

WALKING AND CYCLING CULTURES IN SOUTH AUCKLAND

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SUMMARY

Successful active transport promotion seeks to support and build upon ‘what works’ in local communities. This project seeks to demonstrate how an ‘active transport cultures’ approach that builds in-depth ‘strengths-based’ portraits of the transport needs of diverse communities in Aotearoa, can help us to build a more locally responsive and equitable active transport promotion model. Bringing together Practice Theory and the Bicycle Assemblage Model we develop the ‘active mobility cultures framework’: a unique and simple methodological tool that can be used to gather in-depth qualitative data on the active transport needs of communities. This framework focuses on five key dimensions: people, environments, materials, competences, and meanings; to explore the who, what, where, how, and why of active transport experiences. We use this framework to collect interview and observational data about walking and cycling in two South Auckland communities: Māngere and Ōtara, in Aotearoa New Zealand.

This study produced a range of insights into both local patterns of walking and cycling as well as the ingredients for successful local active transport promotion in these communities. Many of the findings mirrored those from other local studies on the experiences of diverse, marginalised and low-income active transport users in Aotearoa: their transport experiences are embedded in webs of social community and family life. Their needs and solutions are collective, and extend beyond individual access to technologies and skills to meeting a range of pressing social and economic survival needs. They also face multiple safety and access barriers to active transport use.

The collective approach to addressing community needs is also a key strength of local walking and cycling promotion, underpinned by strong volunteering and skills sharing networks. Local programmes tend to be organised around social events and networks, and are holistic, incorporating a wide range of economic, social and cultural goals and projects beyond transport skills and resources. Access to more funding, and respect for more ‘holistic’ and flexible active transport programmes and goals by transport funding agencies will provide powerful opportunities to make active transport more inclusive in Aotearoa.

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1. INTRODUCTION

1.1. Background and aim

This research aims to explore what everyday walking and cycling look like in South Auckland. Understanding the lived realities of daily transport experience is an important part of conversations about the future of transport options in our communities. We take a strengths or ‘assets-based’ approach (Roy, 2017) to walking and cycling promotion in South Auckland: asking local people who walk or bike, as well as local walking and cycling promoters, what works to support people to start and/or keep walking and biking.

Walking and cycling provide a low-cost, health promoting way to get around locally. Research shows that people who cycle or walk for transport get more exercise, and have both better physical and mental health than people who use motorised transport, especially driving (Sahlqvist et al., 2012; Shaw et al., 2017). Walking and cycling also support strong communities. Adults and kids who walk or bike locally tend to be happier with their transport trips, and to know and like their neighbourhoods more (Appleyard, 2017; Gatersleben et al., 2013; Gatersleben and Uzzell, 2007). Active travel can also help to reduce local transport costs through replacement of driving or public transport trips (Golub et al., 2016; Martens, 2013).

However, it needs to be promoted in ways that are meaningful within each community. In our professional experience, current active travel planning in Aotearoa tends to be dominated by models and standards developed in predominantly Western societies, with limited community consultations the primary means of obtaining information about localised transport experiences and needs. Improving our understandings of mobility practices in lower-income and ethnically diverse communities is important for enabling a ‘just’ transition, in which these communities are not disadvantaged or left behind as we move away from high carbon transport modes in our efforts to tackle climate change (Ghosh et al., 2021; Intergovernmental Panel on Climate Change (IPCC), 2022).

Previous research has identified ‘strengths’-based approaches – programmes that build upon existing valued practices – as a key ingredient of successful active transport promotion (McCullough et al., 2019; Moore-Monroy et al., 2016). Understanding more about everyday lived experiences of walking and cycling in communities can help us to understand ‘what already works’ and what is needed to support wider uptake of active transport within a community. This is particularly relevant in communities with economic, social, and cultural contexts that differ from those to which dominant transport planning approaches mostly cater (Golub et al., 2016; Steinbach et al., 2011).

The concept of ‘human infrastructure’ has arisen within active transport research as a way to talk about the people, networks, and cultures that sustain walking and cycling within communities (Lugo, 2018). Walking and cycling look different in different communities – they carry different social meanings and identities (Green, 2009; Lugo, 2013). What is possible and perceived to be possible on foot or on a bike varies between communities, as does the social status attached to walking and cycling (Green, 2009; Steinbach et al., 2011). Understanding the perspectives and experiences of local people who walk and bike, as well as the wisdom of community ‘experts’ who work as walking and cycling promoters, is a key part of supporting active transport in our communities (Smith et al., 2017; Winters et al., 2017). Successful, locally responsive active transport promotion seeks to support and build upon ‘what works’.

1.2. Research questions

We had three key research questions:

1. How are walking and cycling practised in South Auckland?
2. How are walking/cycling practices promoted and maintained in South Auckland?
3. What could be done to support and build upon existing walking and cycling practices in South Auckland communities?

1.3. Note on photo use

Please note that photos were not part of the data collected. The photos used in this report are either publicly available (photo credits included in the caption) or were taken by the authors outside of the data collection process. They are for general illustrative purposes only and do not indicate that the people or groups depicted were involved in the study.

2. RESEARCH METHODS

2.1. The research team

The research team included six active transport researchers (Rebekah Thorne, Kirsty Wild, Karen Witten, Alistair Woodward, Hamish Mackie, and Ali Raja), who have previously been involved in research on walking and cycling in South Auckland, as well as Elizabeth Fanueli, a Pacific health researcher from the study area. The interviews and observations were conducted by Rebekah and Elizabeth with assistance from Ali; Rebekah and Elizabeth also led the data analysis. The other research team members also provided input throughout the research project.

