). A lack of resources for social services is often used to justify the introduction of data-based technological interventions in precarious settings such as carceral systems, with the promise that such novel systems may rearrange existing resources (Dourish & Gómez Cruz, 2018). This type of move may add to the precarity of individuals interacting with public and social service systems. As I suggest in Scenario 1 (p. 9), individuals engaging with government systems, institutions, and public services may be uncertain about their own rights as “data subjects” or the responsibilities of others as “data stewards.” Too often there are few, if any, options for independent oversight and the redress of mistakes with regards to sociotechnical systems used in government and public service provision (Eubanks, 2018).

Actors who collect data value that data for its possible future uses. For instance, the data may serve as evidence to learn from, as a tool of influence, as profitable product, as documentary record, or as public resource. While much critique has targeted corporations whose business model is based on extracting personal data and labour, government and public institutions' experimentation with data-driven technologies is sometimes embraced as an endeavour to serve an imagined public good. Recently, the Canadian government and national institutions have been accused of hoarding public data in a way that creates "data deficits" and "data jails", which constrain access to records relating to public services, inequality, and wellbeing, for example (Andrew-Gee & Grant, 2019). Andrew-Gee and Grant suggest that treating anonymized individuals' and communities' data as a public resource provides a means to demand government accountability and transparency. However, efforts towards open government data do not necessarily mean that the data (e.g., on public services, inequality, or wellbeing, or other issues) will easily become more accessible or actionable. Resources and training are needed to prepare community-level data and make sense of it, and barriers to usefulness and understanding can persist even when data and technologies are made "open" (Ananny & Crawford, 2018).

Prevailing visions of data grounded in neoliberal economic logics are based on ideas of separability, novelty, neutrality, and openness. I suggest that these assumptions present thorny ethical problems, and are visions of communities' data which require complication and reconceptualization.

1.5 Ethical Concerns and Implications of Datafication

Contemporary developments in the use of immigration data and technologies may potentially be helpful in some situations and harmful in others (e.g., Scenario 2 and 3, pp. 10–12, in which the new data tool would be used to help strengthen understandings of immigration, but may also require more invasive data collection). Organizing communities' data and searching for patterns in it are neither neutral nor solely “technical” activities. Individuals who work with data bring their own situated interests, so the outcomes of their activities are contingent on their biases and priorities, advantageous to some and not others.

Through inquiries into data-driven technologies such as facial recognition, scholars have noted that historically oppressed communities disproportionately experience misrecognition, misrepresentation, and marginalization (Browne, 2015; Buolamwini & Gebru, 2018; Eubanks, 2018). When data are organized into categories, individuals can be relegated to the borderlands of classification systems that can perpetuate harms, inequitable opportunities, and erasures of identity (Bowker & Star, 1999). For decades, scholars have recognized ways that pre-existing, technical, and emergent forms of bias can be embedded in data and our means of making sense of it using computer systems (Friedman & Nissenbaum, 1996).

What are the consequences of collecting, analyzing, sharing, and otherwise using data when it represents and speaks on behalf of people (Zook et al., 2017)? In what ways are migrants made more visible to nation states and other groups as a result of governmental and non-governmental practices with immigration data? Regarding climate migration, activists and researchers alike have argued that shock value statistics on the climate crisis and ensuing displacement of people

is too often leveraged under a politics of border securitization and exclusion of future climate refugees (Out of the Woods Collective, 2020).

At their most dangerous, data analytics can become experimental tools used on individuals without their informed consent (e.g., Kramer et al., 2014). As data rhetorics become mainstream and spread from Silicon Valley to other sectors including education, government, and health, these logics take on greater power as they are designed into the infrastructures of the most basic public services and foundational supports for education, social welfare, policing, criminal justice systems, and immigration. The proliferation of data-driven technologies in the public sphere is a massive experiment in governance that represents an unprecedented shift in how citizens interact with the state and its services. Edward Snowden's 2013 revelations of the accumulation, flow, and monitoring of masses of citizens' data by governments represent a critical moment of ethical concern (Hintz et al., 2019). With Snowden's leaks, the uncovering of government surveillance programs sparked outrage and debate. As a result, conversations continue about individuals' and nations' rights and responsibilities with regards to data, individuals' diminishing agency, government control, (erosion of) privacy, and the concentration of power with data brokers and the technology industry. In this respect, the European Union's *General Data Protection Regulation* is one important policy response, which lays the groundwork for some individuals and groups reclaiming agency over making decisions about their personal digital data.

In recent years, Canada's national statistical agency reported that it was running 40–50 projects examining the possibilities of using machine learning and artificial intelligence (Ross, 2019). According to Anil Arora, Chief Statistician of Canada, many different types of data may be

processed using machine learning and artificial intelligence to, for instance, “strip much of the manual work out of interpreting and classifying raw data: early results suggest that ‘the quality is just as good – in some cases, even better – than the work done by humans making judgement calls,’ Arora comments” (Ross, 2019). The specifics of which data and contexts are part of these national experiments are unclear from Arora’s statements. Further detail on these experiments was not clarified in a recent public forum held by Statistics Canada, which I attended and whose keynote speaker was Mr. Arora.

The extent of the Canadian government’s experiments with automated and intelligent technologies in the domain of immigration and settlement has so far been nebulous. Helen Nissenbaum (2019) suggests that shifts in data practices such as these can be experienced as disruptive when implications suddenly emerge for members of the public. Nissenbaum (p. 222) writes:

At the present time, we are experiencing a new wave of privacy threats. These are riding the wave of transformations in data practices enabled by scientific breakthroughs proceeding, some might say, at a revolutionary pace. Even when technological progression is historically cumulative – with seeds of the present evident in the past – it may be felt as sudden and discontinuous when what occurs below the surface of public attention crosses a threshold into practical impact and bursts into public view.

Despite the seemingly fast pace of sociotechnical changes, Nissenbaum emphasizes the need for continued negotiation of data practices and social norms.

Data-driven technologies are already subject to critical study as instruments of political will, governance, surveillance, and manipulation (e.g., Eubanks, 2018; Noble, 2018; Tufekci, 2015). Less explored are ways in which multiple, distributed groups in varying positions of power are connected by information practices with communities' data through which they coordinate collective processes such as immigration and settlement. Interconnections between various actors, imagined in the three scenarios earlier in this chapter, become more visible when data and digital technology use in one setting may affect others in different settings. Data are collected, made mobile, and are used in intended and unintended ways by innumerable actors as they attempt to coordinate their activities. This project approaches a multitude of actors and voices, taking cues from Anna Tsing's reflections on the interactions of groups across disparate priorities and zones, which Tsing refers to as *frictions* (e.g., 2015).

1.6 This Project: Goals and Guiding Questions

Several objectives guide this project. First, it aims to examine how information practices of care are distributed between groups involved in immigration and settlement. In doing so, I set out to strengthen a theoretically informed care lens on information practices. Second, the project explores the diversity of groups' ethical views and practices of care. Third, this inquiry seeks to join and contribute to dialogues on responsible stewardship of communities' data in support of their wellbeing.

The following research questions guide the work, each of which are situated in the Canadian context:

RQ1) What are the information practices which are prominent in the work of different groups who collect and analyze newcomers' data?

RQ2) Do they see their practices shifting? If so, how?

RQ3) What would they like to learn from newcomers' data?

RQ4) What are their concerns for how newcomers' data is used?

RQ5) How do they suggest that newcomers' data should be cared for ethically?

RQ6) What is their sense of whether their practices are aligned with other groups who work with newcomers' data?

1.7 Overview of the Dissertation

This chapter raised questions about distributions of responsibilities for the representation of newcomers and migrant communities in nation state data and documentation. By considering the intersections of my experiences, speculative scenarios, and recent debates in the scholarly literature, I raised research questions which guide this inquiry. This project's research questions investigate actors involved in caring for data on behalf of newcomers, as a shared information practice which may be navigated within situated contexts and domains of work across groups. Chapter 2 reviews the literature on practice theory, information practice, and care ethics to bring together conceptual foundations for a care lens on information practice. Chapter 3 articulates an approach to listening to participants from different groups who work with immigration data and technologies. The two chapters that follow Chapter 3 turn to the findings. Chapter 4 is structured by stories told by each participant about their work with immigration data and technologies, an interest guided by *RQs* 3–6. Through a narrative analysis, I identify variations among groups' ideas of "data care." Chapter 5 turns to commonalities among groups' activities, labour

conditions, and changes in their practices as they influence (and are influenced by) other groups. In the fifth chapter, I generate themes from across participants' experiences, following up on *RQs 1–2*. Chapter 6 draws from the stories and themes of the findings to offer a resource for continued dialogs about data care. The resource takes the form of a designed card deck, containing narrative and visual prompts for reflection and decision making amongst the interconnected groups I worked with. Chapter 7 discusses findings and responds to research objectives and questions. In this final chapter, I address pragmatic and theoretical implications, limits and limitations which shaped the study, and lines of inquiry that future work might explore regarding coordination and care with data in immigration and other collective, societal processes.

1.8 Chapter Summary

As we consider new uses of communities' data and digital tools to facilitate migration, concerns for care and responsibility may help guide our way. Striving for an ethics of care in immigration information practices may be one way to reconceptualize dominant neoliberal data logics, amidst other promising approaches that emphasize migrants' (digital and information-related) agency and wellbeing (e.g., Guberek et al., 2018; Kaurin, 2019; Latonero et al., 2019).

In this chapter, I suggested that the ethical views and experiences of multiple groups participating in these activities to support or study immigration – that is, with a responsibility to care for newcomers' data on their behalf – appear unclear. In the following chapter, this research is situated within existing conversations in the literature on immigration information practices, practice theory, and ethics of care. In turn, the project aims to explore how representations of

immigration and settlement communicated through digital data and technologies may better respect the liveliness and wellbeing of migrants.

Chapter 2: Literature Review

“Along with all living things, we move through life. By this I mean not only that we are all bound to die (it is only a question of when) but that we were all once migrants (again, it is only a question of when). These sweeping statements indicate the existential perspective from which I view migration. Rather than treat the migrant as a singular figure—an interloper, anomaly, or alien in our midst—I view the migrant as exemplifying a universal aspect of human existence. Either we are moving or the world is moving—about, under, or above us. To cite the slogan so often seen on vehicles in West Africa, ‘No condition is permanent.’ Although movement, metamorphosis, and mutation are in the nature of things, change does not merely befall us like a bolt from the blue; it is often chosen and embraced, in the hope that we may be carried into a more fulfilling relationship with the world.”

— Michael Jackson (2013)

2.1 Introduction

In the passage above, I admire how Jackson shakes off reductive ideas of immigration, such as the migrant as a “singular figure.” Through reflections on the shared human experiences of life, death, and movement here and elsewhere in his writing, Jackson enlivens readers’ imagination about the ethics of immigration. Jackson does this by making connections that relate across experiences, philosophical viewpoints, and stories about how to live and move in the world. In such a way, I want to refresh ideas circulating in our field about communities’ data, immigration,

and caretaking performed through information practices, by considering these areas of research as relevant to one another.

We will travel through the literature to draw together multi-disciplinary conceptual foundations to examine the guiding questions articulated in the last chapter. I begin by reviewing work from information studies and related disciplines, drawing attention to strengths and areas of development for information practice inquiries. When paired with practice theory, ethics of care contributes ideas of interdependency, labour, participation, and responsibility which we can apply to information practice. In doing so, I advance an academic justification for why the immigration and settlement sector is a rich setting to study practices with immigration data and technologies which are distributed, negotiated, and shifting amongst actors.

2.2 Considering Data as Part of Social Practices

The language we use to describe data collected or created about human activities is not neutral. In the literature we find terms such as *digital exhaust*, *data trails*, *new oil*, data as *gold*, data *cycles*, and data *food chains* (Hoffmann, 2018; Nissenbaum, 2019; Puschmann & Burgess, 2014). Conceptual connections that map between domains, such as metaphors of data as gold or oil, are evidence of efforts to understand our relationships to data, information, and novel technologies—abstracted, distant, or intangible as they may be.

Common metaphors of data characterize it as a resource, as noted in the last chapter. The materiality of data is embodied in human, physical infrastructures: Data can leak, be bought, sold, moved, broken, and transformed (Pink et al., 2018). These terms about data and

technologies have powerful influence; they can shape our understandings, feelings of agency, and interactions. Notions of data as resource can oversimplify messy interactions into a specific artifact, flow, or gadget. It is easier to conceal these interactions for the sake of designing and selling digital systems, but I suggest this mode of thinking can render contested data practices unaccountable and unruly to all the actors involved or affected, who may also be written off as difficult to track down or unknowable.

Seeing data as a resource which can be contained, mined, and streamlined into faraway systems obviates human actions with it. The framing of data as a resource erases the everyday interactions of people with digital technologies, organizations, natural and built environments, policies, corporations, and peers, communities, or unknown others who are affected by these interactions of ours. What might a different conceptual approach look like? How might we better understand that data should not be separated from our relations with one another?

Data and data-driven technologies are increasingly at the centre of contemporary academic debate: Scholars discuss the rights of data subjects (Metcalf & Crawford, 2016), the responsibilities of actors participating in data ecosystems (Latonero et al., 2019), privacy (Nissenbaum, 2019), algorithmic bias (Noble, 2018), data violence (Hoffmann, 2018), data justice (Taylor, 2017), and related concerns. While data and emerging technologies require sustained study, a wider public discussion that is inclusive of people who are or who will be affected by the applications of data analytics and systems in the public sphere is essential.

The opacity of data and emerging technologies, however, can be an obstacle that constrains the participation of some actors and their understandings of its implications in their lives. Few opportunities currently exist for individuals outside the specialized circles of technology and information policy design to be involved in decision making about data and digital technology use (Costanza-Chock, 2020). Scholars have documented a historic and persistent problem of an all too narrow (often cisgendered, heteropatriarchal, western, and white) grasp on the diversity of experiences and normative expectations for the design and use of digital data and systems (e.g., Costanza-Chock, 2020; D'Ignazio & Klein, 2020).

To expand on what I have so far suggested are overly thin and simplistic conceptions of human data, I will turn to a social practice perspective. A practice perspective can direct conversations of data and tools to the expertise and lived experience of diverse voices in the realm of migration and settlement, moving beyond the perspectives of academics, policymakers, and technologists. Understanding data-oriented activities as practices can extend the discussion beyond data as a commodity or a natural resource.

Considering uses of data as a practice welcomes a wider range of actors into the frame, and in turn can broaden the unit of analysis through which these activities may be studied. Practice includes not only people directly involved, but also those who are affected indirectly. For example, an individual who sends off a sample of their saliva to a company to learn about their ancestry is directly involved with a number of technologies. When we look beyond the individual interacting with technologies in a particular moment, it becomes possible to ask ethical questions about how others are affected by these interactions (e.g., family members

related to an individual who has completed a DNA test), and how they believe these interactions and data practices should or should not be governed. Extending the frame on the use of data also helps researchers to think about the groups who may be influenced by interactions with technologies at less-than immediate places or times (Friedman & Hendry, 2019). Similarly, the concept of information practice widens how we understand routine activities and norms with data, information, and technologies. To help extend this frame and consider how it has been refined, I move on to information practice research.

2.3 Information Practice Scholarship

Over two decades, information practice scholarship has explored relationships between actors, communities, cultures, environments, human values, forms of information, materials, and technologies (Anderson, 2007; Díaz Andrade & Doolin, 2018; Dourish & Anderson, 2006; McKenzie, 2003; Nathan, 2012; Olsson & Lloyd, 2017; Talja et al., 2005). With some roots in information behaviour scholarship, information practice has inherited aspects of this work, specifically through a focus on peoples' everyday life activities (e.g., Case & Given, 2016; Fidel, 2012; Savolainen, 2007). Some information behaviour studies, and studies of information practice following this tradition, divided their focus into work or non-work interactions with information. These studies also categorized practices by demographic or social group, most often by profession (e.g., Chatman, 1999; Savolainen, 2008). This approach provided a detailed understanding of the processes by which particular groups use information and tools, while tying their activities to their roles.

Some scholars have investigated the social characteristics of information practices within specific community, demographic, or professional groups. This work has focused on practices in which participants shared certain traits/interests or were co-located (e.g., Gomez, 2016; Lea French & Williamson, 2016; Lloyd, 2007; Olsson, 2016). There are many strengths to these studies. In addition to these contributions, however, I note that previous work leads to questions about how information practices are developed and shared at the intersection of multiple groups with overlapping interests, whose priorities may converge and at other times diverge.

A plurality of groups may encompass individuals who have unique or conflicting priorities, who nonetheless need to negotiate, since they may share some of their goals, domains of knowledge and work, data sets, and information systems. Researchers of information practice emphasize the collective, cultural, and social facets of activities with information and technologies (e.g., Cavanagh, 2013; Dourish & Anderson, 2006; Nathan, 2009; Rivera & Cox, 2014). Studying privacy and security, for example, Dourish and Anderson suggest that an individualistic view of information practices is inadequate. Rational actor models claim that individuals weigh costs and benefits, and independently make decisions in their best interests. A rational actor perspective disregards the ways in which individuals' knowledge and decisions are frequently influenced by cultural, material, and technological factors.

A view of information practice as collectively constructed can also work against individualistic conceptions of action and responsibility, which are a poor fit with the societal challenges and multiple actors involved in how we use information and technologies. Binaries, inherited by the field of information studies, characterize some of the ways in which information flow and tool

use were described and developed by influential early theorists of information and communication technologies (e.g., Shannon, 1948). Conceptualizing information practices as more collective and intricate may allow us to look beyond some of the binaries in ideas of an individual and their data, a designer and a user of a system, or a sender and a receiver of information.

The scholarship on information practices offers generative approaches for better recognition of the sociotechnical character of interactions, or people and technologies acting together.

Technologies are frequently mentioned as an element of an information practice (e.g., Caidi & MacDonald, 2008, 2008; Gomez, 2016; Yerbury & Shahid, 2017). Yet, the means through which technologies are integrated in information practices and the ends or outcomes of those interactions has been less of a focus, with some exceptions (e.g., Cavanagh, 2013; Dourish & Anderson, 2006; Nathan, 2012). The somewhat limited attention to the mutual influence of sociotechnical actors and other actors on one another may be traced back to the user-centric turn in information behaviour (Tabak, 2014). Researchers may have expressed their resistance to systems-centric orientations by emphasizing individuals' needs and practices more than the technologies they used. Such a move centres human agency in information practices (Tabak, 2014). A move to centre users, however, may have inadvertently left the systems black-boxed.

In the last several decades, information scholars have often drawn upon *practice theory* to develop a stronger notion of what an information practice is and how information practices may be studied (e.g., Cavanagh, 2013; Greyson, 2018; Huizing & Cavanagh, 2011; Ivanov, 2017;

Lloyd, 2010; Pilerot et al., 2017). In the following section I move on to perspectives offered by practice theory.

2.4 Practice Theory

Concepts from practice theory encourage a relational perspective on peoples' interconnections with each other and technologies. Theories of practice are found in organization science, philosophy, sociology, anthropology, and human–computer interaction, and stretch out to other areas of research seeking to study lifeways, patterns, and routines of coordinated activity (e.g., Bourdieu, 1977; Certeau, 1984; Reckwitz, 2002; Schatzki et al., 2001). Practice theory encompasses a range of theoretical developments which consider social practice as a unit of analysis. While there is variation in approaches, practice theorists share some understandings of the nature of a practice. Practice theorists typically study the meaning of a practice *in situ*, where the performance of practices are oriented towards achieving goals that are meaningful to a group (e.g., Certeau, 1984; Feldman & Orlikowski, 2011; Gherardi, 2017; Kemmis, 2013; Reckwitz, 2002; Schatzki et al., 2001).

As information practice scholarship branches from the traditions of information behaviour research, ties to practice theory have strengthened and will likely continue to be reinforced (e.g., as exemplified in Cavanagh, 2013; Huizing & Cavanagh, 2011; Isah & Byström, 2016; Ivanov, 2017; Lloyd, 2010; Olsson & Lloyd, 2017; Pilerot, 2013; Pilerot et al., 2017; Veinot, 2007). By borrowing from practice theorists, we can adapt conceptual constructs for studying information practice, including material mediation, embodiment, agency, and transformation (constructs elaborated on by, for example, Hui, Schatzki, and Shove (2017) and Orlikowski (2010)).

Navigated amongst groups of people, an information practice such as tweeting can be said to have implicit rules for how a tweet should be composed, addressed to others, and shared. These norms are socially developed and shared understandings that go beyond explicit feature functionalities (e.g., 280-character limit to a Tweet). Practice theorists highlight routine activities as they are learned, shared, and carried (Lave, 1991; Reckwitz, 2002; Schatzki et al., 2001; Wenger, 2008).

To study a practice, scholars often focus on three elements— *materials*, *meanings*, and *competences* (Shove et al., 2012). Practice theory emphasizes the influence that these three elements have on people and their activities. With this understanding, we can see how the composition, persistence, and disintegration of elements contribute to the shape of a social practice, and how it may be seen as an “entity” recognized by actors performing it or others who are aware of it (Shove et al., 2012). Consider, for instance, practices such as cooking, growing food, smoking, or voting; each are made up of routines which are performed locally and are changeable. Each have material artifacts needed to perform a practice, while the meaning of practices may be understood differently as time goes by, and as the capabilities of people to perform these activities change in tandem with local social norms.

We may also follow how actors and elements influence one another through their joint performance of practices (Cecez-Kecmanovic et al., 2014; Orlikowski, 2000). Since data and technologies are employed by people in their performance of information practices, in line with some practice theorists I see that materials (e.g., immigration data and technologies) may in turn influence people, although not on par with the agency which may be exercised by individuals

and groups (e.g., Hui et al., 2017). Defining agency as the capacity to act and make change in the world, practice theorist de Certeau likens agency to water that slowly erodes the structure of a rock face. De Certeau's understanding of agency highlights how seemingly small, routine activities can change structures. Social practices organize peoples' lives, yet they can also be sites for people to resist control and attempt to transform societal norms and structures. One relevant example is the power of the passport as a document and an instrument of control (Buckland, 2017). The same passport that is a tool of control for the nation state can be temporarily resisted when individuals, for instance, intentionally destroy or lose their passport when facing the threat of deportation (Ellermann, 2010). Information and technologies can be potential sites of control and resistance, where agency is negotiated amongst multiple actors, some of whom may be non-human or technological systems (Cecez-Kecmanovic et al., 2014).

Practice theory holds the potential to strengthen information practice scholarship in a number of ways, bringing further attention to features such as the materials, outcomes, and stability and change of information practices. Studies of practice often capture the materials or belongings on which groups rely to perform a set of activities (Shove et al., 2012; Wenger, 2008). Practice theorists encourage research attending to the outcomes of practices as well, for example in reinforcing social norms and power relations (e.g., Gherardi, 2009). Contemporary practice theorists tend to agree that groups' engagement in social practices can affect change in societal norms and structures. Societal norms and structures are embodied in entities such as infrastructures, institutions, organizations, professions, political systems, religions, and scientific research (Hui et al., 2017). The civil rights movement and ongoing anti-racism organizing in the United States is one example of how groups resist and reshape societal norms of white

supremacy designed into built environments, community organizations and businesses, and infrastructures. Historically, groups participating in the civil rights movement developed activities to disrupt entrenched racial segregation – college students organized sit ins at lunch counters across the American south, inspired by Freedom Riders protesting racial violence and segregation by riding buses across the country. As social practices, protests contributed to wider participation in the civil rights movement during the 1960s in the United States. Nicolini (2017) argues that historically situated practices such as these reverberate across much larger spatial and temporal scales of social change.

Practice theory can help to examine why, how, and when routine activities, including with information and technologies, change over time (e.g., Jarrahi & Thomson, 2017). With the power of practices in mind, the next section considers information practices in the domain of immigration and settlement.

2.5 Information Practices and Migration

Many groups, such as governments and non-profit organizations which coordinate transnational immigration processes and supports, are facing changes and challenges of interacting with migrants' data and digital systems (Guberek et al., 2018; Kaurin, 2019; Latonero et al., 2019). Studies of immigration-related information practices, however, have mainly focused on single groups – often newcomers – and less so on the variety of groups supporting or studying immigration, as I will discuss in this section.

Within information practice research, there has been interest in the ways in which people use their information practices to help them move through periods of intense disruption, learning, and transition (e.g., Ahmed, 2018; Allard, 2015; Gomez, 2016; McKenzie, 2003; Willson, 2016). With the goal of understanding and supporting transitions, some research has studied the ways in which immigrants, refugees, asylum seekers, and others of various migration statuses access and use information and tools before, during, or after their arrival in a new place (e.g., Aal et al., 2018; Caidi et al., 2010; Lingel, 2015; Lloyd, 2017; Quirke, 2011; Srinivasan & Pyati, 2007). The different experiences of newcomers are recognized in the literature, which has concentrated on the information practices of particular groups including displaced peoples living in refugee camps (Fisher & Yafi, 2018; Talhouk, Vlachokyriakos, et al., 2017), asylum seekers (Kaurin, 2019); former refugees who have resettled (Díaz Andrade & Doolin, 2018; Lloyd, 2017); or individuals who are undocumented (Baron & Gomez, 2017; Gomez, 2016).

Taken together, work in this area highlights the challenges and processes that newcomers encounter. These include accessing and using information and technologies during migration and settlement; becoming involved in a local community; learning a language; building social relationships; maintaining transnational ties; navigating unfamiliar physical and informational landscapes; and sustaining a sense of self and cultural identity. At the heart of many studies of migration within the information field are individuals' efforts to (re)develop their understandings of their information needs and means of addressing them. Several researchers have examined immigration and settlement as periods of time when unfamiliar information was needed, during which individuals did not have established social connections (Caidi et al., 2010). Caidi, Allard, and Quirke (2010) suggested that a lack of access to information can lead to social exclusion.

Similarly, Lloyd (2017) and Kennan et al. (2011) studied how forced migration disrupted individuals' knowledge bases and ways of knowing. Lloyd has suggested that through forced migration newcomers may experience fracture in their connections with physical and digital landscapes of information, in the form of specific actors, groups or organizations, places, and community spaces in which they can learn.

Some scholars have highlighted migrants' agency by examining the capacity to act and make decisions as a critical skill among newcomers (e.g., Díaz Andrade & Doolin, 2018; Gomez, 2016; Guberek et al., 2018). Lloyd studied how newcomers build resilience by re-making and finding ways to navigate renewed information landscapes following migration. Several of these studies (e.g., Hultin & Introna, 2018; Lloyd, 2020) investigate how individuals' everyday capacities to act and make decisions are influenced by their own *and* others' information practices. Taken together, I see that these findings indicate that newcomers' agency is exercised in a network. The network may be composed of trusted relations, acquaintances, institutions, community organizations, built environments, digital technologies, and other entities which may be informative, misleading, or otherwise.

While specific barriers and the adaptability of individual newcomers in overcoming them have been a focus of research (e.g., Caidi et al., 2010; Díaz Andrade & Doolin, 2018; Lingel, 2015; Lloyd, 2017), there is also a need to understand systemic issues and struggles which may persist in information practices. Many scholarly accounts have emphasized how newcomers use information and technologies to their benefit, yet complexities in how migrants' agency is negotiated, enabled, and constrained by a range of interconnected actors, information, and

technologies have been overlooked, with some exceptions (e.g., Díaz Andrade & Doolin, 2018; Guberek et al., 2018; Sabie & Ahmed, 2019). Newcomers are required to be in close contact with service agencies that oversee their settlement experience. Often newcomers are required to provide their personal information for data entry into opaque databases run by international aid agencies, governments, or non-profit organizations, systems which newcomers have little or no access to, so that they can receive basic services or supports such as food and shelter (Latonero et al., 2019).

The process of immigration and settlement involves numerous actors, including newcomers and “receiving” communities in which they come to live, as well as actors such as newcomers’ social ties, nation states, organizations, documents, and technologies (Jackson, 2013). There have been several studies that investigated the information practices of service providers, such as Lea French and Williamson’s (2016) research with welfare workers and Hultin and Introna’s (2018) study of officers’ interactions with asylum seekers within government-run reception centres. Other work has indicated that migrants interact with service providers who are intermediaries in their information practices (e.g., Lloyd et al., 2013). Talhouk et al.’s (2017) study on the mediation of health care services for refugees through a community radio system is one of the few works to examine the effects of service providers and migrants’ shared information practices on migrants’ access to services, agency, and wellbeing. With the exceptions of Talhouk et al. and Hultin and Introna, few researchers have conducted empirical studies of the shared, mutually negotiated, and agentic character of information practices between service providers and the newcomers with whom they work. Each of these actors may or may not be aware of one

another's activities, and their effects on each other, even though they may need to work collaboratively.

2.6 The Datafication of Migration

“Excluding the height of the slave trade in the nineteenth century, the mass movement of peoples in the latter half of the twentieth century and the beginning of the twenty-first century is greater now than it has ever been. It is a movement of workers, intellectuals, refugees, armies crossing oceans, continents, immigrants through customs offices and hidden routes, speaking multiple languages of trade, of political intervention, of persecution, exile, violence, and poverty. There is little doubt that the redistribution (voluntary or involuntary) of people all over the globe tops the agenda of the state, the boardrooms, the neighborhoods, the street. Political maneuvers to control this movement are not limited to monitoring the dispossessed.”

– Toni Morrison (2019)

Digital data and documents designed to convey individuals' identity, nationality, and origin often figure into experiences of mobility and immobility. Like many others, I have navigated this myself: In the United Kingdom I spent several years studying and working on an ancestry visa. This means that my family was able to arrange a visa for me through a paper trail on my maternal relatives, who were settler colonial residents in India, held British citizenship, and became, again, settler colonial residents in Canada. I was a visitor in Qatar, where I was required

to leave and re-enter the country every few months to remain a visitor on paper. I travelled on a tourist visa in India, and more recently I became an “alien fiancée” visa applicant to join my partner in the United States. The point here is *not* my experience. These experiences are not unique; I have heard many stories from friends, family members, and colleagues who have had similar, and much more challenging, experiences of documenting themselves to be legible to nation states.

Normative ideas about group politics and responsibilities associated with immigration are embodied in paper forms, digital data and systems, and procedural rules used to govern movement and settlement (Arora & Stevens, 2019). Information systems are used to manage migrants, and the recognition of certain bodies, borders, identities, and nations (Costanza-Chock, 2020). Information scholars have shown that large-scale acts of coordination at national or international levels are based on data analytics and the bureaucratic sociotechnical systems in which population data is managed (Bowker & Star, 1999).

Within the history of states’ longstanding practices of gathering data on migrants and residents, there may be some recent destabilization in what states can claim is commonplace or routine. Emergent technologies that gather personally or demographically sensitive information about newcomers are now proliferating. Metcalfe and Dencik examined the integration of technologies into what they see as datafied borders, where “border regime[s are] increasingly organised around a set of interoperable databases, digital registration technologies, identity verifications, and various algorithmically processed risk assessments that involve a range of different actors, locations, and devices” (2019). Latonero et al. (2019) found an assemblage of new technologies

deployed in Italy, including drones, digital fingerprint scanners, and databases used with the aim of implementing immigration and information policies in Europe. Experiments with emerging technologies may receive little or no informed consent from newcomers, and can deter people from accessing services:

In the current political climate in Italy and other European Union (EU) countries, the addition of new digital identity systems promising the efficient implementation of existing policy is not an adequate response. What is needed now is a policy-relevant knowledge base about the realities of bureaucratic and technical harms, the difficulties of maintaining privacy and obtaining meaningful informed consent, and the challenges of protecting identity data for all actors in the ecosystem. (Latonero et al., 2019)

Latonero et al. argue that knowledge to inform stronger immigration policy, practice, and design of technologies is required, rather than the development of technology to implement and enforce immigration policy alone.

Arrangements of digital and non-digital technologies, such as former U.S. president Donald Trump's border wall in the United States, have also been used as means to implement exclusionary, violent migration policies. During his presidency, Trump, for example, planned to create a database registry that would further expand the discriminatory surveillance of Muslims in the United States (Phillip & Hauslohner, 2016). In Canada, the federal government has intended to implement artificially intelligent systems to inform its decisions about immigration and refugee claims. A news media report, for instance, suggested that "Ottawa plans on using the

emerging technology to reduce government lawyers' need to perform their own legal research, a costly and time-consuming process. But there are already concerns that the nuanced and difficult nature of many refugee and immigration claims may be lost on those government computer systems, leading to massive human-rights implications" (Ling, 2018). At the same time, Canada's border policing agency has conducted unchecked trials with data as reported on in the media, such as DNA testing and the use of ancestry sites by immigration officials for "providing indicators of nationality" (Kassam, 2018). As Eubanks has shown, the moves towards data-driven technologies in the public service sector constitute a risky large-scale experiment without ethical review processes. Indeed, the methodological connotations of the word "experiment" may be too generous a framing when shifts in immigration information practices go without adequate prior informed consent and documentation. Such practices are not possible to assess since they are typically concealed – by claiming governmental and institutional needs for privacy and security, above that of migrants – until an error and its consequences come to light (e.g., Benjamin, 2016).

Costanza-Chock has also drawn attention to the intersection of oppressive practices and technology design in relation to migration policy in the United States. Costanza-Chock reports that:

Recently, the [U.S.] Department of Homeland Security (DHS) had an open bid process to develop an automated 'good immigrant/bad immigrant' prediction system that would draw from people's public social media profiles. After extensive pushback from civil liberties and immigrant rights advocates, DHS announced that the system was beyond 'present day

capabilities’. However, they also announced that they would instead hire 180 positions for people tasked to manually monitor immigrant social media profiles from a list of about 100,000 people. In other words, within the broader immigration system, visa allocation has always been an algorithm, and it is one that has been designed according to the political priorities of power holders. It is an algorithm that has long privileged whiteness, hetero- and cisnormativity, wealth, and higher socioeconomic status. (2018, p. 9)

Developments like these, described by Costanza-Chock above, invite us to question how migrants’ agency – in making decisions about their own data, representing themselves, and in turn determining their identities and futures – can be eroded by the design and use of these and other digital tools.

Kaurin has found that data protection of migrants is rarely explained (e.g., in policy documents or legal frameworks), which can contribute to low levels of trust in state data collection and sharing. Asylum seekers’ low levels of trust in the stewards of their data is due in part to breaches of safety and security. Kaurin provides the example of data gathered from the Deferred Action for Childhood Arrivals (DACA) program participants under the Obama administration and its subsequent use by the Trump administration to detain, deport, and target migrants from the U.S. Kaurin notes that “complex humanitarian problems merit careful analysis and multi-stakeholder engagement; they cannot be resolved with technical solutions alone” (2019, p. 16). Kaurin calls for methods of co-design with newcomers when developing systems that collect asylum seekers’ and refugees’ data, as well as greater transparency and explanation of these data practices.

This scholarship reveals ways that data and data-driven systems are simultaneously informing governments' visions of migration, while their abstractness may be clouding understandings of the experiences of people whose lives transcend the categories by which they are classified and counted, and through which they are made visible to the state. Taking a step back, I want to reflect on how information practices are tied to values and power.

2.7 The Interplay of Values and Power in Information Practices

From the literature on information practice, we have seen that people do not interact with information and technologies in a vacuum. Other actors, including groups and assemblages of people and technologies, participate in information practices and how they are understood. As such, responsibilities for the processes and outcomes of practices are distributed. Partly because of the co-participation of groups, materials, and technologies, the arrangements of actors and their influences on one another can be difficult to understand. Practices may shapeshift as data, digital technologies, and human actors come in and out of relation. When so many actors are involved, whose values are at play? How do different communities' values come up against one another in their information practices?

Within information science and related fields, there is a tradition of studying peoples' values in relation to information and technologies. In human-computer interaction research, values have been defined as what individuals or groups consider important in life, with an interest in operationalizing specific values in the design of technologies (Friedman & Hendry, 2019). The work on *values as hypotheses* from JafariNaimi, Nathan, and Hargraves (2015) suggests an

understanding of values as plural and developing across time, rather than static or pre-determined. JafariNaimi et al. emphasize that values are articulated within culturally and historically-situated settings. Listing and defining values, such as privacy, security, or wellbeing does not reveal how these values are deployed in action – that is, how certain values help people make sense of a situation and take action in response. Values are developed through cycles of reflection and action, hence the need to study the dynamic nature and development of a practice. As such, a practice can amplify certain values while making others harder to exercise. The exercise of particular values contributes to the concentration of power with some groups as their practices become dominant and are likely increasingly difficult to alter (Orlikowski, 2000).

By drawing from practice theory, we may better understand how an information practice and its consequences are shared amongst actors in different positions of relative power. Yet, distributions of power are rarely equal, nor are the stakes even among co-participants in a social practice. Concentrations of power with individuals and groups affect how practices grow or dwindle (Shove et al., 2012). The work of developing, performing, and responding to the outcomes of a social practice may not be uniformly distributed amongst actors. Power relations influence whose values may be upheld, who enjoys the benefits of a dominant practice, whose alternative/non-dominant practices may be restricted, and who may have to cope with the unwelcome outcomes of that practice (Gherardi, 2009). Refer to, for instance, the inequitable accumulations of harmful waste from energy-intensive, extractive social practices – e.g., the production of digital devices, driving, factory manufacturing, and mining. Scholars have shown dangerously higher levels of particles in the air *of some communities*, pollution in the water *of some communities*, and power plants concentrated in regions where *certain classed, raced*

neighbourhoods have been consistently subject to oppression (Bullard, 2021; Shotwell, 2016; Shove et al., 2012).

Given these insights on the power dynamics of social practices, the next section turns back to questions of responsibility in the performance of, and for the outcomes stemming from, information practices. I seek out conceptual resources with which to clarify ethical questions of migration and its datafication.

2.8 Conceptualizing Responsibility for Information Practices

With attention to emergent technologies and their applications, we have seen increased efforts to discuss responsibilities for their outcomes. During congressional hearings about facial recognition in the United States in 2019, for example, computer scientist Joy Boulamwini testified about negative outcomes that disproportionately affect people of colour and women. However, groups with limited technical expertise are often excluded from discussions related to information technology design, policy, and practice. This tendency coincides with expectations for individuals to hone their information literacies to navigate ever-changing information ecosystems, while corporations and governments may eschew responsibilities for how systems are used (Kaczmarek et al., 2020).

Mounk (2017) traces the rise of personal responsibility as a policy mechanism. Mounk suggests that the decline of welfare state protections has come with the view that only those who have been personally responsible for their data, decisions, or finances, for example, are deserving of protection by the nation state. Practice theorists have also observed this problem: While systems-

wide views may be espoused in theoretical approaches to societal issues such as climate change, policies tend to focus on individual motivation and punishment, or what Shove, Pantzar, and Watson (2012) have called the “ABC” or “Attitude, Behaviour, and Choice” model. Personal models of responsibility do not correspond to the collective character of social practices.

The problems of individualistic understandings can also be analyzed alongside dualistic or binary constructions of the social and technical, the user and the designer, or agency and structure, noted earlier. Eubanks (2018) investigated the rise of data-driven tools in the social service sector, which led to the delegation of responsibility to individuals for their own data and interactions with automated systems. In Los Angeles, Eubanks examined an algorithmic system designed to evaluate the vulnerability of thousands of people who were homeless to prioritize them for a limited pool of social housing. In Indiana, Eubanks found that one million applications for benefits, food stamps, and health care were denied because a new automated system wrongly interpreted any errors or missing information as a so-called failure to cooperate. In Pittsburgh, Eubanks observed how families were monitored by a state child welfare agency and social workers, who were at the time testing a statistical model to predict a child’s likelihood of being a victim of future abuse or neglect. Bringing these examples together with wider trends towards economic inequality and austerity, Eubanks highlights unintended effects of emerging technologies in the social services sector. Eubanks found that individuals were given the work of making sense of these new systems. In effect, they were being told to be responsible for themselves, their data, learning about the system, and how they fared at the sociotechnical interface. This labour was added to the lives of people who were already seeking support. In

essence, new systems asked individuals to make themselves and their needs for care legible to machines.

