

'Mobility work': Older adults' experiences using public transportation

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ABSTRACT

This paper contributes to research on public transport accessibility, disabling spaces, and older adult's mobility by highlighting the 'mobility work' older adults complete to meet their daily travel needs. Drawing on a systematic and inductive analysis of semi-structured interviews with older adult (65+ years of age) public transit users in Hamilton, Canada, we argue that older adults are faced with mobility work that younger and/or more able-bodied people do not routinely encounter as they meet (or attempt to meet) their daily travel needs using public transportation. Key components of older adults' trips that involve mobility work include walking to and from the bus stop, trip planning, stepping onto/ off of the bus, finding a seat, carrying items on the bus, calling a stop, and travelling in winter conditions. This mobility work can be categorized as physical (e.g., struggling to board the bus), emotional (e.g., worrying about getting a seat), or spatiotemporal (e.g., staying home when the weather is bad). Taken together, this paper puts forward a multidimensional concept of 'mobility work' to aid in considering accessibility at the scale of both the individual and the built environment. Further, by highlighting mobility work, this paper demonstrates the ways in which public transport spaces can be disabling for aging bodies and outlines concrete measures public transit agencies can take to make services more accessible to older adult riders.

1. Introduction

The primary role of a transportation system is to provide people with access to places, people, and services (Miller, 2018; Saif et al., 2018). This access is crucial to participate in society, to exchange information, goods, and services, and therefore to accrue or maintain social, economic, and cultural capital (Miller, 2018; Middleton and Spinney, 2019). For this reason, many have argued that transport accessibility¹ is central to mobility justice, and more broadly social justice (Bhat et al., 2000; Martens, 2017; Middleton and Spinney, 2019; Pereira et al., 2017). Though accessibility has been a central concept in transportation planning and mobility justice, the concept is theorised and measured in a myriad of ways (Geurs and van Wee, 2004; Kwan et al., 2003; Pereira et al., 2017). For instance, accessibility can be conceptualized in terms of individual accessibility, the economic benefits of accessibility, or, most commonly, location accessibility (Curl et al., 2011; Geurs and van Wee, 2004). Location-based accessibility, defined as the level of access to

spatially distributed locations, resources, or activities (e.g., the number of jobs within 30 min travel time), has been used to explain variation in, amongst other things, commuting time, employment, mode share, and urban density (Levinson and Wu, 2019). In public transport research, there has been a surge in the methods developed to measure accessibility in recent years in response to cities' growing interest in promoting sustainable travel modes (Albacete et al., 2017).

Individual-based accessibility, on the other hand, considers not only an individual's spatial and temporal constraints, but also how an individual's needs, abilities, and opportunities influence their access to locations, resources, or activities (Geurs and van Wee, 2004). Notably, a large literature exists on transport or mobility accessibility amongst people living with disabilities (e.g.: Darcy and Burke, 2018; Ferrari et al., 2014; Sze and Christensen, 2017). Further, in recent years geographers have turned their attention toward how spaces can be disabling, both emotionally and materially, for non-normative or non-average bodies (Pritchard, 2014), such as sized bodies (Colls, 2004; Evans

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¹ In their literature review, Geurs and van Wee (2004) find that the terms 'access' and 'accessibility' are often used indiscriminately. Generally, when using a person's perspective, the term access is used and when using a location's perspective, accessibility is used.

et al., 2021; Longhurst, 2005), and people with disabilities (Imrie, 1996; Kitchin and Law, 2001). This work has many parallels with the social model of disability that posits that society disables people with impairments – in other words that social and built environments can exclude people with impairments from full participation in society (Shakespeare, 2006). A transport-focused example includes Evans et al. (2021)'s work on fat embodiment on airplanes. By identifying how the social and material space of airplanes make overweight bodies hyper-present, they highlight the ways in which air travel can be exclusionary for many larger people. Taken together, this work highlights the need for spaces to accommodate and enable bodies of all abilities and sizes.

While a large body of work examines accessibility, Middleton and Spinney (2019) argue that the bulk of this work is concerned with the 'objective' causes of, or the outcomes of (in)accessibility. Limited work exists on the experience of 'doing' access: on how being mobile relates to accessibility (Middleton and Spinney, 2019). To address this research gap, Middleton and Spinney (2019) highlight the emotional work that can be involved in gaining accessibility. Further, by focusing on non-normative bodies (mothers travelling with infants and people who are visually impaired) they demonstrate how this work is experienced unequally across axes of social difference. Ross and Buliung (2019) also highlight the work non-normative bodies complete to gain access. Specifically, they explore the 'access work' that families living with childhood disability complete to park at school. Both papers contribute not only to understandings of accessibility, but to geographical understanding of how spaces can exclude or enable certain bodies.