This study is part of the larger 'ACTIVATION' research programme, funded by the National Science Challenges: Healthier Lives and Ageing Well. ACTIVATION stands for *Activating Change through InterVentions for Active Travel in our Neighbourhoods* and aims to investigate the impact of transport and community infrastructure on peoples' health and wellbeing over four years. The programme examines how active modes of travel can be encouraged and car dependence reduced, focusing on streetscape design and social and cultural environments that encourage physical activity. It is a major research collaboration led by Professor Karen Witten of Massey University involving researchers from numerous universities and research groups across Aotearoa New Zealand.

2.2. Previous research: Understanding local walking and biking

The concept of 'human infrastructure' has arisen within active transport research as a way to talk about the people, networks, and cultures that sustain walking and cycling within communities (Lugo, 2018). Active transport looks different in different communities – it carries different social meanings and identities (Bird et al., 2010; Lugo, 2013). What is possible on foot or on a bike varies between communities, as does the social status attached to using active transport (Green, 2009; Steinbach et al., 2011).

We need to understand more about the diverse ways that people practice walking and cycling in Aotearoa. Previous research has identified 'asset'-based approaches – programmes that build upon existing valued practices – as a key ingredient of successful active transport promotion (McCullough et al., 2019; Moore-Monroy et al., 2016). Understanding more about local walking and cycling 'cultures' can help us to understand 'what already works' and what is needed to support wider uptake of active transport within a community.

Existing research on active transport cultures has tended to focus more on the types of cultures and practices that are more common within higher and middle-income communities. For instance, studies on cycling cultures have explored cycling environmentalism (Furness, 2005), 'hipster' or 'creative class' cycling, mountain biking (Lloyd, 2016) and road/sports cycling (Spinney, 2006), as well as 'bicycle courier' culture (Fincham, 2016). However, there has been much less attention devoted to walking and cycling cultures in lower-income and ethnically diverse communities (McCullough et al., 2019; Moore-Monroy et al., 2016). Similarly for walking, studies have explored a wide array of niche cultures such as Nordic walking (i.e.

walking with two sticks) (Shove and Pantzar, 2005), and pilgrimages (Slavin, 2003), or more recently, dog walking cultures (Westgarth et al., 2021).

Where studies have focused on the experiences of these communities, they have also tended to focus in on barriers and enablers, without taking the time to first understand the ‘human infrastructure’ of everyday relationships, practices, traditions, and shared beliefs that are the foundation of walking and cycling in communities.

In recent years, there has been an increase in research attention devoted to understanding the lived experiences of more diverse and marginalised active transport users in Aotearoa. The Inclusive Streetscapes project explored the experiences of ethnically diverse older and disabled people in Tāmaki Makaurau/Auckland, many of whom rely strongly on the use of walking, wheelchairs or other mobility devices for transport (Meher et al., 2021). The recent Shaping Cities for Youth project also explored the transport experiences, including active transport experiences, of marginalised youth/rangitahi in Tāmaki Makaurau and Ōtautahi/Christchurch (Hodgson et al., 2020). Several recent studies have also explored the experiences of marginalised or ‘minority’ cyclists, including Māori and non-Māori female cyclists (Russell et al., 2021), as well as exploring what success looks like within Māori cycling promotion (Jones et al., 2020).

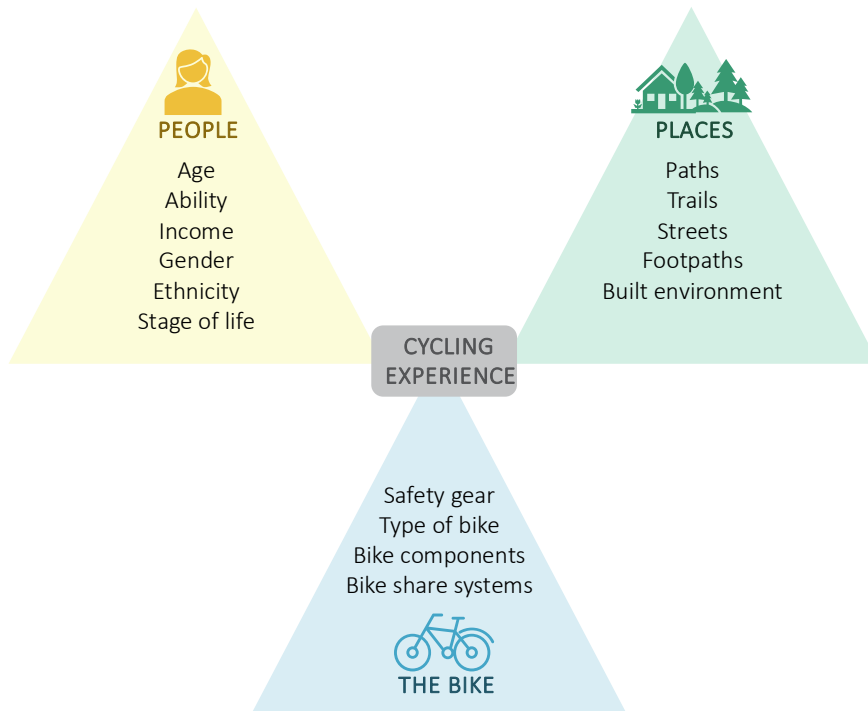
There is a growing recognition that understanding diverse local walking and biking experiences is the important first step for successful active transport promotion. As part of this project, we undertook an extensive literature review on walking and cycling cultures, with a particular emphasis on the experiences of low-income and ethnically diverse communities. These literature reviews are attached as appendices. These literature reviews helped us to shape the current study and its methodology: including the use of Practice Theory and the Bicycle Assemblage Model, and the combined use of interviews and observation.

2.3. Research approach

To understand the everyday ‘lived experience’ of walking and cycling in South Auckland, we conducted two types of data collection: in-depth, semi-structured interviews, and local observations. This enabled us to gain a contextual understanding of walking and cycling in South Auckland and to triangulate data from different sources (literature, interviews, observations).