This model of individual responsibility had damaging effects, including the wrongful rejection of many from the welfare system. The most severe harms were experienced by people in already precarious situations. Eubanks recounts the consequences for individuals who faced its most devastating effects. One of these individuals was Omega Young of Evansville, Indiana:

[Omega Young] missed an appointment to recertify for Medicaid because she was in the hospital suffering from terminal cancer. [...even after calling the county to let them know she was hospitalized,] her medical benefits and food stamps were still cut off for failure to cooperate. [...] Because she lost her benefits, Young was unable to afford her medications. She lost her food stamps. She struggled to pay her rent. She lost access to free transportation to medical appointments. Omega Young died March 1, 2009. The next day, on March 2, she won her FSSA appeal for wrongful termination and her benefits were restored. (Eubanks, 2018)

Questions of responsibility came too late for Omega Young. As Eubanks suggested, these harms were challenging to comprehend because their cause was contested and distributed amongst people and systems. The legal suit brought against the system turned into a battle between the state and the company, IBM, who had built the tool. Even this outcome simplified the many forces at work that eventually led to Omega Young's death. The response was to identify a cause, link it to an effect, and lay blame.

The legal response to Omega Young's death does *not* enable us to prevent similarly destructive encounters between people, information, and technologies used in the public sphere and social service provision. Eubanks' findings are indicative of broken conceptualizations of responsibility within social service systems and digital technologies used in government programs and social services. Notions of individual responsibility may need to be identified and deconstructed or "un-designed".

As an individual, I count myself among those who have had, or will one day have, needs that require medical attention, public services, social service supports, and government assistance. Each type of support I/we will need from doctors, public servants, social workers, community agency staff, or government agencies will most likely require skillful use of digital data and technologies. Given this reality, how might we strengthen collective caretaking capacities? What resources do we, as academics, have available to strengthen logics of shared responsibility – e.g., ethical frameworks, methods, and theories? What are ways to build more collective logics of responsibility into public services, information systems, and societal processes (immigration and settlement being one example)? In working on questions like these, there is a role for information scientists to further contribute to debates about caretaking, responsibility, and ethical practice with information systems.

2.9 Ethics of Care: A Lens on Information Practices

“Care is a species activity that includes everything that we do to maintain, continue, and repair our ‘world’ so that we can live in it as well as possible. That world includes our bodies, our selves, and our environment, all of which we seek to interweave in a complex, life-sustaining web”

— Joan Tronto and Berenice Fisher, as cited in Tronto (1998)

Ethics of care orients this research towards the relationships and acts of care embodied in information practices. Developed in feminist scholarship by researchers such as Fisher and Tronto (1998), *ethics of care*, also referred to as *care ethics*, is a normative ethical theory that considers what constitutes morally right or wrong action. Care ethics emphasizes the achievement of social justice as an ongoing practical effort. The conceptual language of care ethics is therefore distinct from that of legal notions of justice which aim to redress damages, identify liability, place onus, and uphold universal standards. Studies adopting a care ethics lens ask situated questions to understand the concepts and practices of care, within specific locations and their politics, institutions, and transnational relations (Nguyen et al., 2017).

Theoretical frameworks of caretaking can make activities of care and its webs of relations more visible. A mesh of relations connects actors who are involved in giving and receiving care, comprising individuals, communities, and technologies. In this sense, the existence of care is ubiquitous, while it is not performed in the same manner in every place (Mol, Moser, & Pols, 2010).

Tronto's qualities of care include *attentiveness (caring about)*, which relate to the needs and vulnerabilities of the receivers of care; *responsibility (caring for)*, perceived by carers; *competence (care giving)* or practical capacity to care; and *responsiveness (care receiving)* on the part of individuals receiving care (Tronto, 1993, 1998). More recently, Tronto (2013a) expanded on these qualities by integrating *plurality (caring with)*, as it is upheld by communication, respect, trust, and solidarity amongst groups in society.

Care ethicists prompt co-participants in care labour to ask what would be preferable in a situation where individuals are dependent upon one another, whether in a context such as health care, or in the care of personal information such as health records, for example (Mol et al., 2010).

Consequently, a care ethics lens can be a means of working with people to identify what is valued and how values should be upheld.

In her work to bring science and technology studies and care ethics into dialogue, Puig de la Bellacasa (2017) calls for studying *matters of care*. To examine matters of care is to hold on to the question of how care is conceived, and how it can be performed and transformed within each situation. In this sense, good care in one space is not transferrable to other spaces. If we are capable of "holding together a plurality of ontological meanings – doing/work, affect/feel, and ethics/politics," we may create thicker, more complex understandings of care work and its outcomes (Puig de la Bellacasa, 2017).

In turn, Puig de la Bellacasa suggests that previous feminist ethics of care studies typically categorized co-participants into care givers or care receivers. Such arguments align with other critiques of care ethics. From its theoretical inception in the 1980s – coming out of institutions primarily based in the Global North – early work in care ethics tended to base arguments about the value of care on binaries. As Tronto notes, this work reified dualistic distinctions, especially the gender binary. By claiming women’s moral reasoning is tied to their capacities to be or become a mother, early feminist care ethics associated a mother and child’s family relation with a prototypical care giver–receiver dynamic. According to Tronto, to take women’s morality as a basis for care weakens the potential to politicize it and making its performance more public (Tronto, 2013b).

Much of the current work of care ethics lays in adding complexity to the processes, outcomes, and political implications of care. Murphy (2015) proposes that care ethics research should disturb comfortable or positive associations with care. Murphy finds, for example, that the imaginary of care is deployed in capitalist humanitarianism which play on Western feminists’ rescue narratives around women’s health and wellbeing. Related to this, Puig de la Bellacasa shows that the circulation of care labour within society is often non-reciprocal, non-innocent, and uneven, considering, for instance, examples such as the growing, harvesting, and delivery of food, or call centre staff in the Global South whose shifts go through the night as they interact with customers in other time zones. Puig de la Bellacasa’s speculative theoretical approach imagines what studies of care might accomplish, with time and opportunity for moving past assumptions of what is effective or efficient given a certain problem. Puig de la Bellacasa suggests moving on to what is ethically responsive to the situation of all who are involved. Her

interest is in creating a space for care research within current realities, “not looking to create a space for care outside present predicaments and hegemonies” (Puig de la Bellacasa, 2017). This is not an idealized notion, and as such it calls for “paying attention” as a technique to make current configurations of care work more visible (Puig de la Bellacasa, 2017).

Ideas of responsibility, social justice, and values in information practices can be tied together with an ethics of care lens. Young (2011) suggests that liability models of responsibility alone are not sufficient for fully addressing large scale issues of our time such as climate change. Young calls into question the liability-oriented framings of responsibility that are reinforced by laws and policies, pointing out that these views tend to frame responsibility retroactively by meting out punishments or blame. Instead, Young finds that ethics of care conceptions of responsibility can push for an active, shared sense of responsibility. Young’s social connection model of responsibility is more temporally forward-looking than justice-based models, the latter of which have pervaded discussions about the harms of data-driven technologies in the media (e.g., Manjoo, 2017; Valentino-DeVries et al., 2018).

We may look to studies of care practices which have been conducted within the field of Library, Archival, and Information Studies. The work of Lawson (2004) has been influential for the direction as well as the ethical and methodological commitments of this dissertation project. Lawson theorizes care through her study of First Nations knowledge, which was stolen, appropriated, and fragmented by Western institutions, as it is reconnected to First Nations stewards and knowledge systems. Lawson’s findings suggest that First Nations communities’ care for knowledge is carried out by educators, knowledge keepers, learners, and current and

future community members. Lawson emphasizes that cross-cultural communication is crucial to responsible practice with the belongings of communities, as those belongings carry cultural, evidentiary, historical, legal, and spiritual value. Critical to caretaking is the recontextualization of records of knowledge, and the reconceptualization of knowledge as the belongings of specific communities. In conversation with First Nations knowledge workers in Canada, Lawson highlights these labours of care which are performed by experts who build bridges between First Nations knowledge systems and western knowledge systems. Lawson shows that records of knowledge are vital belongings of communities, and that caring for knowledge is a matter of respecting its origins, creators, owners, stewards, and intended use.

Other information scholars have drawn upon notions of caretaking, relationality, and responsibility for communities' records in archival work practices (e.g., Caswell & Cifor, 2016; Nathan et al., 2015). Some have suggested that studies of caretaking and maintenance may challenge a transactional view of social practices (i.e., which can reduce peoples' experiences to numbers or service outcomes, as noted by Cavanagh (2013) and Hargraves (2018)). Related to this, the multi-directional qualities of agency and mutual influence may be better appreciated through a care lens on information practice.

Strengthening an ethics of care lens, including in studies of information practice, will require researchers to encompass dynamics of power, politics, labour relations, invisibility and visibility of work, and the valuing and devaluing of care (Puig de la Bellacasa, 2017). Puig de la Bellacasa's renewal of care ethics has also shaped this project's analysis of ideas and practices of care for people and data within the worlds of immigration and settlement. I suggest that with this

lens we may be better positioned to notice who and what is overlooked, neglected, or made invisible, and who and what is made more visible through caretaking information practices.

2.10 Chapter Summary

In this chapter, I argued that the foundations of information practice, practice theory, and ethics of care are mutually reinforcing. I examined emergent digitally mediated interactions between nation states and newcomers, for which ethical responsibilities and outcomes need to be considered. Resource-oriented ideas of data (whether about newcomer communities or other communities) are risky because they may elide human intention and intervention. Dominant ideas of communities' data and how it may be used require a reframing, hence a move towards practice theory in this study. I noted that a social practice perspective encourages a wider consideration of actors who co-participate in an information practice and experience its effects. In turn, I explored how logics of collective responsibility enacted through information practices may be fortified with an ethics of care lens.

By synthesizing these areas of literature, I aimed to enliven how we may study diverse groups' activities, interests, and values in their shared practices with data and technologies. In the next chapter, I will articulate a methodology for this practice-oriented inquiry.

Chapter 3: Methodology

“It is because of this already existing web of human relationships, with its innumerable, conflicting wills and intentions, that action almost never achieves its purpose; but it is also because of this medium, in which action alone is real, that it ‘produces’ stories with or without intention as naturally as fabrication produces tangible things. These stories may then be recorded in documents and monuments, they may be visible in use objects or art works, they may be told and retold and worked into all kinds of material.”

— Hannah Arendt (1998)

3.1 Introduction

In this chapter I outline a methodological approach that allowed me to look across interconnected individuals and groups who steward newcomers’ data through interviews. I sought to balance my interest in listening for a range of voices with a caution for placing burdens on others. As such, I decided not to recruit newcomers in the midst of immigration and settlement. I reasoned that I could first gain an understanding of which forms of immigration data are being collected, learn more about the groups stewarding newcomers’ data and their norms, and appreciate how their data may or may not be used by a network of distributed actors. I also did not want to mislead newcomers about ways in which their data are used by others before I had a clearer understanding myself.

During data collection and analysis, I was motivated by researchers’ calls for emphasizing possibilities for empowerment as opposed to paranoia in community-oriented projects

investigating digital data use (Lewis et al., 2018). I intended to explore immigration information practices, not provoke unfounded confusion or fear about these practices. In this and other ways, this inquiry's methodological approach is developed in tandem with my responsibilities as a researcher.

3.2 Orientations and Role as a Researcher

My epistemological, axiological, and theoretical groundings for this project are influenced by insights from constructivist, critical theory orientations, and feminist ethics of care. I saw interviews as a chance to build, question, and compare understandings of caretaking alongside individuals. I expected that interviewees would hold a range of positionalities, which would filter into the stories they might tell about their activities.

As for how I saw my role, I aimed to be a facilitator of discussion and a listener, a typical role in studies informed by constructivism and critical theory (Guba & Lincoln, 2004). Each participant was seen as a conversation partner with their own expertise and interests.

The lens of care ethics informed my standards for rigour. I endeavoured to maintain participants' confidentiality, respect their time, compensate their labour fairly, and acknowledge where their ideas may have differed from my own. McKittrick (2021) has conceptualized academic citation practices as a means for drawing attention to where one owes intellectual debt to others, connecting to others in order to call out what one does *not* know. The notion of intellectual debt can be construed as a kind of labour of care necessary for experiencing, listening, making, reading, thinking, and writing; a debt which one owes others. While I cite scholars' conceptual

contributions in the dissertation, I also cite participants' contributions when I refer to individuals' words and stories.

Feminist scholars, including care ethics researchers, encourage critical reflection on standpoints and situatedness involved in producing, circulating, and validating knowledges (Haraway, 1988; Puig de la Bellacasa, 2017). My own motivations are not only academic. What could be called a “research interest” in immigration and settlement are also matters of my personal experience and inherited family histories of movement, migration, and settler colonialism. As an uninvited guest I have grown up and studied within the unceded territories of the Musqueam, Squamish, and Tsleil-Waututh Peoples, and now live and learn in the lands of the Seneca Nation, part of the Haudenosaunee Confederacy. It is in part because of my background – in the South Asian diaspora and in the white western Europeans who brought settler colonialism to Turtle Island and to the Indian subcontinent, constructing and changing borders and interfering with longstanding communities' lifeways – that I want to turn the lens of care ethics on how immigration, settlement, and newcomers are understood.

3.3 Methods for Studying Information Practices from a Practice Perspective

Information practice as a standalone concept is still in development. Information scholars have adapted language and methodological techniques used by practice theorists (e.g., Anderson, 2007; Cox, 2012; Veinot, 2007). As examined in the second chapter, a focus on practice widens the frame on how many different entities interact, including individuals, organizations, documents, and technologies, thereby influencing one another (Orlikowski, 2000; Suchman et al., 1999).

In the design of their studies of information practices, researchers have often foregrounded a certain community's interactions with information and technologies as a case study. Scholars then examine everyday activities, professional work, or a mix of activities and goals in a domain of interest (e.g., Cavanagh, 2013; Nathan, 2009; Veinot, 2007). Many methods have been used to focus attention on information practices, such as document analysis, cultural probes, journaling, interviews, visual methods using drawing and photography, and questionnaires (e.g., Caidi & MacDonald, 2008; Cavanagh, 2013; Díaz Andrade & Doolin, 2018; Gomez & Vannini, 2017; McKenzie, 2001; Nathan, 2009; Pilerot, 2013; Savolainen, 2007). A few studies have also employed techniques associated with ethnography such as extended periods of fieldwork and participant observation (e.g., Greyson, 2016; Nathan, 2009).

I was also aware of some notable methodological challenges, however. From my review of information practice studies, I learned that difficulties may arise in understanding participants' tacit knowledge, following information practices as part of the fabric of practices it is performed in support of, and discussing activities with information and technologies without imposing a functional or tool-oriented view (Lloyd, 2014; Nathan, 2009).

3.4 Research Procedures

3.4.1 Semi-Structured Interviews as Method

I chose interviews as a method of research because I wanted to speak with groups who work with immigration data about their ethical views and information practices. Interviews allowed me to listen to how participants described their experiences with immigration data and technologies in

their own terms. I was able to train my attention on their words and views, and the variations between them, by using semi-structured interviewing techniques. Semi-structured interviews enabled me to adapt the order and the phrasing of my questions to better fit the flow of conversation, where at times we returned to participants' own examples, questions, or ideas of care.

I anticipated that interviewees might not describe or understand their activities in the same way. The interview questions I posed encouraged discussion of participants' roles, objectives when working with newcomers' data, if they had noticed changes in their information practices, concerns about how newcomers' data is used, and ethical perspectives on how newcomers' data should be cared for. If asked what I meant by the words I used in my interview questions – e.g., most often “newcomers” and “data” – I let participants know that I meant these terms to be considered expansively and encouraged them to use terms they were familiar with from their work. I wanted to listen to how participants qualified these terms and their definitions.

I developed an interview guide organized by a core set of questions (see Appendix). Core interview questions corresponded to research questions. I discussed the core set of interview questions with each participant to establish a consistency in topics covered across interviews, given the range of roles each of the participants held.

3.4.2 Sampling Frame

My time learning from the migration-oriented research and service community in the Greater Vancouver area helped me to develop a sense of the groups who collected data from newcomers, providing insight on how to construct a sampling frame.

I had been a graduate student member and part-time assistant affiliated with the Centre for Migration Studies at the University of British Columbia, and this role afforded the benefits of joining regular talks and meetings focusing on immigration research and service provision. During my time learning from events at the Centre for Migration Studies, I was able to listen to the debates and questions of groups who came together at events to discuss shared matters of concern, sometimes touching on the use of immigration data. Because of my combined readings and these experiences, I began thinking through the groups whose practices I was curious about. These groups included: 1) settlement service providers, 2) migrant justice activists, 3) academics working with newcomers' data, 4) government staff or policymakers, and 5) designers who build information systems that are used by newcomers. I was aware that some of these groups were more vocal participants in university events to do with immigration (e.g., academics, policymakers, and service providers), while I reflected that some may be absent from these spaces yet could be concerned about uses of immigration data (e.g., migrant justice activists). Still others may be silent or perhaps unnoticed in events and the scholarly literature on immigration data and technologies (e.g., designers of systems).

I expected that the five groups noted above may be connected, yet the links among them constructed and mediated through immigration and settlement data and systems may be

underacknowledged. I was, for example, intrigued with an immigration information system which I had heard about in my conversations with settlement service providers at university events. The system is a database called iCare used to record interactions between newcomers and service providers within settlement service organizations. The same system is also employed by the government to attempt to track outcomes of settlement services, although alternative and future uses of the data remain unclear from publicly accessible government statements about the system (e.g., CIC Research & Evaluation, 2015). Settlement service providers had indicated to me that the iCare database operates on a one-way model of data entry, so that data are entered into the system which is managed by the federal government. Settlement service providers said there were limited opportunities for them to access and use the data at a local organizational level. I anticipated that holding interviews could raise some of the relationships and frictions associated with immigration data and digital systems such as iCare.

3.4.3 Strategies for Sampling and Recruitment

I aimed to hear from a diversity of interviewees whose perspectives and stories I could closely analyze, using qualitative standards for recruitment (Robinson, 2014). I selected a purposive sampling strategy to recruit one or more individuals from each of the five groups: 1) settlement service providers, 2) migrant justice activists, 3) academics working with newcomers' data, 4) government staff or policymakers, and 5) designers who build information systems that are used by newcomers. Based on these plans, I obtained approval to conduct this study from the University of British Columbia's Behavioural Research Ethics Board.

Individuals were included in the sampling frame through their self-identification with one or more of each of the five groups. This step was conducted through my review of their profile on their own or their agency or organization's website, which I subsequently confirmed during recruitment and interviews. Participants were limited to those living or working within Canada, to investigate information practices involved in Canadian immigration and settlement processes. Individuals in British Columbia were prioritized because of my familiarity with local research projects and services supporting newcomers. I also recruited two individuals beyond British Columbia actively working on immigration ethics or immigration data, who had recently presented public talks or workshops at academic conferences I had attended.

Based on the inclusion and exclusion criteria, I developed a list of 25 prospective individuals and groups to reach out to. I contacted members of the five groups with a letter stating the goals of the study, topics of interview conversation, and an invitation to meet virtually. A total of 14 participants were recruited and interviewed from July 2020 to May 2021. Each participant was assigned a pseudonym, used to refer to them below and in the findings. Recruited participants are as follows:

- Settlement service providers (5): Finn, James, Kim, Noor, Zora
- Migrant justice activists (2): Lea, Mark
- Academics working with newcomers' data (3): Ash, Cora, Hamid
- Government staff or policymakers (1): Wendy
- Designers who build systems that are used by newcomers (2): Ira, Tanis

- Independent consultant/contractor who advises the immigration and settlement sector on integrating digital systems and technologies into service design and delivery (1): Valerie

With regards to the intended outcomes of sampling and recruitment strategies, I emphasize that this was an exploratory inquiry. I did not aim to generate generalizable or predictive findings, nor build a novel theory or model. Related to this, it was not methodologically possible nor a goal of the study to seek out *theoretical saturation*, defined as the point at which no new insights emerge through further data collection. Theoretical saturation was a marker arbitrary to the motivations of this study (i.e., I was motivated to begin to widen the frame on the range of actors participating in immigration information practices, as opposed to recruiting from a narrower range of groups whose views might conceivably echo one another). For these reasons, I brought data collection to a close when a range of perspectives had been shared such that there was abundant material to interpret through the analytic methods I selected.

3.4.4 Hosting Interviews and Generating Study Data

I interviewed participants remotely, providing them the choice of a telephone call or a call arranged through the Zoom teleconferencing software licensed by my institution. Prior to the interviews, participants had been provided with the written consent form for their review. I opened each interview conversation with an introduction to myself and the study, a summary of my goals and the types of interview questions I was interested to ask, and an opportunity to discuss questions they may have had about the project before the interview started.

Most interviews were held individually (10 interviews = 10 individuals), with the exception of two paired interviews (2 interviews = 4 individuals) for which participants expressed to me that they wished to be interviewed together because they worked alongside one another in the same organization or group (even if in different roles). Individual interview conversations spanned 40 to 75 minutes, with paired interviews ranging from 60 to 90 minutes. When interviewees raised follow up questions about the study, I responded by providing further information about my interests. The semi-structured approach helped to clarify my interview questions, follow unexpected areas of conversation or experiences raised by participants, and direct the ordering of my questions. Each interviewee provided free prior, informed consent for the interview and was offered a \$30 honorarium.

Interviews were carried from July 2020–May 2021. Based on audio recordings, I wrote up a close literal transcription of each interview. During transcription I redacted all names of individuals, titles of specific professional roles, organizations, or personally identifying information. I made a second check to ensure that personally identifying information was not included in any of the transcripts in an effort to preserve all participants' confidentiality. I transcribed non-verbals, specifically laughter, when meaningful to the topic of conversation. I did not record other non-verbals such as background noise typical of recording interviews in a home office, due to remote research procedures during the pandemic. Repetitions of words and filler words (e.g., ums) were removed during transcription. In an individual follow up message, participants were provided the opportunity to express their interest in reviewing their transcript and making amendments for accuracy and privacy.

3.5 Analysis: Generating Stories and Themes

I selected analytic techniques that would help me make specific moves, informed by practice theoretical advice for *zooming in and out* on social practices (Nicolini, 2009). Whereas *zooming in* can attend to the performance of a practice in a situation, *zooming out* can focus on features of a practice recognized by members of a community and as linked to other social practices (Shove et al., 2012). I needed to make both these moves to trace threads in the web of immigration information practices.

As a first step, I chose to use *narrative analysis* to help me zoom in on individuals' accounts of their practices with immigration data and technologies. Narrative analysis focuses on *stories* to study their significance in people's lives, their structures and effects, and the scenes in which they are told (Frank, 2012). Arthur Frank is a sociologist who has worked with individuals negotiating their identities and experiences of illness. In his work, Frank examines how people tell stories to understand themselves and each other intersubjectively, and to engage their moral reasoning about how to take action given their circumstances. Adapting Frank's *socio-narratology* (2012) and, in particular, his guidance for *dialogical narrative analysis*, I explored stories participants shared with me in interviews. I understood "stories" as insights drawn from a sequence of events, which closed with participants' reflection on the significance or "takeaway" lessons. As I engaged in conversation and returned to interview transcripts, I noticed stories because they were points when interviewees offered a detailed experiential example to illustrate an idea or view.

While emphasizing there is no recipe for dialogical narrative analysis, Frank provides strategies for interpretation, including noticing possible types of stories, slowing down when listening and interpreting, and responding to the lessons of a story through free writing and thinking exercises. Frank suggests that researchers may re-tell stories to interpret meaning, thereby placing stories within their own frames of analysis. I identified and arranged stories to bring out the similarities and differences between them, organizing them into three types in relation to my lines of inquiry. I report on how I used narrative analysis in greater detail in the fourth chapter of the dissertation, re-telling and returning to a story told by each of the 14 participants.

As a second step after narrative analysis, I employed *thematic analysis* to zoom out on practices with immigration data and technologies. Braun and Clarke's (2019) approach to *reflexive thematic analysis* guided my interpretation of themes. To do so, I re-read interview transcripts while writing reflective notes. In my notes, I pointed out sections of transcripts where I was identifying connections and distinctions between what participants had shared with me; for instance, when a particular thought reminded me of what another individual said. After re-reading interview transcripts and while making continuous notes, I constructed codes.

I coded what I interpreted as *explicit* in participants' words (e.g., activities, viewpoints, or terms that they explained and qualified), as well as what I inferred was *implicit* (e.g., ethical issues hinted at but perhaps not fully articulated in an extended account). I undertook a first round of coding to construct a draft set of approximately 90 codes relating to all the ideas of interest. In a second round of coding, I applied the same codes across the entire data set, by considering where I needed to question, clarify, or update the way in which I understood and applied the code.

During this second pass, codes were adapted, added, or removed based on my assessment of their relevance to the research questions, resulting in a set of approximately 100 codes.

In a third round of thematic analysis, I reviewed all codes and grouped codes into possible themes. I described in my notes what each developing theme may emphasize, reveal, or obscure, as well as why I saw a particular theme manifested as a pattern across interview conversations. At this point, I recorded any overlaps or resonances between developing themes and the stories interpreted in the prior narrative analysis stage. I intended for the themes to explore additional or alternate areas of interest in relation to my research questions as compared to the stories. In this way, I developed a set of themes complementary to stories which could help me respond to each of the research questions. As part of this review, one of the themes I had drafted was cut: A draft theme entitled “care for newcomers’ data as a practice”, of which its three sub-themes were cut: “culturally-specific ideas of care for newcomers’ data”; “facets of data care ethics”; and “moves in making meaning of care”. This theme and its sub-themes were cut because they echoed the narrative analysis and stories previously generated, and were also issues integrated into discussions of the other themes. After writing about each of the draft themes and discussing the themes with colleagues and at presentations of the project in progress, I finalized the set of 79 codes organized into three themes presented in the fifth chapter.

I took an inductive approach to the narrative and thematic analysis techniques (i.e., no *a priori* coding framework was developed before the first reading of all transcripts). To this end, I used the qualitative data analysis software *NVivo* throughout the process to mark-up interview

passages which I examined as stories, created codes for specific ideas, iteratively developed and edited codes, and arranged and rearranged groups of codes into themes.

3.6 Chapter Summary

This chapter outlined my methodological approach. Directions for the research were grounded in care ethics, constructivist, and critical orientations, each of which guided my standards for rigour and role as a researcher. I discussed how my positionality as a settler of mixed immigrant ancestry has shaped my interests in immigration and settlement.

Taking a multi-group perspective on immigration information practices informed my selection of sampling and recruitment strategies which prioritized diversity. I made analytic decisions to focus on participants' experiences and stories of their information practices using dialogical narrative analysis and reflexive thematic analysis. These analytic techniques helped me to better appreciate groups' interconnections and possibilities for advancing dialogues about responsibilities in their stewardship of newcomer communities' data.

Chapter 4: Relating and Remaking Practices of Care Through Story

4.1 Introduction

During interview conversations, participants made our discussions of caretaking information practices more concrete by giving accounts of events and experiences of their own. Their accounts shared several of the characteristics of stories as examined by Frank (2012): I attended to spans of interview conversations as *a story* when I noticed that participants brought in characters, a problem or tension, a dénouement, and closing reflections on what they had learned.

My selection of stories is influenced by the questions guiding this inquiry. I suggest that there are strong connections between stories presented in this chapter and *RQs* 3–6. These questions explore (*RQ3*) what individuals want to learn from immigration data, (*RQ4*) their concerns about immigration data use, (*RQ5*) their views on how care should be enacted, and (*RQ6*) their sense of alignments and misalignments with their peers. These questions require close attention to individuals' expressions of their experiences and how they arrived at particular views, which is why I turn to stories, and extended quotes from a story shared by each participant, as evidence. The findings sections of this chapter are organized by the types of work that I interpret stories may do as reminders, warnings, and guides for action.

4.2 Listening to Stories

During my analysis, I kept questions raised by Frank close at hand while reviewing interview conversations:

What is at stake for whom, including the storyteller and protagonist in the story, listeners who are present at the storytelling, and others who may not be present but are implicated in

the story? How does the story define or redefine those stakes, raising or lowering them?

How does the story change peoples' sense of what is possible, what is permitted, and what is responsible or irresponsible? (Frank, 2010, pp. 74–75)

With Frank's questions in mind, I was able to notice the actors who co-participate in caretaking practices, how those actors are related, and their ideas of responsibilities. I followed the presence of tellers and characters (that is, protagonists, antagonists, and other actors) who are involved in the practices of care, where their interactions become a subject of conversation. During an interview, sometimes it took quite a while for our conversation to move from the more abstract to the specifics of peoples' experiences of their practices and ethical perspectives. Instances of storytelling signalled individuals' move towards specificity in reflecting on their information practices.

Storytelling can move listeners from one place and time to another, as interviewees did when they moved from one sentence to the next to launch into an experience or event they shared with me. Participants sometimes indicated that they were about to make this type of move in our conversation. In other cases, I found the participant had slipped us into a story with little advance notice. The arrival of other actors in our conversation often signaled the beginning of a story. Characters from participants' work lives were brought into stories, as were settings in which participants interacted with them. When participants cast themselves and others as characters into a scene, they constructed stories by showing a connection between actions each of the characters took. As storytellers, participants commented on whether those actions were appropriate or not, and what the outcomes of those events were or could be.

Reflections on events sometimes presented points of criticism, in which participants drew us into a situation to do the work of illustrating their views on how it went well or poorly, and the reasons or conditions that contributed to that outcome. Some participants created space for a listener to inhabit, and occasionally they referred back to me through a second person address or questions (e.g., Ira put me into the shoes of one of the newcomers' who might use a digital system they designed; Lea and Mark asked questions about what I meant by my interview questions while they shared their experiences). I found that these strategies of storytelling pulled me inwards. I sensed that participants used these strategies in part to confirm whether I was paying attention or thinking through others' perspectives, rather than merely attending to my own questions as an interviewer.

Some stories trained my attention on incidents or aspects of practice that were less routine, out-of-place, or strange. In these instances, participants talked about what was out of the ordinary to them. I was curious about whether those stranger situations became a subject of stories because reflecting on these events informed participants about their own roles and responsibilities, the values they want to uphold in their practices, or the dilemmas or binds in which they still are "caught up" yet have found a way to "hold their own" (Frank, 2010, pp. 77–78).

I chose one story from each of the interview participants, so 14 stories form the bones of the chapter. A reader may ask how I selected stories from the range of accounts participants shared. During the narrative analysis, I identified stories participants told about the ethics of working with immigration data. While some participants told one story on this topic, others told two or

three stories during an interview. Since some of the stories were overlapping, I looked for complementary yet distinct issues and points of view, prioritizing difference. That is, I chose stories with an interest in their range. After analyzing a total set of about 20 stories, I chose to leave out several which were from some of the same participants or referred to overlapping issues. While I selected one story from each participant, their account is not meant to be comprehensive, nor to stand in for their role or group. Story types are therefore not stereotypes. I found that investigating types of stories helped me to resist oversimplifying individuals' perspectives by their role, instead attending to the lessons their stories may offer.

Sections of this chapter are organized by the work I suggest that these stories may do to illustrate and provide lessons about caretaking. My groupings of stories into reminders, warnings, and guides for action are not intended to be mutually exclusive. Stories may conceivably fit into multiple types. A warning story, for example, may share reminders of pitfalls to avoid, and can still be seen as a warning story because a storyteller emphasizes dangers and consequences above other aspects. So why examine types of stories at all? I will argue that by considering reminders, warnings, and guides as types, I can imagine how these story types may provide structures to support other actors, beyond the individuals I spoke with, to communicate about their varied immigration information practices. Co-stewards of data may employ story types, potentially by listening to and telling these types of stories to become more aware of one another's ethical views and experiences.

The first section's stories can serve as *reminders*, linked by their capacities to remind individuals of their role in a practice. A reminder story offers a message one has likely heard before, already

knows but may forget. Reminder stories tend to focus on storytellers' sense of identity, and responsibilities attached to it. This section is guided by Frank's questions that turn attention to who can maintain their sense of capability, act on what they see as worth doing, and where individuals are depicted as vulnerable. This section also demonstrates the power to assemble groups that these stories may be able to advance, encouraging individuals to recall their membership in groups affiliated with their philosophies, politics, or professional training.

In the second section, I interpret stories that can provide a *warning*. Warnings are accounts of more unique or rare issues than reminders. Warnings illustrate what individuals may not have previously perceived as consequential or dangerous. Stories of warning demonstrate what to watch out for when performing practices of care for people and their data. In this section I pull at the knots that individuals present, identifying some of the problems threading through them that individuals suggest are consequential to newcomers, as well as their own and their peers' wellbeing. The stories in this section connect with Frank's question "What is the force of fear in the story and what animates desire?" (2010, p. 81). These accounts play out what individuals believe should be avoided. Given this focus, warning stories may invoke affective responses of concern.

The third section offers stories which can be seen as *guidance*. Although the topics of guidance stories may be closely affiliated with reminder and warning stories, I suggest that guidance stories provide more normative, pragmatic insights into how caretaking should be performed. Guidance stories can prepare a listener to act, by indicating the choices that may have to be made and the lessons that participants offer with regards to decision-making. In this section I follow up

on Frank's question "What is the effect of people being caught up in their own stories while living with people caught up in other stories?" (2010, p. 78). Being aware of one another's stories may perhaps be a form of preparation for problems and decision making with other actors. Stories of guidance may pragmatically prepare a listener for tactics such as resistance, refusal, navigation of tensions between values, and shifts in values.

Stories shared in this chapter will take us to distant government agencies, the insides of databases, home offices, service organizations, and neighbourhoods where interviewees work. Each section opens with a participant's story in which they pondered their practices, and each section closes with comments on what I took away as a listener and analyst.

With the possibility for stories to help to move our ideas of information practices into specific and situated spaces, I begin by turning to what I interpret as reminder stories.

4.3 Reminders

4.3.1 "They lose sight of 'are you here to help newcomers or what?'" (Noor, Settlement Service Provider)

The first story is situated within the context of settlement services. Some of the earliest interactions that newcomers have during their settlement process may be with staff who work in these organizations across Canada. Noor is a settlement service provider, who reflects on the norms shaping the practice of service provision for newcomers. Noor questions demands for certain kinds of data and the reporting of that data to *Immigration, Refugees, and Citizenship Canada* (IRCC). In this story Noor refers to what they see as a problematic assumption in

settlement service provision, before delving into an experience from their implementation of a new virtual, synchronous program oriented towards newcomers. As Noor said:

The paternalistic view of it – this experience really helped me to see this – I do think that this attitude is pervasive across the sector. I think that people come into the settlement sector with the best of intentions and then I do think that because IRCC requires such rigid interactions that people become more professionalized in a way that says “The way I need to be is rigid and professional, and that is how I do my job well” and they lose sight of “are you here to help newcomers or what?” I think they are so used to going through the spiel that “Okay, if you want any services from [our organization] you should know that we're going to collect all this info.” So, what ended up happening is we didn't realize they were going to have that attitude [...] I was saying “We will just go to a breakout room, and if people don't have the information, just talk with them a little.” Well, what ended up happening was this brand new person who didn't know about [our organization] and didn't know about [the program] and just kind of found their way here, maybe had never been to another settlement service before, got put in a breakout room with a worker who just said “give me your PR number, give your date of birth,” just very rigidly – you know the drill, you have to give me everything because that is how other clients are introduced. And then it is very much about we have to have this to keep the program running, which we just feel like there could have been so many different approaches. We did end up designing a different interaction. The question was, shouldn't we just let people come, and if you don't have their info, ask them after, “Hey can I collect that from you?” But the system says no. So, we ended up designing a way in, that was once people sign up, they have to book a special appointment with the registration person, and then spend 30 minutes in a separate

Zoom before they can ever come in. Of course, the problem is that people have done that, and then they don't show up to [our program afterwards] so it was a waste of everyone's time. But again, due to the rigidity of the system and the people we were working with, that is what ended up happening. That to me was really eye-opening. (Noor)

In this story from their experience coordinating a new program, Noor shares their realization that certain information practices (i.e., collecting personal data) are now intertwined with what it means to be a “professional” settlement service provider. The way this practice has developed conflicts with how Noor believes that individuals should be treated. As Noor suggests, by focusing on data extraction to fulfill administrative requirements at the outset of a conversation, service providers may foreclose the potential of relating to a newcomer as an individual.

Noor calls attention to the dynamics of professional norms and their roots in institutionalized government requirements which value administrative work. Noor suggests that administrative approaches to interactions with newcomers have been misinterpreted as an indicator for doing settlement service provision well. Practice theoretical insights are resonant here; more specifically, the idea that members of a community can judge the performance of their peers' practice, and how well or poorly they see their peers engaging in that practice. I understand that Noor's story points to data collection and the availability of administrative data being mistaken as an indicator for doing immigration and settlement work skillfully. Noor does not say, however, that administrative work in settlement service provision should be done away with. Rather, they suggest that administrative demands for data should not be prioritized ahead of other routine interpersonal activities in settlement work. Settlement work for Noor is social,

meant to establish relationships that might encourage newcomers to return to a program or service setting. In Noor's words, this means being able to "*talk a little*" before requesting numbers and identification. Taking care of the administrative side of the work does not mean that people have been cared for.

In recalling this story as part of our conversation, Noor addresses a recurring tension that was also brought up by others I interviewed. Administrative priorities are designed into the systems used by many groups. In another example, James talked about how the design of the iCare database did not allow for the types of work with people and data that they wanted to do as a service provider. James found it necessary to recruit a volunteer to develop an entirely separate database for their organization to manage its records of staff, programs, and program participants. Information systems within settlement work are meant to gather data for evaluation, research, and reporting; however, in their everyday use they need to fit within the wider professional practices of settlement service workers. When those systems do not fit with their work, I wondered what individuals' responses may be (e.g., whether they might overlook systems, use them even when distracting, or enter specific data even when they dislike the ways in which data entered into those systems is, or could be, used). Returning to Noor's story, I notice the tension between their own and the other staff members' values in that first interaction with a newcomer that Noor witnessed.

The way that Noor recounts this story shows the agency that they see systems exert: "*But the system says no. So we ended up designing a way in.*" This was in effect an alternative, and a

compromise. The system is said to speak as an actor, perhaps because of the way it functions, and its influence on how work tasks can be performed.

I interpret that Noor's story can remind listeners who service providers are and should be. While service providers may begin their careers with a strong interest in supporting newcomers as individuals, Noor's story alerts us to ways that the pressures of professionalizing work can overdetermine, detract from, or overtake their own agency within everyday sorts of interactions with newcomers (e.g., this scenario of welcoming an individual to a program and completing an intake form). The demand for data from government, funders, and managers within settlement service providing organizations is a factor that Noor suggests leads away from more legitimate forms of supporting newcomers. As a listener, I interpret that Noor's efforts to care for newcomers may be in tension with some professional norms and expectations within settlement service provision. Caretaking for people becomes more difficult to perform while using systems designed to prioritize administrative work. As we move to the next story, we encounter related ideas about demands for digital data placed on service providers.