This paper builds on this work by Middleton and Spinney (2019) and Ross and Buliung (2019) by examining the 'mobility work' older adults do to achieve mobility, or gain access, using public transportation. The focus on older adults allows for an examination of how public transport spaces can exclude and enable non-normative aging bodies. The focus on mobility work, on the other hand, highlights some of the barriers older adults face while using transit, barriers that can be removed to encourage older adult public transit use. Drawing on semi-structured interviews with older adults who use public transportation in Hamilton, Ontario, this paper answers the following research question: What broad practices of work (e.g., waiting, communication efforts, chores, emotional labour, etc.) are needed for older adults to meet their daily travel needs using public transportation? Results indicate that older adults, especially those experiencing declining mobility or frailty, must do various kinds of mobility work, work categorized as physical, emotional, and spatiotemporal, that normative bodies do not have to do to achieve mobility using public transportation. We begin this paper by reviewing the literature on older adults' mobility with a focus on public transportation. This is followed by a methodology section that describes the study's context, theoretical underpinnings, and the methods used. The results are divided into three sections, focusing on the physical, emotional, and spatiotemporal work required to complete a segment of a journey: access work, boarding and exiting work, and riding work. The paper's discussion reviews the implications of the study's results and outlines future avenues for research. The paper concludes with a brief overview of some policy recommendations derived from this research.

2. Literature review

The world's population is aging. In Canada, population projections estimate that older adults could make up almost one quarter of the population by 2031 (Statistics Canada, 2017). Promoting the health and well-being of this growing aging population is a pressing contemporary issue. A key component of healthy aging is mobility, defined as the ability to safely and reliably access desired people, services, and places (Goins et al., 2015). As such, a large body of work examines older adults' mobility (Banister and Bowling, 2004; Spinney et al., 2009; Ziegler and Schwanen, 2011). Much of this work examines the relationship between mobility and wellbeing (Schwanen and Ziegler, 2011; Spinney et al.,

2009; Ziegler and Schwanen, 2011). Other research has explored how older adults' travel and found that older adults make fewer trips, travel shorter distances (Schwanen et al., 2001; Páez et al., 2007; Hjorthol et al., 2010), and travel less outside peak hours or at night (Scott et al., 2009). Further, older adults living in North America rely primarily on the private automobile as their means of transportation (Baxter et al., 2018; Davey, 2007; Newbold et al., 2005; Rosenbloom, 2001). Older adults today complete more trips and are more likely to have a drivers' license than older adults from previous generations. This trend is said to be due, at least in part, to better health and the later onset of age-related disabilities of today's older adults (Alsnih and Hensher, 2003; Nordbakke & Schwanen, 2015). Further, empirical research has found that licensed older adults with access to cars participate in more out-of-home activities (Enam et al., 2018) and have fewer unmet needs for out of home activities (Nordbakke & Schwanen, 2015).

Of course, not all older adults have access to a car. Further, when health problems arise, many older adults must either reduce their driving or 'give up the keys' (Davey, 2007; Chihuri et al., 2016; Curl et al., 2013). In Hamilton, the site of this study, the proportion of older adults with a drivers' license drops significantly at the age of 75; while 6% of residents aged 65–74 years do not hold a driver's license, this rate doubles to 14.7% in the 75 and over age category (Baxter et al., 2018). Driving regulation and cessation is often a difficult and emotional transition (Goins et al., 2015; Hansen et al., 2020). For instance, focusing on adults aging in rural areas, Hansen et al. (2020) found that the loss of one's driving license (and even the fear of losing one's license) evoked social and emotional isolation. Driving cessation is also associated with other negative outcomes such as declines in health indicators (Chihuri et al., 2016) and decreased participation in activities outside of the home (Goins et al., 2015; Curl et al., 2013). In Hamilton, 25.6% of residents aged 75 or older who do not drive and wish to participate in more social activities report transportation as a barrier to their desired level of social participation (Baxter et al., 2018). After driving, the most common travel mode used by older adults is being a passenger in a private motor vehicle (Luiu et al., 2017; Baxter et al., 2018). However, studies have found that relying on others for travel can reduce older adults' independence and self-worth and can result in unmet travel needs (Luiu et al., 2017; Davey, 2007), especially for 'discretionary trips' such as visiting friends or attending social events (Davey, 2007).

Public transit is an alternative to the private automobile. As such, even though only 3.1% of Canadians aged over 65 years use public transit (Newbold and Scott, 2018), many have argued that it is vital that public transit agencies provide services that meet the needs of older adults (Hanson & Hildebrand, 2011; Shrestha et al., 2017). Research on older adults' public transport use, however, is limited. Some research compares transit use across age groups (Alsnih and Hensher, 2003; Forham et al., 2017; Moniruzzaman et al., 2013; Newbold et al., 2005), or other social factors such as gender (Collia et al., 2003; Siren and Haustein, 2013). Other research explores how aspects of the built environment influence public transport use amongst older adults (Hess, 2009; Hess, 2012; Kim, 2011; Kim et al., 2007). Some quantitative research explores older adults' attitudes toward public transit, for instance Habib et al. (2011) find that reliability, convenience, and comfort are the most important factors for older adult public transit passengers. However, little qualitative work explores older adults' experiences using public transit. This paper contributes to this limited research by providing a rich qualitative account of older adult transit users' experiences, with a focus on the 'mobility work' they encounter in meeting and attempting to meet their daily travel needs.

3. Methodology

3.1. Study context

This study took place in Hamilton, Ontario, a post-industrial city of over half a million residents on the shores of Lake Ontario (Fig. 1).