We also called upon two valuable theoretical frameworks to help shape the data collection and analysis: Practice Theory, and the Bicycle Assemblage Model. The Bicycle Assemblage Model was developed by cycling social scientists Sarah Reboloso McCullough, Adonia Lugo, and Rebecca van Stokkum (McCullough et al., 2019) within their important white paper “Making Bicycling Equitable: Lessons from Sociocultural Research”. While most active transport studies focus primarily on the experiences of the walker or rider, McCullough and colleagues position active transport practice as an ‘assemblage’ of people, technology and environment. The Bicycle Assemblage Model can be understood as a form of the social ecological health model (Sallis et al., 2006). While developed to explore biking experience, it is also valuable for exploring walking experience, which also has all three important components, including its own ‘technologies’ (shoes, clothes, sticks, etc.).

Figure 1: Bicycling assemblage model, adapted from McCullough et al., 2019



As the name suggests, Practice Theory positions practices rather than individuals or systems as the object of investigation (Rouse, 2007). Practice Theory has been widely applied to the study of routine daily activities through to highly ordered institutional processes. Within the field of transport, recent applications include an exploration of cycling cultures (Aldred and Jungnickel, 2014) walking practices (Harries and Rettie, 2016), and the use of electric scooters (Curl and Fitt, 2020).

Studies adopting a Practice Theory approach are useful for understanding 'obvious' and everyday practices (Harries and Rettie, 2016). They encourage researchers to focus attention on aspects that may often be overlooked, such as feelings and attitudes about carrying out certain practices. Moreover, they encourage research participants to reflect on and describe their perceptions of practices that they undertake (Harries and Rettie, 2016). In this study we were informed particularly by the work of Shove et al. (2012), in which practices are understood to be made up of three components: materials (such as footwear or clothing), competences (such as fitness levels), and meanings (such as why people walk) associated with different practices.

We decided to use a combination of the Bicycle Assemblage Model and Practice Theory as an analytical framework for our research: both contribute a useful focus on 'materials', while the assemblage model also highlights the rider/walker and external environments as two important dimensions of practice. Practice theory, on the other hand contributes a useful focus on the 'meanings' people attach to their active transport experiences, as well as 'competences' or skills, as two other critical elements of active transport practices.

We combined the two models to produce an 'active mobility cultures framework' with five analytical categories for use in our study: people, materials, environments, competences, and meanings. We used a combination of in-depth interviews and observations to help us to gather data for all five analytical categories. Observation was particularly useful for understanding the 'material' and 'competences' aspects of practice, while the interviews provided data on all five

categories, but were particularly important for understanding ‘meanings’ attached to practices and experiences.

Table 1: Active mobility cultures framework, adapted from *Bicycling Assemblage Model* (McCullough et al., 2019) and *Practice Theory* (Shove et al., 2012) approaches

People	Materials	Environments	Competences	Meanings
<ul style="list-style-type: none"> • Age • Ability • Income • Gender • Ethnicity • Stage of life 	<ul style="list-style-type: none"> • Clothing • Safety gear • Pedestrian mobility device (e.g. wheelchair, push scooter) • Bicycle • Baggage • Accessories • Rituals • Language, music 	<ul style="list-style-type: none"> • Footpath • Shared paths • Bike lanes • Streets • Parks, trails • Buildings • Facilities • Other road users • Weather, season 	<ul style="list-style-type: none"> • Gait • Speed • Riding position • Bike handling • Safety skills • Communication • Social skills • Scheduling, prioritisation 	<ul style="list-style-type: none"> • Perceptions • Motivations • Values • Social norms

2.4. Data collection

A scoping exercise was carried out to explore candidate organisations and people with whom to conduct the interviews and local observations. A snowballing approach was then taken to identify further interview candidates and opportunities for observations. The study was approved by the Massey University Human Ethics Committee (15/044).

Data collection was carried out in autumn and winter 2021, following two citywide COVID-19 lockdowns in February and early March 2021. No community spread of COVID-19 was recorded during the data collection period; however, walking and cycling behaviour may have been influenced by economic and other effects of the pandemic, related to both the perceived risk of COVID-19 spread and the multiple national and regional lockdowns that had taken place over the previous year.

2.1.4. Interviews

We used in-depth interviews to understand local perceptions about the experience of walking and cycling in the study areas. In-depth interviews are a useful way to gather information about local experiences and understandings of everyday practices like transport trips (Carroll et al., 2004). They were chosen in particular for their ability to provide rich data on meanings attached to material practices (Anderson, 2006; Bowen, 2008), along with their resemblance to some elements of Talanoa, a Pacific research method of data collection built on relationships and free-flowing face-to-face conversations (Vaiioleti, 2006).

We conducted key informant interviews with local walking and cycling promoters, as well as in-depth interviews with local people who have everyday ‘lived experience’ of walking and cycling in the study areas. In total, a series of 13 semi-structured, in-depth interviews were conducted as follows:

- five key informant interviews with local walking and/or cycling promoters
- eight interviews with ten people who regularly walk and/or cycle in the study areas.

Walking and cycling promoters were people who were actively involved in promoting community walking or cycling (and in one case both) in Māngere or Ōtara. A total of two walking (one in Māngere, one more widely across South Auckland) and three cycling groups or programmes (one in Māngere, two in Ōtara) were represented. The walking and cycling participants were mostly residents of Māngere who either walked or biked regularly in South Auckland (for 15 minutes or more at least once a week on average), whether as a mode of transport or a recreational activity. One walking participant lived in a suburb outside of South Auckland but were included as they were of Pacific ethnicity and closely linked to the Māngere community. In addition, one of the researchers involved in the project participated in an interview as a walking participant.