4.3.2 “What are the numbers?” (James, Settlement Service Provider)

James is a manager at a small multi-service organization operating at a neighbourhood level, serving and staffed by immigrants and a wide variety of demographic groups. Their story reflects a local, situated vision of people who are familiar with one another, and for whom a data point is an identifiable individual community member. James, however, goes on to describe how they faced considerable challenges when justifying that their data practices are valid:

For writing grants and looking for stats, we have to use the people in the field. How many youth are actually needing support? What are the numbers? It would be observational data. This means when we're writing grants it's very challenging to get localized data for a specific demographic or population. So, most of it then is anecdotal and we have to use the experts in the field, of the staff who have been working with these youth or this population that we want to serve. I think it is still valid data. It is observational, and it's people in the field, on the school board. But then when you are quoting sources, it is not coming from a specific database, but I still think it is valid and I still think it's the way we need to work, because it's how we work. (James)

James says that they and others in their organization are well placed to have a local awareness of what is going on in their community, including specific groups or individuals who have been observed through relationships, rather than as statistics. James explains that *“one of the ways that neighbourhood houses work is community development [...] So in that sense having that movement to then address needs is helpful to support people who need it most.”* James suggests that embeddedness in the place where they provide services offers a perspective from which to generate and interpret their own data. James contextualizes their work within the wider ethic of their organization, a neighbourhood house. Scholars Yan and Lauer have conducted in-depth studies of neighbourhood houses and the role they play in communities:

Neighbourhood houses are long-standing place-based multi-service community organizations that developed from the legacy of the settlement house movement. They serve the local residents of urban communities in Canada as they have for over a hundred years. Their work is guided by a community-building mission, so that neighbourhood

houses not only provide services to residents but also build their social capacity to fully participate in the community and the greater society. (Yan & Lauer, 2021, p. 4)

The up-close view that James describes allows them to look out for community members, in line with the mission of community building discussed by Yan and Lauer. One example James shared was their team finding out that youth in the neighbourhood were missing classes because they were providing childcare for younger siblings, details which they elaborated on subsequently in our conversation. This may be appreciated as caring labour, in which staff members' nuanced observations became data when they shared it with one another in the interests of caretaking. It was not only the simple data that students were missing for a number of school days that was important, but that the data on school attendance could cast light on the context of students' lives.

I believe that James's story shows an example of what grassroots labour with data, and what James called "*community development*," looks like. James reminds others that this type of labour is legitimate and indeed can even be considered data-rich (if justification is needed for groups such as would-be collaborators or funders). These practices, however, may still not be regarded as *data* practices by some groups since they are not intended to be scalable or replicable. Government agencies funding this work such as IRCC, other funders, or academics may expect small organizations such as James's to participate in compiling and analyzing data sets that are comparable, viewable from a distant, transformable, and possible to share digitally through information systems.

Through this story James offers a reminder of the over-emphasis on quantitative and recorded data. To James this presents difficulties for less-resourced organizations which are embedded in “community development” grassroots labour of monitoring and acting within their local environment. This story is a reminder of small-scale practices with data and situated expertise which, in this example, are important to make decisions that better serve youth in the neighbourhood.

4.3.3 “The problem is that the service provider organizations themselves do not have access to the data that they enter” (Wendy, Government Staff)

This next story shifts our focus on service providers as collectors of data to the groups demanding data. We hear about IRCC as a government agency which orchestrates immigration and settlement processes across Canada, making decisions about the data and systems used in those processes. During my conversation with Wendy, who is a Canadian government staff member in a leading role, they helped me to understand more about the database that IRCC uses to monitor the settlement services that are offered across the country:

There are over 600 of them [service provider organizations] who enter data into the settlement database. Settlement data is so important because that is the only data we have to make sense of whether the settlement investment – about \$1 billion a year – that the department makes: Is it really helping, is it creating results? To answer that question more systematically or scientifically, not anecdotally, one needs solid data. The iCare data is the core of it. However, having said that, we collect it, we use it, we have already linked that settlement data with the tax data, IMDB [Statistics Canada’s Longitudinal Immigration Database] it is called. Right now, there are about 15 pilot projects going on across

Canada, that is a good thing, and eventually it will be available in the Research Data Centres as well. But the problem is that the service provider organizations themselves do not have access to the data that they enter. The only thing that they have access to is a monthly static PDF report that we send back to them, which is useless. It has been like this for many years, and we have not really been able to overcome that big barrier yet. Part of the solution lies in our will to do it, and the other part is technological. This means that we have to upgrade and modernize our IT systems, we have to move to cloud systems maybe, so that each service provider organization, anywhere in Canada, they can access their own data which they have entered, and they can use it to create dashboards, to create comparative analyses, and so on. That is lacking, and a big gap. We are working on a modernization project right now to aim for that access, which will definitely increase the capacity of the organizations who enter the data, we owe it to them. (Wendy)

Wendy shows how the settlement service data is used to assess what they frame as a type of return on investment. This business-like logic for the settlement sector is not uncommon—indeed, the fact that that settlement services are often referred to as a “sector” indicates implicit links to economic motives for Canadian immigration policy (in another story Wendy told, they suggest that immigration data is “*everybody’s business and everybody cares for it*” at IRCC, again calling to mind the question of how government operations are framed in business-like terms). Here, this story tells of the rationale for developing the iCare database as well as its need for redesign. A number of other individuals made this point during interviews, suggesting that the data they enter into the iCare system is not made available to service providers by iCare. While the data that IRCC gathers may be used to indicate a *return on IRCC’s investment* (in

immigration service providers) the data are not adequately *returned* to the organizations who collected it in the first place, an issue many attributed to the design of iCare. Several individuals, including Noor and Tanis, pointed out that even if iCare was able to return quantitative data about settlement services that service providers enter, it would miss the outcomes that are more fully appreciated through complementary qualitative data that gives a sense of lived experience of newcomers who are accessing and using services.

With their closing words to this story, Wendy sees equitable sharing of data as an unfulfilled obligation. This can be regarded as an admission of interconnected agency. Unfulfilled obligations for more equitable data sharing are a motivation for government to redesign the iCare database, yet there has been a lack of will and technological development within government over the years. This story also reveals that data as an “asset” is valued by individuals like Wendy working in the government because it allows for a calculation of return on investment with regards to immigration and settlement.

Wendy reminds listeners that IRCC holds a debt of data, labour, and system re-design to settlement service providers from whom iCare data is collected. I suggest that unmet promises and perceived indebtedness may be what gets in the way of fulfilling caretaking in this story.

4.3.4 “You really don’t know whether your specific issue will be picked up by government, looking at all the inputs” (Finn, Settlement Service Provider)

The next story adds to what we have heard about the dynamics between service providers and government. I talked with Finn, a manager of a settlement service organization, about how they

see their relationships with others, who gather and use newcomers' data. Finn noticed shifts in how they worked with other groups. Finn discussed the ways that their ability to communicate directly with the government about immigration and settlement has shifted with what they noticed as a turn toward online consultation. Starting with a reflection on how it used to be, Finn reflected:

I think we were able to tell them, where they will listen. Now the government tends to put many of the consultations online. Before, they would go to some specific group to ask for input, more qualitative input. Now that they ask for input from the general public, you really don't know whether your specific issue will be picked up by government, looking at all the inputs. They may say if they don't like the idea, they may easily say, we got how many people saying yes or no, so thank you for your input, but then they have more submissions and people are inclined to do that. I am being biased, but they may not be experts in the area. Let's use an example of immigration numbers: Is it right to have this number of immigrants coming to Canada? They ask a general question. So, whether it is your expertise or not, it doesn't really matter. They can say that 'we have overwhelming responses that they think immigration levels are too high.' Then if you are concerned about population growth, the decline, or the older generations, we need more new immigrants, and are looking at temporary foreign workers, essential agricultural services, people may not think that way. (Finn)

The story tracks the shifts that Finn has observed in their capacities to inform and influence immigration policy decisions. The government's open public consultations, according to Finn,

overlook the background knowledge and significant expertise of the settlement sector. Finn argues that the voice of settlement service providers is muted by the way the government is valuing data collected through public and open consultations for engagement in immigration policy issues.

Finn brings up their concerns for these shifts in priorities to be covered over or concealed through changes in whose voice is heard, what data is collected from whom, and how that data is used to make policy decisions—or perhaps to make some groups feel that they are being listened to. Finn tells about the changes that they have seen between “*now*” and “*before*.” This marker in time indicates the change they have witnessed and the consequences that they connect to the matter of who is listened to and is acknowledged as having a stake in immigration policymaking. Finn has a sense that the introduction of the online consultation coincided with the government devaluing their own and their peers’ expertise as settlement service providers. The newer approach of gathering data through public consultations relates to Finn’s sense of a loss of accountability from government to consult directly with the sector, accountability which Finn remembers being stronger in years past.

Finn offers a reminder for government staff and policymakers not to forget the expertise of groups closely involved in supporting newcomers. Finn also reminds listeners that the wellbeing of residents is interdependent with that of migrants. The Canadian nation state is dependent on the labour of migrants who are, for instance, caring for an aging population, and performing seasonal agricultural work of growing and harvesting food to fill plates across the country.

This story provides a reminder of the histories of relationship dynamics between government (IRCC) and the settlement sector. Possibilities to participate in decision making fluctuate as practices of gathering and valuing different types of data shift. For Finn as a settlement service provider, changes in data practices modulate the power that they feel they can exercise in immigration policy decisions. Capacities to care for newcomers is informed by a history of relationships between groups. Relationships among groups—mediated by groups’ information practices—are power-laden, changeable, and consequential for policymaking and service provision.

4.3.5 “People were arriving with mobile phones, that transformed our practices, how we collect information and data” (Kim, Settlement Service Provider)

We continue by following the thread of change into the next story. In this story Kim articulates a vision of change in which settlement service providers appear to have more agency than in the last story told by Finn. As a manager at a settlement service organization in a large urban centre, Kim told me that they had seen changes in the uses of data and systems over the last decade. They narrated these changes to show capacity and willingness to change when necessitated by the Syrian crisis and subsequently the pandemic:

Our ability as an organization is to remain responsive to policies and procedures, and in data collection how to do that in an ethical way. So as far as who is driving it, what we have seen for the first time within the immigration sector and trends – Operation Syrian Refugee which was in 2015–2016 when Canada brought in well over 50,000 Syrian refugees in three months – it was the first time that we saw folks, Syrian refugees, who

were making their way through the settlement journey, whether it was from a third country and then arriving in Canada, and then in Canada their settlement journey with mobile devices. They had gone online – people were arriving with mobile phones, that transformed our practices, how we collect information and data, knowing that we have a large swath of community members interacting digitally like that, that informed how we could envision our work moving forward. I would say even now during COVID, the way that we look at collecting data is again – and I like to think it is done this way – client-informed. I don't think it's always been like that, and we've made sure we've been able to do that in constant feedback loops with the community members that we work with. So, I think [we are] more community or client-informed for an internal collection of data. (Kim)

In this story, Kim identified a turning point in their information practices. Kim located a major change in the displacement of peoples during the Syrian crisis – a political disturbance which led to humanitarian emergencies (similarly, Ash also reported major changes in the uses of information and technologies by forcibly displaced peoples, as well as shifts in the practices of settlement organizations). Emergency conditions required quick and coordinated responses. Kim saw that these shifts marked a lasting change. In hindsight, Kim notes this turning point was part of continuing change, with more recent shifts made in response to the COVID-19 pandemic. In Kim's telling, a readiness for adapting their work with digital data and systems has been strengthened through these turning points. Kim notices that shifts in how newcomers' data is gathered and used are subject to continual changes of displacement, politics, and the design of information policies, systems, and technologies. Elsewhere in our conversation they had reflected on their need to hire a contracted information and technology expert to assist their

organization negotiating a change in WhatsApp's terms of service. Kim said that staff at the organization sometimes used WhatsApp to communicate with newcomer clients about programs and services, and that staff also used WhatsApp to stay in touch with one another about their everyday work and particular clients. Kim said:

The tools that we are using to collect that data... of course now we are using all sorts of tools that we did not use a year ago. There are online tools like Zoom, MS Teams, WhatsApp, Signal. There is a whole host of tools we're using to provide services, and to a certain degree receive information. The meeting I was just at was mostly centering around the changes to the security within WhatsApp and what that means for how we're using it. So, we had to take a lot of time to look at what are those privacy issues that are going to change as of May, and what are the other platforms that we have available and how do they weigh up. Of course, we're a lucky organization in that we have resources to hire a consultant to work with us to do that, and not all organizations have that capacity as well.

(Kim)

In this excerpt, the issue that Kim raises is that smaller organizations are less likely to have the financial resources to hire a contractor who can help to guide their shifts in practices (e.g., in relation to WhatsApp's changes to its terms of service at the time). In a sense, the contractor is performing care work on behalf of the organization, meeting the need for this type of labour. The contractor brings their know-how of information policies, systems, and security into the organization. Yet this contracted care work is not permanent. It is a stopgap to intervene in an immediate issue. Kim, however, implies that it will help to orient ongoing changes within the

organization even after the contractor has completed their term. The extent to which several hours or weeks of contract work could contribute to organizational cultures of *data care* over the longer term seems less certain to me. This story reminded me of questions I still have about distributions of labour with immigration data, and by whom data care work is performed as it is contracted, delegated, or otherwise re-distributed amongst the groups I talked with.

To circle back to their telling of this story, Kim characterizes settlement service staff as adaptive to newcomer community interests and desires, shifts in displacement, immigration, information policy, and technology use. For Kim, care work involves the labour of remaking how it is performed with data and digital tools, although there is not necessarily the labour and expertise housed within the organization. This story asserts newcomers' and settlement service providers capabilities for cultivating change in their information practices, not only in reacting to changes that affect them made by other groups.

4.3.6 Stories as Reminders

This section examines the shared qualities of “reminder stories,” alongside Frank’s (2012) questions for narrative analysts. Frank suggests that storytelling can make it possible to narrate identity and struggles with it. He asks listeners and analysts to consider, “who is holding their own, but also is the story making it more difficult for other people to hold their own?” (p. 74). I propose that reminders about immigration information practices encourage individuals to return to their sense of identity, what matters to them, and what they have learned before. Roles that people recall through a story get to Frank’s question of “how does a story help people,

individually and collectively, to remember who they are? How does a story do the work of memory?” (p. 74).

Thinking about some of the commonalities of stories as reminders can reveal where participants suggest we need to pay attention so that their labour, relationships, and integrity in their roles can be held together through the changes that they see or wish to see. This is the work of “reassembling” individuals and groups who fall in and out of arrangements through their social practices (Frank, 2010, p. 83). As reminders, these stories reassemble aspects of care that are at risk of being neglected, forgotten, or erased. Here we can see resonances with Puig de la Bellacasa’s suggestion to examine *neglected things* that are consequential to care (2017).

I do not mean to say that the data, as bits and bytes, are being overlooked in these practices. My interest is in the conditions for caretaking that participants suggest may be overlooked. For instance, I noted that James said their grassroots activities with data in support of “*community development*” were overlooked, not considered legitimate for the purposes of reporting on their work. How might the story from James help us to better understand their conceptualizations of data and caretaking with data at the local neighbourhood level? Perhaps there are opportunities to appreciate the legitimacy of these kinds of community-based data practices, even if they diverge from (and are at times neglected in favour of) dominant methods associated with evaluation sanctioned by funders, institutions, and organizations.

Reminder stories I interpreted helped to draw my attention to overlooked issues such as the history of a role and responsibilities, demands for quantitative data, promises for supporting data

practices, power dynamics, and adaptation to data care practices. These neglected matters may not always be immediate to the performance of a task at the time. If aspects of care work are at risk of being neglected, who picks up these tasks up? Who is being expected to integrate data and digital systems into their work? Whose care work with data is visible and invisible, and what are the implications of that? We can dig into these questions by thinking through how role-specific caretaking appears to be in these stories. For the service providers, Noor invokes their original motivations for getting into the field; “are you here to help newcomers or what?”

Wendy’s responsibilities in government help to generate demands and expectations for quantitative reporting. Wendy’s government department is interested in using data on settlement services to calculate return on investment. However, rather than suggesting that understandings of what is valid and valued should shift, Wendy reminds of the unfulfilled obligations that their department has toward service providers for the return of data that can be cycled back to where it was first gathered. Wendy’s story, when understood from their subject position in government may make it difficult for Noor and James to hold their own, by going about their everyday work with newcomer communities in such a way that data collection is not prioritized. As Noor says, the pressure to participate in the data lifecycle can detract from what they see as the relationships that service providers should be making with people, even if that means that data collection becomes a subsequent or after-the-fact activity. Noor finds that fellow service providers may be caught up in government demands, to the extent that documenting service interactions can take precedence over making newcomers feel welcome at programs.

Not all settlement service provider staff who were presented in stories were equally as caught up in government stories of calculating settlement service outputs or returns on investment. For example, Finn, another service provider who is a manager noticed a disinterest in gathering newcomers' data among some staff who work on the frontlines with newcomers. Finn explained that many staff in settlement organizations see their roles as interpersonal. Finn noted that these staff members tend to be individuals with stronger social service skills rather than clerical skills, which presented a difficulty for them as a manager who also wanted these frontline staff to record data about their work with clients. Data to enable service evaluation may include, for instance, records of newcomers accessing services, programs offered and attendance numbers, and newcomers referred in or out from the organization, as Noor and Tanis also spoke about.

Finn can be understood as a mediator between government demands and frontline staff. Managers' predicament is one of monitoring their organization, supporting frontline staff, and using data generated by frontline staff to report back on their work to government funders. Finn's story narrates a change in how government strategizes about immigration policy. Finn reminds government actors of the expertise that service providers have to offer, which they say is being undervalued. The public consultations weaken the ability of settlement service providers to affect decisions and to be able to call for accountability from the government. The public consultations mentioned by Finn gather data that positions the Canadian government to tell stories of openness and responsiveness to the public. The data gathered from public consultations, with the stories told from that data, may make it much more difficult for James and their colleagues in settlement services to be heard. For the public to be caught up in the story of more participatory-seeming consultations can give the sense that they are involved in shaping immigration policy, even when

decision-making power rests with government. Such an open government and consultative mode of operating, Finn says, does not mean that findings are sound, nor that there will be accountability to the groups most affected by immigration policy decisions that are made (whether because of consultations or not). Finn suggests that this change in information practices, as the means of communication to influence immigration policy, is a loss of power. This is power to influence policy that Finn reminds settlement service providers that they used to exercise.

In the final story of this section, Kim reflects on change. Yet Kim's reminder focuses on the agency that settlement service providers have in the face of change (in this case, tens of thousands of Syrian newcomers with cellphones). Kim's reminder of the history of change focuses on settlement service providers' capacities to learn from and adapt to the shifts in the communities that they serve. While the demographics of newcomers that they serve change, so do their norms in the use of data, systems, and technologies. Kim imagines settlement service providers and their clients navigating these changes together. Responding to changing circumstances and crises is part of the historical development of settlement service, in their view. Settlement service providers are active, responsive, and capable of responding to change in their clients' information practices in this story.

In thinking through each of these stories as reminders, I considered how they are a means for individuals to maintain their identities as they define what *data care* means for them or the group to which they belong. Participants remembered how they have navigated their work in the past,

how their work has changed, what has been (or may be) forgotten in the process, and what they want to hold on to as their practices with data and digital systems continue to change.

4.4 Warnings

4.4.1 “This is a huge ethical slip that is happening in front of me” (Valerie, Independent Consultant and Contractor)

In the next series of stories, I explore how individuals spoke about their conflicts with other actors and identified potential sources of danger. I start with a story about what one participant, Valerie, suggested are “underlying challenges” in the immigration and settlement system.

Valerie is an independent consultant and contractor who advises the immigration and settlement sector on integrating digital systems and technologies into service design and delivery. With almost three decades of experience working in the settlement field, Valerie offered a series of observations about the differences between in-person and digital interactions and the competency building that they see is required. They noted that certain ethical issues become more discernable as information practices are remediated from in-person to physically distanced interactions.

Valerie offered the insight that there are less visible “*iceberg issues*” which can go unnoticed amongst practitioners in the settlement sector. This idea is guided by their work in advising the sector on technological changes and remediations of existing ways of working, communicating, and adapting to the need for distanced digital interactions with newcomer clients. Valerie’s role could be considered an example of a contracted IT and settlement service expert, a role which Kim had discussed in the last reminder story. While Kim’s story could be seen as an embrace of the type of patchwork practices in which contracted work meets a need or solves an immediate

problem so that service provision can continue uninterrupted, Valerie appears to call attention to some of the fissures between actors' performances of care for newcomers. When left unnoticed, such "iceberg issues" can fall to individuals to navigate, whereas Valerie suggests that these issues should be addressed at a more structural level by the funders and government agencies who regulate the sector.

According to Valerie, the settlement sector has not had guiding professional codes of ethics or standards shared across the country for service providers. This leads to the current context of uneven ethical expectations and trainings. As Valerie shared examples of the consequences of this, they noted possible ways forward:

The sector is made up of people who are both formally trained and people who come into it through lived experience. People who don't have the formal training around social service work or are social workers, or any other social work, aren't oriented or onboarded with that kind of baseline framework. So, we have heard horror stories of people who come from social service work programs who are doing an internship in a local organization. And they are sitting in the lunchroom, and two people are having a conversation about a client, and they are naming the client, and they are discussing [the client in public]. It breaks every ethical guideline that they have been trained in in their project, and then what do I do? This is a huge ethical slip that is happening in front of me, and that is because there are not these baselines. People with sometimes lived experience just don't have the training background and the onus is on the organization to get to them up to that level. It doesn't mean that everyone who comes into settlement work has to go through one of those programs. But if we talk about what are at least the baselines that we need to be aware of,

ethical guidelines like those, we won't have those situations happening. Then you can imagine what is the virtual equivalent with that. Well, if I was on a Facebook group and I start talking about a client, and that client happens to be within my community and then it goes to the Facebook of that community, and then so and so is outed or so and so is stigmatized for a mental health issue. These kinds of things happen all the time. It is about building in this notion of this is the same issue that happens offline, it is just online. The way I tell people is that we already have a three-legged table that is broken, and if we layer digital competencies on top of it, the whole thing is just going to collapse, right? Because we still have underlying challenges like this one of ethical issues that people have known about for years for example, because there are no baselines. We don't have a core curriculum of how to become a settlement worker. Every province does it a bit differently. If you look at them, there are threads and there are kinds of baselines in those. But we have never worked as a sector to create it, but I think it is time to, it is time to create that. (Valerie)

Valerie speaks from a point of view of belonging within the sector and seeing its ongoing changes, suggesting a need for baselines for working with newcomers, their data, and technologies. Without these adaptations, Valerie warns of instabilities and potential harms to newcomers. Valerie's vision of care is competency-based, possible to do poorly or well, and yet a challenge to shift. The history of how care for newcomers' personal information has been performed has roots in settlement service provision as a profession.

In the next story that offers a warning, varying perspectives on the ethics of caring for newcomers' data go unnoticed until a conflict arises.

4.4.2 “The less data you have, the more secure it is” (Tanis, Designer)

As a service designer who works with settlement service organizations, Tanis talks about a time when they had a disagreement with others with whom they work about how newcomers’ data should be cared for. During their development of an online synchronous program for newcomers, Tanis and colleagues partnered with an organization that would eventually assume full responsibilities for operating the program independently. While Tanis aimed to minimize the information gathered about newcomer attendees, sometimes referred to as “clients,” their partner organization wanted to collect this data and argued that they needed it to report back to their government funder. Here is how Tanis recounted their experience:

On the prototyping scale, we personally don't really want a lot of information. When we got people to sign up for [our program], we only really wanted to know their name, we were interested to know their neighbourhood but that was optional. We didn't want to know their address or postal code. We wanted to know what culture they were from. And what language they speak, because that helps us match them. But other than that, from a UX [user experience] design perspective, there has been a lot of problematic data collection. But I think the best practices now are don't take data you are not going to use. The less data you have, the more secure it is – because there is less chance for misuse. So, we were taking a very data-light perspective to data collection, and we started partnering with the [management and staff] at [a settlement service organization] to take over the running of the program to test and see how an existing funded service would view that. So, registration became a big sore spot, or a pain point between us and the team. And they wanted to collect PR numbers to get them registered, for IRCC to count the numbers. I do

recognize that, and we were trying to find a way to say 'ok, if you say you're a PR' only then will we follow up and send you an email to collect that in a secure way, and then only we'd collect the data. I think they did not respond well to the question of what data do you really need. They know the data that they usually collect and didn't have any reflection on what data it is that they really needed. [The settlement service organization we partnered with], I would guess, collects data on everyone using the services for their annual report that does not really affect our funding. And they said we want to get the addresses of everyone so we can know things, could we just ask people for their postal codes? We were really saying we don't see the need for anyone who is not a PR to do any sort of extra registration, and to us that seemed extraneous, we didn't want to take their time. We didn't see that data as necessary to the mission of what we were asking, but that is not really how the other team saw it and it was not the hill we were going to die on. So, we did let them take it. We tried to explain our perspective and I think our senior manager was on our side in this conversation by asking "do you really need this data?" It was very interesting to see this ingrained resistance to thinking about data collection differently. (Tanis)

The conflicting views on what data should and should not be collected were not resolved.

Instead, Tanis and their team and supervisor decided that it was “*not the hill we were going to die on. So, we did let them take it.*” This story of a breakdown in coordination suggests that this outcome of conflict and tension is still not seen as sufficient by Tanis. The compromise lay in allowing for the collection of individual program participants’ permanent residence numbers.

This was data that the settlement service organization felt was needed, though this sentiment was not shared by Tanis and their team. Tanis and their team thought that this point of data was not

needed to document the services provided, nor to satisfy funders' expectations and in turn justify the continuation of the program.

This story warns of conflict, compromise as outcome, and different ideas of what care for people and their data look like in practice. To Tanis, differences appeared irreconcilable in this situation. The problem was overlooked rather than overcome. Tanis's story warns of over-collection, conflicts in professional norms, and data practices that continue to be sources of tension for the people who participate in them.

This story warns of tensions that Tanis sees between their own and others' ethical and professional norms. Care work is characterized as a site of conflict, or as Tanis sees it, a "*pain point*" between actors. This story raised the question about ways in which conflict avoidance or compromise are used by actors when they disagree about data care work. Avoiding or moving past conflicts through compromise, however, does not address the tensions between partners' understandings of ethical care for data, i.e., in this case minimal burdens for data collection and the creation of subsequent responsibilities for taking care of it. The next story continues to follow this thread of conflicts that arise in caretaking work.

4.4.3 "It was so upsetting. This gets into representational issues" (Cora, Academic)

As an academic involved in a collaborative project, Cora said that they were able to use resources to work with immigration and settlement data in different ways that they found innovative. Cora had been eager to leverage funding they were offered to work with others on an information visualization that would become a three-dimensional art piece. In their words:

I was able to do some things that I'd never been able to do before, for example, I was able to arrange for a hologram to be made. It was kind of an amusing thing where I had a whole bunch of census data for [a large city] on the census track level. Think of a map of [the city] and then with different information fields. One information field was immigration, one was ethnicity, one was religion et cetera. And think of a table with a map on it, and as you walked around the table the hologram would shift from showing you one type of information to another. So, if you approached it say from the bottom it would be ethnicity, from the left side it would be religion, from the top it would be socioeconomic status and so forth. This would be a hologram. You know those things you look at where the angle of you changes as you're seeing it? It would be like that. It was really fun, except, it's hard to laugh about this, but it was so upsetting. This gets into representational issues. We spent thousands of dollars on this thing, and it got built and there was a glitch in communication between me and the person who arranged the final data files. They chose the wrong colours. You know, in this day and age you just can't do these sorts of things: So, for example, I just couldn't believe it but they chose the colour yellow for Chinese people. So, I had to abandon it, it's sitting in a warehouse and it's thousands of dollars.

(Cora)

Cora's expectations of their collaborator to represent newcomers respectfully were not met. Cora seemed to believe it would be common knowledge and the norm to avoid the insensitive correlation of stereotypical skin colour to modes of representing the visualization. When telling of how this visualization was turned into a hologram for public viewing, this story may show

how a conflict can arise that can be too late to avert. In this case, consequences included lost time, money, and the opportunity for the piece to be shown to a wide audience, thereby offering city residents a visually nuanced and interactive resource for learning about immigration. With the hologram sitting in a warehouse, Cora brings it into this conversation as an artifact of what can go wrong when partners' expectations and norms conflict. Cora points out that misinterpretation, confusion, and clash in norms can play into partnership projects. This story alerts listeners to the dangers of assuming shared understandings.

4.4.4 “You are losing the fact that these are actually people and that what you do with it also impacts the people” (Zora, Settlement Service Provider)

The next story is one I interpret as a reminder of ripple effects which can come from choices when collecting, analyzing, and reporting on data. Like Cora's warning of representational, racializing harms that are at stake in caring for newcomers' data, Zora also raises concern for the ways in which certain flawed narratives about racialized newcomers can travel.

Zora, in their role as a settlement service provider, said that there is the potential to lose perspective with bigger data sets and analyses. Zora says that projects with newcomers' data should be steered purposefully and in conversation with communities by requesting consent or holding consultations:

I think what gets lost with big data is "who are the people?" You are losing the fact that these are actually people and that what you do with it also impacts the people. If you use it to make recommendations and policy decisions, they are not just numbers. If it is going to

be used to make decisions about what happens, it has to be really careful. Recently, and I think it came out in the news today, a few years ago – there was a study done – they were looking into who was buying housing in Vancouver. What they used to determine that there were a lot of Chinese people buying, is that they looked at names. They determined it based on – if it's a non-Anglicized name – you can already see, hmmm... right? (Zora)

By assuming a non-Anglicized name was an indicator of being a foreigner, Zora points to the problem at the core of the study. They suggest that the framing of the study, combined with anti-Asian racism, took hold of circulating fears about foreign investment. Zora sees that researchers and journalists had been careless with this data, whether intentional or not. According to Zora, the study pandered to stereotypical or xenophobic views in both the methodology and reporting on the project.

This story warns against losing perspective, as another reminder of what should not be forgotten when working with newcomers' data (e.g., cultural, political, and social context). Zora envisions that caretaking is purposeful, focused on intentions and outcomes, whereas carelessness can perpetuate dangerous stories, in this example in narratives based on misused data and methodological flaws.

The next warning is oriented towards academics yet is germane to others. The story sets up caretaking as a part of the methods of conducting research projects and communicating with participants whose safety may be precarious.

4.4.5 “They are afraid of surveillance” (Ash, Academic)

Ash is an academic who examines media and technology use in connection with displacement. In this story, Ash points to a specific concern for privacy and security of communications between researchers and their partners or participants who are fleeing from political strife and violence. Ash discusses their relationship with members of the *White Helmets*, individuals who are collaborators and informants in Ash’s research. Some members of the White Helmets continued to work in Syria while participating in Ash’s research, and some members had also made a visit to Canada to engage in research activities and talks facilitated by Ash. The White Helmets are a volunteer-run organization established during the Syrian Civil War in 2014. Members of the group often serve in emergency response and rescue, to assist fellow Syrians forced from their homes and workplaces immediately after attacks carried out by the Assad regime. Ash responded to my question about their concerns for the stewardship of displaced peoples’ and newcomers’ data by reflecting on concerns articulated by their collaborators:

Another problem is surveillance, this is very, very important. It is especially important during COVID-19. Surveillance was always an issue with immigrants because the basic assumption is that we all know they come from countries where they are being tracked, they are afraid. If you remember last year when the White Helmets came and we had a conference, they said that they were scared of surveillance. They are afraid of surveillance. When I interviewed the White Helmets face to face when they came – and I’m still in contact with them – when we speak they are always very cautious. They say to me, don’t like us on Facebook, don’t write to us. We don’t want to be identified because Assad is tracking us. Take these people, that are so traumatized from tracking, and they come to

Canada because they want to find a place where they can be secure where they know that they are safe and are not being tracked. To take these people and then to use a very sophisticated technology in order to find where they are, in order to report on Coronavirus, it's very problematic [...] How do you develop a way to track to migrants without affecting ethical issues? (Ash)

I understand that Ash's story presents a turning point in their awareness of their collaborators' privacy and security. Ash was increasingly aware of their collaborators' precarious privacy and security, due in part to crises of displacement and the global COVID-19 pandemic beginning in 2020, crises in which state surveillance was a frequently debated issue. Ash's collaborators in the *White Helmets* group were attuned to the need for Ash to help protect their privacy, since they knew that Ash could inadvertently make them more visible and vulnerable to state surveillance and targeting. The action of this story lays in negotiations between the researcher and individuals with whom they work, revealing an interdependence among them.

Beyond this story, I had also learned from Noor and Tanis that they continued communication with individuals who had participated in a research project, and to whom they had a sense of owing certain acts of care not only for the data, but for the newcomers to whom it belonged. To return to Ash's story, I find that it warns of the potential dangers and missteps that may be made when continuing to maintain a relationship with people who have contributed to a project. According to Ash, small signs of a connection may deepen the vulnerabilities of the research partner or participant, such as a like on Facebook or a message sent to an individual. These traces of interactions may be understood as data, which has the potential to be used as evidence that a

researcher and a research partner or participant sustain an ongoing connection and may possibly endanger individuals to whom it relates. Ash shows that the wellbeing of individuals behind the data is subject to everyday decision making. The story warns of the potential consequences of revealing the identities of partners or participants, implications of which may be unknown to researchers without their understanding of these concerns.

Ash's warning about the long-term responsibilities between partners in a research project suggests that researchers may need to learn to become caregivers for data by eliciting their partners' or participants' concerns early on in their interactions. This account may also extend our thinking beyond typical institutional ethics review board protocols to protect individuals, since community-level or group-specific vulnerabilities may also be exacerbated by researchers. Care, in Ash's story, requires an orientation towards learning about research partners or collaborators' situations and concerns. While researchers and their collaborators may aim to influence and teach one another as equitable partners, collaborators can still be far more vulnerable to unintended outcomes of data- and technology-mediated research activities.

4.4.6 Stories as Warnings

Warning stories are examples of what may happen when practices of care for peoples' data are at risk of falling apart. These warning stories point to different dangers. Some stories referred to threats perceived by participants. These stories do the work of pointing to what participants saw as a source of problems for themselves or others. Individuals signalled the presence of dangerous "*iceberg issues*" (Valerie). Others described what they understood as "*a pain point*" or a "*sore*

spot” (Tanis), for instance. Some individuals identified sources of risk, harm, or undesirable consequences.

Stories of warning make visible the threats affecting storytellers and the people and processes that they care about. Ash’s understanding of newcomers’ fears for surveillance qualified their sense of this interdependence among care givers and care receivers. Their story shows that researchers and participants or informants are reliant upon one another; care is more complicated than giving and receiving as binary fixed roles. The labour for data stewardship, and in this case the preservation of individuals’ privacy and security, however, is performed by Ash as researcher. This labour does not have an end point in time. The responsibility to care for participants’ data is self-perpetuating, in the sense that it continues and even may grow as a relationship between researcher and participant persists across time. The records of such a relationship are fragmented, layered traces left across various platforms that they use to stay in touch, for instance Facebook or WhatsApp, as noted by Ash as well as other participants with whom I spoke (Kim, Noor). A participant or research informant’s identity may be revealed through a post or “like”, or even through the trails of interaction on social media between a researcher and their contacts. To use Frank’s terminology, the “force of fear” for harms to newcomers’ wellbeing appear to influence how information practices are performed.

These stories also suggest that navigating dangers is a challenge for participants, and for others whom they suspect of being unaware of harms that can be done if the risks are overlooked. Warnings indicated dangers of the carelessness that they either witnessed or could imagine happening if their stories of warning were not “heard” by others performing acts of caretaking.

The attitude of caring *about* newcomers is not sufficient for these practical enactments. The competencies of knowing and navigating conflict become an essential element of the caretakers' work in these warnings. Here we can think back on Valerie's interest in raising awareness about ethical issues through training and the establishment of baselines so that threats to privacy could be better avoided. Other individuals with whom I spoke said that the dangers of caretaking labour are much less clear and are left unresolved.

Tanis, Cora, and Zora's stories offered accounts of what happens when problems ran their course. Their stories draw out the shape of the problem, although participants do not necessarily suggest that such problems could have been avoided. In Tanis's case, the compromise they made with others was undesirable. Tanis said that their conflict over ethical use of data was "*not the hill we were going to die on.*" Attempting to refuse may not have been worth the trouble of a breakdown in working processes or relationships. In addition, Tanis may not have felt they had the power to refuse in this situation. Temporary breakdowns happened when people who were collaborators experienced tensions in their everyday work because of an unforeseen issue with how data should be used ethically, as in the stories of Cora as well as Tanis.

Zora directly spoke to the problem of losing sight of newcomers when collecting their data. They outlined consequences in a story which followed dangers to their outcomes. Zora showed how misuse of data through a methodology flawed by ethno-racial assumptions of name and ethnicity congruence led to decontextualization, and the circulation of narratives in the media that

perpetuate anti-Asian racism. With these stories having signposted warnings, the next section looks towards guidance that individuals offered.

4.5 Guides for Action

4.5.1 “How do we make it sort of personalized, in that we can feed the user information that would be relevant to their profile, yet not actually collect personal information” (Ira, Designer)

As a designer, Ira helps to build digital systems for settlement service providers and newcomers to use. Ira discussed one of the systems that they helped to develop, which provides guidance to newcomers who settle in a particular location about proximal resources and services in relation to their interests:

One of the biggest goals of the project of [designing our app] was to help folks navigate the overwhelm [sic] in the amount of information that they needed to deal with when they first arrived. We heard from a lot of folks in surveys that there is a sea of information, and you have to look at a lot of aspects of settlement from housing, to “if I have a kid, I need childcare,” to wanting to drive and getting a drivers' licence. There is a myriad of different tasks, and people were really feeding back this desire for – “I just want to know what is important for me, not necessarily all the information available.” So, one of the angles that we went about with [designing the app] was how do we make it sort of personalized, in that we can feed the user information that would be relevant to their profile, yet not actually collect personal information. It was a weird challenge to work with. So, if you use [the app] you see there is a questionnaire that you can fill in, at the top, it is optional so that it is an intentional design aspect. When you go into the app you don't have to fill out

the questionnaire. You are more than welcome to look through the information without putting in personal information. The questions we ask, it is a series of ten questions that we ask that help the app recommend certain topics for folks. We ask them what important documents that they have in place, if they have children, what is their English language level, if they are looking for work, things like that. It basically helps us assess, for instance, if they have children, we'll recommend them child-related resources, and then we ask them about age so that we can figure if they need to register their child for school, if they have particular health care needs, there are certain topics around health care. This is not necessarily apparent to the user in that when they answer the questionnaire none of the answers are fed back to us as [an organization]. When they download the app, all the information is downloaded to their phone so that they can actually access it offline. And what that enables us to do when they use the questionnaire, is that it basically just filters the information that they enter on their phone, so there is nothing that is being sent from your phone back to us to identify whether or not they, for instance, have multiple children or whatever that they enter. So that is how we navigated that. Essentially it is just a filter, it is not really a personalization. But you are able to narrow in on specific recommended topics while not actually providing personal information to us, so that is how we have balanced that data collection aspect. (Ira)

The story moves through the course of action that Ira took to uphold their decision not to collect personal information from newcomers in the system they were building. Describing this as a “weird challenge,” Ira negotiates the tension between personalization or relevance of recommended services and their intentional choice to limit data collection by design. By

narrating the design process, Ira notes the lesson of learning to negotiate what may appear to be competing or conflicting values. Ira places the system they were designing in relation to possible circumstances of its future users – and those that they talked with who used it during and after the design process, suggesting that this decision did lead to the system meeting the needs of the multiple groups who use it. Yet, Ira later notes that this means that there is less of a clear picture of who exactly is using the system and for what purposes, since their data is not gathered. While Ira says that the data would have been useful for continued evaluation and iterations on the design of the system, as well as reporting back to funders, it is not being gathered. Ira's account follows how they draw on their values as a designer when they are acting and making decisions.