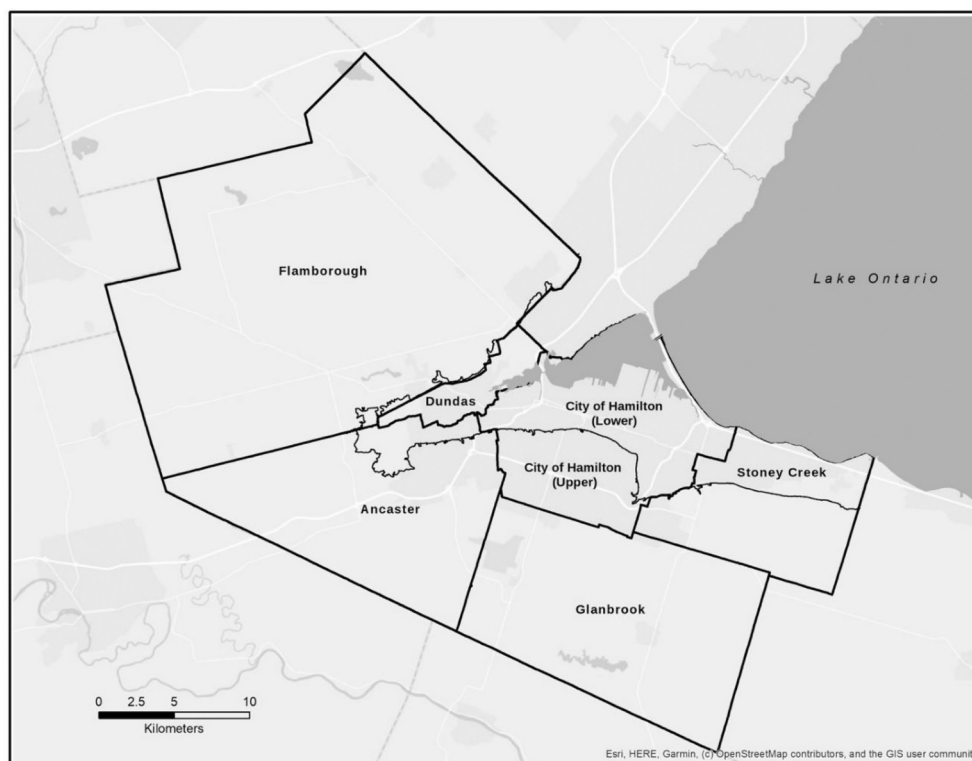


Fig. 1. Hamilton, Ontario (Patrick Deluca, McMaster University, 2021).

Hamilton is served by both an intercity bus service (the Hamilton Street Railway [HSR]) and a network of intra-city buses and trains connecting the populous Greater Golden Horseshoe region of southern Ontario (GO Transit). Though some participants discussed their use of intra-city buses and trains, the primary focus of the interviews was on their use of inter-city HSR buses. In Hamilton, seniors represent 17.3% of the City's population (City of Hamilton, 2018). In 2013, the City of Hamilton developed its first Age Friendly Hamilton Plan in partnership with the Hamilton Council on Aging and the Seniors Advisory Committee (City of Hamilton, 2018). The Age Friendly Hamilton Plan has seven strategic goals, one of which is directly related to transport: Getting Around Greater Hamilton (City of Hamilton, 2018).

The HSR provides discounted fares to seniors on single rides, monthly passes, and annual passes (City of Hamilton, 2020a). Hamilton residents over the age of 80 are also eligible for a Golden Age Pass, which allows for free transit use across the city (City of Hamilton, 2020a). All HSR buses are equipped with Accessible Low Floors (ramps) to accommodate standard wheelchairs and scooters in compliance of the Accessibility for Ontarians with Disabilities Act (City of Hamilton, 2020b). Further, those who are unable to use fixed-route public transit (i.e., HSR buses) due to physical or functional limitations can access Accessible Transportation Services (e.g., DARTS and the taxi-script program) (City of Hamilton, 2020c).

3.2. Methods

Older adults (65 years of age or older) who live in the City of Hamilton and use public transit were invited to take part in this study. To be eligible, participants had to have used Hamilton's bus system, the HSR, since January 1st, 2020. Recruitment took place between March and August 2020 and was done through community organization listservs, posters on the City of Hamilton's official poster kiosks, and through snowball sampling. Overall, twenty-four older adults took part in this study. These participants were diverse with respect to their social characteristics and residential locations (Table 1).

Table 1
Research participant characteristics.

Participant characteristics		n	%
Gender	Women	15	63
	Men	9	38
Age	65–69	7	29
	70–74	4	17
	75–79	6	25
	80–84	5	21
	85–89	2	8
	90+	0	0
	City of Hamilton – Lower	11	46
Residential Location	City of Hamilton - Upper	7	29
	Dundas	4	17
	Flamborough	2	8
	Graduate degree	5	21
Educational Attainment	Undergraduate degree	4	17
	College	6	25
	High school or less	9	38
Place of birth	Canada	17	71
	Outside Canada	7	29
Employment status	Retired	22	92
	Disability	1	4
	Full-time employment	1	4

Participants took part in individual semi-structured interviews where they were asked to discuss their experiences using HSR. Specifically, they were asked about their current travel options, and to detail the 'work' involved in travelling using HSR. In our consideration of 'work' we are informed by Institutional Ethnography's 'ontology of the social,' that assumes people enact social life through routinized actions, actions that often go unnoticed but that nonetheless take time, energy, and knowledge. In Institutional Ethnography, 'work' refers to all activities required to complete a task, even informal ones that typically go unnoticed such as waiting, communication efforts, chores, and emotional labour (Smith, 2005). In an Institutional Ethnographic study, the work that people do is the entry point of an analysis that aims to

uncover how this work is coordinated by ruling relations (Smith, 2005). In the discussion we suggest ways that older adults' work might be traced through bus standards documents. In this paper, however, we focus on the work itself, making visible the multiple and often challenging steps, actions, and the knowledge, required to be mobile using public transit as an older adult.