The large majority of participants identified as being of Pacific ethnicity (nine Samoan, two Cook Island Māori), with a further three identifying as Māori and one as Pākehā/European. Nine participants were women and six were men. Walking participants or promoters were mostly women, while those included as cycling promoters or participants tended to be men.

Walking and cycling promoters were interviewed about their work promoting walking or cycling and their own walking and cycling practices, as well as those of their community. Walking and cycling participant interviews focused on the participant's walking or cycling behaviour, as well as some discussion of wider walking and cycling practices in the community (see Appendix 1 for examples of interview questions).

Interviews were conducted between March and July 2021. Participants were offered a \$30 koha for their contribution. All interviews were recorded and transcribed in English. All participants provided written informed consent, and had the opportunity to review, check and amend their interview transcripts if they wished to do so.

2.2.4. Local observations

Observation is a useful research technique to help researchers deepen their understanding of everyday practices they are attempting to describe (Taber, 2010; Thompson, 2017). Observation can be particularly useful for enabling researchers to describe visual and material aspects of a practice, e.g the types of bikes people ride, or the sorts of environments they ride them in (Adler and Adler, 2008; Garfinkel, 1967; Spradley and McCurdy, 1972). Observation is particularly valuable when combined with interviews, which provide rich data on 'meanings' attached to material practices (Anderson, 2006; Hume and Mulcock, n.d.; Taber, 2010). Observation is also a valuable way to prepare for and maximise the quality of interview data. It provides researchers with an opportunity to develop background knowledge of the local context and environment, so that they can have more in-depth conversations with participants.

In this research, with permission, we went along to four local cycling events (no suitable walking events were held during the study period), as 'participant observers' (Hume and Mulcock, n.d., p. xi). We also completed eight observations of local walking and biking in and around town centres, at markets, and along suburban or arterial roads. Outside of events, most observations were undertaken during mornings and afternoons/evenings on weekdays, i.e. during peak travel times. Almost all observations were conducted in pairs, i.e. two researchers carried out separate observations at the same event or location.

A total of 12 in-person observations were carried out in Māngere and Ōtara between March and August 2021. The researchers took notes about what they observed but did not record identifying personal information about anyone (see Appendix 2 for examples of what was observed). Following the observation, the researchers wrote up fieldnotes of their observations, including descriptions of what was observed, self-reflections on their personal experiences,

analysis of connections in the observations, and summaries of any emerging themes and questions for further investigations.

For observations at events, permission was requested of the organiser and they were provided with a short research information sheet outlining the purpose and different elements of the study. A \$30 koha was provided.

2.5. Data analysis and reporting

Both the interviews and local observations were analysed using thematic analysis (Braun and Clarke, 2006). All data were first read through by Rebekah and Elizabeth, with each noting down themes and ideas. These were then discussed and combined. Initial codes were created based on these themes as well as some based on Practice Theory and the Bicycle Assemblage Model. Coding was completed by the primary researcher, with new inductive codes added as they were identified throughout the coding process. All interviews were coded first, followed by all observations, to facilitate identification of different themes across the two datasets. The analysis was then written up by Rebekah and reviewed by Elizabeth, followed by the rest of the research team.

2.6. Study areas

The study was carried out in two suburbs of South Auckland, Māngere and Ōtara. Māngere was a particular focus due to previous work in this area and resulting relationships which were helpful for identifying and recruiting potential participants. Ōtara was chosen as a second suburb to give a wider understanding of South Auckland walking and cycling cultures due to its large town centre and the recent formation of two cycling promotion groups there.

These suburbs, like many other parts of Tāmaki Makaurau, have followed a path of car dependency through prioritising road investment over past decades (Imran and Pearce, 2015). Walking and cycling infrastructure is variable, with ubiquitous 1.5 metre wide concrete footpaths often immediately next to live traffic lanes, and bike lanes rare in most of Ōtara and Māngere. An exception to this is in Māngere Central, where protected bike lanes have been installed on collector and arterial roads close to the town centre, some footpaths widened to three metres, numerous raised crossings installed, and traffic calming added as part of the Te Ara Mua – Future Streets project (Mackie et al., 2018).

Both suburbs are demographically diverse, characterised by large Pacific and Māori populations, low median ages, high rates of religious affiliation (Christian), large family sizes, low incomes and home ownership rates, and high disability rates relative to the Auckland region as a whole (Table 2). Residents of these areas are more likely to travel to work or education by car, as a driver or passenger, than are other Auckland residents. Māngere residents are less likely to cycle or walk to work or education, while Ōtara residents are less likely to cycle, but more likely to walk to these places compared to residents of Auckland overall (Stats NZ, n.d.).

Table 2: Demographic data for Māngere-Ōtāhuhu and Ōtara-Papatoetoe local board areas and whole Auckland region at 2018 census (Stats NZ, n.d.)