As a listener I noticed Ira's reasoning about their value tensions and responses to those tensions. Ira encountered challenges in upholding the need not to collect newcomers' personal data. While values for relevance and usefulness seemed at odds with limits and boundaries at first, the workaround Ira and their team developed was able to avoid making a trade-off. In this story Ira articulates a vision of care as deliberative, involving creative approaches to negotiating tensions in a design process. The next story also guides listeners to limit data collection.

4.5.2 ““Oh hey, you're doing interesting work – do you mind sending me your data?””

(Lea & Mark, Migrant Justice Activists)

As anti-racism and migrant justice activists, Lea and Mark spoke to the difficulties posed by others' expectations of their data practices. Lea and Mark began their work to create and maintain a database on incidents of racism in 2020. Mark recalls the origins of this project which were grounded in their own personal experiences:

[Lea] and I are colleagues and friends. We have been working on the frontlines throughout the pandemic, and we started [our group] at my kitchen table, because continuously when out and about during the pandemic had experienced a sharp increase in anti-Asian racism directed at us personally, separately, and together. We had actually been talking about anti-Asian racism and the issue for a couple of years before COVID-19, and because of our experiences when COVID-19 hit, we felt really motivated to do something. So [our activist group] was born with this data collection, and community data collection form.

(Mark)

Once Lea and Mark had set up a Google form to gather data and had shared it on social media and through their networks, individuals began reporting their experiences of discrimination. Lea and Mark were gathering evidence that could counteract narratives that denied or hid xenophobia. They viewed this evidence as worthy of public attention and began to share summaries of their findings on the rising trends in discrimination within the city with others, including a government agency, law enforcement, and journalists. Responses from these groups and institutions were sometimes unexpected; some responded by undermining Lea and Mark's assertions of the credibility of their findings by pointing towards data quality or bias as potential issues with the project. This persistent skepticism for the credibility of their findings was what Lea and Mark called "*credibility gatekeeping*," whereby groups or institutions demanded to have access to their data set. These groups justified their request by contending that they needed to assess the validity of findings for themselves. Lea noted that:

It is very interesting when [the police department] says “x number of anti-Asian incidents happen in [our city]” then the media say “Oh, great, [our city’s] police say this many incidents increased by this much percent.” But when a community group that also collected incidents in a way that is more accessible to community then says, well we collected double the number of incidents, that information is not seen as valid. So, the way our society operates, white supremacist institutions with power are seen as credible and the rest of us are too emotional and biased to do any form of valid research. (Lea)

Subsequently, Lea returns to the demands for data that they have encountered by telling a story of the limits they established:

We have definitely had issues with journalists who have said, “Well we can't fact check your information, therefore it is going to be a problem for my editor,” or something to that effect. Or, what else have we heard – “This information needs to be made publicly available, if it's to be considered credible.” Or, even [a certain B.C. government agency], one of their staff out of the blue said, “Oh hey, you're doing interesting work – do you mind sending me your data?” And my response was, “Yes, I do mind, can you share more information? Why do you need it?” And they actually backtracked, and said that was a crude request, I don't know why we need your data, so you don't need to send it to us. But they were not even thinking about it. There is this idea that having more information just makes you more important. I don't know, but why do you need it? Or people have asked, “Please send us the data so we can see if there are other trends than the ones you've

identified.” Why? Why do you get to decide that? These are very odd, and sometimes people don't reply at all, they just get kind of upset. (Lea)

Frank suggests that stories such as this one can inform a sense of how to respond. Stories can imply what is responsible action, what is warranted by a situation, and what may constitute irresponsible or problematic responses:

Stories inform people's sense of what counts as good and bad, of how to act and how not to act. Stories depend on a principle of response, operating both in the story and in the storytelling scene. Characters in stories respond to Trouble, both their own and one another's. Those who tell and receive stories respond to each other as well as to the content of the story that is told. Stories are literally responsible. People are able to respond because stories have taught them how. Stories most evidently teach what counts as good and bad by linking characters' actions to consequences that listeners feel are good or bad (Frank, 2010, p. 36).

This story tells of Lea and Mark's response to others' critiques of their credibility. Lea and Mark push back on the motivations for those demands to prove their credibility in relation to assumptions that academic expertise or training is needed to work with and learn from this type of data, or to carry the burden of proof others place on them. Lea and Mark cast their own roles as mediators between people who reported their experiences of discrimination, and as stewards who act on behalf of those contributors.

While Lea and Mark seek out others in positions of power who need to better understand, respond to, and address systemic racism, what they often encounter is the request for more labour. They are asked to teach others about their own ethical norms and boundaries, which become a point of contention, conflict, and communication breakdown upon occasion. This labour may be emotionally charged, although the term *emotional labour* does not convey the scope of activities involved. The language of *conflict raising and resolution*, if considered integral to caretaking, may provide a more expansive sense of what this work looks like for the individuals with whom I spoke.

Conflict raising and resolution was narrated by several individuals who told stories as a medium for discussing when, where, how, and why conflicts came about. Talk of conflict was linked with responses, responsibilities, troubles, dangers, and moral guidance when narrated through stories. The story that Lea and Mark tell here communicates the trouble that they see in others' assumptions (i.e., that their data set should be made open for others' appraisal and analysis). In the case of the one individual from a government institution who had requested their data, they "*backtracked, and said that was a crude request.*" In this instance, their response served as a moment of teaching others to limit expectations, demands, and requests for more data for data's sake. As activists, I understood that Lea and Mark are well practiced in taking an ethical and political stance to guide their organizing work and are able to embody this experience in their information practices.

Caretaking on others' behalf necessitates boundary setting. This story prepares listeners to enact limits and refuse unfounded demands for communities' data. Lea and Mark say that they have

gained experience navigating tensions between care and “*credibility gatekeeping*,” as they question and resist requests. Lea and Mark point out that conflict can be engaged in skillfully to serve a purpose. Data care is framed as deliberative, responsive to others’ demands, and in turn unpacks implicit narratives of data as a resource that makes someone “*important*.”

4.5.3 “If people are telling us, then they want to be telling us, and that is their choice period – and let's stop looking at it there” (Noor, Settlement Service Provider)

When narrating their work with data, a common frame of reference against which many participants compared their practices were peers in their respective fields. Individuals did not see themselves operating independently. The sensibility of mutual influence pervaded peoples’ reflections on their ideas and practices of care.

In our paired interview, a service provider and service designer I spoke with (Noor and Tanis, respectively) said that their ideas of caretaking were informed by a collaborative project in which they had worked with other peers. Their back-and-forth with one another revealed areas where they were still reflecting on their experiences as part of that team:

Noor: So that is a very important part of the story, that we were originally working with a firm who really found it important to determine what ethics were from their point of view, which was really diametrically opposed to the way that academic institutions view ethics and research boards, and the risk management factor. So, I guess as a general statement, I would say those partners, and myself to a certain extent, view the risk management practices of researchers and academic institutions as actually mostly risk management for themselves. Yes, there is an amount of concern for care of the interviewees that people are

talking with, but much like an HR firm, you know, or an HR department in any organization, their real function is to protect the institution, not necessarily the people. Given that all academic institutions are built from the lens, what comes out, of course there is no way that it can be necessarily the right lens and ethics to the person who is being interviewed, and also that there probably isn't any one lens or ethics that can be applied to any one person. So, to set that stage, I would say that the people we worked with were completely opposite, who viewed systems as very oppressive and getting in the way of human relationships which they saw as the purpose of doing any research or building any services. Again, I agree with it in theory, but I do think that there was a huge lack of care around getting people to open up, share stories, and then where to go from there. So, I would say, yes, I do not have any answer to what is perfect. But I do think somewhere in between those two ends of the spectrum. So, from the academic standpoint of data collection and human interviews, making it more human. But from the standpoint of the people we worked with, making it – I don't know what the word is [Tanis]. What is the word?

Tanis: Is it more true? Or...

Noor: More careful...? More contained?

Tanis: In terms of what [the organization] was not doing? [...] I would say their approach was sometimes in the moment feeling good, and then afterwards you ask, "Was that duplicitous?" In the moment you say, "Oh this is so great" and then you get this data and then you look at it through a different lens, that is not looked at through the collection, and then you're not sure the person would have said it in those ways if you're taking it in that way. So, you can get to some different types of data using those methods, but then I don't

know that informed consent necessarily works. But I think informed consent is super difficult, in terms of cost and time. To do it correctly would be super expensive for everyone's time, both the participant and the researcher, so where do you draw that line of understanding? (Noor & Tanis)

Here Noor and Tanis pause to search for words that express their vision of care. In talking with one another they went on to raise the question of when and in what circumstances duplicity can become a problem in data collection activities in the course of interactions involving newcomers accessing services or participating in research.

Noor continued to talk about this story of working with partners whose ethical perspectives diverged from their own:

I think the biggest question or issue around all of that is the one of agency. So, I feel that our partners, and we had a form that people read in their first language to understand what we were doing there. And they signed those forms and consented to it. I feel that this person was really guided by ethics around agency – so if people are telling us, then they want to be telling us, and that is their choice period – and let's stop looking at it there, let's take it at face value, and whatever they want to say that's up to them, and systems take away that agency by trying to be overprotective. Again, I agree with that in theory, but when you look at it on the ground – approach it from, “We're just friends” and, “Yeah you signed this form, and we're all casual, so tell us more about that.” Using visual prompts to get people talking, I think there are so many complex things happening with power dynamics, and cultural norms, that maybe from our cultural lens we would read, “Well

that's agency, they wanted to tell us stuff” but from their cultural lens I really reflect back on interviews we did over two years ago with Syrians, and see “Oh, of course they would never say no to sharing that information with us, because that is so rude in their culture” to say no and set boundaries and ask people to leave after we've been in their house for five hours, it won't happen. So, when I think you try to say, “Well that's their choice, that's agency” it doesn't exist in a vacuum, and that is a really short-sighted approach that is convenient for the researcher collecting information. But then the after effect of that is that people feel, “Now what?” and that we're collecting all this because eventually we're getting to a service that is going to serve you. In reality, we needed to collect that information to create a service that would probably serve future generations of newcomers, right? We're looking at them at a certain point in time, so two years later this intervention may not be the right one for them, it would have been good for them two years ago. I think the researcher knew that one hundred percent, but I think that could be an example of duplicitous means that was mentioned. (Noor)

Noor discusses different understandings of agency that can be exercised, which affect the relationships that are defined and built within research and design projects. They guard against what they suggest is a more short-sighted approach to data collection and use. A short-sighted approach would be at odds with the intentions for sustained friendship and for the benefit of the people who participated. This story also implies the difference in cultural norms that inflect information practices couched in conversation or as an easy interaction when data is collected and used, far different than the relative coldness and impersonality of a different method. Noor recalls a learning experience which brought into question their partners' and organization's assumptions that agency is universally exercised, as if outside of cultural and social norms.

Noor's guidance story turns my attention to learnings and changes in how practices are understood. When reflecting on how newcomers' data should be cared for, Noor and Tanis compared their views and values with their own past actions, as well as with others with whom they had worked. Their story clarifies these shifts over time, and what they have taken away and can now offer as a teaching to others. Here caretaking is culturally specific, contextual, and includes conflicts, even within groups with aligned professional roles who collaborate on the same initiatives.

4.5.4 “The danger in that approach is that governments could actually use it to then try to prevent those mass migrations from happening” (Hamid, Academic)

As an academic who works with immigrants and refugees, Hamid warned of the “*long term and potentially unintended consequences*” of working with large data sets and experimenting with automated or algorithmic systems. Hamid said these concerns for consequences of working with newcomers' data were palpable for him in a project that aimed to predict future displacements of peoples. Hamid said that he sees dangers in designing a system that could be misused to block the movement of people under an anti-immigration regime. Hamid said:

One of the concerns that I had about the project that [an academic] led and I shared with them and other people also on the team felt, was because they were trying to predict the next areas of mass migration. The danger in that approach is that governments could actually use it to then try to prevent those mass migrations from happening, but not in a way that is trying to resolve the underlying issues of human rights or economic

inequalities, but more in a kind of fortress Canada or fortress Europe perspective in the sense that if we know the next wave is going to come from this country, let's already start to put in place extra-territorial and externalization mechanisms so that individuals cannot get out of that country in order to claim asylum in our country. I think that again we cannot assume that everyone's motivations are going to be inherently pro-migrant, so we have to think through some of the ways in which the information on a massive scale like this can be used. I think that with big data there's a whole bunch of different facets, so you mentioned joining up individual peoples' records which is one thing and more of an administrative thing. On a scientific, research level people are also using big data in the sense of using social media data to track things. Again, I would say that even methodologically we have to take that information with a bit of a grain of salt because it is possible as we saw with the elections that you can manipulate big data. (Hamid)

If embedded within motives to uphold human rights Hamid suggests the system could have outcomes very different than if employed under a hypothetical “*fortress Canada*” government. Designed systems are influenced by the political environment in which they were made to be used. The story implies that the politics of care in which a system is designed cannot be assumed to be universal, nor persisting, in the worlds in which the system would be used.

Hamid speaks to his peers from a collective point of view, using “we” to warn researchers and others working with immigration data of the harms that can be done. In doing so, this story advises caution and attention.

I also interpret that Hamid makes anticipating and imagining other ethical frameworks a criterion for caretaking. The policy perspectives Hamid personally and professionally would not espouse become a responsibility to understand, such as extraterritorial and externalization mechanisms, which would keep migrants outside of nation state borders. Hamid's guidance story demonstrates the imaginative perspective-taking he suggests others involved in *data care* should engage in.

4.5.5 Stories as Guides for Action

Guides for action offer participants' teachings for navigating decisions and conflicts. In these stories, individuals draw on their experience, reflecting on responses required by the situations they found themselves in.

Ira negotiated what they found was a "*weird challenge*" between personalizing the system that they were designing while also limiting data collected about newcomers who would use the system. Addressing the question of how to hold on to both of those interests guided their design process. Ira describes having "*balanced that data collection aspect*" by creating a filter, to reduce the information overload for newcomers reviewing organizations, programs, and services. Rather than the mobile app collecting user-entered data, a filter selected by users prevented data being collected and stored beyond users' devices. Ira's story of decision making for the app stretched from gathering input from potential users and newcomer community members, to resolving the "*weird challenge*." Ira suggests a variety of options were available: To emphasize the decision-making process is to suggest that a choice was not inevitable or obvious. Ira, as a designer, was able to be involved directly in choices about how the system would work. Ira's story illustrates how an apparent conflict between values may be resolved. Ira does not suggest

that there must be a trade-off, that something is necessarily lost when there are competing visions of how a system should work. This story guides action by showing caretaking can attend to multiple values at play through a recognition of challenges, and deliberation with the other groups involved in or affected by the design process.

Lea and Mark's story also brings out the frictions between their own views of how newcomers' data should be cared for. The difficulty that Lea and Mark identified was for others to consider their data credible. By demanding data, journalists claimed entitlement to the community-based data set on xenophobia that Lea and Mark had built. Lea and Mark were not willing to entertain these requests, and resisted them by asking questions to prompt others to take a step back from their demands. Lea and Mark questioned the motives of people who demanded their data. This oftentimes led to a communication breakdown or added emotional labour when people got "*kind of upset*" with Lea and Mark's strategies of resistance or refusal (Lea). This story prepares listeners to enact boundaries by resisting or refusing data access requests that are seen to undermine individuals' sense of their own responsibilities for data stewardship. The telling of this story works on listeners by preparing them (us) to identify trouble as it arises, to be attentive to conflict that may be instructive and worthwhile. In contrast, other interviewees witnessed an "*ingrained resistance to thinking about data collection differently,*" and pointed out conflicts that were not "*the hill we were going to die on*" (Tanis).

The last two stories of this section provide advice on addressing conflict between groups. Noor and Tanis reframed their ideas of care after working with colleagues who were critical of academic institutional ethics framed by "*risk management.*" As Noor said,

I would say those partners, and myself to a certain extent, view the risk management practices of researchers and academic institutions as actually mostly risk management for themselves. Yes, there is an amount of concern for care of the interviewees that people are talking with, but much like an HR firm, you know, or an HR department in any organization, their real function is to protect the institution, not necessarily the people.

(Noor)

Noor's ideas relate to Puig de la Bellacasa's (2017) observations on the diffusion of ethics in institutional or corporate settings. Puig de la Bellacasa refers to the use of ethics in a broad sense that is about projecting a trustworthy identity to partners, clients, or consumers and a sense of care that may be more about taking care of business interests. A shallower sense of care can be constructed when it is conveniently adopted amid the acknowledgement of its currency and relevance. Some argue that corporations', institutions', and organizations' use of the term itself can be a cover for inaction or carelessness, as "carewashing" (Chatidiakis et al, 2020).

To think back on Noor and Tanis's story, they provide guidance about how their own ideas of care have developed in tandem with their work experience over time. What they once attributed to the agency of individuals in data collection activities appears more complicated in hindsight. Noor reflects on what they have learned about the diversity of cultural mores around hospitality and the sharing of personal information. Their ideas of care now highlight its specificity within each new situation, rather than a sense of care as a logic that can be applied to any situation.

Noor and Tanis's story becomes a two-way conversation in which they contrast their ideas of care with others who were former colleagues. Ideas and practices of care are still to be worked out and described, as Noor and Tanis ask each other to help them fill in the words they are looking for to express how their current visions of care differ from what they had believed in the past. This story is a guide to the process of learning, not a set of specific directions.

In the final story of this section, Hamid guides listeners to approach consequences of their acts of caretaking for data. Hamid makes his story into an opportunity to exercise one's thinking about others' motives and alternative or opposing political views. Hamid suggests that other academics and individuals acting as stewards of data might stretch their vision into the future to consider whether certain data might be used in unintended or unexpected ways.

Taken together, guidance stories bring listeners into the messy space of conflicts and how they may be addressed. These stories present what it looks like to deliberate, pause, ask about others' expectations and motivations, and examine how to move through the process of caretaking.

4.6 Chapter Summary

While the individuals I interviewed might seem disparate at first, there is more than a common interest in immigration and settlement between them. Actors need not necessarily intentionally coordinate to influence one another and be affected by one another. Assembling the stories in this chapter illustrates that activities with data and systems in one place can influence what is possible in another place or time, among other groups working on or participating in the process of immigration and settlement in Canada.

Stories that I understood as reminders, warnings, and guides underscore the interdependency among actors who are caregivers and care receivers. As caregivers who uphold the collective process of immigration and settlement, each participant suggested that their caretaking capabilities were affected by their peers. Stories of caring for data made it evident that there are variations in how much agency individuals feel they can exercise. Stories in this chapter are told by individuals with very different motivations and perspectives, however these stories suggest data practices are not individualistic. Rather, these stories suggest how social and interrelated these practices are. All the stories cast individuals together, illustrating how they affect one another when they work with others' or one another's data.

I interpreted that participants' stories focused closely on the personal experiential aspects of their practices, and at the same time signal some of its communal aspects by acknowledging contradictions and conflicts, where resolved or more often unaddressed. Groups may need to strengthen their awareness that their practices are shared, and better engage in strategies for managing conflict and coordination in the interests of caretaking. A wider awareness of mutual participation may also support groups in more collectively navigating change.

The issue of change recurs across stories. Many stories emphasized a sense of transformation, primarily in the use of digital systems and data. Unexpected challenges are tied to recently adopted procedures, policies, technologies, or unfamiliar collaborators. In these situations, it becomes clearer that perspectives are not symmetrical among co-participants, and frictions (or "*pain points*," Tanis) are common. As changes are jointly negotiated, differences between

groups will be important to continue attending to. Accounts of *data care* provide chances to explore these differences.

While the framing of reminders, warnings, and guidance stories offers my initial interpretation of their significance to the ethics of caring for data, these story types remain open to many other stories that may be told. The next chapter continues with a focus on patterns in participants' experiences and views of their practices. Themes from interview conversations will provide detail about common activities and issues in participants' information practices of data care.

Chapter 5: Patterns in Caretaking for Communities and their Data

5.1 Introduction

Whereas the last chapter zoomed in on experiences and events of care through individuals' stories, this chapter zooms out on data care as it is negotiated between actors. Themes extend what we can learn about (*RQ1*) prominent information practices among participants, and (*RQ2*) shifts in activities with immigration data and technologies.

As detailed in the methodology section, I read and reviewed interview transcripts over a period of months to build my analysis of stories reported on in the last chapter, and to develop patterns presented in this chapter (I use the term “pattern” interchangeably with themes, borrowing it from Braun and Clarke (2019)). I identified patterns by examining what was shared among participants' expressions of data care and their experiences of performing it. The three themes I will set out in this chapter indicate that data care is labour, in turn shaped by labour conditions, and subject to changes and visions of change.

Each participant described how they saw themselves engaged in labour, referring to activities with immigration data and technologies as intellectual and embodied work. Participants' work was often, but not always, organized in the form of wage labour between employees and employers. In my analysis, I focus on the interdependence of professions and roles, such as researchers depending on government staff to access data or service providers sensing that their work would be affected by academics' studies of migrants' experiences of settlement. Groups facilitating and managing these processes must structure and organize their work with one another. As Nardi and Ekbja suggest (2017), the labour of organizing work between groups who

collaborate – particularly through their interactions with data and systems – has its own demands. They note that:

Human labor is inherently collective, in the sense that individuals rely on others' labor in order to bring their own to fruition. This dependence calls for some kind of structure and organization to enable and support a division of labor with the collective. Organizing, however, incurs costs—of communication, coordination, control, and collaboration. These costs represent an interesting problem for organizations because they must expend a portion of their resources to manage the division of labor. The larger the number of people involved, the higher the cost of management. (Nardi & Ekbia, 2017, p. 147)

Participants spoke to the costs of organizing labour with immigration data. They saw labour divided up according to norms, histories of practices, and in some cases left up to the motivation of individuals.

All participants also expressed an interest in supporting newcomers' wellbeing. They saw themselves contributing to the work of upholding newcomers' wellbeing according to their own areas of expertise. The work of coordinating the study of, and support for, immigration and settlement as a process is intentionally shared among groups with complementary capabilities. Data care labour is only one component of the larger set of practices which participants share. And as I expected, working with newcomers' data is mostly viewed as a means to an end in support of other practices. Participants said that immigration data is often not the point of their work, and data care served some participants' goals more than others. There were exceptions, however, since a few academic and government-affiliated participants sought to advance their work by amassing data sets and making their statistical calculations stronger.

Before advancing, a note on how this chapter may be read: A reader will notice differences in the organization of this chapter as compared to the last chapter. The fourth chapter followed stories of individuals; this chapter moves amid the collection of interviews. As an interpreter, I have had to navigate my own interests alongside directions that individuals brought to our conversations. I suggest the themes and sub-themes of this chapter represent my understanding of activities and issues experienced by all the individuals I spoke with, although to varying extents. Each theme makes space for and marks this variability, illustrated through examples.

5.2 Data Care as Labour

5.2.1 Introduction

Each participant described their activities with immigration data and technologies as labour. I explore their understandings of data care as labour through three sub-themes. The first sub-theme examines *divisions of labour*. In this sub-theme, I discuss the interconnections between actors involved in immigration information practices, links which are embodied in the labour they perform. Specifically, I attend to acts of labour which participants say they benefit from, are burdened with, or are affected by.

5.2.2 Divisions of Data Care Labour

The work of caring for immigration data is shared between formal or visible roles and responsibilities, and informal, often invisible, responsibilities not structured into a single role but distributed amongst several roles. Given that work with data is divided up among groups, there are some groups who are more proximal to certain activities (e.g., collecting information from a

newcomer to fill in an intake form for a program or to carry out a study) whereas other groups and actors may be more distant. Closeness and distance to certain activities was indicated by participants' discussions of what they did or could do, or did not or could not do, as I will illustrate.

Activities of data care appeared to be distributed across all groups, while also distributed at the local level within groups or organizations. A service provider at a settlement organization, Kim, explained the divisions of labour between groups that they witnessed:

When I think about data collection and the impact it has on what we do at [our organization] is that it also really heavily influences funding as well. We're here to collect a lot of information, and information that is supposed to feed up into settlement outcomes that really don't make sense – those measurements and indicators of success and whatnot. Again, when we're talking about a colonial framework, the settlement sector and the funding framework which we're governed by is definitely that. They have been working on how they collect data. The settlement funding for the whole country comes from IRCC, the government body, and they have every five years a call for proposals. That is how we get our funding, and it was only last year in the call for proposals that the government actually had outlined an outcomes and measurement framework for the settlement sector that our programs need to adhere to. Before they were just really collecting numbers – quantitative data – through their iCare system which is a database that we enter information into. But [putting] that data into that system did not demonstrate the impact of our programs and services, it still does not. At least now they have told us, "Hey, this is what we want to see

out of your programs” and again it’s up to us as organizations to implement the framework to be able to do that data collection. (Kim)

Service providers are compelled to fulfill requirements for reporting. Individuals like Kim see organizations *not* in partnership with government funders but operating in service of their demands. Another service provider underscored the work that they do to collect and create data that is analyzed by other groups, especially government funders. Zora questioned what funders do with the data that they receive from settlement service providers. They noted the lack of transparency about funders’ work with the data further along in the life cycle of that data. Zora elaborated:

Some of my concern is that we do not know. We don’t even know; I think it is sometimes challenging because we feed a lot of data to IRCC as required by our contracts. But nothing really gets shared back with us, so we upload a bunch of stuff, but nothing really comes back to us. What gets back to us is basically a PDF version of what we sent them. We are always hoping that they would do more in terms synthesizing, in aggregate, from different service providers, and sharing back with us. Sometimes there is very limited stuff on the Open Data Portal, if you know how to go through it. Even then, it is not really accessible. Us as service providers we spend a lot of time collecting and uploading, but we don’t really get anything back. I think that is sometimes a frustration, and you know, the other piece again is consultation around use of data. I think at IRCC there is an opportunity for them to do more, and also consult with the newcomers. It should be a practice, in consultation with communities, about how data would be owned or used.

Zora shows that workflows with data are arranged around funders’ expectations for reporting on outcomes of immigration and settlement service delivery. Commenting on this division of

labour, Zora calls for responsiveness and accountability from funders who receive and have access to data from across the settlement sector.

Divisions of labour between groups were evident in relationships of various types, which inform their sharing of data. Two types of partnership relationships were raised by participants: The first type of partnership was a contract or corporate partnership, while the other common type of partnership was between community organizations and universities. Partnerships, participants suggested, are not just increasing the variety of groups who have access to and can decide how to use immigration data, they may also be bringing in other professional norms, policies, and ideas of how data can be defined, measured, and collected. Participants formed partnerships to share projects that would not be possible without the different sets of skills, resources, relationships, interests, and questions that they found complementary to their own. Most participants discussed partnership projects they had co-organized, which had been developed through relationships with newcomer community members, settlement service organizations, government agencies, immigration researchers, systems designers, or other groups (Ash, Cora, Finn, Hamid, Ira, James, Kim, Noor, Tanis, Valerie, Zora). These were all projects in which partners worked with immigration data, often assigning one another activities (e.g., doling out the activities of collection, analysis, and sharing to different actors). Characteristics of partnerships varied, embodied by aspects such as the duration of participation and extent of decision-making with data. The framing of a partnership was useful to participants for communicating shared activities, interests, or outcomes of their labour, which signalled their need for one another.

Some ties between groups were developed to complete data-oriented tasks. Participants had established partnerships to share areas of expertise. Two of the academics, for example, described projects in which they partnered with a private company (Ash, Cora). Ash described a project with a company they developed after receiving research funds from the private sector:

“The advantage that we have is the access to the refugees, that we can go do interviews with them and learn what they need and how we can help them. The advantage that they have [on the computer science and engineering side is] they know how technology works, they know how to identify fake news, they know about surveillance, they know everything that I don't know. I told them that I want to work on this topic that they work on, but in the context of refugees. They said, “We don't know what you are talking about. How can we help you? Refugees are not a part of our work, we don't work on fake news and refugees, we don't see an issue here.” I told them that this is a big issue. (Ash)

Ash's partnership with the company claiming their expertise in computational mis/disinformation detection led to their development of a system to study disinformation and immigration. Ash appeared motivated to engage in this partnership to experiment with uses of data and technical systems, each partner extending their areas of work in ways that they saw complementary (and profitable) to their professional work.

Beyond partnerships in which labour with immigration data was shared between two or more parties, voluntary work represented another distribution of labour among parties. Several participants brought up the work that volunteers do within their organization or government agency. James, who worked in a neighbourhood house, had been describing their limited use of information systems as part of a small organization. The neighbourhood house did not have a

local network, nor the staff with a defined set of tasks to maintain IT systems. James gave an account of their work with volunteers to establish a database which they were pilot testing:

Most staff have their own ways of collecting information, so we will try to eliminate that to make it more efficient to have one database where they can put all their information about clients, about program sessions, about the support services that we provide to the clients so that at the end of the year if we're asked by our Executive Director to provide such and such information, we're able to provide it. Also, for writing grants we will have that information to say that we have "x" number of people from this community who need this form of support. So, it is challenging that we are trying to cover everything, but because it is volunteers that are doing that project for us, we don't make it onerous. It was supposed to only be a four-month project and now it's extended over a longer period, because every time we talk about what we want from this database it keeps expanding. The wonderful volunteers within that project say "I don't want to create something that you're not going to use because it is not covering everything that you want it to do" so they are putting in extra time to make it better than what we expected, better than what we initially asked for, so it is taking longer, way longer. (James)

This passage illustrates how a database design project grew into a more complicated task than it initially appeared to be. Volunteers, James said, wanted to ensure the database would be useful for James and their colleagues, suggesting that volunteers are motivated by their interest in supporting the operation of the neighbourhood house. An ethos of relationship development and skill-sharing was associated with these activities at the neighbourhood house, in keeping with the findings of scholars who have studied community building and neighbourhood houses as social infrastructure (Yan & Lauer, 2021). Motives for volunteers appear to fit within the local context,

directed towards adapting the neighbourhood house's workflows with data. As I found across several participants' work, the design of information systems to work with immigration data was one common motivation for incorporating the labor of peripheral or temporary actors into workflows, whether as volunteers, partners, or contractors (e.g., Ira, James, Kim, Lea, Mark, Valerie, Wendy).

Participatory projects often leverage volunteer work with data for civic engagement and citizen science, unpaid work organized by companies and organizations alike. The volunteerism in this space can be considered in relation to *heteromated labour*, as conceptualized by Ekbja and Nardi (2017). When James discusses volunteer labour that is motivated by their organization's need for a database, they show how volunteers are filling in for work that would not have received paid compensation. James reported that their organization is not funded for the development and maintenance of databases and information systems design. Work that contributes to the ability to sustain essential elements of their service provision is here organized through volunteers. Less visible work activities, specifically those to do with information and the creation and maintenance of systems, stay on the margins of formal roles and responsibilities when distributed to the only group who can perform such activities, volunteers.

The delegation of database design to volunteers in this example means the task is re-organized to the edges of actors' professional work. What might it mean for labour with communities' data and systems to be seen as optional, non-professional, and perhaps even unskilled? Roles – and payrolls – draw a line between what is deemed necessary and what is not. Data labour that was not viewed as strictly necessary or efficient was not compensated (e.g., James and Wendy's

organization of voluntary work within workplaces which otherwise paid employees). Two participants elaborated on initiatives to collect, analyze, and maintain data that were based on voluntary work: Lea and Mark's development of a database to track discrimination was entirely based on volunteer labour. They reflected on who participated in this work by saying:

I think it is a very interesting dynamic. The people that are being impacted the most, according to the data we have, are Asian women, and it is mostly Asian women that are doing the work. And most of us are doing it for free, and are then expected to do it. Because we do the work for free, then it is just for free, all the information is free and should be made available to everyone. I can't tell you how many requests we get from people, complete strangers who email us and then say, "Hey, can you email me your data?" Or, "I need to look at your data" or "I need to see your sources" without really introducing themselves, or trying to build a relationship, or giving us context. (Lea)

Adding to this, Lea said that their collaborators or intended audiences come to expect and depend on free labour that they provide: *"The more free labour you provide, the more people expect of you."* These examples suggest that when labour with data is given to volunteers, data care can occupy the edges of legitimate, visible, or compensated labour, or potentially be pushed beyond it.

Voluntary data care work was at times embraced by participants, although others deliberated about whether its status as performed by volunteers made these practices more precarious, sporadic, or possible to devalue. Free labour can become deeply embedded in a project, so that it cannot be sustained without the work of those specific people. This becomes an issue for the possibility of work to change hands and to involve others in what was imagined as a community-

based initiative. To whom can Lea and Mark, as volunteers, pass on their work and data? Lea and Mark raised this question in our conversation, as they wondered about the legacy of their work.

Even government staff members appear to rely on voluntary work with immigration data. From their role within the government agency managing immigration and settlement, Wendy saw the work of caring for data was divided among paid and voluntary forms of labour performed by government officials at various points in a hierarchical structure:

We have a data issues identification and resolution team. We have a data stewards network across the department, so this data stewards network has individuals working all over the world from IRCC. They are stewards on the side of their job – this is an additional job – they are volunteers. They identify data issues, they report when those issues are processed, and they are addressed and resolved whatever shape the solution takes. That is the overall governance of data, ensuring that the data, what we call the data impact review and assessment – two layers of work – gets done across the department at every single space where decisions are being made. [...] It is a question of being at the right place to intervene in the name of data, if you will. [...] So, it becomes everybody's business, and everybody cares for it. (Wendy)

Wendy explains that voluntary labour with data can be integrated into professional work, even within the federal government. The voluntary “data stewards network” which picks up on issues and works on cleaning the data supplements the work that Wendy and their staff members do. With the help of volunteers (and the other actors who initially collect the data from newcomers), the government agency may assert their claim to immigration data as an “asset” that they

produce (Wendy). Creating and increasing the value of this “*asset*” is only possible in a web of actors, among whom labour is divided.

Through a labour framing, we may see that partnerships and volunteerism (re)organize this work by integrating actors who are seen to have the necessary expertise, initiative, or time to offer.

The next several examples of data care labour turn to the demands and expectations that groups place upon one another.

5.2.3 Demands and Expectations

Demands and expectations were constructed within and outside of the group which participants were affiliated with. Participants said their labour could be structured by others whose views and values could contradict their own. Consider, for example, an earlier story shared by Noor and Tanis who worked with a settlement service organization that wanted to collect postal code data, which Noor and Tanis did not view as necessary. The expectation for this type of data was understood to be a holdover from existing practices at the organization, and Noor and Tanis said this was a sign of “*ingrained resistance to thinking about data collection differently.*” Zora, a settlement service provider also said that a sense of funder demands structured their practices:

We always have to meet the funder requirements, IRCC requirements for data, whatever it is. I find that we get so focused on that. We are just trying to meet the funder requirements for data. It limits your vision, you are just so concentrated on meeting that requirement which we have to, but because we are so focused on that we can't think outside of that little box in order to better be more creative in how we're capturing and using data sometimes.

So, I think that is something that we're cognizant of and we're trying to work our way around what that means. (Zora)

Another participant, Valerie, who advises organizations in the settlement sector on their use of information systems and technology, suggested that the expectations service providers had were informed by the intentions of the iCare database as it was rolled out.

The promise of iCare was that two-way – give us the data and we'll take care of analyzing it and sending it back out to you. People have complained for many years that the two-way has never happened. They submit data, IRCC does run reports, and does some research on it that they put out. But the data does not go back.... That promise has never really happened. The onus is still on organizations to try to figure out how to mine that data. Because of that initial promise, I hear that people didn't feel the need to invest nor were they given the resources to invest in data analytics, because it was the promise of iCare that was going to do that. (Valerie)

Many demands on service providers were enforced through the iCare database, which Valerie said was designed to collect certain streams of immigration data from service providers. As a government staff member, Wendy said that they too saw the return of iCare data to service providers as a promise left unfulfilled. Wendy explained, “*we owe it to them.*” At the same time, Wendy also discussed what placing these demands and expectations for data on newcomers, service providers, and other groups enabled:

Provinces hold a lot of data that StatsCan does not have, that federal institutions do not have. Therefore, we create partnerships with provinces, this very cleaned up person-based data to provinces. In the provincial space, which is secure and safe, new linkages start happening. Those linkages are mainly our data, temporary and permanent (PR) [sic, i.e.,

temporary and permanent residents], that whole data set, going back to almost 1980 in many instances linking with provincial health data, social services data, education data, whatever the provinces have in their possession as provincial jurisdiction data. As they get linked, they create brand new data assets that generate analytical capacity and are used. [...] Every month there are a few complex research projects undertaken and published, coming out of those data assets. Similarly, in the provinces, provinces do not have that direct access to academics, but they also publish very important papers. An important one recently was a COVID paper on immigrants, by gender, by source country, rates of testing and positive testing. [...] Just as an example, without that type of a data asset, there is not a single possibility of conducting such a study. (Wendy)

As a government staffer, Wendy sees the use of data collection and analysis from a vantage point far different than that of other participants. In their role Wendy has the power to enforce demands for data from other actors, particularly settlement service providers. Demands for immigration data, as illustrated here by Wendy and described by other participants subject to it, typically comes along with expectations for it to be produced and shared in accordance with their desired format. Most participants were in the position of being subject to demands and expectations for their collection, analysis, and sharing of data with individuals like Wendy.

The dynamic of demand for data was problematized by several participants, who warn against the extraction of labour and time from newcomers. Hamid reflected on the issue:

This problem of over-research. [...] Ten years ago, there weren't as many people working with forced migrants. Now it is a bit flavour of the month. There is a lot of interest in it. It is very politicized, and because of this I think that the situation has changed for the people

with whom we're working, who also get asked by many other people – other researchers, journalists, government workers, the whole range of groups that you've been talking with – for information over and over again. I think that there is also a general information fatigue. People are less inclined to want to speak with you because they have already spoken to other researchers and other government workers. That is another area in which the landscape has changed over the past 15 to 20 years. (Hamid)

The multiplying number of research projects on migration has contributed to an uptick in the demands for the volume of data collected from newcomers.

Undue demands were seen to impose expectations, constrain possibilities for trying alternative approaches in information practices, and contribute to a sense of tiredness when working with data (Hamid, Zora). Participants questioned how much freedom they have in their labour when it disproportionately advances the needs, interests, and norms of some groups at the expense of others (e.g., managers' needs for data advanced ahead of frontline workers' priorities and preferences, government agencies' needs for data sets ahead of settlement service providers' interests).

5.2.4 Inequitable Dynamics

What inequitable dynamics then might exist between actors as they work with migrants' data?

As an academic, Ash said they find settlement service providers are burdened with the labour of caring for data:

Most of the burden is on the settlement organizations, not on the government. Many settlement organizations in BC and in other provinces, they have all these problems that

they don't know how to tackle. [...] So, the main problem is that the government is not responsible for it, but the settlement organizations are responsible for it. (Ash)

Demands and expectations for the collection, analysis, and sharing of immigration data were perceived as bringing benefits or burdens to multiple actors involved, distributed differentially between them. James, a service provider, was concerned with unfair burdens of data care labour. James elaborated on divisions of labour enacted by the iCare database, which enforced demands from government (discussed earlier by Wendy from their viewpoint as a government staff member):

We turn our information into iCare, but we are not able to generate any reports. It is all managed by IRCC, so it is not useful for us. [...] I am not sure how useful it is for the people who use it, who manage, and I know that it continues to grow. Previously we used to enter our narrative reports and our annual reports on it, but recently it has been changed because they heard from the sector how onerous it was to have so many reports that needed to be entered. Now they have sent us this year a pdf document that we need to fill out instead. It is not useful for us, because we can't generate reports from it. (James)

Another service provider, Kim, said that data work was a burden for their organization:

It is administratively burdensome, especially for organizations that do not have CRMs [customer or client relationship management systems] as well. We spend a lot of time having to aggregate data manually and to then feed it back. What makes it really frustrating and demotivating is that the data we produce then doesn't tell the full story of what we are doing and what community members are going through, and speak to the system issues or assets. (Kim)

To some participants the arrangement of their data care labour was not very meaningful to what mattered to them and the goals of their work. While required, the outcomes of the labour were not seen to be wholly useful to Kim because the data that they wanted to analyze was not being collected and analyzed in the first place.