To capture the mobility work required to use public transit, some of which is so routine that participants might not even think to mention, participants were asked to describe a trip using transit in detail from the point at which they began planning the trip until they returned home. This involved describing trip planning, the preparation to leave the home, leaving the home, getting to the bus stop, boarding, riding, and exiting public transit, getting to their destination, and all the steps involved in returning home. To capture the emotional labour of these actions, participants were also probed on how they felt at each step. By talking/ walking the interviewer through these steps, older adults in this study painted a detailed picture of the mobility work required to use public transit as an older adult.

Considering COVID-19 public health recommendations to practice physical distancing (City of Hamilton, 2020d), all but one interview took place over the phone (one was done in-person before the recommendations were put in place). Because the pandemic greatly impacted travel behaviour, participants were asked to separately share their experiences both before and after the pandemic. Participant's experiences using transit during the pandemic have been reported elsewhere (redacted for anonymity, 2020). In this paper we report solely on their experiences before the pandemic, when participants described their travel, including their public transport travel, as 'normal'. The study was approved by McMaster University's Research Ethics Board. All interviews were transcribed verbatim. Pseudonyms are used herein to ensure participant anonymity and were selected to represent the self-reported socio-cultural background of the participants. Data analysis was approached inductively whereby the interview transcripts were systematically coded to distill the data into key themes, organize the data, and engage in data exploration, analysis, and theory-building. This paper reports on the mobility work participants discussed describing the steps involved in travelling using the inter-city bus network in Hamilton.

4. Results

To meet their daily travel needs, older adult participants described needing to complete 'mobility work', work that emerged as physical, emotional, or spatiotemporal. While much of the work older adult respondents described is shared by all users of fixed-route public transport systems (such as deciding which route(s) to take, scheduling one's trip, waiting for the bus, or experiencing frustration when a bus is early or late), they also encountered work that was more specific to using transit as an older adult. We focus on this work specific to those public transit users experiencing aging, with the results organized into three sections that correspond to segments of a trip by bus: access work, boarding and exiting work, and riding work.

4.1. Access work: "When the weather is really bad, I don't go out" - Florence

A trip completed using public transportation does not start on the bus: one must first access the service, in this case get to a bus stop. When discussing how they accessed transit, three major themes were discussed: challenges travelling in winter conditions, walking to and from the bus stop, and trip planning, all of which required physical, spatiotemporal and/or emotional work.

4.1.1. Winter conditions: Physical, emotional, and spatiotemporal work

A major theme that emerged from the interviews was how a normally easy walk could become much more difficult in inclement weather. Sixteen respondents shared how difficult it was to walk to the closest bus

stop in winter weather, seven of whom said they outright avoid travel when the weather is bad. The issue was not the poor weather, per se, but the fact that those experiencing a decline in ability had difficulty walking in snowy/icy conditions due to inadequate snow removal or the absence of sidewalks. Winter weather therefore caused older adults to do additional physical, emotional, and spatiotemporal work to access the bus. At times, this work meant they were unable to travel at all and had to either find other ways to meet the needs their trip was designed to address or forego the purposes of their trip. Examples of physical access work include walking very carefully and slowly to avoid falls. For instance, Mabel shared the following:

[...] it could be challenging in the winter because [...] the street has no sidewalks on it. And it could be like – lots of snow – [...] – there's a lot of snow and the cars go through and they make tire marks – I call them ruts, I don't know what they are. So that can be kinda challenging you know to make sure you're not walking where it's slippery and yeah. Even if the plow goes by it's still not a clean surface so sometimes it's a bit of a challenge when there's snow to get to the bus.

Navigating streets without sidewalks or with poor snow removal in wintery conditions involve emotional work as well, such as stress, anxiety, or anger. For instance, Rose shared: "I might get a little anxious if people don't shovel their snow...you know, it turns to ice and then you have to shuffle, and be very careful because if you fall, you could break something when you get old". These winter conditions made Rose not only anxious, but angry: "it just makes me a bit angry because I figure I'm going to be 84; I shovel my own snow. These people are only in their 40s, why aren't they shoveling?". Finally, poor snow removal during inclement weather also involves spatiotemporal work. Notably, five respondents shared how they would stay home, postpone, or cancel their trip due to snowy conditions: "When the weather is really bad, I don't go out" (Florence).