		Māngere- Ōtāhuhu	Ōtara- Papatoetoe	Total Auckland region
Population size	-	78,450	85,122	1,571,718
Median age	-	29.0 years	29.1 years	34.7 years
Ethnicity*	Māori	16.4%	15.7%	11.5%
	Pacific	59.4%	46.0%	15.5%
	Pākehā/European	19.1%	16.6%	53.5%
	Asian	19.0%	35.1%	28.2%
	Other	1.4%	1.6%	3.4%
Languages**	English	90.7%	89.6%	92.8%
	Māori	4.6%	3.6%	2.4%
	Samoan	18.3%	16.0%	4.4%
	Tongan	10.5%	4.8%	1.8%
	Hindi	3.3%	7.5%	3.0%
	Panjabi	0.7%	5.4%	1.3%
Religion#	No religion	18.9%	18.2%	42.6%
	Christian	60.7%	48.5%	38.4%
	Hindu	5.7%	12.0%	5.2%
Activity limitations§		8.4%	8.0%	5.5%
Number of children to each female	No children	33.4%	32.7%	34.7%
	One child	13.2%	14.3%	14.8%
	Two children	16.3%	19.4%	25.8%
	Three or more	34.0%	30.6%	22.4%
Unemployment	-	6.3%	5.8%	4.1%
Median income	-	\$24,700	\$25,900	\$34,400
Home ownership	Owned/partly owned/held in family trust	41.5%	43.1%	59.4%
	Neither	58.6%	56.9%	40.6%
Transport to work###	Private vehicle	68.7%	68.6%	59.5%
	Company vehicle	7.3%	7.7%	10.3%
	Work at home	4.9%	4.3%	8.7%
	Walk or jog	2.0%	2.1%	4.3%
	Ride bicycle	0.5%	0.4%	1.0%
Transport to education###	Passenger	49.9%	43.2%	38.6%
	Drive	9.8%	11.3%	11.4%
	Walk or jog	18.4%	22.8%	21.0%
	Ride bicycle	0.5%	0.3%	1.5%

*Self-reported ethnicity, numbers do not add to 100%

**Only languages spoken by 3% or more of population in at least one of the two local boards recorded, note less common Pacific languages not included in dataset (may be higher than 3%)

Only religious affiliations for 10% or more of population in at least one of the two local boards recorded

Excludes public transport

§ Experience a lot of difficulty or cannot do: walking, seeing, hearing, cognition, self-care, communication.

3. FINDINGS – WALKING AND CYCLING CULTURES

3.1. Introduction

Both the participant interviews and observations revealed considerable diversity in how walking and cycling practices are organised in the communities. Deep attention to the who, what, where, how, why, through exploration of the people, materials, environments, competences, and meanings associated with walking and cycling, brings the local experience of these practices to life. The study findings are reported under these five categories of the active mobility cultures framework in this section.

3.2. People

3.1.2. People walking



Photo credits: Left – Māngere Town Centre; Right – Author (EF)

Walking is practiced in various forms. In Māngere, some interview participants felt that walking was relatively common, while others suggested that only a small proportion of residents walked regularly, particularly relative to the vast number of people driving (no interview data were collected for walking in Ōtara). Certain types of walking were associated with different groups of people in the interviews. Walking for exercise, often in walking groups, was seen as something perhaps more common amongst Pacific women, and older people or people with health or weight issues affecting their mobility. Jogging for exercise was something more likely to be associated with young men. Walking for everyday transport trips was commonly observed amongst kids and young people (particularly to and from school). Groups of boys also walk to get to basketball, it was reported. Older people were considered to be more likely to undertake short transport walks, to pick up a few items from the shop, or to get to church, compared to younger adults.

Age and gender may affect whether you walk alone or with companions. We noticed more men and older people travelling solo, and more women in groups. Gender may also influence walking purpose. All the female participants we interviewed about walking, themselves walked primarily

for exercise rather than transport, while male participants (who tended to be interviewed primarily about cycling) were more likely to talk about walking places for transport. Finally, family walking, in the evenings, for exercise or fresh air in summer and during COVID-19 lockdowns was also seen as an important part of life:

“There’s a lot of people that walk... in the early evenings, in the summertime, like I’ve got a block... It takes you roughly about 10 minutes to bike, walk. Sometimes I’ll pass maybe 20, 30, maybe 40, 40 families walking the opposite way.” (Male, Māngere)

In Māngere, walkers mostly appeared or were described as ethnically Pacific or Māori, while in Ōtara, a wide range of ethnicities was observed. For cycling, ethnicity varied by cycling type in both suburbs, with those riding on footpaths and wearing more casual clothing more often of Pacific or Māori ethnicity. On-road cyclists in more specialised cycling clothing included people of European descent as well.

3.2.2. People cycling



Photo credits: Left – Ōtara Bike Burb; Right – Ōtara Bike Burb

Cycling practices tended to be described as more limited than walking practices and as involving specific demographic groups, particularly in Māngere. Interview participants mentioned a few key groups of cyclists: kids, both boys and girls, cycling with parents (either on bikes or on foot) and at cycling events, as well as teenagers and youth riding around alone or in groups. Cycling was also seen as something done by adult men riding alone to work or for recreation, as well as in groups, mainly of Pacific and Māori men, in Māngere. Pākehā riding through the area were also identified as a group of cyclists in both Māngere and Ōtara. Participants in Ōtara were more likely to report that cycling was something that people of all ages and ethnicities were doing both alone or in families both as transport and recreationally. Organised rides, and skills training sessions were considered to bring together a fairly diverse group of people. Interestingly, middle aged and older women starting to ride for the first time in a long time (maybe since they were kids) were also identified as a growing group of cyclists, who are being supported to get started by local ‘bike hubs’:

“A lot of people bike, you know people who bike all over the place, I don’t know them personally. But mainly, the ones that I see all the time are the ones that will come here [to the cycling hub]. Like there was one time... a couple of ladies turned up here and we went for a ride and that’s a big step in your life if you haven’t been on [a bike] for a long time.” (Male, Māngere)

In general, in both Māngere and Ōtara, cyclists are considered much more likely to be boys or men, with women mostly cycling at dedicated events or with children. However, cycling promoters in Ōtara noted that girls and women were increasingly getting into biking and they actively encouraged them to do so. Similarly, some older people were starting to take up biking in various forms, either as a form of fitness or to enjoy time with their children or grandchildren.