Some individuals said that they were burdened not only with requests for data, but they also experienced expectations for analysis and action as burdensome when placed upon them by others. For instance, Lea and Mark said they were expected to formulate a plan of action based on the findings of their community surveys about discrimination:

We also encountered numerous times, even within our own community, “Okay, you’ve collected this data, now what do you want to happen? What are you trying to say?” [...] We just created this outlet for people to share their experiences and that was already a lot of labour. And now you want to jump light years ahead to ask us, “Well what do you want the government to do now? What do you want the city to do? What do you want to do?” Can you give us a minute?!” (Mark)

Zora, a service provider, also saw an unfair dynamic:

I feel it is very one way right now. I feel we feed out a lot of data to IRCC, to policy people, to researchers. But we do not get a lot back. The most we get from IRCC is a pdf of what we send them, of what we send them in Excel, they give us a pdf summary version back. It is not very helpful. [...] So, I think that there are definitely more opportunities for more engagement around data. I think we need to start with what we mean by data. There isn't that shared. Sometimes people think only in terms of a research lens, or an application form you have to fill out, so not a lot of other things as well. I think it would be really

beneficial if there were more connections and guidance. Again, there is a massive amount of data collected and shared with some people, but then what happens with it, if anything? The issue is that if nothing is ever going to happen with it, good or bad, will we still need to be collecting [it]? If we're never going to be using it for anything, then why are we collecting it? There needs to be that deeper connection between IRCC, their data and policy people, service providers, and even the newcomers, about how all this links together. (Zora)

Zora suggests that inequitable divisions of data care labour are closely connected to groups' (mis)understandings of one another. Without a stronger working relationship, current activities with immigration data may continue to privilege the interests of government funders and researchers who derive disproportionate benefits from this labour.

5.2.5 Valuing Labour with Data

In the last several examples of data care labour divided between participants, we followed the demands and expectations that they placed upon one another, often inequitably. Earlier in this section the issue of “free” labour performed by volunteers was raised as a grey area between visible and invisible work (i.e., with expectations for it to be fit into non-work hours, off the side of one's desk). In the next few examples, I attend to the value which groups attached to each other's labour with data. Some participants questioned the quality of the data that they were contributing to or using to make decisions. Others were frustrated by the skepticism that they encountered for the quality of their own data sets. These individuals said that other groups underestimated their credibility, which they saw that their data practices embodied since they were quite often grounded in relationships and their working environment, thereby enriching the

quality of their data. Participants' norms and roles at work, therefore, contributed to the forms of data which they thought were credible and relevant, and this became a point of friction.

In the context of labour relations between many of the groups I spoke with, the creation and extraction of value from immigration data also took on qualities of different claims to epistemic authority exercised by groups. Participants noticed that divisions of data care labour were often organized from the top down – that is, from the entities with the most power who delegated demands, expectations, and everyday work with data to others (Ash, Finn, Hamid, Kim, Lea, Mark, Zora). We have seen one prominent example: From their position drawing from many streams of data that others' labour made possible, the government staff member emphasized possible value of the immigration data which they collected and used:

We are obviously not the only ones who deal with data, but we have a role to take care of the data, which we call a corporate asset. A caretaker kind of role in terms of quality, integrity, and everything else. We also augment that data, which means that we do not settle for what we have got, but we increase the analytical capacity of that data through a whole bunch of different methods. (Wendy)

Wendy's remarks draw a connection between their role as a caretaker and the "corporate asset" which they see themselves and their government agency creating by preparing data for analysis. This interest in creating and adding value was expressed in terms of the mobility or immobility, and the worry for data being held in what elsewhere in our conversation Wendy called a "locked jail." Wendy helps to prepare the data for use by others, such as academics. In this way, although Wendy and their agency are collecting streams of data from settlement service providers all over the country, they are similarly in an intermediary position of passing on that

data once they have transformed it through cleaning, organizing, and searching for errors and privacy infringements.

5.2.6 Questions of Credibility and Data Quality

When the labour of data care is divided among groups jostling for power, groups can develop sharp judgements about how well or poorly others are performing this work. Participants took a critical stance on the value of one another's data, or the value of their labour with it (Cora, Lea, Mark, Noor, Tanis, Zora). Their comments assess one another's epistemic authority on data quality, validity, and value, while rooted in their own epistemological perspectives on these matters. Researchers took an interest in the value of immigration data, and some expressed their own and other researchers' judgements about the quality of the data. Cora talked about the experience of a researcher who raised a problem with the comprehensiveness of the government data sets on immigration managed by IRCC. According to Cora:

There was a researcher, and this goes back about 15 or 20 years now [in an immigration research network]. [...] We were given access to the early versions of the IMDB [Statistics Canada's Longitudinal Immigration Database] around that point in time. At that point, one researcher used that access and took a very careful look at the data, and then in the publication that he wrote, he wrote something that you could say both embarrassed, but more than that really annoyed, Statistics Canada. In a publication he had a footnote that said that based on his own innate curiosity and the fact that he's an immigrant, he looked to find himself in the database. He couldn't find himself. He was surprised that the database had him missing. StatsCan went ballistic. Seriously ballistic at that because it was an attempt to identify an individual in a database. (Cora)

The researcher had questioned the quality of Statistics Canada's datasets on immigration. Cora also shared that Statistics Canada had removed the researcher's access to the data and required the researcher to redact a scholarly publication reporting on the data quality issue. Cora continued by discussing evaluations of data quality:

One of things I find a little bit annoying is... let me give you an example. The census has never really asked people about their immigration category, their pathway. But then about ten years ago there was an idea that it should, and people should be asked whether they came as a refugee, or whatever. But then it was discovered that people make mistakes, they gave incorrect answers. People as individuals don't understand the administrative categories in the way bureaucracies do. There was a high error kind of issue, so what they did instead was to link to the landing files. Jane Doe fills out the census, and they link to that person's landing file. How do they link to that person's landing file? They use a combination of first name, middle name, last name, age, and there might be something else, but those are the obvious things that are used. It's pretty good, but never perfect right? So, the linkage I think is in the high 80 percentile range, so there's a number of people who can't be linked. There is a question that says, "Were you an immigrant to Canada?" If a person says "Yes," they were an immigrant to Canada, (and by the way there's an error factor on that too, believe it or not, some people mistakenly think they were immigrants who weren't and vice versa), so they get that question filled. Once the person says they were an immigrant, they go into link into the database when they came, what year, and under what category. Like I said, there's something between an 80% and 90% success rate on that, closer to 90% than it is to 80%. What do they do with the other 10% to 15%? Well, as of the 2016 census, they imputed, based on other characteristics, but

then they don't tell you who they imputed for and who they know it is for, and that's what bothers me. (Cora)

These comments point towards mistakes, such as those in census data on immigration, which arise from misunderstandings of categories or errors. What Cora says they find frustrating about this is not the presence of errors, but the lack of clarity about how missing data was filled in or errors were corrected (or perhaps not corrected). The lack of clarity from Statistics Canada about how missing or mistaken data were adjusted prevents Cora from being able to have a comprehensive understanding of the composition of the data sets they work with as a researcher. Another participant who is a designer, Ira, was also concerned about the quality of the data that they gathered because of the implications that flawed data could have. Ira's questions about data quality relate to their testing of a feature which would invite newcomers to rate their experiences with specific service providers through an app:

[Users who are newcomers] can put a happy face if the experience was good, and then there is a box if they want to write a comment. [...] Currently the data is being collected and used internally and not being shared back to the service providing organizations because we understand that there is a lot of concern around that [client satisfaction data]. What happens for a service providing organization that gets a lot of frowny faces? Does that affect funding? That is a huge question for them. Is it going to be shared across the sector in a way that makes them look bad? What is your ability to do something about the problem? If newcomers are putting frowny faces because they are not eligible for the service, if I am a temporary foreign worker and I am just not eligible for a service that is only for permanent residents, then I might put a frowny face. But that is not something the service providing organization can change. So, there are a lot of questions there

around [...] the risks of aggregating this level of data that actually makes it harder for service providers to do what they are trying to do. (Ira)

One participant suggested that quality of the data they collect as a service provider can become a problem when language accessibility of data collection is not planned for:

For most of the people that we work with, English may not be their first language, so we have challenges to make sure that survey forms are in their first language. Not everyone is literate as well, so we have come across challenges and we have to verbally ask the question. Usually, it is the settlement staff that are asking the question, and maybe there could be client bias where they want to give favourable answers instead of honest answers. This is a question of how valid is that data, and then entering that too, because we have a collection of survey forms in different languages, and then we need people to interpret that and enter it. We don't have trained interpreters and translators, so it is volunteers who are helping us out. If they are interpreting information or a sentence, they may think it may mean something different than what was intended. It is tricky. There are a lot of variables to be aware of. Being able to reflect on what the client is trying to say, the intention of the message, did we collect [...] what they were hoping to communicate to us? Because we don't have any systems, it is manually – we hand out paper forms, we collect it, and if we don't do paper forms then the situation is like, “Show of hands, on a scale of one to ten....” It is in a group setting, so there is peer pressure. So again, because we have to work with what we have, the methods that we use to collect may not be the best for confidentiality or for valid data. (James)

Several participants from across different groups raised the problem of errors in immigration and settlement data. Noor, a service provider, reflected on this:

We had many years where we had 100% client satisfaction reported, and I then say, “That is not something to be proud of, because it is not real.” Just starting from a literacy standpoint, some people have never seen Likert scales in their life. [...] We did spend a lot of time, and I gave a lot of input, on how to do surveys. And this past year it was 87% and then I said that sounds better, that seems a little more real, and maybe it is meaning a little more. We also did them this year over Google Forms, which is so different. But again, that is really measuring what people thought about the program, it is not measuring how did it change their lives or help them at all. They are totally different sets of questions, and that is why we have a developmental evaluator as a contractor now. IRCC does want to know better ways to measure outcomes, because they know that this not perfect by any means, so that is definitely a huge question that has come up in the sector right now. (Noor)

Participants also saw the lack of context detrimental to the quality of the data which they were analyzing. Individuals in various roles discussed this problem. Hamid, an academic, said:

Methodologically, it really matters how things are defined, how information is collected on that, and how those statistics are used and presented in particular contexts. [...] For example, the number of asylum seekers pre-COVID coming across the border with the U.S., taken out of context, they seem large, right? We're talking about tens of thousands of people who are coming over irregularly. But then I would say, that is the number of people who would cross the Congo-Uganda border in one day when I was in the field. These are countries that are very, very poor, so they can't really afford it, whereas refugee claimants usually start working and directly contribute to the economy. It is not just about the numbers, it is about the way you put those into context. (Hamid)

Whittling away at the context of immigration data can allow for distortion, making misrepresentations and misuses more likely. This reflection extends Hamid's story to guide action shared in the last chapter, which encouraged actors to consider how immigration data may be used in alternative situations or by actors with political motives counter to those imaginable or dominant in the present.

A few individuals suggested that others' judgements about the validity and the value of the data they created or collected reproduced existing power imbalances. Some said that they found other actors claimed epistemic authority through "*credibility gatekeeping*" (Lea):

If you don't want to go public with your face or your full name, then they are not interested. Again, it's "Well, the public really needs to know your name and your face to really understand that it actually happened." So again, it is credibility gatekeeping. Why does my photo need to be plastered on the front page of a website, without any consideration for my safety or potential safety implications to follow, in order to be believed. (Lea)

Lea and Mark found that groups who they hoped would appreciate analyses of their community-based data set on discrimination had instead questioned Lea's and Mark's qualifications. They went on to talk about the unquestioned credibility afforded by certain roles: "*What information in our society is viewed as valid? Usually if you have a Dr. in front of your name, if you have multiple degrees, if you have peer-reviewed literature. There are certain types of information that we do not question as true*" (Lea). Lea and Mark were both members of the communities that they studied. They felt a sense that others' perceptions of their empathy and positionality

being aligned with the people whose data that they stewarded made them *less* rather than *more* credible in the eyes of some:

I think of when people say, for example, “Asian reporters shouldn't report on anti-Asian racism because they are biased.” If Asian people are collecting data on anti-Asian racism and then talking about anti-Asian racism, it is not valid because it is biased. Or, it hasn't been peer reviewed, therefore this information is not credible. But who are the credibility gatekeepers? And how can we say that academic institutions are not biased, and then who determines those factors, and who maintains power? (Lea)

The differences in validating and valuing data corresponded to actors' perceptions of one another's expertise, bias, and the degree of respect that they had for one another. Lea and Mark were responding to others' credibility judgements, which were based on epistemic claims for authority linked with institutional affiliation or professional training. Lea and Mark countered disparagements of their credibility by emphasizing familiarity with the community as a form of expertise to care for community members *and* for the data set on instances of discrimination they had experienced.

Some participants' comments include judgements about competencies necessary to perform data care. Typically, judgements that individuals made about information literacies were based on the skills that they had witnessed others bringing to their practices, for instance by demonstrating certain proficiencies or not, which were deemed to be relevant to individuals and their problem solving, as they used data, information, and technologies. Participants sometimes judged their peers' information literacies in connection with caretaking responsibilities. In doing so, participants tended to make statements about the content of data and information others worked

with, and the competency which they believed others did or did not have in using it. Several participants referred to cognitive, relational, social or sociotechnical dimensions of information literacy (ACRL, 2016; Bruce, Edwards, & Lupton, 2006). Hamid, for example, turned attention to the sociotechnical aspects of researchers' work. Hamid said that academics like themselves needed to continue strengthening their information literacy skills to conduct research:

Technology is one big way in which I think things are changing. The second thing that I would also say is that – and again I am thinking about over the past 15 years that I've been a researcher – is the volume of information has increased. There has always been information around, but again true technological advances – Twitter, Facebook, and all of these social media as well as more traditional ways of getting information – I think that there's a sort of saturation and an over-saturation of information. It is actually quite difficult to assess the quality of the information that we are gathering, but also that we're receiving. Obviously as researchers we are collecting our own empirical data, but it is helpful for us to be able to contextualize that information within a broader context. I find that sometimes it is hard to know. You have to do a lot of digging to get a sense of whether a source is credible or valid, unless you know the person or the institution. (Hamid)

This reflection on immigration researchers' and newcomers' information literacies furthermore indicates that their practices may affect one another: Hamid provides the example of the adoption of digital systems, so that as newcomers engage with certain social media platforms, immigration researchers wanting to explore newcomers' experiences may turn to those social media platforms and need to recontextualize their information literacies with an awareness of the characteristics of information ecosystems shaping how social media data may (or may not) be produced, gathered, and interpreted.

Other participants turned attention to service providers' information literacies. Like Finn, Tanis as well as Valerie commented on the skills of service providers. As a service designer, Tanis saw service providers' perspectives on data practices as polarized:

I feel like there are the two camps or sides of it. There are the people who are like the ones we used to work with, and I think to an extent us, we are the middle ground between the two camps of people who say, "Yes, let's use the data and draw some conclusions," and then I would hazard a guess that a lot of people in the sector would never touch it. [...] So, this may be a problem also about people knowing what data is not necessarily representative, or they pull conclusions from it that are slightly different than the systemic problem that is caring for data in a way that is truthful to the data, not misrepresenting it.

(Tanis)

Valerie suggested that service providers need to have a certain level of skill with digital data and systems:

There is not the expectation that everyone needs to become data experts, but they need to be data literate. They need to understand, because they are the ones putting the data in, and if the data doesn't go in in a useful way or if there is bad data hygiene, then the stuff they get back out is not useful. So, there is still a huge set of literacies around this that we are grappling with in the sector, but technology is at least making it easier to create the systems to do this work. (Valerie)

Like Valerie, Wendy pointed towards data literacies expected of service providers:

One important level on the caretaking side is to raise what I call "data mindfulness," meaning that making practically everybody, from the deputy minister all the way to the

junior analyst, realize what data is and how their lives are implicated by data, but also how what they may do or not do can either harm data or can actually help data quality. So, it is building that mindfulness, and from there on it starts going into data literacy and then data fluency, and all that, you could keep moving up in the scale of skills and expertise. (Wendy)

Finn, a settlement service provider, discussed data care work performed by staff members who work on the frontlines directly serving newcomers on a regular basis:

Most of the staff in human services, their training, their background, is for one-on-one work and with clients. They may not be as provisioned as other people in the clerical or computer world that they understand how to input data in a systematic or effective manner. Their skills are not really in data management. Their mentality is really about wanting to spend more time with the clients that they serve, rather than spend time in doing recording, or data entry. So that is the challenge in day-to-day work that we're facing. (Finn)

Whereas Wendy, a government staff member, noted their interest in supporting “*data mindfulness*” amongst all actors who work with immigration data, Finn said that service providers’ “*mentality*” is often focused on attending to individuals rather than documenting their interactions for the sake of data collection.

Some participants referred to members of the public, and their capacities to interpret data on immigration and settlement. Cora was especially interested in helping members of the public to learn about immigration processes. Cora saw this work as linked to their use of immigration data, because they wished to present it in a way that individuals with different educational backgrounds would be able to understand. As an academic Cora also was attentive to the

political uses of immigration and settlement data, as was Hamid. Cora saw that part of their responsibility was to provide access to understanding immigration data through narratives:

It's quite pointless to do any of this stuff if you can't communicate it to people, and people learn best through narratives. They interact on that kind of basis. There is something kind of attractive in just exploring data for the sake of data, but at the end of the day it's not going to go anywhere. No one's going to get anything out of it. So that's a really important thing. How do we do better on this? I think by spending more and more time trying to understand how people appreciate information. I think we have to experiment about that. (Cora)

Each of these perspectives drew a link between different groups' information literacies and interests as they elaborated on how immigration data should be presented with care.

5.2.7 Theme Conclusion: Data Care as Labour

As they reflected on their practices, participants sketched labour relations between themselves and others. Divisions of labour were shaped by professional or voluntary forms of labour, types of relationships such as partnerships, demands and expectations groups placed on one another, epistemic claims to authority on the value of data, and appraisals of one another's (and one's own) competencies.

I found that the point at which one group's perceived responsibilities for data care ended, and others' responsibilities began, was often confusing or contested. Individuals gave me glimpses of collisions in their ideas and practices of data care labour, and I interpreted ambiguity in responsibilities. For these reasons, I began to wonder through what circumstances divisions of

labour are enabled, constrained, and realized. The labour conditions which inflect data care is therefore the topic of the next theme.

5.3 Labour Conditions

5.3.1 Introduction

Care ethics calls for attention to the labour of caretaking and the conditions which affect its performance. This theme builds on the last by looking more closely at the circumstances in which data care is performed. Labour conditions can be composed of the places and situations in which work tasks are performed and recognized. Working conditions include the material resources which are allocated and used (or not), and relations among groups which create a demand for labour, arrange its performance, and benefit from or are burdened by that labour. Each of these issues are touched on in the following section examining participants' experiences of their working conditions with immigration data and technologies.

When immigration data care is interpreted as labour, variations in its conditions become more noticeable. Labour conditions shaping data care practices include: 1) *differential access* to data, infrastructures, and resources; 2) *boundaries and connections* between actors; and 3) *conflicts and challenges*. These labour conditions are explored in three sub-themes of the same name. The conditions which characterize data care work informed how capably participants said they could perform it.

The three labour conditions are interrelated: The first sub-theme suggests that data, infrastructures, and resources lay the groundwork for data care labour. It focuses on views of

abundance and scarcity of materials, which appear to be distributed and accessed differently among participants. The second sub-theme charts perceived boundaries and connections between groups who co-participate in data care. Following from my observation that access is differential, this sub-theme delves into why, in what ways, and to what effects access is distributed. Distributions of access construct boundaries for groups' labour, and what participants suggested are limitations to carrying out their duties, where they are excluded from certain activities and decisions. I consider boundaries and connections to examine positions from which participants related to one another, focusing on the qualities of those relations. The third sub-theme follows interconnections among groups to the knots of conflicts and challenges. Individuals reported that conflicts and challenges emerged when there were frictions between ideas of care and differential access among groups, with boundaries between groups adding to the difficulty of cooperating.

5.3.2 Differential Access to Data, Infrastructures, and Resources

Participants said they had varied forms of access to data, infrastructures, and resources. In this sub-theme I will unpack ideas of access and use of data, infrastructures, and resources, which ranged from perceived abundance to scarcity. For instance, academics typically expressed their experiences of abundance, as well as their capabilities and uses of data given their ability to apply for grants and determine the direction of their research on immigration and settlement (Ash, Cora, Hamid). Others with whom I spoke, most notably service providers, were quick to contextualize their data practices within the strictures of funders, IRCC policy, and the limitations to their resources, staffing, and infrastructures (Finn, James, Kim, Noor, Zora).

Access to data, infrastructures, and resources typically related to freedom of choice for participants. One service provider said that pressures to maintain funding for their organization detracted from nuanced considerations of data care and its consequences:

I think that we need to be better, and I am talking about the settlement sector... [at] really understanding how data can be used in not great ways for particular groups of communities. I think that we are so compounded in [our] organization in the need to just have data to keep our funding going, and when you're in that whirlwind, how then do those considerations not stay at the forefront? (Kim)

Kim went on to guess that other groups may have a greater sense of freedom in their labour with data than service providers do. Kim implied that others, such as migrant justice activists, may face fewer financial pressures as compared to service providers whom Kim knows need to prove their worth through outcome-based measurement expected by government funders.

Kim continued by pointing out that misalignment in groups' goals can mean there is a shortfall in information infrastructures and resources, a point also made by Valerie. Kim said:

We collect our own data for the different indicators that we see as valued, that we see as success, so we are trying to collect data to measure self-efficacy and hope, and things that are important that funders do not think are important. How does that interplay with all the other indicators that we're collecting information for? As far as the labour: For us, we are moving forward to a solution which is a CRM [i.e., a client relationship management information system], I think that will help. For other organizations, they might not have the resources or capacity. Having funders that enable funding for CRMs actually in contract will be huge. (Kim)

James, another settlement service provider, similarly spoke to unmet needs for information infrastructures:

This is a tricky subject because not everyone is at the same place, and everyone needs support to get to a certain level. If they gave us funds or support to say here are the best practices, this is what we recommend for databases for the information we collect, it may not work for all organizations. Some organizations may want to collect the information not just for settlement, but for the whole house. I don't know that the government would be supportive of funding every individual agency's database needs, they would probably only want to fund a certain portion that collects "x" information and then who own that data? Is it shared with the government? For iCare, it is in the cloud, and we enter what they need, and it is done. Government moves slow, and I don't see them any time changing the way they are going to do business. It would be great if there were some funds and resources that supported agencies that did provide the money to get themselves a database that works for them, and for the government not to say too much [about] what that would look like. They are very strict that it only has to collect "x" and then the information has to be shared with government, so it may not be useful in all departments and all aspects for that organization. (James)

Despite it being a difficult task, James still suggests the government funding and support for labour with data performed by service providers is lacking. Perceived scarcity of resources within the settlement sector can also contribute to questions about when monitoring of service providers turns into surveillance. Worries about the influence of data practices on future funding of organizations and the job security of staff reveals an awareness of the potential for

surveillance, an issue also articulated by Ira as a designer of a system collecting client satisfaction data.

As compared to other groups with whom I spoke, academics tended to have far fewer concerns about their access to data and resources. Academics were afforded access to all the types of immigration data they requested from organizations or from government agencies, and were able to direct funding towards collection, analysis, and sharing of data (Ash, Cora, Hamid). Immigration researchers' capacities to access newcomers (as research participants or collaborators) and their data seemed to be mostly unfettered by barriers which other participants reported. Cora, for example, reflected on their work as an immigration researcher:

Basically, the point that you can generalize from what I said is that the availability of data has increased over time. [...] [As an example,] there's one other important resource, and that's been really quite recent, it has to do with a monumental effort on the part of IRCC and Statistics Canada to link together as many data files as possible. These now link the census, the IMDB, and a new data resource called iCare, which is a recording of every settlement service that has been used by anyone in Canada. Now that those are connected, we can look at things like how many refugees use immigrant settlement services, as opposed to how many family reunification cases, for example. You can itemize everything you want to, and that's been quite valuable. The main story is that over time, far more data has become available. (Cora)

The iCare database noted by Cora here, however, is one system which other participants said embodies the problem of differential access to data. iCare is a system that is used to track outcomes of settlement service provision to permanent residents by organizations funded by

IRCC. Individuals across groups seemed aware of one another's complaints about iCare, mainly with regards to the accessibility of data for service providers, even if they did not face these constraints themselves. One service provider said of their experiences with the iCare database:

iCare spits out these monthly reports which are useless. They are useless, but even if you look at these forms, and even though they do not give you much feedback, even to be able to read them is very difficult. So how are we building our capacity to analyze data and to know what we can use that data for our work and for the communities who we work with? There is a lot of effort that goes into that data collection, and very little benefit for us and our clients, essentially. (Kim)

The design of the iCare system is understood to restrict service providers' access to the data that they collect and enter. Several service providers said that the iCare database has become an obstacle in the way of their preferred routines. The one-way movement of data on to IRCC but not back to those who originally collected the data was seen as imbalanced by each of the service providers I spoke with (Finn, James, Kim, Noor, Zora). A mismatch may reveal contradictory expectations for the accessibility and usefulness of immigration data. What may be accessible or useful evidence to one group may not be accessible nor useful to another group's aims and routines, such as applying for grants or measuring outcomes of immigration and settlement defined on their own terms, rather than funders' views of successful settlement. In this way, individuals emphasized disparities in their abilities to access and use immigration data, especially when their expectations were not met. Constraints appeared to relate to participants' sense of agency, capacity, and creativity in their labour with immigration data and technologies.

5.3.3 Boundaries and Connections

I interpreted that boundaries and connections between groups may be borderlands in which they negotiate responsibilities, spaces for working with the same data sets, systems, community members, and joint projects. The relations among groups shaped collaboration, competition, and coordination. Boundaries and connections between groups which participants identified suggest they were influencing and influenced by others, where duties, trust, and claims of expertise were constructed and contested.

Individuals described instances of relationship building, coordination, competition, exchange, understanding and misunderstanding between themselves and others while working with newcomers' data. Participants explained how they felt the influence of other groups' principles, policies, and professional norms as they talked about their ties to them. Some participants were resolute in their sense that they were benefitting others but were not receiving mutual benefits from a relationship with groups with whom they shared data. Finn, a service provider, said their collaborations with academics had become more balanced in this respect:

I think it's getting much better. In the past, they would come to the organization and say, "We need to conduct research with a certain kind of group, get the people for me." And then afterwards, we have not heard back from them. Now each time we ask for bigger participation, or if it is a collaborative project, sitting on the advisory committee, so that when they design the research methodology and look at data and information gathering, we want to provide input, but not passively as somebody who can do the posting and recruitment. We want to be bigger than that. It is becoming receptive for that. Today we committed ourselves with an academic institution on a labour survey looking at the

underemployment of many newcomers in a vulnerable group. We were able to say, “Okay, we want to tell you and have more say about how you recruit, and what methodology is more appropriate.” I think, if I compare to five or ten years before, it has been improving.

(Finn)

Finn suggests that an indicator of a change in relationships between service providers and academics is more decision-making power in recruitment and selection of an appropriate methodology for a partnership project. Academics and service providers have a history of working together, and over time their dynamics as collaborators has seemed to improve in Finn’s view.

If we want to take an interest in groups’ dynamics, we will need to know more than whether a linkage exists between an organization and an academic, funder, activist, designer, or newcomer. Participants said that the interactions they have with their peers influence their own work activities in specific ways. Noor, for instance, asked me to envision relationships along a scale. Early on in their career Noor had been bound by a university research ethics board’s rules, which in their view narrowly defined how researchers and research participants may interact. In more recent work, Noor worked in a community-based organization serving newcomers, an organization which also conducted research to scaffold the design of settlement services. As part of this, Noor said their work at the organization left definitions around researcher/participant interactions much more open, conceptualized as friendship. Noor explained:

Imagine visually a scale of defining relationships. I see academia defines relationships so rigidly. When I did my master’s research with refugees who were being resettled in a smaller city context, I was so scared to meet them in certain places, I was just so scared to

be breaking the rules. Looking back on it, I made them so nervous, and I didn't treat them as humans as much as I should have, because I was so concerned with following rules. I wanted that expectation of what our relationship would be as so rigid – I am a researcher, and then that makes people say, “I've never been in that sort of relationship before, where someone is researching me, so I guess I will say what maybe you want to hear,” although some peoples' personalities are more open. So, comparing that with what we went to [in more recent research projects], [...] the [organization I worked with] wanted to keep the relationship very ill-defined with, “Well, we're entering into a friendship.” And there were issues with colour blindness, and not differentiating between equality and equity; equity being what do we need to do to make sure this person is on the same page. This person [at the organization I worked with] had a view of equality and, “We need to treat them exactly the same,” even though most of the researcher team have higher degrees, and these people are maybe illiterate in their first language. But to try to bridge that gap to them was unequal. So that is a big philosophical difference. (Noor)

Noor's reflection reveals how fewer rules about researcher/participant interactions brought new challenges when working in an organization serving newcomers. Noor suggested they were uncomfortable with data collection under the banner of friendship. Noticeable differences between individuals' capabilities and understandings of their research protocols deepened these issues, which Noor's former colleagues at the organization had set aside. While working in this situation, Noor had developed strategies to set limitations on researcher/participant interactions:

[I was seeking to] not overextend us and overextend them as well, which we did see over the course of the year because we did keep coming back to the same people again – not “It's a relationship,” but what it feels like when we are bothering people. And more and

more it started to feel like that, and people started to give excuses, “Oh no I can't meet now.” [They gave] various excuses. Because we have someone on our team who is from the Middle East, they were able to serve as a cultural broker to say, “This is really what this means,” and help us realize where to draw those boundaries. (Noor)

Noor reports that their colleague was able to interpret implicit boundaries participants were trying to set on research relations, and in turn on their organization's data collection efforts. Their colleague's insights as a “*cultural broker*” enabled them to set limits on researcher/participant as well as service provider/client interactions, to better respect newcomers' preferences.

Understanding cultural dynamics was an ongoing process for Noor. Likewise, other participants suggested that building trust with newcomers, while also collecting their data for service evaluations or for research, could be a long-term process. James, a service provider, reflected on their connections with newcomers:

Some people are used to data collection, and surveys. But with some of the more vulnerable populations, definitely trust needs to be built first and they need to have a key person that they would connect with and over a long and consistent relationship. Same thing with service providers, trust needs to be there for people too, and to know people's intentions and what they want to use that data for. Trust is huge, and the process of developing it is huge. (James)

What gets in the way of building trust with newcomers? In some cases, it seemed to be data practices. Several participants suggested that a focus on data can alienate them from their labour and their appreciation for newcomers as individuals (Hamid, Noor, Tanis, Zora). As mentioned

earlier by Noor, institutional research ethics board protocols can place requirements on individuals to interact with newcomers as data subjects. Hamid, an academic, said:

I think that when we're thinking about information and research and ethics of care, it is really a two-way relationship and building relationships. Also, this notion of taking seriously our responsibility for other peoples' information. I think that especially when people deal on a regular basis with other peoples' information and/or when we have multiple interviews or large-scale surveys, sometimes researchers may disassociate the data from the individual. This is part of the principle of anonymity; in a way, we are trying to disconnect it from the individual. But I think in that process people may forget that there is also a human being behind this information. I think that that's the advantage of the qualitative work, you know the individuals, you have a relationship with them, so it gives you pause when you are writing about them to think, "Okay, is this appropriate?" You can start asking yourself questions. But I think once we start gathering more information through online means or large amounts of information, the individual gets disassociated which means it is easier in a way to forget that there are peoples' lives behind that. (Hamid)

Institutional norms with data, such as separating research participants' identities from what they said for the sake of their privacy, may discourage researchers from understanding themselves in relation to participants. In turn, certain forms of two-way communication channels between researchers and participants, such as the use of Facebook or WhatsApp reported by Ash and Noor, may be prohibited by institutional research ethics boards.

Hamid expressed an interest in mutually influential relationships between co-participants in data care. Hamid not only wanted to strengthen two-way relationships with newcomers, but also with other groups with whom they wanted to communicate. They went on to talk about the connections they saw to other groups:

I feel very connected to the NGO and the advocacy communities. I feel connected to the service provider NGO community and also to the advocacy migrant justice groups. I feel like part of that is the work that we've done jointly and also because the work that we've done has been mutually beneficial, so I think there's a level of trust but also a level of people feeling like they're getting something out of it. It's not just a one-way street of putting into it. (Hamid)

Other participants also shared an interest in building stronger connections between themselves and others who care for newcomers (Finn, Ira, James, Valerie).

Individuals sometimes expressed confusion about one another's uses of immigration data, a source of skepticism linked with limited trust. Ethical boundaries and lines of responsibility for data care were seen as complicated by some. Cora, an academic, said:

I've never really been able to sort this [ethical matter of immigration data] through because of the intricacy of the issues involved. For example, what if group x has a higher rate of spousal violence and group x is a highly marginalized group? Where do you go there? That's an ethics question that I'm never going to be able to answer. There's trained ethicists and so forth who think about that kind of issue all of the time, but I'm not the person who is going to answer that issue, yet it needs to be answered because actually what I just said theoretically does exist. There are groups that are groups that are both

marginalized and have high rates of spousal abuse, child abuse. What's the trade-off between making that information available versus refusing to make that information available? People can literally suffer by not making that information available. In fact, let me put it in a more pointed way: Certain kinds of people will suffer if that information is made available, and other kinds of people will suffer if that information isn't made available. There's an ethical trade-off if ever there was one. I am not equipped personally to sift through those kinds of things, because I know those problems exist, but I've never studied [them], I've never gained expertise on how to deal with that. But I fully acknowledge that that's a major ethical headache that researchers have to face. (Cora)

The “*ethical headache*” seems a foggy space indeed. Clear delineations between groups do not seem evident to participants in the various roles with whom I spoke. Where one’s job ends and the others’ begin can be perplexing, especially when individuals share some of the same immigration data between them through systems such as iCare. Cora’s statement draws attention to their own and others’ confusion: Whose job is it to work through ethical dilemmas? Do distributions of labour for data care need to be re-articulated in every new project, or at every turn in existing projects?

Participants tended to draw boundaries by saying they did not understand one another’s ethical protocols, cultural worldviews, epistemologies or philosophies, methods, material realities, professional norms, politics, or visions of immigration and data. Valerie, for instance, saw cultural and professional divisions between groups exemplified in their work with data:

I think the sector is very siloed in a lot of ways: Both between settlement organizations, and between stakeholder groups. They look at each other differently, so my favourite

example is around the tech people – the civic tech people or the app makers or things like that. They look down on the sector in a lot of ways because the sector is not technically hip, they don't talk about co-creation and user experience, and stuff like that. They do not use the right language. You have technologists who come in, who might have the solution for the audience, but the conversation is like this – they don't meet each other, because one feels disempowered and talked down to, and the other feels like they are talking to idiots. I have seen these interactions and they are terrible to see. You need the cultural interpreters almost in the middle, to help host those conversations. Again, similarly with funders, and agencies, there are tensions about doing things for different reasons. Collecting data for different reasons sometimes does not come together, for example. With the silos, I think they are starting to break down slowly, but they certainly still exist.

I interpreted that confusion about boundaries, capacities, and constraints that condition participants' labour with data was associated with a sense of being misunderstood. Valerie's earlier comment on noticing "technologists" acting as if they were "talking to idiots" when in conversation with settlement service providers indicates technical jargon is a barrier, especially when paired with apparent condescension. I find Valerie's discussion of "technologists" is resonant with *technological solutionism*, a term which refers to a bias towards believing in the unalloyed potential, novelty, and utopian outcomes of implementing a tool or system. The logic of technological solutionism tends to ignore or reduce the complexity of societal issues by assuming a new tool might solve a problem (Kaczmarek et al., 2020). As I suggest that Valerie's example indicates, distinct disciplinary words and worlds of practice could be more confounding than convergent, their separateness making data care harder to coordinate on.

Cora, an academic, brought up the strain between academics and Statistics Canada, previously discussed in the last theme. Cora gave an account of a researcher who was seen by the government agency as having pushed the boundaries of their role too far. Cora explained that an immigration researcher had once been using a Statistics Canada data set in one of the institution's physical data centres. The researcher, out of curiosity, looked for themselves in the data set by searching for attributes such as their name, year of arrival, origin, and so on. Their search returned no results. The researcher claimed that they found an instance of a missing record. Cora elaborated on what happened next:

He wrote about it in a publication and published it. That publication actually had to be withdrawn, that person's access to further data was nullified, and in fact it created institutional ripples in terms of who would be given access to administrative data in the future and so forth. It was kind of a moment of serious rethinking on the part of Statistics Canada about what could be made available. So that's an example of what happens when researchers go in a direction that is considered too far. (Cora)

At issue is the matter of what is “too far,” a boundary that can be unclear. Cora gave an account of a conflict that can demonstrate the ethics of data practices are often implicit and potentially more flexible until a problem is raised. The researcher contended that Statistics Canada was not performing its job well enough if it was missing data. Then, the agency appeared to use principles for privacy protection to turn attention to what it framed as an unethical move. Cora said the researcher was not clearly in the wrong, and their attempt to look themselves up seemed not to have any intention to violate others' privacy. The problems raised by the researcher and Statistics Canada were at odds about one another's role and responsibilities: The researcher raised the problem of data quality and the government agency as gatekeeper of data, while

Statistics Canada raised the problem of the researcher's need to maintain the privacy of individuals represented in data sets on immigration.

I noticed that participants linked disputed boundaries in the ethical use of data with a competitive environment in the settlement sector. James articulated the financial motive for competition among organizations that seek to gain an edge on one another. James said:

We need to do our own thing, and we collaborate when there are opportunities, but we are on our own now. The way the funder shapes the landscape shapes how we do work, deal with each other and other agencies. Some of it is trust, but it is a competitive environment because the RfP, the Request for Proposals, is a competitive environment, which means that there is one piece of pie, or one pot of money and we are all fighting for that same piece of pie. I know on the ground what that means is that certain big agencies would not partner with us or work with us, because we are digging into their numbers, and it is all about unique client number count. (James)

They went on to illustrate how this competitive environment might limit newcomers' choice and access to services:

I know in the past, not naming agencies, we've reached out to certain agencies and said, "We have this wonderful program to help your clients in this certain class," and they say, "Nope, go away." They were very territorial and very protective of their clients. (James)

Ira, a designer working alongside service providers, said IRCC's funding model for immigration and settlement led to competition amongst organizations rather than coordination. At times, service providers did not see work to count and report on clients, by using program attendance

data for example, as possible or conducive to their goals. Ira reflected on a project in which they noticed this barrier to collaboration:

Because each program was funded individually, there was not the funder incentive to do a collaborative program. Unless the funder, say IRCC, were to say you are all mandated to participate in this collaborative program, the organizations felt risk because they are trying to meet their own targets for IRCC programs. They are supposed to match a certain number of newcomers to a certain number of volunteers, so that dis-incentivizes the collaborative aspect, and they don't know if this collaborative thing is even within the purview of what they can report on. They can see, "In theory this would be helpful for the newcomer, but I actually need to meet these targets specified in a funding agreement and this other collaborative thing is actually not part of it." So, that collaboration is really difficult to achieve because of the funding model. We actually had to do a lot of design where we are taking a lot of organizations' targets into consideration around the target they report on [and] how we could adjust their program [...] and that made it really challenging because everyone's funding terms are different and that made it hard for everyone to participate. (Ira)

Ash, an academic, raised lack of coordination among organizations as a problem caused by the funding model as well. When asked about how connected they found the settlement sector to be, they said:

It's not really well connected, it's one of the problems between government, community organizations, and academia. The connections are not really tied. Also, one of the problems is the competition between the settlement organizations. In Canada there are not many refugees like in Turkey, but many settlement organizations, and each one of them

fight for funding. There is not coordination, and refugees do not know what is the difference [between organizations' specialization in services]. (Ash)

Participants tended to see competition amongst organizations as a challenge for the settlement sector and detrimental to newcomers. Competition among organizations engenders power imbalances, where data can be used as a bargaining chip to win funds and influence.