4.1.2. Walking to and from the bus stop: physical and spatiotemporal work

Because one of the recruitment criteria for this study was that participants had to have used the bus in the past eight months, the sample is biased toward regular users who experience little difficulty walking to their nearby bus stops. Though most participants had easy access to a bus stop, the long walk from their destination bus stop to their destination (often referred to academically as the last mile problem) was often a barrier to travelling by bus as it required physical work. This was brought up by seven respondents. For instance, when asked "what kind of things do you have to think about before making that trip?", Shirley responded: "Okay. Number 1: the weather. Number 2: How far I have to walk when I get to my destination. So, you know, those are two huge things...". While long walks can be a barrier to all bus riders, this barrier was especially salient to participants who were beginning to experience frailty or had health problems due to aging (e.g., bladder conditions, knee pain, etc.). Here, those who had access to other mobility modes, notably access to a car (either their own or as a passenger) or to Accessible Transportation Services, could still travel to destinations that involved long walks by bus. For others, these trips were simply not taken. Further, for two participants the length of the walk from the bus stop to their final destination wasn't the only issue, as the safety of that walk due to a lack of pedestrian crossings was also a barrier. These long walks to or from the bus stop represent physical work, work that some participants could not complete. For those unable to complete the physical work (and did not have the option of using other modes), this resulted in the spatiotemporal work of not making the trip and, importantly, forgoing the needs the travel would have addressed.

Even when bus stops were located near participants' homes, this did not mean they were accessible. For instance, two participants discussed how they would forego the bus stop closest to their home in favour of a stop nearer to the start of the route when the bus is less crowded and busy, and thus easier to navigate and to find adequate seating. For

example, Robert shared the following:

I prefer when it is quiet because it is easier for me to get around. [...] I used to go and get it on the corner of [names intersection]. But by that time there's so many [university] students already aboard so I go to [different intersection] and get on there where the bus is vacant and I can really get everything organized.

In this example, Robert does additional physical work (i.e., walking further to a bus stop) to do less emotional and spatiotemporal work (i.e., less effort to get "organized" as a passenger).

4.1.3. Trip planning: emotional and spatiotemporal work

Physical work was not the only kind of work that could result in trips being avoided. For instance, some participants shared that they could access the bus stop, but nearby bus routes had such infrequent services they could not make the trips they wanted to, such as Nora who shared: *"Sunday morning I can't get to church on the bus system because of the infrequency of how often buses run on a Sunday. I've tried every combination on the planet to get to my church and it's not worth it"*. When asked whether she would get a ride with friends to get to church, she responded: *"No, I just don't go...Because no one lives near me and I don't want to put people out"*. Wanting to avoid the emotional work of being (or feeling like) a burden to others (an experience very common amongst older adults experiencing driving cessation (e.g., Davey, 2007)), Nora does the spatiotemporal work of staying home, and as a result goes without the social and spiritual benefits she would gain by attending her church.

Taken together, when it came to accessing the bus service, key challenges that emerged included travelling in winter conditions with inadequate snow removal, walking to/from bus stops, and trip planning. Each of these challenges required a combination of physical, emotional, and/or spatiotemporal work. At times one type of work resulted in other work, such as when a long walk from the bus stop to a destination, or a short walk on snowy sidewalks, resulted in so much physical work that participants did the spatiotemporal work of staying home, and forgoing the needs that travel would have met.

4.2. Boarding and Exiting Work: *"You know, like as he's approaching he can see, 'Oh, the lady has a walker', and sometimes he'll lower the bus, but when you're getting off he doesn't remember that she has a walker, so..." - Betty*

Challenges boarding and exiting the bus emerged as a major theme in the interviews. All but four interviewees discussed challenges boarding the bus and all but two discussed challenges exiting the bus. The root of these challenges was the physical work involved to step onto or off the bus. This physical work, however, could also result in emotional and spatiotemporal work. Further, this mobility work was found to be particularly challenging for people with less visible disabilities.

4.2.1. Physical work

Of those who faced challenges boarding the bus, most stated these barriers were removed when the driver would lower the bus for them, as this would reduce the physical work needed to board the bus: *"it seems like the older I get, the shorter my legs are...(laughs)...It's the hardest part: getting onto the bus [...] if I got a little bit more energy I'll pull myself up on it. But if not, I'll tell them please, to lower it"* (Rose). Others, such as Evelyn, found the physical work to exit the bus tolerable, unless micro-geography features of the built environment resulted in additional challenges, such as when: *"they stop at a curb, a driveway, or an amended curb for wheelchairs or something, you know...in the sidewalk part, and then it's a bit of a longer step down from the back of the bus"*. When this is the case, Evelyn shared how she completed physical work to exit the bus: *"I grab onto the bars, I'm not saying I pop up like an 18-year-old, but I have...I grab onto the bars on the door, and I pull myself up, but it's not an effort, you know?"*

4.2.2. Spatiotemporal and emotional work

The physical mobility work involved in boarding and/or exiting the bus could result in emotional or spatiotemporal work. As was the case for access work, too much physical work could result in the spatiotemporal work of avoiding travel. For instance, Iris shared how she does not complete trips by bus when they involved transfers as the physical effort required to lift her walker onto the bus twice makes the trip not worth it for her: *"So, it's only a couple of inches I have to lift up the walker, it's really not that bad... It's just if I'm not feeling well, it feels like 5 feet, I'm lifting it..."*. This physical work stops Iris from making trips, trips that are necessary to meet her needs.