Amongst adult men cycling, we often observed common differences in practices: a type of high speed on-road cycling amongst Pakēhā men wearing specialist cycling or exercise clothes; as well as Pacific and Māori men cycling wearing more casual clothing, often with a hi-vis vest, riding at medium to high speeds. Of course not every rider fitted into one category or the other; however, there were often clear differences between these practices.

3.3. Materials

3.1.3. Walking materials



Photo credits: Left – Author (EF); Right – Te Ara Mua Future Streets

Physical walking materials, including clothing, bags, and other items carried, varied somewhat by walking purpose, in particular, whether people were actively walking for exercise or walking as part of another activity (i.e. dispersed/transport walking). Participants described the clothing they wore to go for a purposeful exercise walk as being comfortable and sporty, often leggings or shorts with a jacket, jumper, or t-shirt, with good walking shoes considered especially important:

“I used to think it didn’t matter what shoes, but now I walk, I’ve got some proper walking shoes... And I think footwear is really important if you’re walking, ‘cause then you’re able to enjoy the walk instead of suffering along the road (laughing). Yeah, so if people wanna get into walking or even just leisure you’ve gotta have at least the proper footwear, yeah. Jandals aren’t for everything.” (Female, Māngere)

A cap or hat was also common. Clothing was also used to modify visibility, in some cases wearing bright or fluoro colours to increase visibility to drivers for safety reasons, and in others wearing dark clothes or covering up to avoid recognition, suggesting they felt embarrassed about being seen walking:

“I started off, you know, where people couldn’t recognise me on the streets (laughter) round South Auckland (laughter). You know, hoodies, tracks, the

hoodie's on the head with the cap. I'm sure people were looking going 'what the heck?' But now I don't care, so I'll go in my shorts and a cap. I won't overdress or hide from – you know, I don't care now. I just walk the streets.” (Female, Māngere)

Branding was not mentioned beyond avoiding employer sign-written clothing, though some South Auckland walking groups produce and wear t-shirts with the walking group name on it.

Participants also talked about wearing headphones to listen to music, and a phone, which could also be used to measure distance or number of steps. One participant has a FitBit for this purpose. Some take a water bottle or a backpack, but generally participants reported avoiding carrying things, in some cases preferring to overheat rather than carry a jacket: *“after 30 minutes you're so hot and you don't wanna take it off 'cause you don't wanna hold [clothing], you know” (Female, Māngere)*. A walking stick is also carried by one participant to protect herself from *“unregistered dogs” (Female, Māngere)*, while the organiser of a regular walking group takes health and safety items such as a first aid kit and a COVID-19 tracking scanner.

In contrast, walking for other purposes, e.g. to buy something from the shop or around the markets, was both reported and observed to be done mostly in casual, everyday clothing. This could be work or school clothing (e.g. school uniform), a hoodie or t-shirt with shorts or pants, or more culturally traditional clothing. For example, one Māngere participant reported usually wearing an 'ie lavalava (Samoan wraparound skirt) to the local shop, and seeing older women walking to church on Sundays in a white or a multicoloured puletasi (traditional formal Samoan dress). Teenage girls and women were also occasionally observed wearing hijab at the markets and town centres. Common footwear includes jandals, slides, or sneakers, and the odd person was observed wearing a bandana or medical mask over their mouth and nose, presumably as COVID-19 protection.

Overall, carrying one or two items for a short distance appears to be a common practice, but carrying more than this, for example, bags of groceries home from the supermarket, seemed comparatively rare, possibly more so in Māngere than Ōtara. Walking seemed more common in some places, including markets and town centres, where music, usually from multiple sources is played loudly and there is often a Christian preacher or two. There are also usually local musical and cultural performances at the markets, which receive attention 'choohooing' (cheering) from the audience.

Materials more relevant to walking for exercise include listening to music on headphones, or occasionally a bluetooth speaker, while walking, and counting steps or kilometres, as well as how long it takes to travel a certain distance. Interestingly, participants who walked primarily for exercise and those walking to get to places often commented on how far they had travelled – the former in distances e.g. kilometres, and the latter in numbers of steps. Walking groups also used timebound challenges with prizes to encourage walking among members, for example, to walk up multiple Auckland mountains over the course of a month. Further, putting members into teams to compete against one another was considered to help create social accountability which encourages and sustains walking practices.

3.2.3. Cycling materials



Photo credits: Left – S Double S Services; Right – Ōtara Bike Burb

Broadly speaking, physical materials were found to be much more important to South Auckland cycling cultures than to walking cultures. This is in part due to the centrality of the bicycle itself for the practice of cycling, i.e. physical materials are required for cycling where they are not for walking. However, the data also indicate that clothing and other cycling gear are an important part of how people view themselves and others as cyclists.

People ride a range of bicycles in Māngere and Ōtara but the most common style in both suburbs is the mountain bike; unsurprisingly given their prevalence in Aotearoa New Zealand more generally. They tended to be the default bike for adults, as well as reportedly the preferred choice for youth because they have a hand brake on the back wheel which is used to do wheelies. Another aspect of mountain bikes valued by large men in Māngere was a solid frame: *“I’ve got a pretty good mountain bike. It holds my weight, that’s the main thing (laughing).” (Male, Māngere).*

Road bikes were also observed frequently, and children’s bikes were of course used by most children. Interestingly, e-bikes are reasonably common in Māngere despite their high price and relative newness to the market, with one cycling group primarily riding them and reportedly an increasing interest from community members seeking donated bikes as well. Participants said they like e-bikes because they are able to ride faster, more frequently, and over longer distances, as they require less physical effort and take less time than riding a push bike. They also make hills and wind less challenging and minimise sweating. One participant reported owning an e-bike as well as a Dutch bike/cruiser and a road bike, which he continues to use for some purposes though his e-bike is his default option. However, for the most part, those who have tried or who own an e-bike reported being reluctant to use anything else now.