We may be more familiar with the ways in which private sector technology companies collect and trade “user” data, but we may see a similar dynamic playing out with immigrant-serving agencies and community organizations. I found that some of the groups that seem to be engaging in this dynamic are non-profits or part of the federal government. Yet, a capitalist logic of free market competition in the collection of newcomers’ data, growth of data sets as assets, and protection of private or proprietary data sets and resources appears to inform aspects of multiple groups’ practices. In what ways might ideas of competition influence information practices with immigration data? What are the possible effects of competition? Kim reflected on these issues:

Even within our organization who collects the data – usually the collection of data comes from frontline staff, and then gets fed up to management and senior management, and then up to the funder whether they are government or whatnot. I think even observing – definitely within the settlement sector, when you're frontline you're focused on the impact of your service and the community member to get to where they need to be – you're not focused on trying to tell that story and supply the data to feed into that. They see the value and know what data is used for, but I think unfortunately in the settlement framework it has been embedded that the data is just seen as for keeping the funder happy. We haven't been

empowered, I would say, and not all of us, but I don't think we've empowered to leverage what data collection could look like, and benefit community and organizations. (Kim)

IRCC and other funders appear to exert influence on organizations to prove their “*impact*” and out-compete one another in their work and how it is represented. Competitive pressures are affecting the interactions of service providers with each other, with other groups with whom they collaborate, as well as the relationships between managers, staff, and newcomers.

The competitive environment is a labour condition which shapes possibilities for groups’ communication and coordination through their activities with immigration data. This environment may coerce groups to reproduce dominant, familiar, or seemingly safe patterns in their work with immigration data to be competitive, in the interests of being able to sustain themselves or their organization. In response to these dynamics more questions arise: How do groups feel compelled to act in particular ways with immigration data? What encourages, or even enforces, those activities? Where are perceptions of force or lack of choice imagined, and where are perceptions operating in the language people use, infrastructures and policies, and material digital and non-digital systems that they work with? Are possibilities for alternative practices being suppressed before they can be considered, debated, or created? While I cannot answer each of these questions in this inquiry, these issues for deliberation are revealed by exploring the quality of boundaries and connections between groups who co-participate in data care.

5.3.4 Challenges and Conflicts

I noticed that the interactions between groups and the interventions that they made in one another’s practices could contribute to convergence and disagreement. There were in some cases

clashes between what groups assumed one another's roles and responsibilities should be. This sub-theme therefore identifies how challenges and conflicts were described by participants.

Challenges and conflicts over the use of data were framed as productive to some extent (e.g., Ira, Lea, and Mark) and in other cases possibly damaging (e.g., Cora, Hamid, Noor, Tanis, Valerie, and Wendy). Participants described links between their labour conditions and challenges they encountered. Individuals specifically noted current funding models in the Canadian immigration and settlement sector, which they suggested perpetuate top-down patterns of governance and the extraction of data valuable to some and not others. Participants described how challenges contributed to conflicts between themselves and others. Conflicts over data care were avoided, revealed, and in some instances resolved.

When conflicts came up, they tended to be framed by participants as unaddressed or poorly understood. Conflicts were also seen as instigating potential harm to newcomers, the commodification of data, and communication breakdowns. Individuals did not pinpoint a single reason for conflicts (e.g., competition created through funding models, as previously discussed). Instead, conflicts were described as complex. The confluence of roles and their histories, labour conditions experienced by people in those roles, and the responsibilities they felt they could or could not uphold, contributed to this complexity. Participants identified feelings of confusion about questions, problems, or resolutions with regards to conflicts. The characteristics of conflicts with newcomer communities' data were not easily defined, nor bound to specific groups or activities.

Individuals raised tensions between their own and others' views. I found that the tensions that participants raised were situated within their labour conditions. Labour conditions affected how participants encountered and responded to tensions. Some found a way to work around tensions, and eased them to an extent. Some participants saw tensions as a part of recurring ethical dilemmas that they were still unsure how to address. Opposing professional norms between groups presented challenges. Ira said they came across such differences in professional norms while working as a designer, a job which brought them into contact with a range of settlement service providers. Ira gave an example from their piloting of a newly digitized employment mentorship matching system with service providers: *"That [matching system] was our proposition, and one of the most immediate barriers we came up against was the sharing of client information."* Ira noticed that the difficulty of coordinating across organizations may come from settlement service providers' ideas of care; that is, refusals to share client data with other organizations, which prevented the design and use of a shared mentee/mentor matching system. In this instance, Ira said they needed to work with settlement service providers' sense of care embodied in their decision not to share client data, and to let go of their plans to design a shared system.

Some participants described the challenge of addressing a tension in their activities within a single group or role. Valerie, as noted earlier, said they noticed a tension between caretaking in analog and digital contexts as performed by settlement service providers:

If I am on a Facebook group and I start talking about a client, and that client happens to be within my community and then it goes to the Facebook of that community, and then so and so is outed or so and so is stigmatized for a mental health issue. These kinds of things

happen all the time. It is about building in this notion of this is the same issue that happens offline, it is just online. (Valerie)

Valerie points to a tension they have witnessed: Service providers are familiar with analog forms of care for people and their data, while they may have a discomfort or lack of familiarity with enacting care in digital interactions. Valerie's comments suggest analog and digital interactions may be seen by service providers as different sorts of activities, leading to confusions and challenges with knowing how to remediate ethical commitments to caring for people when using digital systems. What if various analog and digital activities with data were reconnected, perhaps through updates to organizational information policies? Could forms of care in analog and digital contexts be seen as contiguous, rather than jagged and separable? Valerie's views suggest that it may be necessary to trouble the digital/non-digital binary in service providers' activities, and illustrate the need for policies and training to extend service providers' current experiences and norms around care to include digital interactions.

I noted that a different type of challenge was understanding the context for immigration data as it is shared between groups. Zora said:

Context and other stuff like that, I think that is another thing [to consider with immigration data]. That is harder, but I think it gets to the ethics of research and journalism and how things get reported and the duty to clarify if you see something that could be misinterpreted, or if the context does not fit. So sure, maybe it was a direct quotation, the number is correct, and everything is correct, but it is used in a context that is problematic. So, at what point do we have to speak up and clarify, to go, "Wait, sure that number is

correct, but the way you used it is totally outside the context, and you're using it in a way that was not intended.” (Zora)

Tanis also saw the need to carefully negotiate the line between knowing and not knowing. They raised questions about who settlement services are truly serving (and for whom services may be inaccessible) to demonstrate where larger data sets may not necessarily be better for answering questions like those:

It is what we don't see which is the most important thing, and that is definitely where big data sets fail us in. They trick us into thinking we know everything, and they are so huge, but we don't know everything. (Tanis)

Tanis invokes humility as a priority in data care. They suggest building in opportunities for pause and skepticism, since big data sets by design reduce context.

Risks with immigration data were at times uncertain, and this presented a recurring challenge for participants (Ash, Cora, Finn, Hamid, Lea, Mark, Valerie, Zora) – hence Tanis’s call for humility. Some individuals struggled with feeling like they could (or could not) foresee and prevent harmful consequences in their data care labour, particularly when working with others whose information practices and values were different. As an academic, Hamid remembered a dilemma brought on by assessing risks with newcomer individuals they interviewed:

On the level of the individual story, the concern that I have is when someone tells me something when I have a duty to disclose it. I try to tell people, “If you disclose self-harm or harm to other people, or that is technically illegal even if we may not agree with the legality or not of something, then I'm obligated to disclose it.” I don't know if people either remember that or recognize the gravity of what they are saying, for example, the child

protection issues. If young people tell me “I feel uncomfortable in this house because I feel like I might be sexually assaulted,” I have a duty to report that. That is where I find it is not necessarily information that is being misused, but what I am more concerned is that once I disclose that information to the police or child services, I then lose control of what actually happens to that information. We have to have faith in the institutions that we have, but we also know that those institutions have systemic racism in them.

We also know that immigrants, people who are newcomers and who don't have status or who have recent status as permanent residents or as citizens, are often quite concerned about having that status revoked. They are trying to minimize any kind of interaction with the police or other services. By reporting it, there is [a] danger in the way that the information can be used. (Hamid)

Hamid must act on their “*duty to disclose*” possible harm. For Hamid this means sharing data about individuals reporting potential harm, a principle that they go out of their way to communicate to participants, especially in their work with children and youth. Hamid’s labour conditions, then, include the challenges of contextualizing and acting on the ethical principles to which they are bound, while considering how sharing such data may put individuals at risk of systemic discrimination embedded in institutional and governmental systems.

5.3.5 Theme Conclusion: Labour Conditions

Participants’ varying labour conditions may mean that the borderlands of care practices are places where responsibilities blur, even as limits and zones of power are drawn between groups. As multiple groups work together to coordinate their activities, they claim particular activities,

delegate others, and some activities may be left in the spaces between them. I suggest that questions of to whom these acts of care for data are owed, and by whom they should be performed, can be at risk of being set aside when challenges and conflicts are avoided or unspoken.

5.4 Changes in Data Care

5.4.1 Introduction

The third theme in this chapter examines shifts in the performance of caring for newcomer communities and their data. In it, I follow participants' perceptions and reflections on past and potential changes to how data care is enacted. From incremental to immediate, concerning to promising, an issue in the past, present, or future, and experienced in their own working environment or elsewhere, participants discussed changes in relation to their role.

Individuals noted changes in their activities of data care, types of data they dealt with, and their sense of responsibilities (Ash, Cora, Finn Ira, Kim, Valerie). Some identified changes they sought out in ways of knowing and working with communities' data, with an interest in moving towards non-dominant or alternative data practices (Kim, Lea, Mark, Noor, Tanis). Others suggested the promise of experimentation with novel or unfamiliar systems. Academics and government actors were most interested in building or testing novel systems to analyze immigration data (Ash, Cora, Wendy). This theme is therefore organized by two sub-themes which indicate different orientations to change: The first sub-theme follows shifts which participants said they had noticed in their data care labour. The second sub-theme follows the possibilities for change in data care practices which participants imagined.

5.4.2 Noticing Shifts in Practice

This section focuses on changes in data care which participants witnessed. I attend to adaptations in activities of data care and the types of data deemed suitable to supporting or studying immigration. Participants' roles afforded them different views on changes in data care. Early in each interview, I asked questions about participants' roles and responsibilities, and their uses of data and technologies. In response, individuals often framed their work along a timeline, moving from older to more recent projects. Individuals provided background on their training, areas of interest, and understandings of the histories of immigration and settlement in Canada. During our conversations, individuals sometimes recalled specific information systems and technologies which had – or had not – been used in the past to draw a point of comparison, and to ground comments about changes in data care. Participants characterized these shifts along a continuum from slow seeping to a sudden flood of new expectations or activities.

I will move deeper into this sub-theme by focusing on one recurring pattern which many participants who work directly with newcomers noticed: changes in newcomers' information practices. Participants saw their own acts of data care were affected by newcomers' shifting information practices (Ash, Hamid, Ira, Noor, Tanis). Ash, for example, said that refugees' use of media and technologies was influenced by social and political ruptures associated with their experiences of forced migration. As an academic, Ash had also selected the intersections of these changes as the focus of their research:

During this period between 2006 and 2020, I saw a big change, a dramatic change that happened in the use of media and technology by migrants. When I started in 2006, my first

research was my PhD research at the time in the U.K., the migrants used mostly internet to receive information. They still didn't use much WhatsApp; they still didn't use much mobile phones like they do today. And then, it gradually started to change. In this period from 2006 to 2020, there were a few major global events that influenced migration, forced migration, and also the use of technology. It started from the Arab Spring. The Arab Spring in 2011 which actually led to a big wave of refugees and also it was the first time that citizens in these countries that later became refugees started to understand how to use social media. It was the first time that they really used social media. Later when they became refugees and it was a very rapid change, because there were people that protested in their countries, used social media and immediately some of them or many of them became refugees because they protested. And then they started using social media again. We had the Arab Spring and we had the Syrian conflict, and the problem with the refugees in Europe, and Brexit, and the Coronavirus. So, all of these events relate to forced migration and technology. (Ash)

In this passage we hear about the different modes of communication re-organizing what it means to protest, and who may not be safe when forms of digital, traceable dissent make individuals vulnerable to the backlash of their nation state. Ash continued by reflecting on their career studying these changes:

The difference between the time that I started my research in 2006 to today, the gradual change was that now [refugees] have the ability to use WhatsApp and mobile phone applications; so, the era of mobile phone applications, smartphones, was really to disseminate information without limitations of editing. They sent information by WhatsApp and received information, so this was a really big change for them and helped them. The

second layer – the first one is how we use it – started from the refugee camps. Today, refugees are being encouraged to use mobile phones for different reasons in refugee camps. (Ash)

Ash went on to discuss that they noticed refugees were encouraged by humanitarian agencies, researchers, and service providers to use mobile phones for purposes such as banking and access to services linked to personal identification while sheltering in refugee camps. Ash's comments emphasize the burgeoning uses of digital devices and data, which groups interacting with refugees have now come to expect from refugees. What this shift means for the magnitude of digital data gathered about migrants and newcomers is implicit, an issue raised by other participants (Cora, Hamid, Zora). Another academic, Cora, focused my attention on growing uses of immigration data by researchers and government. Cora pointed out current efforts to adapt strategies for collection and analysis of immigration data:

This one is very challenging from a privacy point of view, but increasingly there are efforts to link up that big suite of things – iCare, IMDB [Statistics Canada's longitudinal immigration database], census, taxes, with healthcare information. This is still a frontier to be developed. Ultimately researchers are going to be able to look at things like the health status of newcomers to Canada over time and how that changes, why that changes, and under what circumstances that changes. [...] That's another frontier that's being developed. There's going to be this effort to link everything together in terms of administrative files, such that there's just so much that could be done. (Cora)

Cora sees the potential for analyses of linked data sets to be helpful for understanding how newcomers' lives change as they settle. While privacy issues are an emergent aspect of this change in the use of data, note that they are flagged and left aside early on in this comment.

In addition to linked data sets, another type of change Cora discussed was in their access to immigration data as an academic, which has increased over time. Cora explained the reasons for greater availability and access:

[Greater availability of immigration data is] a product of three things at the same time. One of them is the accountability of the bureaucracy. If Canada is going to spend 1.5 billion dollars a year on settlement services, there's been this huge effort to show what that does. That accountability side is one thing. The second thing is a rise in computational power, and the kinds of software people are using as those things have improved over time. That's meant that more data can be made available. The third point is the Privacy Commissioner has taken an increasingly expansive attitude on what is allowable in terms of personal privacy. For some time, there was a lot of resistance, different Privacy Commissioners come and go over time, and there's been a lot of resistance in the past on linking administrative data files. Right now, the mood is more expansive rather than restrictive on that front. So, you put all those things together and a lot more data are available. (Cora)

In this passage Cora shows how the information practices of groups collecting, analyzing, and using immigration data have shifted because of requirements for accountability in the spending of resources, changes in available computational systems, and specific information policy positions of Canada's Privacy Commissioners. Materially, there has been more funding and systems that enable this type of work. Cora shows interpretations of newcomers' privacy are changeable, experienced as an "attitude" or "mood" that can shift. I find that varying

interpretations of policies to uphold newcomers' privacy is an example of the interplay between affective, political, and practical dimensions of caretaking.

Others spoke about new decisions being made about how immigration data should be used within organizations. Kim, a service provider, said they were evaluating the digital systems that they would or would not allow their team to use for communicating with newcomers. Setting organizational policies was a part of their role. As a settlement service provider, Kim said:

I think from an organization standpoint, [I want to have] clarity around what are those larger platforms that we are now strategically using, and pointing our staff to use for service delivery. We saw things come up around Zoom. Over the year [of the pandemic] we have had to shift, so just selecting those platforms that are secure and which make sense.

(Kim)

Kim saw the need to shift organizational policy and practice with information and technologies, given the turn to interacting with newcomers online during the pandemic. The difficulty of reactively developing alternative practices with immigration data and systems during the pandemic was a recurring pattern. Finn, a service provider, said:

With COVID-19, the challenge is that many of the interactions are through email, or virtual connection, and that is a new dimension that we haven't really done well before. When we're conducting a face-to-face meeting, is it better than conducting a meeting like this over Zoom? That's a whole new normal that we have to start looking at because we don't know how long it will continue to be like this. (Finn)

Others saw service providers' changing workflows as a chance to re-organize their labour with the support of systems and technologies:

Coming back to my first point about the transition from more manually done information to digital, I think that it is a big opportunity area right now around how equipped people are in understanding the implications of putting personal data online, as well as what tools are best suited for it. (Ira)

Ira is a designer working with settlement service organizations. Ira sees this period as a “*transition*” during which actors can engage in learning and strengthening data care. Others I spoke with might have seen this as a somewhat ambitious framing, influenced by Ira’s professional experience with iteration and cycles of development which are furnished with material resources.

Terms such as “*transition*” (Ira) indicated participants’ recognition of changes in their work. Valerie was working as a consultant to assist settlement service organizations with integrating systems and technologies into their activities. Valerie noticed settlement service organizations “*pivoting*” in different ways:

We're not all pivoting technologically, there are even more layers of knowledge that become challenging – how do I make the right choice about which systems to collect and analyze my data? How do I report that back? How do I ensure the data stewardship, and all those kinds of things? (Valerie)

Valerie says that they do not see these changes happening uniformly. They elaborated on changes that the settlement sector is negotiating simultaneously:

I've been working in the sector for about 28 years. [...] About 15 years ago, we were having those conversations [about integrating digital information systems and technologies] with the sector, but the sector wasn't ready, it was too early. There were

pockets of innovation happening in the sector, and they were starting to digitally develop if you will, but not a lot of organizations are digitally mature. Even during the pandemic a lot of them are still developing, while some of them are so mature that they're launching AI chat bots, for example. (Valerie)

A comparative view of organizational practices is evident here. Valerie identifies a spectrum from less to more “*mature*.” This framing suggests a developmental logic, where history, capacity, and information and technology interactions correspond to certain levels – referred to as “*baselines*”, “*benchmarks*”, or “*standards*” – against which individuals’ or groups’ engagement can be assessed.

Most participants’ comments about change suggest pragmatic concerns, situated within their personal experiences. Some other individuals’ reflections, however, emphasize cultural, historical, and political factors which shape data care. Lea and Mark, as stewards of the community-based data set on discrimination, brought these issues forward:

Who collects the data is very important. I think that we know historically data collection has been used as a form of policing as well. If you look at the incarceration of Japanese people, how did they know where they all lived, and how did they round them up? It is used as a form of policing, so we need to be very careful about who is collecting the data, who is determining the boxes that we pick, who is writing the questions, [and] who is making the categories. (Lea)

When I asked Lea what their concerns were for how newcomers’ data could be used, they returned to historical precedents for misuse of data to help guide their current thinking and actions. Lea elaborated:

For me I have more existential, or philosophical concerns. For example, if we're collecting newcomers' data, I am assuming that people are collecting data on race. But race itself is a social construct, so I think it is so interesting when we look at the history of the US census. I only learned this recently, that the option for Chinese appeared on the census only because there were concerns about the large number of immigrants from China. So that was the impetus for adding it to the census. It was also the first time that it was a nation-based classification rather than a race-based classification, and then of course it was white people that said, "Okay, we're going to add Chinese and we're going to add it now," and that shaped policy, that shaped everything. Who is creating the categories, and when we as a community can't even decide what, for example, Asian includes, we can't even come to a consensus amongst ourselves whether we want to be classified as Asian, where do these labels come from? Who is determining them? They also change with time. And, part of white supremacy is distributing groups by race, so is this all just playing into this notion that we are all separated by race? I don't know. (Lea)

Noor also brought up the history of white supremacist ideas influencing an interest in collecting and monitoring the data of migrants and minoritized groups. Noor spoke about wanting to creative alternative approaches to data collection. Noor was part of a community-based project with elders who were once migrants. Noor was training younger community members to act as researchers and stewards of their elders' life stories and teachings. Noor and their colleagues said they selected Shawn Wilson's book *Research is Ceremony* (2008) to inform their training of youth researchers. Noor and Tanis recommended that the book could be helpful for reorienting data practices. Noor said:

The whole premise is that research is ceremony, it is not just data collection and gathering. It is building relationships, it is a sacred practice. I feel so much of all that research and data collection is just colonial, it's a means of taking [from] societies. [...] White supremacists want to use it to show educated they are. Knowing that is where all of this is rooted from, gives us all a good hint to think about what the detrimental effects could be, given that it is rooted in white supremacy. (Noor)

Like Lea, Noor refers to what they see as the colonial “roots” of how data on newcomers, as well as their cultural and ethnic backgrounds, has been dealt with. These are histories that persist and pervade current data care practices, in Noor’s view. The changes they seek to make towards alternative ways of using information are situated in struggles for decolonizing and equity. When dominant practices with immigration data are rooted in western knowledge systems for organizing into categories and valuing within hierarchies, and in assumptions of narrow cultural diversity, what other data care practices can be grown?

5.4.3 Possibilities for Change

I continue to examine the theme of change in this section by turning to the potential for alternative practices imagined by participants. Individuals frequently pointed out aspects of their own experiences of working with information and technologies which appeared to be blocked or stuck. In some cases, these were points where participants saw trouble arising from their current forms of data care work and labour conditions. Some participants were not sure about what sorts of change should be made, but that change would need to be negotiated collectively amongst groups so that agendas for immigration and settlement could be mutually agreed upon.

Most participants appeared to be uncertain about changes in uses of immigration data and technologies in which they were not personally involved, as part of activities such as policy development, service design, and technology design. Some individuals were concerned about possible moves which could be made by government agencies to experiment with immigration data and technologies (James, Noor, Tanis). James said:

I'm not sure what they are doing currently and what they're discussing [in government]. I think everyone has different comfort levels. Some people are worried about having their information in a government database, and to be tracked [...] For efficiency of tracking information and ensuring this is the correct person, that would be great, but I don't know how comfortable all newcomers would be to do that. I think in some way they have come from governments where the use of that kind of information was not making them feel safe. So, from an efficiency point of view, that's great. But for security, safety, and comfort level, it would take a bit for people to get comfortable with that. If it is a law, and you come through the border and have to do a bio scan, then it's "Oh, that's just the way it is." I don't know. I guess that's just the way of the future? (James)

In this passage James wonders about techniques used by government, considering biometrics as an example which they brought up in our conversation. James notices that efficiency is often prioritized above all else in decisions about sociotechnical change. This comment suggests a perceived lack of agency in knowing about and informing decisions on the use of immigration information systems, perhaps a source of resignation to one's role outside the circle of decision makers in government.

Other participants emphasized the need for consultation about changes in the use of data and systems. Zora reflected on the example of COVID-19 data used to identify disparities in communities' health. Constructive use of data is guided by the community to whom it belongs, according to Zora, who said:

I think they were saying that people need to know, because the numbers are so high, that people need to know to help get the message across, so we can't be saying, "Oh no, it doesn't impact our community." We can say, "Oh, actually it does, and we need to figure this out." We need to think about how to do this with care, with thoughtfulness, to create good change, and not use to stigmatize, or to harm communities. This is why communities need to be consulted. (Zora)

I see Zora's statement indicates their interest in stronger lines of communication and coordination between groups for constructive change in caretaking activities. This also necessitates greater engagement with newcomer communities. Kim, a settlement service provider, suggested:

Quite often what we see within the settlement sector, we get a lot of reach out from folks within academia or other organizations that want access to the community members that we work with. I think it's gotten better over the years, but it still needs a lot of work as far as what is the reciprocal relationship that these people are going to engage when they talk about wanting to interview, and all those things. We have gotten a lot better through the years about having a conversation with folks before they are connected in with community members around what are the guiding principles around engagement here, what is the data going to be used for, and will community have access to it and benefit from it. We're able to encourage those discussions to ensure that any data collection that

we may be part of is actually community-centred, and somewhat community-led as well. When we look at participatory research, and how research is done, the actual framework: Is it stories? Is it giving time for people to actually share? Is it leaning into more qualitative not just quantitative [data], because so much gets missed when you're moving into that area? Then there is responsibility that comes with if you are the holder of data, at every single level and I think that from an organizational standpoint, we have responsibility from the frontline staff [... who are] interacting with the community member.

(Kim)

Kim says that issues such as the definition, type, and methodologies of working with data are contested, requiring continuous negotiation. Resonant with this point is the suggestion from another service provider, Zora: *"We need to do a better job, and not just us. IRCC, the sector, service providers, everybody communicating as we collect more and more data."* The changes that Zora sees require shifts in how groups relate to one another: *"We are the ones who are expected to protect all the data and make sure it is accurate. The support around that piece is critical I think [...] to do data protection."* While stronger lines of communication would be helpful for groups to recognize one another's various labour conditions and ideas of care, Zora says that communication needs to be in service of action, to pursue a more equitable distribution of data care responsibilities.

I wondered what sorts of pragmatic adaptations to current practices could bring about more equitable sharing of responsibilities. Several individuals stressed material and policy supports. As mentioned earlier, Valerie, a consultant, proposed the creation of standard ethical and sociotechnical *"baselines"* to clarify and jointly uphold responsibilities. Valerie said:

Still in flux is the notion of baseline competencies, baseline infrastructures, baseline technologies so that every agency and every settlement practitioner, every manager, has a certain level of competency that they do not fall below. Every agency, is for example, funded for a technology infrastructure that they do not fall below. It has certain aspects to it and one of them is privacy and security by design, for example. We are using technologies in a safe way. Then the onus is both on the funder as well as the organizations to make sure that everyone is meeting those baselines, and you can exceed them and go way above them if you want to. It is about establishing what those look like. Should our baseline look the same line as health or social work? I'm not sure; that is part of the conversation that needs to happen. What we do need is some sort of regulatory framework or standards for lack of a better word. [...] We don't have regulation in our sector, and we'll call them baselines so they don't seem so heavy-handed. In some cases, the sector itself is asking the funders, "Tell me what I need to comply with when it comes to privacy and security and data, just give me the rules," because they do that now for the in-person stuff. Here you must explain to the client why you're collecting that information and how it will be used for example. Well, how do I do that digitally? What is that baseline digitally? What are the tools we use for that? (Valerie)

The issue highlighted by Valerie is not that groups such as service providers are not complying with expectations for professional practice. Rather, such professional standards for immigration information and technology use do not exist, are shifting, or are unclear. In Valerie's visions of change, "baseline" competencies, infrastructures, and technologies would more clearly establish rules and supports for following those rules. Greater clarity about how data care should be performed could help organizations work with each other, the government, and their funders, as

well as newcomers. Like Zora, Valerie sees the need for enabling factors, not only funding, but also training and a regulatory framework which sets up individuals to have a sense of relevance and agency, infrastructures, and information literacies to implement policy locally.

Whether or not participants suggested specific plans for making changes to better care for communities' data – Valerie's baselines, for instance – many hoped to see greater funding and training directed towards settlement service providers' information practices. Service providers I spoke with repeatedly made interrelated suggestions for change. They suggested that ethical principles need to be collectively built and adopted to guide the use of immigration information, systems, and technologies. Service providers also suggested that material resourcing should be directed towards staff training, and that sociotechnical infrastructures should fit with staff motivations and routines. Based on what I have learned from participants, I believe that the development and adoption of principles would need to embody how data care labour is arranged across multiple groups' duties, rather than leaving ethical labour to be delegated or externalized.

Service providers were more specific about imagined changes, and quite aligned about the types of changes they would like to see (e.g., systems used, such as iCare, funding models, and ways that organizations should prioritize relationships ahead of administrative duties). All participants, however, appeared to agree that there needs to be stronger mutual understanding amongst groups who share, or should better share, data care responsibilities. Participants often indicated their awareness of boundaries between themselves and others, which could mean that they might have different visions for change in their practices. Several participants noticed that care was neither common sense nor coordinated. At the same time, they said that these conditions could be seen

as an opportunity to create a coalition between groups, which may establish grounds to deliberate about their information practices. Finn, for example, said:

One of the better ways, and I don't know if we can solve the problem, is [coordination amongst] the funders themselves; if there is any alliance, any coordination where they really talk amongst themselves [to agree on] what is the information that they need. Then they would approach the social service sector to see how the sector would respond collectively, so they come up with the information that they need collectively, and we will respond collectively, to how a system or systems could be determined and made available in response to the collective lead of the funder. That is one of the ways we try, whenever we have the opportunity to align ourselves to the Stats Canada definition, so that we have some consistency in defining who our clientele is, their age group, their ethnicity, whatever that we want to align, we want to have that, so that we have some common language and common approach. That is the recommendation that we see is important for the funder community and the service community to have that. (Finn)

By recommending a “*common language and common approach*” Finn indicates that settlement service organizations can more consistently report on their activities if measurables and their definitions are cooperatively established by funders, most often government agencies.

I find there are possibilities for stronger relationships and communication amongst groups as co-stewards of immigration data. I suggest that data care necessitate an ongoing conversation, a point that echoes the earlier suggestions from Ira and Zora. Individuals working on the frontlines with newcomers agreed that changes should be made so that activities with immigration

information and technologies can be adapted and developed with more fulsome opportunities for participation from newcomers.

5.4.4 Theme Conclusion: Changes in Data Care

Individuals had different relationships to making change in their data care practices. While some were interested in making change within their own local organization or project, others suggested they were more confused about changes, which they saw beyond their reach.

Adaptations to data care labour will likely influence how immigration and settlement policies, services, and technologies continue to take shape. These information practices generate evidence that guides various groups' strategies for action and moral reasoning about how immigration and settlement should look in the future. Yet, as participants have suggested, current and historical uses of newcomers' data are partial and sometimes flawed. Intentional or unintentional carelessness with data and systems can misrepresent newcomers under the guise of novel analytics, narratives, or emergent technologies (Cora, Tanis, Wendy, Zora).

The inheritances of colonial recordkeeping which informed dominant practices, especially those of government, could be left undisturbed by reproducing current expectations for the types of data collected about newcomers to Canada (Kim, Lea, Mark, Noor). At the same time, data care could hold potential to shift what some individuals felt was broken within immigration and settlement (Lea, Mark, Noor, Tanis, Zora). Participants acknowledged that within their information practices lay power to reinforce or to realign their collective processes and

outcomes. Power to shape change in dominant practices with data, however, was not seen to be equally held nor exercised amongst groups involved.

Although many participants noticed their information practices shifting, these changes were not experienced uniformly. I found there was not a vision of unified transition. Several individuals had noted chaotic, confusing changes, which they said tangled them together with other groups' actions and decision making, even if they were not able to participate in making those choices (e.g., Hamid, James, Noor, Valerie). All individuals I interviewed suggested that they were engaging with shifts that others had begun to make and respond to, which in turn influenced their own activities with immigration data. Better understanding dissimilar, simultaneous, and mutually influential changes in interconnected groups' information practices may support their capacities to coordinate, a contention I take up in the discussion of findings.

This inquiry is a blink in the eye of a social practice if considered from a longer timescale, in which the direction of changes may be discerned. My view is situated and temporally bound to the year during which I talked with participants. Given this standpoint, I find that there does not appear to be either general stabilization or disruption in practices of caretaking for newcomers and their data, but both. Stabilization may be needed for coordination in support of newcomers' wellbeing, while we may need reorientation and variation to move away from inequitable power relations in data care practices.

5.5 Chapter Summary

This chapter zoomed out on participants' information practices, offering themes generated from my close readings of reflections on their routines with immigration data and technologies. The themes are shaped by my interests in care ethics and practice theory, which emphasize caretaking as labour and as a practical accomplishment of communities. From my analysis, I identified three patterns, relating to 1) participants' experiences of data care as a form of labour; 2) the presence of certain conditions which structure how data care labour can be carried out, and by whom; as well as 3) changes in data care labour.

In the first theme, I began by following links between participants' experiences of their work. I interpreted that participants' activities are often organized into labour performed professionally and voluntarily, with varying degrees of proximity to newcomers and the frontlines of immigration service delivery. I noted inequitable dynamics, as heavier burdens tend to weigh on groups working directly with newcomers. I investigated how the outputs of labour with data are at times valued above the processes needed to produce and sustain it, finding that some individuals said they were expected to perform free labour or activities off the sides of their desks. Participants reported that a top-down hierarchical structure was often used to motivate, organize, and evaluate the credibility and quality of work with immigration data and technologies (i.e., indicated by managers, funders, and government agencies occupying the higher-level roles claiming more power to orchestrate this labour).

In the second theme, I examined labour conditions. I interpreted that material access to data, information, and resources in support of data care labour was differentially distributed (e.g.,

funding for training and implementation of systems). I found that boundaries and connections between groups were a feature of labour conditions because they influenced how actors may cooperate, compete, communicate, and come to grips with one another's varied norms. I also explored the conflicts and challenges that participants had encountered in their work. Conflicts were noted at the sites of clashes in groups' sense of professional expertise and responsibility, and confusion about one another's activities. A persistent challenge participants raised was the stewardship of sensitive data belonging to refugees, undocumented individuals, and others with precarious status.

In the third and final theme, my analysis was attuned to changes in data care labour. First, I followed shifts participants had noticed. Many individuals shared reflections on time spans of their careers and historical periods of immigration policy and settlement in Canada. Some reported that they had witnessed significant shifts in newcomers' information practices over one or more decades, and the increasingly personal data which could be gathered by corporations and governments about newcomers. Others trained their focus on the linking of large data sets on access to health care services, taxes, census, and landing and immigration records, which represented a move towards more longitudinal studies of immigration in aggregate.

I brought the chapter to a close by studying possibilities for change expressed by participants. Some were concerned with continuing effects of settler colonial government recordkeeping, seeing a need for re-examining activities with newcomers' data. Many participants suggested that changes to data care labour could be more cooperatively negotiated through modes of consultation with newcomers, collaboration with fellow data stewards, and information policy

deliberation. I draw on these findings in the next chapter, in which I discuss my development of a resource for hosting conversations about data care.

Chapter 6: Data Care as a Continuing Conversation

6.1 Introduction

Whereas the last two chapters offered my interpretations of interviews, in this chapter I provide an account of how I worked with others to prototype a resource that leverages findings from this inquiry to support continued conversations. The resource is a card set, entitled *Sangam*. *Sangam* is a word for a meeting place in the South Asian language, Sanskrit. The content of the cards is drawn from events, conflicts, dilemmas, and priorities raised by participants in the interviews.

As discussed in the preceding chapters, each activity with immigration data can involve caretaking responsibilities. If we imagine a typical lifecycle of immigration data reported on in this study, we can see that data are initially gathered by service providers from newcomers. Next, immigration data are passed on to managers or academics who may be removed from those early stages, and are usually more involved in analysis and stewardship. Immigration data may then be passed on to groups at a greater distance, such as funders and government agencies, who may have more power to share data sets in aggregate and determine future uses. In this web of actors negotiating the lifecycles of immigration data, I see possibilities for offering a resource back to these groups to support their reflexivity about ethical responsibilities which span roles.

I aimed for this resource to be a collection of conversation starters, in the form of cards, to promote communication between groups influenced by, and participating in, immigration data care labour. In particular, the cards' prompts may be employed to better understand expectations

and concerns of newcomers and their allies, in line with participants' calls for expanding procedures of consent, consultation, and co-design of information practices and policies.

Examples from previous work in interaction design and information studies demonstrate that engaging with physical cards can scaffold creativity, discussion, decision making, and individual or group-based learning activities. Cards have been found effective in deepening ethical reflection on the design, use, and future implications of information and technologies amongst multiple communities (Friedman et al., 2011; Urquhart & Craigon, 2021; Yoo et al., 2022), including organizations serving migrants (Gomez et al., 2020).

To create the set of cards I collaborated with a team made up of an artist and designers, who are introduced in this chapter. We prototyped a set of 28 3.5×5 inch physical visual and textual cards. The card set encourages reflection and deliberation between groups who steward newcomers' data, a need identified by participants and through my analysis of interviews. Figures 1–4 in this chapter offer select examples from the *Sangam* card set. In addition to the descriptions below each figure, the following sections draw out key aspects of cards in the set and their intended use.

I begin with my motivations for selecting a card deck as a research output. My motivations are based on the associations, features, and activities that cards can support. I then discuss the iterative design process of the cards, which was guided by affordances and intentions specific to this project, as well as the work of artistry and co-creation that led to its prototyping. I conclude the chapter with possibilities for assessments and future sharing of the cards.

6.2 Motivations: Why Cards?

I was motivated to trial a set of cards because of what I had learned from interview conversations. As I spoke with participants, I noticed a need for communication between groups, where opportunities to listen may be just as critical as opportunities to speak or be heard. I found individuals from different groups expressed a sense that their data care labour was at times invisible, overlooked, or misunderstood by others, whether within or outside their group, role, or workplace. A resource could be designed to bring out contested aspects of immigration data care labour, which may support groups to become more aware of one another's presence, with a broader understanding of their effects on one another. I turned to cards as a format in large part because of the examples I had seen employed to encourage deliberation and reflection.

The format of physical playing cards is often associated with skill and strategy in working within a set of parameters or rules. Card sets frequently include a rulebook or guidance on how cards may be used, a range of activities or roles for players, types or suits of cards linked to shared textual or symbolic meanings, and ways of combining cards into categories based on the interests of an individual or group. One of the purposes of card sets is play and participatory engagement in games, often simply for entertainment. Play for entertainment is an area of design and study which I acknowledge, yet it is not a focus of the card set described in this chapter. Instead, I turn to the several instructive examples that demonstrate a range of ways cards have been used to scaffold interactions in educational and research initiatives, or what scholars have called “serious play” (Gomez et al., 2020).

Cards can be used for conveying complex information clearly and briefly. As a two-sided medium, cards may balance text-based information with visual cues. A card set may offer different affordances than a more academic document genre used to communicate about the ethical implications of information practices, such as a policy brief or white paper, for which there may be the possibility of an individual becoming overwhelmed or assuming that linear reading is expected. Speaking from my own experiences interacting with card decks from the fields of design and information studies, I find that a card set can invite one to think of oneself and issues at hand differently than if the same content was covered in a written report. In the latter case, one might imagine one's role as primarily that of a *reader* (although more or less active), and possibly less so as a *decision maker* who must choose how to approach, adapt, remix, and organize a set of cards. The medium of cards invites agentic interaction, since individuals select, sort, and review items from a set, and choose how to engage with textual and visual prompts included on each of the cards.

Some card sets serve as conversation starters for members of a community of practice. This is an approach reflected in, for instance, the *Library of the Future Trend Cards*¹. The card set includes a set of 26 “trends” and why they might matter to libraries and librarians. The cards focus attention on changes in the realms of society, technology, education, the environment, politics and government, economics, and demographics. Each of these realms serve as categories of the cards, intended as prompts for information professionals’ reflection, library initiatives, and strategic planning. Trends were identified by the *Centre for the Future of Libraries*, affiliated

¹ See <https://www.ala.org/tools/future/trends>

with the *American Library Association*. When I first reviewed the cards, I noted a skew towards technology in the composition of the whole set, and less of a focus on communities and environments of which libraries, information, and technologies are a part. At least 10 cards directly relate to an assortment of technological artifacts and digital modalities (e.g., badging, gamification, and virtual reality).