The physical work involved in boarding or exiting the bus could also result in emotional work. For instance, participants often felt nervous about whether the bus driver would lower the bus for them, or annoyed if they had to ask them to do so. For instance, when asked how she felt when she had to ask a driver to lower the bus, Rose said: *"sometimes it annoys the heck outta me, like, 'Jesus, can't you see that I'm an old lady?!', and other times I don't mind, I just figure they're not paying attention"*. Agnes, on the other hand, shared how she always assesses the driver before boarding:

[...] when I get to the bus stop, I start up overall the look of the driver face, because you can tell if he's a nice person or a person that is grumpy, you know, it is a person that is gonna lower the front- still some of them don't lower the front; sometimes you have to ask them...

Both Rose and Agnes need the bus to be lowered to board, however, their needs may be overlooked if they do not engage in the emotional work of ensuring they are seen or heard by the driver.

Further, exiting the bus was considered more challenging than boarding as you are socially expected to exit using the back doors. Ten respondents stated they preferred to (or always) exited the bus using the front door, even though this involved the emotional work of feeling conspicuous or guilty for breaking bus etiquette. This preference was either due to it involving less physical work due to the bus being lowered (e.g., *"the problem with getting off of the back is that it can't lower: it's higher"* -Edith) or less emotional work as it made respondents feel safer when the driver could see them disembark (e.g., *"whether they like it or not, I will go from the front door... Just to make sure that he [the driver] is keeping an eye on me"* - Ahmed). Other times exiting the bus was a combination of physical and emotional work:

[...] sometimes you're getting off the bus, and there's snow piled up there so, you know, if they don't drop it...it's, uh, kinda scary sometimes. But I hold onto that wire that goes across the door...Until I hit the ground, and then I know I'm not gonna fall... - Rose

4.2.3. Mobility work for non-normative bodies

Participants were also acutely aware of the social expectation to be quick as you board and exit the bus. This social norm made the boarding and exiting process stressful for many respondents who were not physically able to move as quickly as they used to. Four participants discussed how they prepared for this by having a special place for their bus pass to ensure a quick boarding. Olive discussed having issues exiting due to these time pressures: *"if I'm at the back door I yell out 'can you please put the ramp down?' Some will do it, some won't. Some say they don't have time. They'll get behind schedule"*. Those with less visible disabilities felt this pressure strongest. For instance, Agnes discussed how she was slow when boarding and exiting the bus due to knee pain, pain that is invisible to the bus driver and other passengers, resulting in a stressful experience. Two other participants discussed how boarding and exiting the bus were difficult due to problems with their sight, problems that others cannot see. Mike shared how this invisible disability made boarding and exiting emotionally difficult:

[...] it's because I take longer to focus...and it's always a place where you feel like you're in a hurry. When you're paying [...] and everyone thinks you're fully sighted, and that you should be able to do this as quick as the last guy... So, sometimes I struggle with that.

Mike's experiences make visible the organization of public transit around normative bodies.

Taken together, boarding and exiting the bus involved physical work for many older adult interviewees. This work could result in emotional and spatiotemporal work, including worrying about the bus driver lowering the bus, guilt for breaking bus etiquette by exiting using the front doors, or staying home to avoid the mobility work required to travel. Importantly, it seems this work may be particularly salient for those with less visible disabilities.

4.3. Riding work: "If they see you there waiting, holding on for dear life they'll let you sit first" - Bernie

Finally, successfully riding the bus as an older adult also involved physical, spatiotemporal, and emotional work. The most discussed challenge was finding a seat, a necessity for many due to the physical work required to keep one's balance while standing. Trying to avoid this physical work by sitting while mobile, however, could result in both emotional and spatiotemporal work. Other challenges included carrying items on the bus and calling a stop, both of which could involve physical, emotional, and/or spatiotemporal work.

4.3.1. Finding a seat

For all but one respondent, or 23 of the 24, sitting while the bus was in motion was either strongly preferred or necessary. For many of the participants, sitting while on the bus is essential as they cannot do the physical work of standing on a bus while it is in motion. For instance, Ahmed shared how the movement of the bus, especially while accelerating and braking, often makes it too difficult for him to stand:

When they [buses] take off, they shake everyone on the bus, as if it's, like, climbing the Mt. Everest. When they stop, they shook everyone... [...] I have to sit because the bus's movement will be too much for me... [...] Especially breaking and taking off, it's, uh, for senior people it's not easy...

This difficulty standing while riding the bus was shared by many others: "I don't want to be losing my balance" (Nell), or "I couldn't really stand up for a long time on a bus..." (Edith). Here, "losing [one's] balance" and "stand[ing] for a long time" are examples of physical work older adults try to avoid by sitting while riding the bus.

While sitting while mobile was a common strategy used by older adults to avoid the physical work of standing while riding the bus, asking for a seat involved emotional work for many participants. For instance, take Nora who describes her experience after boarding:

So I wave my PRESTO card and then God I hope I don't have to ask somebody for a seat. And then if the bus is packed, I stand there like a crazy old lady and say, "Is there anybody that could give up their seat for me please because I will fall down if I stand".