Cycling promoters often dealt with a wide range of bike types, which they fixed up or used for cycling events. For example, other types of bikes observed at events include cruisers, folding bikes, BMXs, choppers, fat bikes, and low rider bikes. Of these, only cruisers and BMXs were observed being ridden around the local neighbourhood.

At one event, from the way they were laid out and the reactions of attendees, it was clear that a set of chrome low rider bikes were widely considered much more exciting and cool than the other bikes, despite being very difficult to ride:

“Along the left side of the room around 20 adult bikes are lined up along the wall. Some are e-bikes, including a couple of purple Beam ones, most are mountain bike or step through design, but some have long, high handlebars. One orange one has small wheels with a low seat and a very long frame

extending from the handlebars to the front wheel. Another green one at the other end, which featured on the event flyer, has a small and skinny front wheel and a very wide back wheel. And one is a tandem, with two sets of pedals... In the centre of the room are placed 6 shiny silver 'low rider' bikes... they sit very low to the ground, with the pedals close to the seat. They are all different designs and some have coloured parts on them, but they are all low and they all gleam. (Observation, Māngere cycling event)

For some though, the type of bike was reportedly not important, as long as it worked and they could modify it as they pleased, including painting it or attaching 'siren' music speakers:

"Everybody loves their mountain bikes. But like I say, whatever's here, and whatever the community can access, they'll ride it, they don't care, as long as it's a bike. Even the colour, they don't care, 'let's spray paint it', 'okay then, let's do it' (laughs)." (Promoter, Ōtara)

Participants often reported carrying items on their bikes or in a backpack when riding. Some like to take music in the form of headphones or a bluetooth speaker, and usually their phone. Bike repair tools such as a puncture kit and spare tube were also considered important, particularly for group rides, along with a first aid kit, snacks, and water bottles. Backpacks were a common way of carrying these items. Only one participant talked about more specialised equipment such as panniers for grocery shopping, and carrying quality waterproof clothing in a backpack on days when rain was likely, and only one mentioned needing a padlock in some situations. Similarly, in the observations, backpacks were commonly observed, with panniers, crates and baskets, cross-shoulder bags seen more rarely, along with occasional shopping bags hanging from handlebars or a phone or bottle of drink held in a hand.

Several adult clothing, bike, and safety gear styles were observed as well as described by participants. This included:

- work clothing and boots with a hi-vis jacket or vest and a helmet, usually riding a mountain bike
- casual sports clothing e.g. shorts and t-shirt or jacket, usually in dark colours, often with a hi-vis vest and wearing a helmet, sometimes gloves, riding an e-bike or a mountain bike
- specialist cycling clothing e.g. lycra, often in bright colours, with a helmet, riding a road bike
- casual street clothing e.g. t-shirts or hoodies with shorts or pants and no helmet, riding a mountain or other bike, which often looked too small or too large.

One particular version of the latter style was described as being closely linked to gang involvement or aspiration: "if you're seen wearing a Proclub and you're riding a Big Nine Merida there's that assumption that you're one of them." (Promoter, Ōtara). Participants also indicated that clothing was important to their own cycling practices in terms of how they looked through comments about what they wore as a group, e.g. dark clothing and hi-vis vests, as well as laughing at the idea of wearing a suit on a bike, or lycra: "some people get decked out in the riding gear but I can't wear that" (Male, Māngere).

Young children mostly wear helmets while riding, though those over 7 or so years old were observed taking their helmet off in between biking sessions at events, and teenagers and young adults seen cycling outside of events rarely wore them. Even one adult participant who regularly cycled noted that he prefers not to wear a helmet when he feels he can "get away with it"

(Male, Māngere). Helmet-wearing tended to be emphasised by promoters, who noted that helmets tend to be seen as uncool, and were actively considering how they could change that, for example, by using designs and stickers that reflect local identities.

Children also tended to be dressed more colourfully than adults, and ride more colourful bikes, with girls often observed in pink clothing and/or riding pink bikes. However, at one community cycling event observed in Ōtara, attendees of all ages were encouraged to dress up and wore a range of bright colours and accessories:

“Adults arrive wheeling their bikes or without bikes – almost all walking, not on their bikes. Almost all area dressed up colourfully – there are tutus and funny glasses and hats and wigs and lei. A few people, kids mostly, wear full face masks. One family are all wearing pink capes with a Pacific-looking floral motif on them. They also wear pink caps and accessories, but are otherwise all in black. They have pink metallic tassels on their bike handlebars. Big groups of event volunteers in different coloured hi-vis vests are standing around.”

(Observation, Ōtara cycling event)

Motifs representing cultural and ethnic identities were visible everywhere, with some community members wearing Pacific floral-patterned capes and lei, while others wore the tino rangatiratanga flag (Māori sovereignty flag) as a cape or on their t-shirt. Several people wore t-shirts or jumpers with the name of one of the local bike promotion organisations on it. Most prominent, however, were flags and clothing celebrating Ōtara place names, phone area codes, and organisation, pointing to a strong cultural and community pride. Similarly, cycling events in Māngere tend to be based around Pacific identities and to use cycling group names, slogans, signage, and branding to promote cycling to Māngere residents.

Other things that seem important or were common ingredients at community cycling events include music, usually loud and coming from multiple sources, often playing popular songs from the 2000s or upbeat reggae and pop music, light-hearted dancing, especially children and families, kai (food) and inu (drinks) provided at all cycling events, karakia (blessings) of food – traditional Māori or Christian, Christian karakia to begin and end cycling events in Māngere.

3.4. Environments

3.1.4. Walking environments



Photo credits: Left – Author (EF); Right – Te Ara Mua Future Streets

One of the main benefits of walking commented on by interview participants was that it could be done anywhere, at almost any time. However, they often had clear preferences for where they liked to walk and different strategies for how they dealt with challenges related to their walking environment.