As I suggest in pointing towards this example and others, card sets are by no means comprehensive nor neutral resources – and it is due to qualities like these, not despite them, that cards have the capacity to encourage conversation. Card sets can serve as provocations to reflect on what topics may be abundant *or* missing from a collection or set, thereby sparking critical thinking. Several years after it was initially published, the *Library of the Future Trend Cards* were updated to include a card about changes in libraries in response to the COVID-19 pandemic. Even when published, many sets of cards may be considered a work continually in progress as “users” adapt and re-shape a card set. The form of a card deck can allow additions of subsequent topics or categories. There is yet to be further addition to the sole card in the environment category of the *Future of Libraries Trend Cards*. I note that this, however, may be an indicator that such a focus on “trends” is limited by presentism, out of step with a long-term timeline of changing circumstances and the need for ongoing engagement with such matters. As the existence of this card deck illustrates, the medium may be invoked with an interest in timely issues, drawing attention to points of dialogue and opportunities for learning. As I read more about the *Future of Libraries Trend Cards* on the associated website and accompanying materials, I wondered how that deck was designed, what types of activities it had been used to support, and whose interests it sought to advance. While reviewing card decks such as this one, I

returned to the question of how cards are crafted – that is, by whom, through what techniques, based on what evidence or reasoning, and for what purposes – and to what extent those design processes are elaborated on in published academic literature.

In the context of academic or professional design and information research, cards have been employed to draw attention to matters of public concern for discussion, and to slow down or pause design processes so that certain complex issues may be raised which otherwise may be skipped over or backgrounded. One project relevant to this study sought to make emergent data protection regulations more accessible to designers within the European Union (Luger et al., 2015). Another project summarized common aspects of everyday life which a technology may influence, through categories which refer to scale and disruption, usage, equity, and access (Artefact design studio's *Tarots of Tech Cards*²).

Some card deck projects focus on supporting ideation and reflection during the design process, aiming for professional designers to be intended users (e.g., Yoo et al.'s *Metaphor Cards*, 2018; Urquhart & Craigon, 2021). Urquhart and Craigon created a card set to encourage reflections on ethics in information technology design. Urquhart and Craigon noticed that the use of cards may help to embed thinking about ethical implications in design processes, which can be contrasted with externalized or post hoc assessments by ethicists (on this point, a reader may recall Cora's interest in delegating ethical issues with immigration data to trained ethicists).

² See <https://www.artefactgroup.com/case-studies/the-tarot-cards-of-tech/>

Other researchers have found cards useful when supporting conversations between and amongst heterogeneous groups; for instance, supporting “non-designers” to participate in discussions of how information systems and technologies should work, imagining intended and unintended uses, and considering how to uphold values through design and use (Friedman & Hendry, 2012). Some cards have been developed to support critical discussions amongst members of the public across different audiences and areas of interest. One example is part of the *Unbias Fairness Toolkit*³, which focuses on investigating the effects of algorithmic systems. The toolkit was developed with youth by artists and designers, who reflected on the process of creating the cards and pairing the topics with artistic representations of the history of computing and digital civics.

Gomez et al.’s *Mind the Five Card Game* (2020) is perhaps most similar to this project, not only because of its focus on migration but also because of its underlying motivations to support reflection, learning, and understanding among data stewards. I was fortunate to participate in a conference workshop co-hosted by creators of the card set, in which the *Mind the Five Card Game* was trialed (alongside others in this workshop, I had the opportunity to engage with the card deck and offer feedback on its design). Prior to creating their set of cards, Gomez and colleagues found that undocumented individuals and other migrants with irregular status in the United States experience intense privacy risks. Undocumented migrants also often face greater risks because they seek supports from humanitarian organizations providing services, yet humanitarian organizations such as churches, public libraries, schools, and health centres may not adequately protect migrants’ privacy and security even if they strive to, due to a “lack of

³ See <http://proboscis.org.uk/6002/illustrating-for-algorithmic-bias>

means or proper training” (Gomez et al., 2020, p. 117). As a result, Gomez and colleagues proposed five guidelines for the information practices of humanitarian organizations:

1. Prudence: Collect as little information as possible.
2. Protection: Secure the information you do need to collect and store.
3. Training: Make sure volunteers and staff are aware and trained on privacy protection; help your users be more privacy aware.
4. Share Alike: Work with collaborators and partners who share your concern.
5. Non-Discrimination: Offer services to all, including those who do not want to share their personal information (2020, pp. 117–118).

Based on these guidelines, the *Mind the Five* cards seek to raise awareness about the privacy of undocumented migrants and other vulnerable communities served by humanitarian organizations. The cards are designed to focus attention on the lived experiences of undocumented migrants, bolstering awareness and empathy amongst individuals working in humanitarian organizations to strengthen their privacy-protecting practices. The format of the *Mind the Five* cards includes the five guidelines, along with examples of three types of organizations, and prompts to imagine information behaviours of those organizations and respond with a rating system – a series of three smiley faces corresponding to “good,” “okay,” and “bad” reviews of information behaviours brainstormed by individuals playing with the cards. Gomez and colleagues assessed the cards with academics and students in educational settings through a questionnaire and verbal feedback. Participants in facilitated activities reported that the cards provided a non-judgmental setting for conversations, and helped to mitigate how overwhelming topics may be (i.e., migrants facing dire repercussions of privacy breaches). The authors and creators of the cards suggested that players were in turn enabled to question their expectations that digital technologies include adequate privacy protections by default.

Parvin and collaborators (2022) have raised questions about the extent to which the increasingly popular formal characteristics of cards may at times lend too trivial or tokenistic an air to matters of concern, scholarly interests, or research participants and populations. Parvin's points about the possible pitfalls of cards used in design can be helpful when considering whether cards would be appropriate in relation to a certain group of actors, situations, and intended modes of conversation. This critique also trains our attention on motivations for developing a card set as an output of research. Rationales to avoid include: i) claims that cards may represent and speak on behalf of communities in decision making and design; ii) aims to comprehensively summarize or close down conversation in an area of research or design; and iii) novelty as a primary motivator.

Informed by the examples and critique of card decks, I chose to create a set of cards with an awareness of some of these possibilities and pitfalls to avoid. I found the form appealing for its potential to be used when opening the types and topics of conversations which I had with participants in this study. I anticipated that cards – imagined as a series of adaptable prompts offered by a group facilitator – could be used in encouraging more participatory design and decision-making *with* communities influenced by and involved in data care activities, and considering alternative points of view on immigration information practices among those communities. My findings, reported in chapters four and five, suggested that a diversity of groups work with immigration data and technologies, who have a range of political views, professional norms, cultural values, and goals. Groups tend not to recognize this diversity, nor “see” one another as fellow data stewards with whom they need to coordinate. Groups are therefore not well positioned to collectively negotiate their varying ethical perspectives on

immigration and data from their silos (that is, silos associated with the roles of the five groups of participants: researchers in academia, service providers in the settlement sector, staff in government, migrant justice advocates in activist circles, and builders of systems in the design profession).

Early in my thinking about cards as a research output for this inquiry, I turned to the *Envisioning Cards*.⁴ The *Envisioning Cards* enable reflection on four conceptual strands for longer-term systemic thinking in the design of information systems and technologies. The four strands for the set include *stakeholders*, *time*, *pervasiveness*, and *values*, along with a set of four cards that individuals can use to add to the set with their own cards. On each card, its topic is elaborated through a visual and a written explanation and prompt to engage in an activity, offering users grounds for personal reflection, embodied activities (e.g., sketching a process, identifying roles, imagining a scenario, role playing, drawing a diagram), and group deliberation. The *Envisioning Cards* were influential during the construction of the *Sangam* card set in several respects – especially the structuring of cards into conceptual categories, the mix of questions and prompts, supports for thinking through scenarios, and an open orientation to the interests of different groups.

6.3 An Iterative Design Process

The cards were created during the research project's initial interpretation and writing stages, with the guidance of Franks' *dialogical narrative analysis* (2010) and *reflexive thematic analysis* from

⁴ See <http://www.envisioningcards.com/>

Braun and Clarke (2019). Early stages of narrative and thematic analysis of interviews from the research project were used to generate the four categories, *Care*, *Culture*, *People and Relationships*, and *Stories*, which represent issues brought up by participants as they talked about their information practices related to immigration. As I drafted topics and textual content, I prioritized representing areas of confusion, conflict, decision making or debate, and open or unspoken questions about information practices raised by participants during the interviews. In doing so I developed an initial set of approximately 60 card topics, which were sorted and condensed into the current set of 24 cards. The card topics that made the final cut were issues marked by ethical complexity, as they were topics on which I noticed interviewees had raised conflicts or questions which had been left unaddressed (e.g., matters of debate such as how to work with collaborators who are data stewards, means of culturally and linguistically appropriate informed consent with newcomers in service organizations, and the future developments of techniques with data and technologies by the government which could be used to enforce border policing).

Four blank cards are included in the deck to support prompt development by those engaging with the set. Cards in the set can be changed in response to arising challenges, needs, events, policies, and technologies. The cards are meant to be flexible enough to be used by individuals and groups who were not interviewed as part of the project, including newcomer community members.

To help generate design criteria, I recalled situations in which the cards could have been helpful in the discussions, events, and projects I had joined. Situations included times when individuals told me they did not know where to start conversations about the ethics of working with

immigration data, or encountered a question, problem, or difficulty in making decisions. I aimed for cards to be a possible resource for individuals and groups in the immigration and settlement domain when, for example, they are learning about newcomers' expectations for data care, adopting a new information system or adapting an existing system, and updating their organization's information policies.

6.4 Art and Co-Creation of the Cards

I approached potential collaborators to discuss the design criteria and intentions for the card set. Following introductions from a generous colleague, Rodrigo dos Santos, I connected with a group of artists and designers to co-create a prototype of the cards. I had some of the earliest conversations about the cards with Olúwásọlá Kẹhìndé Olówó-Aké⁵, a professional artist and design researcher who agreed to work on the project together. Olúwásọlá offered *Aroko* as a visual framework from her Yorùbá heritage. Olúwásọlá and I sought out the expertise of Ruby Pang, Arina Sin, and Katherine Gillieson from *The Stationery Project* at the *Emily Carr University of Art and Design* to create the cards. Ruby, Arina, and Katherine engaged us in dialogue to identify intended outcomes, objectives, specify a format, and embed aesthetic and technical considerations, which we drew up as a project brief to guide our process. Ruby, Arina, and Katherine in turn offered advice on material production, usability, and feedback on how the prototype could be iteratively created and updated. The arrangement of textual and visual content is based on dialogues with collaborators from the design team and exchanges with colleagues.⁶

⁵ See <https://www.kehindeolowoake.com/>

⁶ Many thanks to Rodrigo dos Santos, Michelle Kaczmarek, and Lisa P. Nathan for sharing insightful connections and introductions to collaborators, invaluable feedback, and suggestions during the design process.

Throughout the rest of this chapter, I present figures which offer select examples of the cards we created.

During my earliest conversations with Olúwáṣọlá we discussed the findings of my research, our interests and approaches, and ways in which we could represent research findings in a tangible output. We reflected that visual imagery and terminology of *pathways* and *open doors* were often used in metaphors for immigration and settlement in Canada: Consider the name of one of the largest Canadian conferences attended by immigration researchers, *Pathways to Prosperity*. Idealizations of linearity in immigration processes and violent settler colonial notions of “open” spaces, lands, and data are in need of deconstruction. With this in mind, Olúwáṣọlá and I sought out visuals and language to represent dynamics of active exchange and simultaneous integrity in the boundaries that groups may wish to uphold. We were inspired by connotations of thresholds and meeting points, which could bring groups together with an understanding that groups *may or may not* want to be affected by one another’s data care practices and views on immigration.

To examine alternative ideas and visual metaphors, each of us offered some aspects of our cultural traditions. What we created respectfully borrows from Olúwáṣọlá’s Yorùbá heritage and my own South Indian background. Olúwáṣọlá offered the visual language of *Aroko*, a means of carrying messages between groups through significant symbols (Ojo, 2013). Olúwáṣọlá shared that *Aroko* had traditionally been used to forge, strengthen, or break ties between groups. Each of the four categories of cards have a unique visual pattern drawn from *Aroko*, as discussed in the booklet which accompanies the card set. Figure 1, for example, features artwork and text for a card on “Stewardship of data” in the *People and Relationships* category. The visuals for this

category of cards evoke contrasts in positionality, emphasizing the possibilities of connections and disconnections between groups in the web of immigration and settlement processes.



Stewardship of data

- Who owns and takes care of newcomers' data?
- Are there multiple responsible people or groups of people involved (e.g., researchers, staff or volunteers, governing bodies, boards, partners, or corporations)?
- Do we share decisions about stewardship of the data with others? Why or why not?

4

Figure 6.1: A card in the *People and Relationships* category, which includes markings inspired by Aroko traditions of sending and receiving intricate material and visual messages between members of a community.

We also drew upon the conceptual connotations offered by the Sanskrit word for a confluence of rivers, *Sangam*.⁷ Naming the card set *Sangam* communicates our intentions for the cards to serve as a meeting point for actors in the immigration and settlement sphere, while the integrity of different origins or points of view are acknowledged.

6.5 Aligning Intentions, Learnings, and Affordances of the Cards

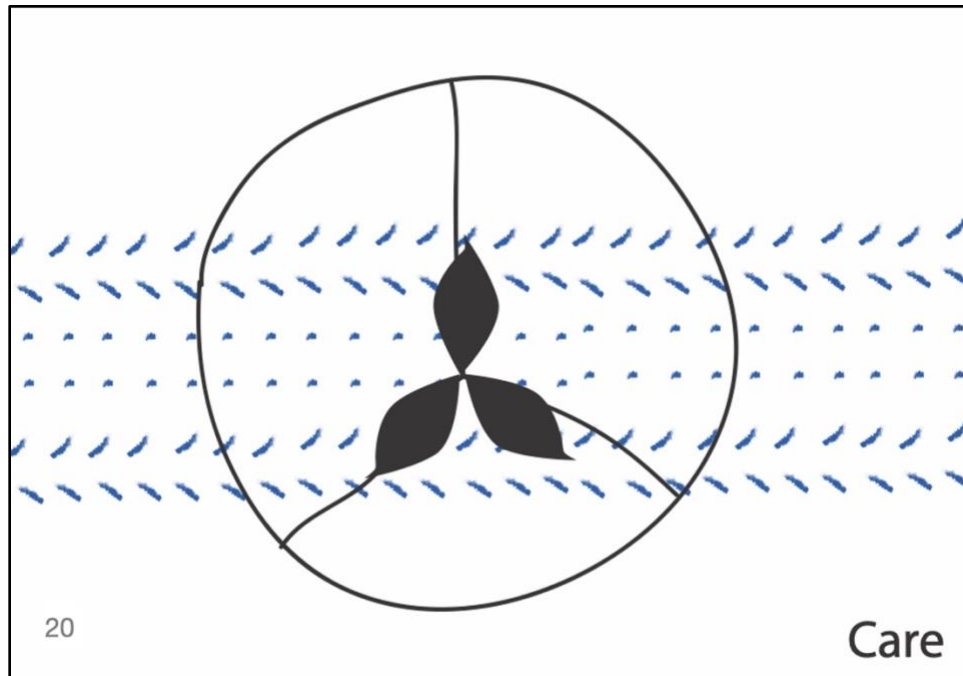
As mentioned earlier, my intentions are that the *Sangam* cards offer one option for hosting facilitated conversations about how newcomers' data should be cared for, providing some starting points and structure. What these cards are *not* meant to do is close down conversation, trivialize issues, or contribute to tokenistic representations of communities, with the warnings of Parvin et al (2022) in mind. I intend for the cards to enable meaningful perspective-taking between and amongst groups in the roles of "data stewards," "data subjects," and others who engage in immigration information practices.

The affordances of physical cards can support these aims, in alignment with what I learned from participants in the research project. The groups that support or study immigration through their use of data are situated in very different contexts and have varying concerns. The cards are intended to mediate conversations that are not currently happening between these groups, whose data care activities are often separated by space, time, and hierarchies. The five participant

⁷ The suggestion and teachings about the Sanskrit word's significance are thanks to my father.

groups are understood as the potential “users” of the cards. The flexibility of a physical set of cards from which prompts to discuss *data care* can be selected supports groups’ choice and adaptation, with the freedom to think creatively in response to the cards’ prompts. In line with the goal of facilitating the meeting of multiple stakeholders, the cards acknowledge a plurality of perspectives that one or more groups may hold about data, ethics, and immigration. One knowledge system, setting, or technological system which may be familiar to individual “users” is not assumed. The card set, however, does emphasize a shared concern for newcomers’ wellbeing and a commitment to the need to support respectful deliberation about uses of their data.

Through short narratives, questions, and prompts for conversation, users of the cards are asked to pay attention to others’ varied professional roles, training, labour conditions, political and ethical views, cultural backgrounds, and settings for their work. The cards make space for individuals to step outside of their typical activities and assumptions about who is responsible for data and technologies, which may be implicit or unspoken. Individuals are encouraged to “see” and “foresee” the everyday practices of others with whom they may not typically interact, and whose cascading, interconnected effects of their data care labour may be difficult to construe.

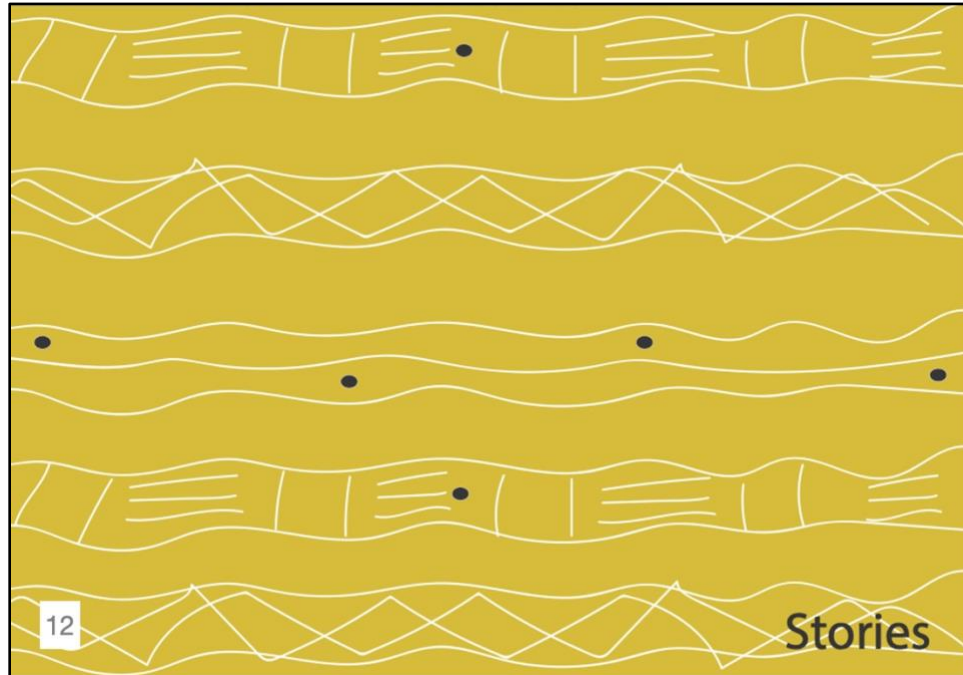


Different interests in data

- What are our interests in, or needs for, working with newcomers' data?
- Does the data we collect answer our questions or meet our learning needs?
- If working with other collaborators: What are all collaborators' shared and different needs for data? What questions do we each bring to this project that are unique?
- How might we measure what matters to us?

20

Figure 6.2: The top and bottom images correspond to the front and back of this card in the *Care* category.



Accessibility awareness

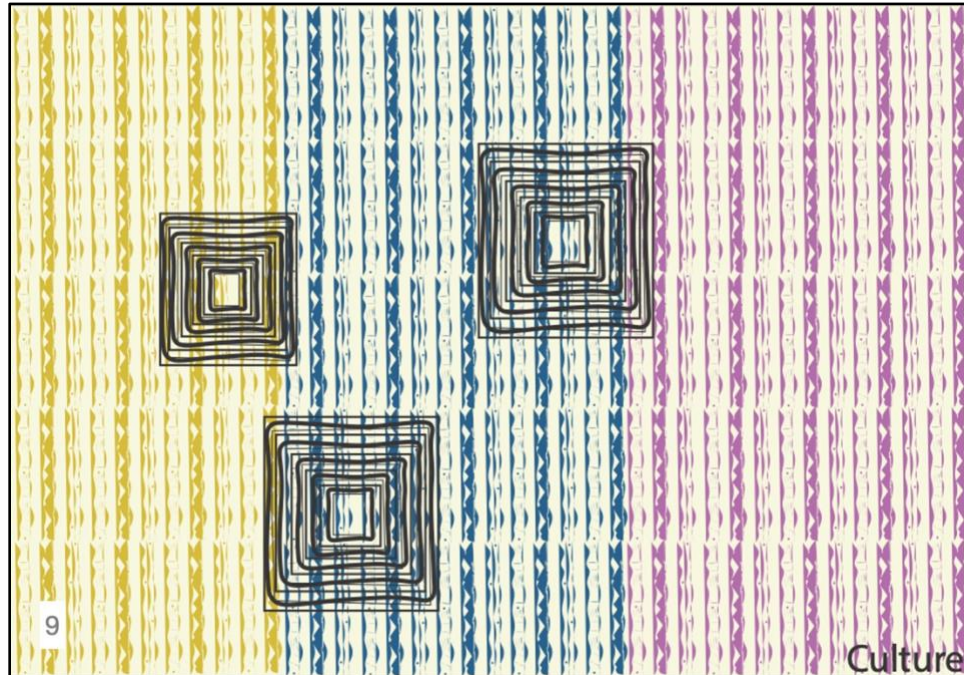
You are a refugee claimant who arrived in Canada a few months ago. While waiting for a decision on your claim, you decide to seek out community services. Before you begin a new program at a local organization, you are asked to provide some details through a form, which is written in English. You are being asked for your immigration status, your gender identity, your country of origin, and your cultural background. You believe answering these questions may be required to join the program.

- How do you feel about answering these questions?
- What might you do next?

12

Figure 6.3: A card in the *Stories* category which invites reflection on the experiences of newcomers being asked to provide data to access services.

The written content of the cards aims to focus on ethical concerns and tensions which interviewees shared with me, which most participants said they had not previously had such an opportunity to discuss. If not for a resource to facilitate and focus conversation, groups may not have the opportunity to discuss what some participants called “*pain points*,” “*sore spots*,” or “*iceberg issues*” with one another (Tanis, Valerie). Individuals within the same group or organization may need to coordinate their stewardship of newcomer community members’ data, yet may struggle with addressing difference in one another’s perspectives.



Dynamics of data work

- Thinking about how our work is funded and structured, are there dynamics of collaboration, coordination, or competition that motivate our work with data, for example?
- If we are aiming to better collaborate and coordinate, do we share ideas and language for our practices with data?
- How can we build more common ideas and language about our work with data to understand one another?

9

Figure 6.4: A card in the *Culture* category which invites reflection on dynamics of collaboration, coordination, and competition within information practices.

The card set is designed to be used in discussions involving multiple groups with varied interests, as well as within the activities of relatively similar groups (e.g., individuals in the same role, such as settlement service providers, or individuals working across roles in the same organization). Owing to its form, the set is divisible into separate cards, which can be applied to the issues that are most important to one group at a certain point in their work or in the parts of the lifecycle of immigration data in which one or more groups participate.

The booklet accompanying the card set outlines situations in which the cards can be used to host conversations or support reflections on data care labour. The booklet also describes the design process, refers to this research project, and elaborates on the *Aroko* artwork and specific symbols' significance that relate to each of the categories of cards (e.g., cassava leaves used to communicate about nurturing in the *Care* category). The booklet includes sections entitled "Using the Cards" and "Starting Points." These sections provide suggestions for integrating the cards into one's current work. For example, one such suggestion focuses on changes in data care labour:

Reflect on any changes you would like to make through (or within) your work with data.

Select one or more cards that could help to support the changes that you imagine. You may, for example, consider a new project, service, or system you are developing. Return to these cards when making decisions about how data and technologies may be used.

In this way, other suggestions similarly invite users of the cards to consider their own context, curiosities, and questions, which they may explore by browsing through the cards by theme or card topic.

The booklet that accompanies the cards offers possibilities for how to use the cards to host discussions. Yet there are no set rules or roles, no requirements for numbers of players, nor winners and losers. Modes of engagement are open-ended. Prompts may scaffold ethical reflection and understandings of individuals' place in a wider web of labour in relation to others' varied perspectives, policies, and practices. Users of the cards may be able to seek out and listen to one another's perspectives, by talking and taking turns in a cooperative manner.

To distribute the card set, I plan to create a webpage on the project and publish a digital version of the card set under Creative Commons licensing (CC BY-NC-SA). The goal is for the card set to be freely available online, which individuals can choose to download and print if they wish to work with a physical version.

6.6 Future Activities with the Cards

At the time of writing, the card set is in the form of a full draft, which I will print and distribute to each interview participant. I plan to send all participants a summary report on the findings, including an update introducing the card set. The update will describe how the card set is based on project findings, specifically the opportunities I see for further supports to start conversations about the ethics of working with newcomer communities' data. In my introduction to the card set, I will share several suggested activities for using the cards (e.g., as summarized in this chapter, and in the booklet which accompanies the cards). I will also share an invitation for any interested participants to stay in touch about their experiences of using the cards in their work, and feedback they may have on its content, design, and usage.

In the future, I plan to develop workshops on data care, which could be hosted with the types of groups I interviewed as part of this project and in other contexts. Towards this goal, I will develop a guide for hosting discussions about data care, integrating cards into facilitated activities. Workshops with the cards could also include an assessment component to consider workshop participants' experiences of using the cards. More broadly, I am interested in organizing future inquiries into how the card set and other design-based techniques like it can enable decision making and dialogues on the ethics of information practices and policies in spaces such as community-based organizations, classrooms, and design labs.

6.7 Chapter Summary

Based on findings of this inquiry, I learned that actors on the frontlines of working with newcomers suggest their perspectives need to be better recognized by their peers and others in positions of power to make choices about how data care is performed, resourced, and supported. The *Sangam* cards are informed by the potential for deliberation, exchange, and mutual learning to shape ongoing changes in immigration information practices.

The design of the card set provides a series of evocative prompts which can turn attention towards the ethical complexities of data care labour. The card set may be integrated into groups' work, for instance, through facilitated discussions, review at specific points of decision making, and activities involving planning or evaluation. The *Sangam* cards offer a means for groups, such as the participants interviewed in this inquiry and others in comparable roles, to negotiate their interdependent information practices.

Chapter 7: Discussion and Conclusion

7.1 Introduction

In this chapter I return to the original research questions along with additional queries that developed during the project. The first section is organized by questions and responses which guide the discussion of my findings. I also summarize findings in accordance with interests expressed by project participants, utilizing a series of tables. Subsequent sections articulate the project's methodological and theoretical contributions, limitations, future work, and reflections to conclude the inquiry.

7.2 Discussion of Findings

7.2.1 RQ1: What Information Practices are Prominent in the Work of Different Groups who Collect and Analyze Newcomers' Data?

I interpreted acts of *data care labour* in the work of each participant. Data care included activities of collection, creation, access, ownership, stewardship, management, analysis, reuse, sharing, retention, and destruction of immigration data. Such activities could be considered information practices in a broad sense. A fellow information practice researcher may ask, what is the point in understanding these information practices specifically as acts of data care labour? I offer the term *data care labour* because it can establish possible conceptual connections with wage labour, accumulation and assessment of value, employer/employee relations, alienation from one's work or its products, and other economic considerations which the term *information practices* alone does not convey.

In the first theme, I attended to the characteristics of collective performance and the coordination of multiple data caretakers or stewards, each of whom work in varying labour conditions (see themes in Chapter 5: *data care as labour*, and *labour conditions*). Data care emphasizes that these are information practices performed *on behalf of* a group with intentions to support the group's wellbeing. Groups engaged in *some* of these activities while relying on others for activities they did not perform. That is, groups made demands and expectations on one another for one another's activities with data, creating divisions of labour among themselves (see theme: *data care as labour*, and subthemes: *demands and expectations*, and *inequitable dynamics*). Academics and government staff, for instance, typically relied on settlement service providers to conduct immigration data collection.

Some actors did not perform certain activities due to challenges or conflicts which blocked their participation. Service providers consistently articulated challenges with accessing and using the very data that they created. Wendy's story referred to these barriers to accessing and analyzing data (see Chapter 4, "*The problem is that the service organizations themselves do not have access to the data they enter*"). Wendy reminds us of IRCC's unfulfilled obligations to return data collected through the iCare database to service providers. At the same time some individuals, including service providers, were at liberty to selectively pass on data care activities, delegating them to their peers, different groups, partners, contractors, or volunteers.

I analyzed distributions of labour for communities' data which are inequitably shared. I found that migrant-serving organizations and government agencies are positioned in the role of interconnected stewards, who need to share information to accomplish the design, provision,

assessment, and management of services. In contexts outside of the immigration and settlement services sphere, scholars have shown how data analytics and emergent technologies have been deployed in social services with interests in innovation, calculation of risks and benefits, and the circulation of limited attention and resources for caretaking (Bharti et al., 2021). The introduction of new sociotechnical systems in social services can be accompanied by neoliberal government framings of cost/benefit analyses of interventions, modes of individual (or patient- and client-centred) consent and decision making about personal data, and scarcity of attention or funding for public and social services (Dourish & Gómez Cruz, 2018; Eubanks, 2018). Government adaptations to sociotechnical infrastructures of care reconfigure uses and users of data, a process which can be contested when information policy, practices, and community members' expectations for data use are not aligned (Carter et al., 2015).

Scholars such as Eubanks have found that individuals who access services (i.e., "clients") may have very little choice about how their data is cared for by organizations and government agencies. A similar link can be made to a study which examined *ecologies of data* about homeless community members and housing services shared among policymakers and service providers (Karusala, Wilson, Vayanos, & Rice, 2019). Karusala and colleagues emphasized the importance of better understanding client-facing staff members' experiences and interactions, particularly when considering the introduction of new data-driven techniques. Findings add to these areas of work in several respects by drawing attention to how actors stewarding communities' data may agree and disagree about their responsibilities, and by examining a wider range of actors involved in the lifecycle of immigration data as it circulates from local service organizations to federal government agencies. This inquiry also adds to what we know about

datafication in service contexts by highlighting the demands for newcomer communities' data and the variety of responses to these demands from actors who steward their data. Immigration data are used as part of measurements of immigration service eligibility and evaluations, calculated in decidedly economic, quantified terms by Canadian government agencies or government-funded organizations – uses of the data which can run counter to local priorities.

7.2.2 RQ2: Do They see Their Practices Shifting? If so, how?

Participants noticed shifts in their information practices over years or decades, and anticipated changes or made suggestions that could lead to desired changes in data care (see theme: *changes in data care*, subthemes: *noticing shifts in practice*, and *possibilities for change*). Kim shared a reminder of service providers' adaptive capacities, which were refined in response to crises of displacement (e.g., "*Operation Syrian Refugee*") and the pandemic. Kim told a story which suggested that service providers had already encountered turning points in their information practices. Kim emphasized that service providers and newcomers can respond to political and sociotechnical changes. Their story reminded me that data care labour was continually changing. For individuals like Kim and the clients that they served, their data practices had already been remediated in response to patterns of displacement and the Canadian governments' concerns for resettling certain displaced groups, including Syrian refugees. All participants said that they were negotiating a period of changes because of the pandemic, during which many of their interactions with newcomers or immigration data shifted in some ways with the increased necessity of digital documents, systems, and remote work from home.

Individuals, however, noticed they have uneven capabilities to effect change in their practices of data care and everyday work routines. Participants emphasized the different forms of power they possessed to wield resources and make decisions about immigration and settlement data stewardship. Most participants said that newcomers and service providers were not often invited to participate in efforts to shape data care practices initiated by government staff or academics. In contrast, designers stated that they prioritized concerted efforts to consult newcomers and service providers in these types of decisions, as part of their willingness to “*design with*” others (Ira).

Participants imagined changes that would support more equitable dynamics in data care responsibilities shared by all groups. In doing so, they expressed interest in stronger ethical guidelines, enabling communication about appropriate data practices, funding for data care, and staff training in the ethics of using data and digital technologies at work.

Changes in data care can be considered in relation to what information scholars have noted about the difficulty of altering our routines, when information practices are built into large scale infrastructures, designed systems, and dominant norms of communicating, living, and making decisions (Nathan, 2009). In this inquiry, remaking dominant ways of working with immigration data was a struggle for actors who perceived they had less agency to explore alternative practices, some of whom said they felt beholden to other actors. Participants noted that more dominant and hierarchically organized actors (e.g., funders, government agencies, police forces, larger and better funded service organizations) claimed epistemic authority, were afforded greater access to financial resources, and as such were able to enforce demands for newcomers’ data to be delivered or evaluated on their terms (Hamid, Ira, Lea, Mark, Noor, Tanis).

I see continued opportunities to study changes that groups feel they are constrained or enabled to make in and through their information practices. Existing work on collapse informatics (Tomlinson et al., 2013) and information practices during transitions (Ruthven, 2022; Willson, 2019) is highly relevant in this respect. Studies of transition, however, tend to track one group or cohort closely over time (e.g., nursing and public health scholarship's *transitions theory* developed by Meleis et al. (2000)). What could we learn by examining how multiple groups in a particular domain seek to make changes in the way that they collaborate and enact care, through shifts they navigate at the same time across roles?

I suggest that further research could follow groups' intersecting and conflicting understandings of the rapidly changing situations they are negotiating. A few relevant contexts include emergency response, health care interventions, and shifting ideas of community safety in response to discriminatory carceral policing systems, where there are continued debates about uses of data analytics and emergent technologies in support of reconfiguration, reform, or transformation. Of particular concern, for example, is the climate crisis as the largest collective health problem we face, which scholars have found is understood by individuals in vastly different ways (Salas & Hayhoe, 2021). There may be great diversity within and among groups who negotiate a shared change – including a breadth of ideas about what is required of them given the circumstances, and how they may adapt and respond to the diagnosis of a societal concern by acting with certain forms of data and technologies.

7.2.3 RQ3: What Would They Like to Learn From Newcomers' Data?

Groups had situated interests in learning from immigration data, tied to their roles and responsibilities. Individuals' axiological, epistemological, and ontological expectations for themselves and one another sometimes appeared tangled together. That is, participants in different groups appeared to hold various expectations for what was worth knowing and learning about immigration, which stakeholders should benefit from research about immigration and settlement, how one could learn about newcomers' experiences of settlement, and what one could know about immigration through specific forms of data. A service provider, for instance, told a story of the challenges of responding to IRCC demands for quantitative data, which assume quantitative data is more generalizable and can help the government to evaluate service organizations by comparing numbers of clients served and metrics of so-called success in settlement, such as gains in job security and economic stability after arrival in Canada (James). Such a framing of newcomers' lives and the calculable value they bring to the Canadian economy leaves out what their personal life stories, professions, and ambitions were before they arrived and began to access services. The data collected about such an individual newcomer is partial and subsumed into national/settler narratives of what it means to be(come) a Canadian. Their data is made to serve a Canadian nation state narrative. James also shared their own situated goals to learn from data that was observational, up to date, and specific to neighbourhood-level activities and concerns, all of which were criteria for the validity of that data in their view (see also related subtheme: *divisions of data care labour: valuing labour with data*).

Some participants told me that members of other professional groups claimed epistemic authority over members of their own group. Individuals noticed that others used either their role or their position within a hierarchy to make these claims of credibility to set agendas for learning from immigration data (Finn, Hamid, Ira, Lea, Mark, Noor, Tanis). The same participants suggested they found fewer opportunities to learn what they wanted from their data practices. The matter of who sets an agenda for learning, and brings that agenda to decisions about data practices, is an important question to consider when these practices are collectively performed.

Participants' experiences of learning from immigration data through their data care practices can also be considered alongside Lave and Wenger's insights about the overlap between multiple communities of practice (1991). Even though information systems like iCare may be assumed to fulfill the needs of others by some groups, such as government staff, iCare was not seen as adequate by service providers. In this inquiry, participants' goals for learning were often at odds, which made it difficult to learn with and through the same information and systems. If these findings suggest that multiple communities of practice are connected by data and systems that they share, though their needs and priorities for learning are in tension, how might groups in contention be better supported to coordinate? Emergent questions such as this one could be explored within the context of societal challenges currently marked by polarizing information and deepening social, economic, and political divides.

7.2.4 RQ4: What are Their Concerns for how Newcomers' Data is Used?

Participants often expressed ambivalence about how others interact with immigration data (i.e., their co-stewards, who work as settlement service providers, academics studying immigration,

migrant justice activists, government staff managing immigration and settlement, and designers of systems). Individuals raised concerns related to others' activities of collection or creation, analysis, ownership, re-use, retention, sharing, and destruction. Participants told stories of warning (e.g., Ash, Cora, Valerie, Zora), or discussed challenges and conflicts when they revealed their concerns about others' activities (see theme: *labour conditions*, subtheme: *challenges and conflicts*).

One of participants' main concerns was that the collection of immigration data is a default demand required to access services. Service providers negotiated a tension between administrative requirements and interpersonal interests in building relationships with newcomers as individuals (see subtheme: *divisions of data care labour*, subtheme: *demands and expectations*). Service providers noticed over-collection and fatigue with data care labour amongst themselves and newcomers.

Academics, service providers, and migrant justice activists raised further concerns, noting examples of how immigration data had been used to perpetuate representational harms and misunderstandings about immigration amongst members of the public. Zora, for instance, told a story warning about one instance of carelessness in a researcher's "*flawed study*" to examine non-resident home ownership in British Columbia by reviewing the names of homeowners that signalled Asian origin. To Zora this was a source of methodological flaws because the study did not bother to disaggregate residents from non-residents, nor consider how country of citizenship cannot be discerned from surnames (no matter the ethnic background). Zora had seen news media articles referring to data from the study, which had become fodder for anti-Asian racism,

evident in comments about the article. The study represented several ethical missteps on the part of researchers and journalists, to Zora. Participants' concerns such as these brought forward questions of how newcomers' data should be analyzed, and within which narrative frames it can and should be understood.

Newcomers are missing from decision making and design activities with their personal or community-level data. How does this missing perspective manifest in data practices? If newcomers are not able to influence how their data is cared for, their situations may not be considered to anticipate processes and outcomes of using their data.

Newcomers who are asylum seekers, forcibly displaced peoples, undocumented individuals, or temporary foreign workers tend to experience more intense conditions of vulnerability, which are a factor in their information practices (Gomez, 2016; Lloyd, 2020). Yet the term “newcomers” as a category used by the Canadian government and service organizations, and as an imagined “data subject,” can hide their dissimilar conditions and consequences of misusing their data. My writing of this chapter coincides with the latest in a wave of decades-long calls for the Canadian government to grant permanent residence upon arrival for migrant farm workers, students, and others facing precarious conditions. It is clear there would be ramifications for any changes to immigrant status categories the federal government recognizes (and does not recognize), which would in turn affect how and by whom data is gathered about newcomers to determine their eligibility for services and supports.

Participants were also concerned that their peers may lack an awareness of cultural and political dimensions of caring for newcomers' data. Examples illustrate what may go unspoken between caretakers and "data subjects." In these situations, activities or alternative choices were not articulated. Certain norms are seen to be obvious; often those which are dominant, whitestream, or western. Participants said that they had struggled with learning about and acting upon cultural and political differences between themselves and newcomers as they navigated consent, privacy, communications, and relationships between "data stewards" and "data subjects." An academic, Ash, shared a warning about their concern for Syrian research participants' or informants' risk of being targeted for surveillance by government actors in Syria under the regime of Bashar al-Assad. Another participant discussed how they became aware of cultural and political differences in ideas about how information should or should not be shared: A service provider, Noor, said that they now relied on their colleague to help them interpret newcomers' boundaries with data and research activities, after finding out that their own and others' expectations for hospitality and politeness were not uniform. Through these experiences, Noor said they learned that newcomers' preferences for limiting the sharing of personal information and refusing recruitment may be subtle or unspoken. Researchers, therefore, might overstep their privileges and place burdens of expectation on newcomers.