Here, Nora's worries about getting a seat and sense that asking for one makes her "a crazy old lady" demonstrate the emotional work involved in riding the bus. However, she simply cannot do the physical work of riding the bus standing; she will fall if not seated. Nine participants who preferred or needed a seat stated they refused to ask for one: "I never ask" (Rose) or "No (laughs). Never." (Shirley). Six other respondents made a point to ask riders to give up their seats. Evelyn explained how she asks for seats "nice and loud", while Edith explained how normalizing asking for a seat on the bus is something she prioritizes in her senior advocacy work.

Not getting a seat also involved emotional work. For instance, when asked how she felt when people don't give up their seats for her, Betty

responded: "Yeah...yeah...we're...you know, invisible. Old people are invisible. That's, you know, that's just how it is...". This emotional work, be it annoyance or feeling invisible, was particularly strong for those with less visible disabilities, take Olive who often accompanies her husband who is losing his sight:

[...] for my husband like a lot of times he's gotta stand up and I though "oh if they only knew". When you can't see very well what standing up is like on a bus when you're moving. Like I'm holding on to him so he doesn't fall. And people don't care about giving up seats either. So.

Beyond the emotional and physical work involved in finding seating, older adults also completed spatiotemporal work: they avoided certain seats or sections of the bus. For instance, fourteen participants stated they had a preferred place to sit on the bus. For many, they preferred sitting somewhere where it was easier to exit the bus: "well... I like to get seated opposite the exit door. When I get on, I try to move to a door close to the exit so that I can get off with the least disruption" (Robert). Others, especially those experiencing frailty who had experience riding the bus, knew which seats were easier to get on and off, such as Emily who knew where to sit to avoid serious injury:

[...] I usually sit um like there's the benches at the front that are across from each other? I usually try to sit on the first one high to the back, and that's so I can see what's going on and also there's a step up to that. [...] And there's a bar on both sides, so I've got a bar on both sides to get back down and then step off it. You have to be very careful because it's so easy to fall. And if we seniors fall then we're on the way out.

Other than knowing which seats were easier to get onto or off of (e.g., because they have a step and a bar), some respondents also knew which seats to avoid. The seats at the back of the bus were brought up by three participants as section they must avoid as they need to climb up steps to get there, such as Shirley:

I used to go up the stairs at the back of those buses, and that's not very good for getting off, cuz then you've gotta really hang on to come down those steps... So I never sit up there anymore. I know exactly where I sit, you know, you need to be near a pole that you can hold onto, and you can tell the bus to stop when you need to.

Avoiding these parts of the bus, sections that are often quieter and have more empty seats, due to the physical work required to get to and back from the back of the bus is a form of spatial and physical work.

4.3.2. Carrying items

Riding the bus while carrying items, be it groceries or mobility-assistant devices, resulted in more physical, emotional, and spatiotemporal work. Ten interviewees explicitly stated they were careful not to carry too much if they were travelling by bus. For instance, Nora couldn't do the physical work required to carry more than two bags of groceries: "I can't carry more than so many pounds. More than two bags of groceries become cumbersome. It's the weight can cause balance problems and there's nowhere to put the groceries". Most participants who had other mobility options, for instance access to a car or could afford taxis, would use these options for trips involving carrying items. For others, a system to carry items was developed; most frequently a shopping cart (or buggy) or a backpack was used. However, most participants, both those who use shopping carts and those who do not, discussed the emotional work of using a buggy, a tool seen as inconvenient on the bus: "They're a pain in the bus. When people bring them on a bus you can't get around them so they're a problem on the bus really" (Bernie). Getting around these carts was discussed as something that required a lot of physical work when one has declining mobility due to aging. Therefore, participants were acutely aware of how important it was to keep the aisles clear and would do the spatiotemporal work of finding where best to sit to ensure they

could tuck their carts away: “Well, I always have my shopping cart, so you know, I mean I have to sit in a seat where I’m not causing an obstruction. I have to be mindful of that...” (Edith). This emotional work of worrying about keeping the aisles clear and spatiotemporal work of finding seating where one can do so was also experienced by those who used mobility-assisted devices, such as Robert who uses a walker:

I make my way, or at least I try, to get to a good place where I can get off easily. And I worry about having to pull in my walker sufficiently. Or fold it and keep it in front of me. So that I’m not using more than one seat.

4.3.3. Calling a stop

Finally, some older adult respondents discussed the work needed to call their stop. Six participants said that the fact that stops are announced (both visually and audibly) on the HSR system was very helpful for them to recognize their stop. A further six participants discussed how they sometimes had trouble reaching the button or pulling the string to call a stop, such as Nell who shared:

I have a bit of a hump. You know, just as you age, I’ve got osteopenia. [...] But I find, especially if I’ve got stuff in a backpack, reaching up to reach the bell – because I have to kind of reach up and twist. There’s not enough of the buzzer things that are shoulder length for people to push. I would like to see a few more of those.

This physical work is likely felt more strongly amongst older adults, such as Nell, who are experiencing declining mobility as they age.

Overall, riding the bus involved physical, emotional and spatiotemporal work. Major themes and challenges that emerged included finding a seat, carrying items, and calling a stop.