Previous work shows that displaced peoples' data has been used in crisis response by pro- and anti-migrant actors alike. Detrimental consequences include denial of displaced peoples' right to seek asylum in contravention of international agreements; withholding of resources or services; spreading of discriminatory and misinformed narratives about migrants; profiling and over policing of migrants; and the transformation of agencies and service providers into security

guards or police forces, among other consequences (Achiame, 2020; Kaurin, 2019; Latonero et al., 2019; Molnar et al., 2020; Walia, 2021). Insights from this project offer another angle, in contrast to previous work on datafication at borders or in refugee camps. Border crossing is only one piece of newcomers' stories (Jackson, 2013). I spoke with groups who discussed routine uses of immigration data once newcomers begin living in Canada, exploring shifts in immigration information practices within the country rather than at distant locations, or by government officials and border patrol agents alone.

Information scholars have examined minoritized communities' and migrant and refugee community members' experiences of privacy, finding the need for context-aware strategies to respect privacy on community members' own terms (Vannini et al., 2019). Vannini and colleagues, for instance, focused on humanitarian agencies and service providers as actors who gather data about migrants and refugees. Vannini and colleagues indicated that aid agencies' and service providers' information practices may unintentionally make migrants more precarious if they are not aware of their situations and the specific inequitable and vulnerable conditions which they face in their everyday lives. In addition to aid agencies and service providers, there is a wide array of groups whose interconnected information practices affect newcomers' wellbeing (i.e., immigration researchers, designers of systems, government staff, and activists; as well as other groups indicated by participants, including journalists, and actors in the carceral criminal justice system). In addition, this inquiry complements other studies' emphasis on privacy as a value of concern by looking towards the multiplicity of actors' values in immigration information practices.

7.2.5 RQ5: How do They Suggest that Newcomers' Data Should be Cared for Ethically?

During interviews, I found that using the term “care” to ask questions related to *RQ5* held space for interpretive flexibility. Participants said they cared about immigration and settlement, and often said they personally cared for newcomers' wellbeing. How care for newcomers could be realized through their work with information and technologies, however, was up for debate (see theme: *data care as labour*).

Care for newcomers' data was framed as a “*burden*” (Lea & Mark), a “*duty*” (Hamid), and a responsibility that stretches out over time (Ash, Noor, Tanis). Several participants said that data care actors have a responsibility to imagine future implications of others' use or misuse, or possible unintended consequences (Hamid, Lea, Mark, Zora). Others noted that newcomers' data should be stewarded with an appreciation for variations in cultural norms which inform ideas of care and expectations for information and technology use (Ash, Ira, Noor, Tanis, Zora).

Participants told stories that gestured towards their suggestions for ethical data care. A designer told a story illustrating tensions between possible benefits and consequences of decisions (Ira). Some participants said caretakers should be prepared for conflicts with other actors, resistance to demands, and boundary setting (Lea, Mark). Limits were also important to others, including in Tanis's warnings against over-collection of data and underdeveloped security mechanisms. A few participants said that assumptions of similarity in cultural and political views between themselves and others could be a stumbling block, which could inhibit understandings of how others might want to steward and use newcomers' data. In those stories, care for data was framed

as culturally specific (Noor), and mindful of political motives for using immigration data (Hamid).

The collection of participants' stories may broaden moral criteria with which to assess uses of immigration data and digital technologies. In the fourth chapter, I examined how meanings of care were illustrated more often through stories than abstract definitions. Where definitions guided a few participants' understandings of care, these definitions were still organized by a description of routine activities (e.g., Wendy's explanation of the aspects of caretaking performed by government staff). Understandings of care for communities' data seemed to develop over time; individuals told me they had experienced situations which became resources for them to communicate their expectations for caretaking to me and to others. I found that witnessing participants' developing and shifting sense of caretaking echoed ideas articulated in *values as hypotheses* scholarship, since care was considered through narrations of activities and outcomes (JafariNaimi, Nathan, & Hargraves, 2015). The ethics of caring for newcomers' data was continually under construction, as groups worked through negotiations with one another. In this sense, participants' insights also reflect Parvin and Pollock's (2020) arguments for anticipating outcomes of the design and use of technologies as a moral imperative, rather than brushing aside "unintended consequences" as inevitable or the result of unavoidable compromises.

My conversations with participants remind me of Langdon Winner's critiques of impoverished moral criteria for technologies (2020). Winner argued that efficiency, material wellbeing, and risk of physical harm are insufficient, and the most basic requirements for technologies. If these

are the only criteria we apply to tools and the data and information those tools are entrusted with, what we care about and for whom we care may be restricted. By borrowing from Winner's critique of the narrowness of moral criteria for technologies, we may extend a similar critique to how communities' data should be treated. Moral criteria for the use of immigration data are perhaps too constrained by influential actors in positions of power over others – e.g., government staff, managers of settlement service organizations, or academics attuned to research ethics board regulations and hesitant to engage with the “*ethical headache*” of practical decision-making. I found that dominant groups that set the moral criteria for immigration data tend to designate (or, delegate) responsibilities to one actor or group, rather than realizing the realities of distributed responsibilities.

Continuing to develop a care lens on immigration data may be helpful to elicit serious consideration of many more criteria from cross-sections of actors who are stakeholders. Possible moral criteria arising from this study, for example, foreground the responsibilities of different data stewards, deliberation with communities, forms of democratic participation in decision making, awareness of tensions and conflicts in data practices, and practices which are minimalist, secure, culturally specific, and politically informed.

7.2.6 RQ6: What is Their Sense of Whether Their Practices are Aligned with Other Groups who Work with Newcomers' Data?

Participants tended to express confusion about one another's labour conditions and practices with immigration data (see theme: *labour conditions*, subtheme: *differential access to data, infrastructures, and resources*). Individuals also often drew attention to what they saw as

differences between their own and others' goals, capacities and constraints with data and systems, and professional norms (see theme: *labour conditions*, subtheme: *boundaries and connections*). Even participants within the same group and role, such as service providers, said that their peers' professional norms could differ (e.g., Noor's reminder story of service providers' identity, "*They lose sight of, are you here to help newcomers or what?*").

Points of contention between groups made data care work harder to perform (see theme: *data care as labour*, subtheme: *divisions of data care labour: demands and expectations, inequitable dynamics, questions of credibility and data quality*). One point of contention shared among several participants was a lack of transparency in federal government decision making about immigration policies and procedures with data. Participants' concern for the federal government's use of their data was made evident through questions of trust. In other words, some participants wondered whether their data practices made much of a difference in influencing decisions or policies, and if the data that they provide is used to support or to subvert newcomers' wellbeing (e.g., Ash, Finn, Hamid). One service provider (Finn) told a story to this effect about their sense that "*you really don't know whether your specific issue will be picked up by government, looking at all the inputs.*" Given these views, I suggest there are grounds to govern immigration data care more collectively and create opportunities for communication and coordination across data care actors.

There is a wide range of scholarly work on Indigenous data governance, sovereignty, and stewardship which advances a caretaking approach to communities' data (Carroll et al., 2020; Kukutai & Taylor, 2016; Lawson, 2004; Rodriguez-Lonebear, 2016). This inquiry is indebted to

longstanding projects which have examined the networked qualities of stewardship amongst groups, as well as calls to centre community members' control over their own data, information, knowledge, and research initiatives (e.g., Wilson, 2008). Lawson's (2004) work on stewardship of communities' knowledge amongst stakeholders has been especially instrumental in how I aimed to approach this project to highlight interrelations among groups' practices. Lawson's research helped me to learn that norms around use of communities' data may be constructed locally, yet the same norms may not be embedded in the contexts where more distant data stewards work. That is, a network of stewards may include individuals who are participating members of communities to whom data belongs, while including actors who are less familiar with community members' everyday lives, interests, and priorities (e.g., individuals situated in government agencies, institutions of higher education, or libraries, archives, and museums where communities' data may be presently held). In the immigration context, the ethics of stewarding newcomer communities' data need to be more strongly developed, supported by efforts to understand interdependencies among networked actors, and to (re)direct recordkeeping practices of the Canadian government and institutions.

Findings of this inquiry could also be reviewed alongside anti-discrimination policies which prioritize community-led participation in governing boards and decision-making bodies to guide the use of communities' own data (e.g., the "Grandmother Perspective" report, BC's Anti Racism Data Act - Bill 24). Given what I learned in this inquiry, it could be important to consider how these types of policy developments and their implementation may address alignments and misalignments in groups' understandings of one another's responsibilities as caretakers for data.

7.3 Interlude: Generating Contributions in Conversation

This section provides a noticeable break from the style and concerns of other sections. In it I organize my interpretations in relation to participants' interests, looking for points where participants' interests and findings overlap. To provide some background for what prompted this interlude: While completing the dissertation a colleague asked me about how findings of the project could be used to understand the interests of certain participants or groups. My colleague wondered how the findings might support the interests of migrant justice activists in particular: What had I found out, for instance, about distinctions between advocacy and academic forms of work? Were activists' and academics' practices with data compatible? Since activists' work was so often separated from academics' work on immigration – to the extent that my colleague pointed out terms like temporary foreign workers and modern slavery were seen by some as incommensurable – what could be done? How could these groups “hear” one another if they used data in such different ways? What were activists struggling with, and what had they taught me about their work?

I talked with my colleague about the questions that continue to swirl around the project, even after spending months analyzing interview conversations. To their questions, I shared that it had been challenging to find ways to recruit migrant justice activists. As an outsider with an ongoing project, there were limitations on how much the direction of the project was open to their input. I had not developed the research project alongside activists in some of the groups I reached out to for recruitment. I still grapple with these ethical and methodological matters of relating to participants. The one group with whom I shared more in common were the academic

participants, although their experiences were different than my own as a graduate student. Aside from the differences in our areas of work and interests, one of the other challenges lay in relating to participants with whom I shared no physical presence, and limited time. Yet, the very same challenges provided a shape for the project, allowing me to move between groups.

In the next section, I communicate possible practical contributions and implications through a series of tables. The tables are organized by my understanding of the most prominent interests of each group motivated by the questions offered by my colleague, as discussed above. Over the next several pages, I present tables which outline interests expressed by members of each group with whom I spoke, project findings related to those interests, and implications for action. Still, these tables are based on my views, and do not presume that participants would all agree on these interests, findings, or implications.

7.3.1 Contributions: Practical Implications

Interests of Activists	Related Project Findings	Implications for Practice
Organizing community-based data projects to support their advocacy	Activists gather and steward collections of data about newcomer communities – e.g., data sets on discrimination. Activists are faced with demands to share their data from government agencies and journalists.	Establish and act on boundaries to resist unfounded demands for data from government agencies, journalists, and other groups who may request access to data. Resistance can be used as an opportunity to teach others

		about data care-grounded ethical limits on the use of data.
Telling evidence-based stories to reach government agencies, settlement service providers, journalists, and other groups	Activists found that their credibility as data stewards and storytellers was assessed based on academic affiliations, professional training, and objectivity. Narrow understandings of credibility may constrain activists' potential to be heard by audiences they wish to reach.	Explore alternative techniques of assessing, sharing, and valuing community-based data work. Communicate the importance of proximity to groups with lived experience. Group “insiders” can act as credible stewards and storytellers. In addition, “insiders” may have greater trust from their peers, and may elicit more accurate information than “outsiders.”
Sharing the labour of migrant justice activism with peers/group members	Uncompensated and voluntary labour based on individual members' initiative and interests can become difficult to pass along to peers or future group members.	Make decisions about the longevity and lifespan of projects to gather data – consider questions about maintenance and handoff. Assess the characteristics of data to be gathered (e.g., what

	<p>When groups are doing informal and voluntary work, they may need to use free or low-cost information tools which are contradictory to the group's ethical orientations (e.g., using a corporate tool such as Google Sheets despite concerns with its advertising and surveillance practices).</p>	<p>personal information is gathered intentionally and unintentionally, whether individuals can be re-identified, whether there are community-level risks if certain neighbourhoods or activities are revealed). Consider the possible implications of a data breach. Be aware of the benefits and downsides of using a particular information tool, given characteristics of the data and the risks it poses.</p>
<p>Motivating accountability in governmental and institutional decision making on immigration issues</p>	<p>There appear to be few measures to promote accountability in the Canadian government's adoption of emergent information technologies to regulate immigration. The government's introduction of some new information systems (e.g., iCare), as well as automated and</p>	<p>Migrant justice activists could partner with immigration researchers and legal scholars to investigate automated and algorithmic systems used by the federal government. Through procedures such as access to information or freedom of information requests, further research may analyze whether</p>

	<p>algorithmic technologies, may have gone without input from newcomers and service providers.</p> <p>Groups who would be influenced by new systems are not necessarily invited to participate in design and decision making.</p>	<p>the implementation of proposed (or existing) emergent systems could subvert or support migrants' wellbeing.</p> <p>Methods that support deliberative, participatory design may better investigate a broader range of potential ethical concerns and outcomes of new systems and technologies introduced by the government.</p>
Revealing settler colonial, discriminatory, and racist practices associated with Canadian identity, history, and narratives about immigration	<p>Activists noted that discriminatory practices can be implicit in norms with immigration data. Racial classifications introduced in census forms, for example, date back to settler colonial states' historically white supremacist policies of immigration.</p>	<p>Based on their ethical stance, activists are well positioned to provide guidance in questions about how immigration data can be more respectfully collected, managed, and shared. Activists' community-based data practices may offer lessons in how caretaking for data can be performed locally within organizations, research projects, or in other settings.</p>

Table 7.1: Practical implications for migrant justice activists.

Interests of Settlement Service Providers	Related Project Findings	Implications for Practice
Exercising local control over data about newcomer community members who access services	Service providers' capabilities to determine their local data practices are constrained by funder and government data practices.	Settlement service providers can collectively establish agreements about ethical norms and limits with data, which would recognize matters of local ownership and control.
Strengthening capacities for working with immigration data and systems	Government and private funders provide limited supports for infrastructures and trainings in ethical issues with immigration information and systems.	Funders can allow for organizations to identify local needs and accordingly direct funds towards infrastructures and trainings with immigration information and systems.
Prioritizing interactions with newcomers ahead of administrative tasks	Service providers said they felt pressured to document their activities, track newcomers attending their programs, and detail their use of funding. Administrative tasks such as these could distract from their attention to newcomers as individuals.	Settlement service providers may consider holding internal discussions amongst managers and staff to debate procedures for data collection and reporting. Discussions could focus on the data practices of frontline staff – e.g., what staff expectations are; where staff are finding tensions

		between their professional identity and responsibilities given the expectations of managers and design of systems such as iCare.
Reckoning with settler colonial, racist norms that have organized immigration policies, programs, services, and narratives about identity, belonging, land, and home	Service providers noted settler colonial constructs which shape the immigration system; they saw ethical problems with the federal government tracking newcomers' settlement to calculate return on investment for the development of the economy and the population of the nation state.	Service providers may work with others (e.g., migrant justice activists, academics) to investigate how dominant settler colonial constructs in the immigration system may be identified, how they have bearing on their everyday practices, and if/how these constructs can be dismantled.

Table 7.2: Practical implications for settlement service providers.

Interests of Academics	Related Project Findings	Implications for Practice
Learning about others' interests and questions in the multi-disciplinary realm of immigration and settlement	Academics studying immigration and settlement described "data" differently, in line with their own disciplinary norms and interests. As such, expected competencies with	Initial stages of research may open with an exploration of the interests of each of the groups involved. Once interests are expressed, a fuller conversation can be had about what forms of

	<p>data, methods, and norms varied, even if variations were not explicitly articulated.</p>	<p>data are required, what data already exists, ethical norms and expectations, why certain methods are chosen for collection and analysis, and how those methods make it more or less possible to uphold certain ethical commitments and answer some types of questions.</p>
<p>Collaborating with other groups who have different disciplinary backgrounds or motivations for engaging in research</p>	<p>Academics found it difficult to collaborate with groups who could not grasp their areas of interest or training – in particular, academics found it difficult to communicate about their data practices with collaborators who had more technical backgrounds.</p>	<p>More open discussion is needed about areas of confusion, difference, and tensions in ethical expectations with data that are shared (e.g., in partnerships between academics and computer scientists or designers).</p>
<p>Attending to tensions between duties of care towards research participants and how these duties relate to personal/political views, professional codes, institutions, or partners</p>	<p>While some guidelines exist to guide academics' research with people in vulnerable conditions (e.g., undocumented individuals, asylum seekers, minors), academics still experienced</p>	<p>Training for academics engaged in immigration research may include dilemmas and stories from practice. Training may draw upon academics' own experiences and/or use the</p>

	ethical dilemmas in reporting and data sharing about members of these and other groups.	<i>Sangam</i> card set as a starting point for dialogue.
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Table 7.3: Practical implications for academics.

Interests of Government Staff	Related Project Findings	Implications for Practice
Aggregating data from organizations and settlement service providers at a national level, through iCare and other sources	Settlement service providers identified problems with the iCare database deployed by the government. iCare did not meet service providers' expectations for usability, types of data gathered, and capabilities for data to be returned in re-usable forms to the original collectors/creators. A government staff member, Wendy, agreed with the need to find different ways to return data collected through iCare to its original creators.	IRCC can redesign iCare in coordination with settlement service providers to better support their local ethical limits, standards, and goals with the data.
Developing data sets as resources for research by government and academics	The federal government is linking various data sets to allow for new types of analyses	Academics raised questions about how linking of immigration data sets should be

	by academics (e.g., provincial data on health, social services, education).	done respectfully, and what the outcomes may be. Linking should anticipate possible consequences so that they can be prevented, such as re-identifying individuals with precarious status, and perpetuating stereotypes or historically entrenched patterns of systemic discrimination.
Stewarding data sets on immigration collected through different streams (e.g., Statistics Canada data, provincial data, etc.)	Voluntary labour of a network of staff helps to support the government's work with immigration data. Volunteers assist with identifying problems or missing data.	IRCC may consider whether voluntary labour is sufficient to enact practices of stewardship. What are the implications of voluntary labour as it is currently organized, including potential ethical consequences, and benefits and drawbacks?
Identifying priorities for funding and making evidence-based decisions about where government resources can be directed	iCare data is used to inform government decisions about the relative success of service providers' local activities and uses of funding.	Service providers suggested that the current funding model for immigration services could be adapted so that a competitive environment does not constrain their abilities to coordinate with

		their fellow service providers or refer clients to other organizations.
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Table 7.4: Practical implications for government staff.

Interests of Designers	Related Project Findings	Implications for Practice
Partnering with other groups to build resources, systems, or tools that could be useful given their needs for making sense of immigration data	Designers' specific approach to their work informs how they make decisions (with or without others) about how immigration data is gathered and used in resources, systems, or tools they help to develop. Ira, for instance, co-designs a range of information systems and tools which are being developed in partnerships between designers, service providers, and members of newcomer communities.	Further resources may assist designers in learning from their partners about practices of data care which information systems should acknowledge, embed, and enable. One example of such a resource is the <i>Sangam</i> card set.
Understanding the experiences and the needs of collaborators, partners, and newcomer community members to enable their design work	Designers interviewed as part of this project conduct user experience research and fieldwork with newcomers and settlement service providers.	Designers may look to service providers (and other collaborators) to learn about culturally specific expectations around the use of information

		and technologies they help to build.
Adapting design ideas or plans to fit the lived experiences of newcomers of differing backgrounds and statuses	Designers suggested the principle of taking the lightest and least burdensome approach to data collection possible, noting that this should become a norm or default in the immigration context (e.g., Ira, Tanis). Designers are aware of the diversity of newcomers' experiences depending on their background and status. There is no prototypical newcomer "user." Individuals' experiences influence their (dis)comfort with sharing personal data and interacting with information systems.	Designers may benefit from opportunities to better understand the specific lived experiences of newcomers who would use the services, systems, and tools which designers create. In addition, designers may wish to engage in strategic planning with community members and settlement service organizations about how to engage in lighter and less burdensome data practices.

Table 7.5: Practical implications for designers.

7.4 Contributions: Theoretical and Methodological Implications

The following sub-sections report on further implications related to the practical contributions shared in the last several pages. I turn towards more theoretical and methodological considerations in the sub-sections ahead.

7.4.1 Data Care as Ethically Complex

As a result of this study, I argue that caring *about* newcomers' wellbeing is not sufficient to be able to perform care *for* their data. Data care is difficult to enact because it is marked by tensions between its co-participants' varying priorities, as well as between their current practices and envisioned practices. Most interviewees proposed a variety of alternative activities and systems to enable data care, although many had not yet found ways to move towards these alternatives.

7.4.2 A Different Take on Information Practice: Theoretical Reflections

Findings complement previous studies of information practice, investigating a context in which there is less consistency amongst participants' roles and responsibilities. While other studies of information practice often presume that participants share ethics, community or group norms, professions, or cultures of activity (e.g., Lloyd, 2007; Olsson, 2016; Savolainen, 2008), this inquiry reveals difference in a jointly negotiated information practice. I interpreted multiple ethical and political views, professional backgrounds, cultural norms, sites and situated perspectives, which can co-exist in an information practice, even if not comfortably. Data care, because it is negotiated across groups, holds contradictions, conflicts, and possibilities for forms of coordination. This project offers an example of information practices that recruit multiple groups. Future work may explore how groups holding different positionalities and perspectives engage in information practices, including data care labour, which may support and subvert their efforts to coordinate with one another.

7.4.3 Data Care Labour as an Interdependent Information Practice

I examined how groups negotiated their information practices within a web, in which each depended on one another as fellow stewards of newcomer communities' data. Groups' interdependence goes further than interconnections, showing how they give and receive in non-symmetrical relationships. Responsibilities for data care are distributed and rearranged across groups, though not by a single centralized actor. Interdependencies are emergent and can change as groups reorganize their local information practices.

7.4.4 Data for Data's Sake

The ends of data collection were at times used to justify the means. Some participants noted that the collection or creation of immigration data was valued – by themselves or others – as an inherent good, regardless of how it was used (e.g., Cora, Hamid, James, Kim, Tanis, Wendy). The motivation of data collection for the sake of immigration data becoming a “*corporate asset*” (Wendy) benefits few groups, primarily IRCC and academics.

7.4.5 Inequitable Divisions of Labour

The share of benefits and burdens are unevenly distributed among groups. Inequitable divisions of labour reinforce the status quo in the immigration and settlement sector. Government staff and academics tend to wield power with regards to knowing and learning about immigration.

7.4.6 Data Care as Generative Concept: Practice and Policy Reflections

Groups advocating for stronger ethical decision making with communities' data may find the conceptual framing of data care relevant. The concept holds open the matter of how data *should*

be cared for, implying that it is a question to be deliberated with groups whom these activities affect. When used to generate conversation, the concept could be employed to encourage groups who co-steward newcomers' data to learn about the interdependency of their information practices, attending to their own and others' competencies, ethical views, labour conditions, politics, norms, understandings of change in their practices, and their shared priorities for caretaking.

7.4.7 Stories of Data Care and Interdependence: Methodological Reflections

Storytelling and listening can be a means of learning about differences among groups' experiences of data care. The methodological approach of gathering and analyzing stories of data care allowed me to follow each actor or group member's perspectives on their participation. Stories were also a medium through which participants could communicate about ethical complexity through examples. It was through stories that I interpreted individuals, for instance, shared reminders of their role and responsibilities, flagged warnings of the consequences of misusing data, and provided guidance on how they navigated conflicts and acts of refusal or resistance to demands for data.

7.4.8 A Resource Based on Project Findings: The Card Set

The *Sangam* card set can be used by groups advancing dialogues on information practices and policies with immigration data, as discussed in the sixth chapter. The card set created as part of this project has been grounded in empirical work with participants from the groups for which it is designed.

7.5 Limitations

I made choices with regards to research design, recruitment, data collection, and analysis that resulted in insights and limitations of the project. For instance, I chose to situate this inquiry within Canada, a nation state which is distinct in its labour market demands and political dynamics pervading policies and discourses of immigration and settlement (Caidi et al., 2010). Specifically, Canadian economic concerns such as population demographics, resource extraction, and the service industry form the sub-text of many mainstream media stories and assumptions about immigration, settlement, and newcomers in the country. The Canadian immigration and settlement system is developed as a “sector” in large part because of these economic and political motivations, and is funded by the government, unlike in other countries such as the United States. Some findings of this inquiry, especially those pertaining to the demands for data used in the organization and evaluation of settlement services, may therefore not be transferrable to countries other than Canada.

I raise the characteristics of the Canadian context, and the limitations that follow, to communicate how my claims can be considered or applied by a reader in relation to their own local contexts. In addition to my own decisions, factors outside of my control were also at play. The next sub-sections outline the conditions which influenced how I carried out this inquiry.

7.5.1 Crises of Care: Data Collection Decisions

The research project was conducted during the COVID-19 pandemic, which meant that my original pre-pandemic proposal to follow a cross-section of participants in their places of work, vacated for their home offices, was no longer possible. The constraints of physical distancing and

remote work led to fewer opportunities to recruit participants. Individuals who did agree to participate often said their workload was stretched, as they needed to shift the modality of their work with little to no notice, moving more of their interactions with newcomers online. I noticed that service providers were especially affected by the transition to remote work, and were perhaps more interested to discuss their experiences of using information systems and technologies because these recent issues were prevalent in their efforts to shift from primarily in-person service delivery to online service delivery. Partly because of the pandemic, I came to realize that I needed to be especially careful with participants' energy and time, limiting my own expectations for data collection.

Recruitment for the project coincided with the beginning of the pandemic, however this was not the only crisis influencing the research. Even before the pandemic, ongoing climate and community emergencies were taking place across the region: Leaders of the Wet'suwet'en Nation were defending their lands against pipeline construction and protesting violent intervention by the RCMP and occupation of their traditional territories. Marches for climate action had been building across Coast Salish territories. Struggles for decolonization, social justice, and climate action were evident in the province and the streets of the city I grew up in, where I was a doctoral student at the time. When the COVID-19 pandemic hit, some scholars called these circumstances "crises of care" and suggested that conditions such as these need to be addressed simultaneously (The Care Collective et al., 2020). While experiencing or witnessing crises of care and social movements, participants were possibly more prepared to imagine how their existing practices, systems, and ways of working may be changed and strengthened.

7.5.2 Sample Size: Adjusting Expectations

While the final sample size of 14 participants is smaller than anticipated in pre-pandemic plans, a member of each of the five groups was recruited. As Robinson's (2014) sampling guidance suggests, "interview research that has an idiographic aim typically seeks a sample size that is sufficiently small for individual cases to have a locatable voice within the study, and for an intensive analysis of each case to be conducted" (p. 29). Whereas working with a larger sample may have obscured some of the details characterizing participants' voices, ethics, politics, roles, and stories, a comparatively smaller sample helped me to attend to the integrity of these characteristics in the analysis and writing.

7.5.3 Frictions Between Thematic Analysis and Many Meanings of Care

I approached this inquiry with assumptions that groups' information practices may be more closely aligned than they turned out to be. Early on in this project, I expected that groups may even articulate some of the same ideas about care. In keeping with these assumptions, I chose to use reflexive thematic analysis (Braun & Clarke, 2019) to follow up on my first stage of analyzing stories told by participants. As I compared interview transcripts, however, I found that although participants may share many interests in the wellbeing of newcomers, there was more variation than consistency in participants' patterns of meaning associated with caretaking. I found that reflexive thematic analysis was limited in its capacities to represent the range of experiences, roles, and meanings of care articulated by individuals I spoke with.

7.5.4 Further Opportunities for Discussions and Analysis with Participants

A roundtable discussion about preliminary results was initially planned for; however, I did not end up gathering participants for a knowledge exchange event during analysis. My decision was based on time constraints – and a priority for sharing findings with participants at the same time as the draft card set. In support of this, I will organize a knowledge exchange event in the future to report back to participants on preliminary (i.e., dissertation) findings and the card set. My plan is to seek out their feedback so that participants’ reflections on the findings and the card set can be integrated into my writing of summary reports and publications.

7.5.5 Additional Evidence on Government Activities and Plans

Prior to conducting interviews, I had considered putting together a series of access to information requests, which could have provided further insight into the federal government’s plans to use automated or algorithmic immigration information and technologies by obtaining primary sources. Legal scholars have employed similar techniques, and findings of their studies informed this inquiry’s literature review (e.g., Molnar & Gill, 2018). I put off making these types of requests until I could have a stronger understanding of how participant groups might want to see care enacted, as perspectives through which to assess the design and implementation of new immigration systems. These and other lines of inquiry are noted in the future work sections ahead.

7.6 Future Work

In this section I outline several avenues for research that could build on this inquiry. These activities may extend investigations of the project's guiding questions and explore related contexts of caretaking for data.

7.6.1 Extending this Inquiry with Newcomer Communities

By carrying out this project I learned that activities of data care can be challenging, and at times chaotic, changeable, and contested. Questions continued to arise in each of the interviews I had with members of different groups. To extend this inquiry, I would look towards the expectations, practices, and questions of individuals whose personal data is stewarded by the types of groups I interviewed.

Such an extension to this project could be situated within an organization navigating decisions about how to collect and analyze data to strengthen the organization's research, evaluation, and service design in support of newcomer community members. A next step would be to develop a long-term partnership with a settlement service provider to examine issues of mutual interest. A partnership project could help to identify questions to do with the ethics of immigration data and representation alongside newcomers and staff involved with an organization.

7.6.2 Ethics of Immigration Analytics, Automated Systems, and Algorithmic Technologies

Future inquiries in this space could investigate how nation states, including Canada and the U.S., are designing immigration information systems and technologies. Crises of displacement are

being used to justify hastily formed corporate-government partnerships, often paired with trials of novel technologies on forcibly displaced peoples (Achiume, 2020; Molnar, 2020).

Compounding climate and social justice crises should instead be used to call for stronger ethical examination of systems to slow experimentation, and to enable communities and advocates to more fully guide and intervene in the design of immigration data practices and technologies.

Currently, the Canadian and the United States governments' implementation of analytics, automated systems, or algorithmic technologies do not often have public oversight or review processes, and are therefore hard to track, as found by Eubanks (2018) in U.S. social welfare and housing systems. Researchers following this line of work may choose to audit government processes of systems design through freedom of information requests or similar methods, to gather details on procedures of design, looking into who is invited to participate in shaping the next generation of immigration systems and technologies. I see a need for projects that complement the legal and human rights analyses conducted by scholars such as Achiume (2020) and Molnar and colleagues (2020). Complementary work may also examine the development of immigration policies and systems design, to bring ethical limits into deliberation about how systems should and should not operate, by whom they should be designed and used, and for which purposes.

7.6.3 Coordination and Collective Action

There is no end to societal issues which are characterized by the need to work across a range of contexts, communities, academic disciplines, and worldviews. Reckoning with climate crises and global migration requires coordination across sites and scales of political and social action

(Fazey et al., 2018; Sheller, 2018). Drivers of the climate crisis and transnational migration are tied to global economic entanglements of racial capitalism, and the theft of lands and peoples which perpetuate continuing legacies of harm (Táíwò, 2022). To strengthen collective action in relation to displacement and climate change, groups need to be able to agree on means of respecting the wellbeing of diverse communities and ecologies. With the continued displacement of climate refugees, for instance, new ways of documenting and supporting the realization of global and local responsibilities for adaptation and the resettlement of refugees will be needed (Sheller, 2018).

As I learned in this project, groups' array of ethical perspectives and information practices can mean that coordinating their caretaking activities can be challenging. In situations where groups need to communicate and coordinate across domains of expertise, I anticipate that it will be especially critical to recognize groups' different ways of working with data and technologies. If groups are not aware of one another's ethical perspectives and ways of working, their capacities to cooperate with one another may be constrained by conflicts, compromises, or confusion over their varied use of data, information, and technologies.

Opportunities for better communicating about collective and distributed responsibilities for caretaking in part lays in our routines with data and systems, work that no doubt spans disciplines. Future research can help to develop strategies for negotiating cooperative information practices to address shared challenges and matters of concern, safeguard lands and people seeking sanctuary, and cultivate healthier ecosystems.

7.7 Chapter Summary: Dissertation Conclusion

The project began with an interest in how immigration is mediated through data and digital technologies. If representations of newcomers affect our/their lived realities and communal narratives of becoming, belonging, and identity – as the framing of this project holds – immigration data should be stewarded responsibly. The project was first motivated by signs that the Canadian government and humanitarian agencies were conducting trials of automated and algorithmic techniques with immigration data to forecast displacement, inform immigration policies, manage crises, and police borders. Findings from the project, however, suggest that changes in Canadian immigration information practices are being made sporadically by a range of actors with various motivations, ethical views, cultural backgrounds, politics, professional norms, and areas of training. This is quite different from the large-scale, top-down, or uniform processes of transition that I may have imagined when I first formed this project's research questions.

Immigration information practices are shifting in an ad hoc, decentralized manner at the local level of many groups' activities and are also being remediated by the federal government through more centralized forms of power. The Canadian federal government acts with little accountability to the range of groups affected by government decisions about immigration data and technologies. Interviews with individuals on the frontlines of these changes led me to argue that the ethics of caring for newcomer communities and their data is navigated across contexts, where tensions between many groups' concerns and ideas of caretaking need to be examined and openly discussed.

The project contributes to the development of a care lens on information practice by exploring a methodological and theoretical approach suited to studying information practices negotiated across different roles. *Stories* told by individuals allowed me to explore variations among views and norms with information, while *themes* offered an understanding of some of groups' common conditions, struggles, and goals in their use of shared data and tools. Communicating these stories and themes through *cards* aims to summarize what I have learned in the form of questions and narrative prompts that can be used by groups negotiating what it means to care for data locally, in joint initiatives, and as those means of caretaking are re-negotiated.

This inquiry opened by drawing attention to the mobility of people, and the data and technologies that are created to count, represent, and analyze trends in immigration in the name of service provision and national security. It closes with ethical imperatives to collectivize our forms of care for one another, and for how we understand our fellow community members. Faced with current challenges of addressing crises, taking steps towards equity, and holding space for our differences, I want to advocate for a focus on our interdependencies – including in our practices of knowing and learning about one another.

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Appendix: Interview Guide

Interview questions include core topics and questions asked of each participant (italicized), and a series of possible follow up questions and prompts.

Interview topics and questions:

1. Role, aims, and work with information and technologies:

- a. *Please tell me about your work, and the types of activities you do as part of that work (e.g., developing projects; offering resources or services; managing or training others; gathering or analyzing evidence; reporting on your work; staying in touch with others).*
 - i. *What are some ways that you use newcomers' data or data about immigration and settlement as part of the activities you do?*
 - ii. *Can you tell me about times when you have needed to gather, work with, or make decisions about that data?*
- b. Can you tell me more about how your work is connected to processes of migration and settlement?
- c. What are the goals you are currently working towards? How do you decide to work on these goals?
- d. Can you tell me about a time when you used data, information, or technologies as part of your work? Do you also collect or create information like this?

2. History of information practices and ongoing changes:

- a. *In what ways have you found that your work with data, information, or technologies in the space of immigration and settlement are changing?*
 - i. *What has changed for you, if anything?*
 - b. Over the time that you have been working, what are some of the shifts that you have noticed in processes of immigration and settlement? How did these changes influence your work?
 - c. Where does the data and information (or evidence) you use come from? Do you have a sense of how it is collected or created? If so, by whom?
 - d. Do you input data or use data from the iCare database? If not, is there another digital system that you use?
 - i. If yes, what are your reflections on iCare? Have you felt that its introduction influenced how you do your work? If yes, how do you feel about its design?
 - e. What has been helpful as you have used iCare (or other digital systems to record information about migration and settlement)? What has been challenging?
3. Learning from newcomers' data, and immigration-related information and technologies:
 - a. *What do you want to learn from the data and information that you use?*
4. Concerns about immigration-related data, information, and technologies:
 - a. *How do you think data and information about newcomers and migration should be cared for?*
 - i. *How would you define care?*

- ii. *Do you have concerns about how the data that newcomers provide to you or to others could be used (for example, in a way that influences newcomers)? Why or why not?*
 - b. In your experience, what are important things to consider when collecting, managing, or using data or information about immigration and settlement?
 - c. Do you find the people providing data or information about themselves (e.g., newcomers) have a sense of how it will be used?
- 5. Multiple values and voices on data, information, and technologies used in the context of immigration and settlement:
 - a. *How connected do you feel to other groups in the area of immigration and settlement (e.g., newcomers, service providers, academics, government policymakers, migrant justice activists, or designers of digital information systems and technologies that you use)?*
 - i. *Do you find that the values guiding your work are different than the values guiding these other groups' work?*
 - b. Who do your activities with data and information influence? Who are you influenced by?
 - c. Who benefits from your activities with data and information? Who would you like to benefit?
 - d. Whose voices are consulted when decisions about data, information, and technologies are being made in your work?

- e. Do you think others in the space of migration and settlement could be doing things differently with data, information, or technologies? In what ways?
6. Concluding the conversation:
- a. What would you like to highlight or go back to in our conversation?
 - b. *Is there anything else you would like to discuss?*

Further potential questions by participant role:

Settlement service providers:

1. What are your priorities when caring for your clients' data? What can others learn from you?
2. What is your organization's approach to collecting, managing, or using data for research and evaluation?
3. What is your organization's approach to supporting staff members to work with data, information, and digital technologies (e.g., iCare)? Are staff members' roles changing?
4. Do you find that there are data, information, or technologies that you want to have access to?

Migrant justice activists:

1. How do you define migrant justice?
2. When have you found that data, information, and digital technologies have been used helpfully to support migrant justice? When have data, information, and digital technologies been used in ways that could or did cause harm?

3. In what ways should values around migrant justice inform how newcomers' data and information is collected, managed, or used?
4. Who do you see performing labour with data, information, and technologies in the context of immigration and settlement? What are the power dynamics you have noticed?
5. What are some of the narratives of immigration and settlement that you are following or contributing to?
6. Do you see data and information being used to tell stories about newcomers and immigration? Why are stories being told in these ways?
7. What does responsible storytelling look like?

Academics:

1. What are your experiences gathering research data with newcomers directly?
2. In what ways have you gathered data with/about newcomers or migration and settlement indirectly?
3. Have you re-used data about newcomers, migration, or settlement that was originally gathered by others? What are your reflections on the process of data re-use?
4. Can you tell me about a time when you worked in an institutional research data centre?
5. In what ways do you see that methods of immigration research will be changing, given increasingly accessible or larger data sets? What are your hopes and concerns?

Government staff or policymakers:

1. To what extent does your work to develop policies draw upon (big) data sets? Do you use other information and digital technologies?

2. Do you feel that you are able to understand the influence of government policies, services, and other interventions in newcomers' lives?
3. What might be some possibilities for how data, information, and emerging technologies could better support government decision making about immigration and settlement?
4. Have you noticed signs of moves towards "data-driven" governance in your role, or in others' work in government?
5. Do you anticipate changes in how different governments around the world may manage migration, given potential shifts in ways of using data, information, and emerging technologies?

Designers:

1. What projects have you worked on in the space of migration and settlement?
2. Can you tell me about a time when you have worked on developing an information system, technology, or other digital tools in the context of migration?
3. Who have you worked with as you have designed information systems, technologies, or other digital tools around migration and settlement?
4. Thinking back on one of your projects in this context: What were your goals, and what were the goals of the groups you worked with? Were there differences that you needed to navigate? How did you go about this with others?