5. Discussion

This paper contributes a rich and nuanced account of older adults’ experiences using public transportation to the large body of work on older adults’ mobility (e.g.: Banister & Bowling, 2014; Schwanen and Ziegler, 2011), and the small, and largely quantitative, literature focusing on older adults’ use of public transport (e.g.: Kim, 2011; Habib et al., 2011). Further, we build on research by Middleton and Spinney (2019) and Ross and Buliung (2019) on the ‘work’ people do to access people, places, and services. This way of conceptualizing and measuring work considers accessibility both at the individual level (e.g., being physically able to lift one’s walker onto the bus) and the scale of the built environment (e.g., inadequate snow clearing, lack of sidewalks, walking long distances to a bus stop). In doing so, this paper contributes to the literature on accessibility (Kwan et al., 2003; Levinson and Wu, 2019; Miller, 2018) and specifically responds to the research gap identified by Middleton and Spinney (2019): a lack of research focused on the ‘doing’ of access.

This paper highlights the additional ‘mobility work’ that older adults, especially those experiencing declining ability, must complete to meet their daily travel needs using public transportation. This work is needed to access public transportation (e.g., walking long distances to bus stops, walking to stops on sidewalks poorly cleared of snow and ice, adapting to bus schedules that accommodate older adults’ needs, such as attending church), board and exit buses (e.g., lifting oneself and/or one’s walker onto the bus, needing to ask for the bus to be lowered, paying and disembarking as quickly as possible), and to be mobile on transit (e.g., finding a seat, sitting where one is able to disembark easily and quickly). Further, we demonstrate how this work can be emotional, physical, and spatiotemporal. Normative and able-bodied public transit riders do not have to complete the ‘mobility work’ described herein: this is additional work imposed on older adults, especially those experiencing declining ability, as they meet their daily travel needs in spaces that are not designed for their bodies. These results highlight ableist bias

embedded in transportation planning and contribute to past work by geographers’ on how spaces can be disabling for non-normative bodies (Colls, 2004; Evans et al., 2021; Imrie, 1996; Kitchin and Law, 2001; Longhurst, 2005; Pritchard, 2014).

This study is not without its limitations. Firstly, while the sample was diverse, it did skew toward participants who identified as white and female, a limitation shared with other qualitative work on older adults’ mobility (Goins et al., 2015). By only recruiting participants who are public transit users, we also do not capture the ‘mobility work’ that prevents older adults from using public transit in the first place. Data collection also took place during the COVID-19 pandemic, therefore future work could examine whether the pandemic resulted in additional ‘mobility work’ for older adult riders (e.g.: due to reduced service, restricting boarding to the back door, etc.). The mobility work described in this paper drew on Institutional Ethnography’s concept of ‘work’, future research might begin from the analysis here to undertake an Institutional Ethnographic study that would trace the ruling relations governing public transportation. For instance, an Institutional Ethnography study could map which texts (policies, standardized procedures, organizational messages) stopped the bus driver from lowering the ramp for Olive and her husband when the bus was behind schedule. Further, while declining ability and frailty tend to increase as one ages, it is important to note that decline is not experienced evenly across the older adult population, and assuming so can lead to ageist stereotypes associating aging with dependency and immobility (Nordbakke & Schwanen, 2015). This was the case in this study as well: self-described ability varied greatly amongst older adult participants. Future work can examine how ‘mobility work’ varies for older adults due to ability, or other axes of identity such as gender, class and race.

Finally, public transportation is not the only travel mode that requires ‘mobility work’. As discussed in the literature review, previous work has found that driving cessation, fear of losing one’s license, and requesting rides from friends and family members also requires emotional work (Davey, 2007; Goins et al., 2015; Hansen et al., 2020; Luijck et al., 2017). Though it was not the focus of the interviews, participants also discussed the work required to achieve mobility using other travel modes, such as walking, cycling, and driving. Though driving may seem like a travel mode which requires less additional work (and for many, it was), many in this study could not drive due to a declining ability, or the high costs associated with automobile ownership. For these seniors, public transportation was essential to meet their daily travel needs. This paper does not aim to obscure the work required to achieve mobility using other travel modes, nor to paint public transportation as a form of mobility that is inaccessible to older adults. Instead, it highlights the work many older adults must complete to achieve mobility using public transit to identify weaknesses and barriers in public transportation system so that we can plan truly accessible services.

6. Conclusion

This paper examines the ‘mobility work’ imposed on older adults accessing their travel needs through public transportation. In doing so, it contributes to the literature on accessibility, older adults’ mobility, and the geographies of disabling spaces. This focus on ‘mobility work’ also holds the potential to inform policy on how best to enable public transport use by non-normative bodies, specifically aging passengers. For instance, we find that designing buses with lower pull-cords to call stops and without steps inside the bus may make them more accessible. These results contribute to the literature on bus design (van der Waerden et al., 2018), and specifically bus design for passengers with mobility devices (D’Souza et al., 2019; D’Souza et al., 2017). We also identify social norms to target in interventions, such as nuancing the common directive to exit the bus at the back, and interrupting the unspoken social prohibition against exiting the bus using the front doors. Further, we find that planning age-friendly public transit services extends into the

municipal realm: for instance, snow removal and dense cities with destinations short walking distances from bus stops might also make public transit more accessible to many older adult riders. Finally, this study identifies policies currently in place in Hamilton that enable older adults' public transport use. Examples include discounted senior fares, Accessible Transportation Services, the ability for buses to lower, and the visual and auditory calling of stops. These practices can be replicated in other cities to make public transport more accessible to older adults.

Declarations of interest

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