In the observations, people were observed walking to and from and around the town centres, schools, local shops, bus stops, and parks, as well as smaller numbers of people seemingly walking primarily for exercise (based on their clothing and route). Interview participants, however, mostly spoke about their fitness walking routes, which tended to be either around the block close to their home, or at a park or scenic walkway, often that they drove to by car. All had a regular route they walked. Participants who walked around their local neighbourhood tended to prioritise the convenience and proximity of being able to go whenever they found time, while those who travelled further liked being in a scenic and safe environment and in the company of others walking.

Features of the walking environment that participants reported valuing include:

- attractive scenery and natural environment
- absent or distant traffic (i.e. paths away from the road)
- good lighting
- presence of others walking
- wide, flat, smooth paths
- toilets and benches, for walking groups in particular
- proximity to home and appropriate length.

One of the main challenges of the walking environment in South Auckland is the presence of large volumes of traffic and negotiation thereof. This was noted in the observations and mentioned in different ways in the interviews. For example, both the Ōtara and Māngere town centres are heavily vehicle-dominated environments with large car parks and busy, multi-lane arterial roads running alongside them. People walking to the town centres often have to cross busy roads and walk a few hundred metres through mostly empty parking lots to reach the shopping area – or on Saturdays, when the markets are on, to negotiate through large volumes of queued, parked, and reversing cars, including in some cases, over footpaths. Pedestrian priority pathways are not always in convenient places and people mostly made their own way:

“The car park is filling up more and more, and there are more cars driving around and getting in each other’s way. As people walk into the markets from the surrounding areas, they are constantly observing the car park. Car speeds are quite slow and drivers generally seem observant, but it is a complex environment with a lot of reversing in and out of carparks. Although there is a pedestrian crossing where I am sitting, most people seem to walk across the car park in and out of the market simply where they are i.e. they do not go out of their way to walk to the crossing. This requires some waiting for the cars to pass etc. but generally this seems to be a comfortable behaviour for most people. Maybe this is through experience? I recall now when I was walking across the car park with [community researcher], she walked in front of some cars that I would not have but I guess in an environment like this the pedestrian needs to walk with some authority. I have not seen a car driver give way to a pedestrian yet (outside of a pedestrian crossing). People find gaps and then walk through.”
(Observation, Māngere town centre market, Saturday morning)

Similarly, a large, signalised intersection right on the corner of Ōtara town centre provides a crossing point for many pedestrians to access the town centre. However, the signals take a long

time to change, a diagonal cross from corner to corner requires four separate crossing legs (two slip lane zebra crossings and two signalised crossings), and on one side of the intersection, vehicles were observed running a red turning light for several seconds in every cycle, leading to conflicts with pedestrians crossing on their green light. People crossing were observed running out of the way of red light running vehicles multiple times. In other cases, people appeared to be familiar with the way the lights worked, ignoring the crossing button and signal, and simply crossing when they deemed it to be safe.

Interview participants also reported difficulties crossing some roads, mostly those without any pedestrian priority facilities, although some also noted that even at zebra crossings, drivers did not always give way. Participants described various safety strategies to deal with these risks, such as always waiting for cars in both directions to stop before entering a zebra crossing, always using signalised crossings during times of heavy traffic, not listening to music or taking out headphones to cross the road, and wearing bright colours:

“I don’t listen to music. The reason why I don’t is because for me I need to be alert about what’s going on around me. And if you’re walking on a busy road and you’ve got headphones on and, you know, someone could just hit you and it really would be the pedestrian’s fault because you’ve got your music blasting. But, I’m pretty safety conscious for myself... is that I want to be alert of where I am and who’s around me if I’m walking by myself, for safety.” (Female, Māngere)

Some participants also indicated that the heavy traffic environments they walked in made them feel watched, which in some cases discouraged them from walking, or led them to try and hide their face while walking. In other cases, while participants wished for less traffic in order to improve their walking experiences, they consciously ignored potential driver gazes in favour of walking in a way that was enjoyable to them:

“I walk fast without the music but I walk even faster with the music (laughing). I’m not sure if I look like I’m dancing, but I don’t look at people in the cars. I just keep walking in case I look like I am dancing along the street but, you know, I’m enjoying it (laughing).” (Female, Māngere)

The social and personal safety environment was also reported as influencing walking practices in Māngere. Concerns fall into two main categories: risk of attack by an unleashed dog, or by other people. Dog concerns were reported to have influenced route decisions, including for walking groups, and one participant said she always took a stick to protect herself. One older participant reported having been seriously injured in a dog attack in the past. Women in particular were also worried about being approached or attacked by strange men while walking. One young female participant reported having experienced such approaches, and being heavily discouraged from walking anywhere by her family as a result: *“I used to feel like really safe in my area, like even just walking to the bus stop that’s just up the road, but not anymore” (Female, Māngere)*. Strategies participants reported using to minimise the risk from other people include walking only in groups, not walking in the dark, walking only in well-lit areas, or (for fitness walking) walking around one’s own property instead of on the street.

Walking surfaces were also identified in the interview and observation data as impacting walking decisions and experiences. As well as describing flat and smooth paths without obstacles as desirable for walking, participants discussed how the texture of walking surfaces was especially important to people with mobility issues such as knee problems. One participant mentioned other suburbs in which there were paths with softer surfaces which made walking easier for this group, and another noted she had seen older people walking in Māngere with

knee pads on. An additional challenge is walking in wet conditions, particularly given that jandals and slides are common shoe choices. In one of the observations on a wet day at the Māngere markets, people were observed slowing their pace and walking more cautiously as the town centre floor became wet and slippery.

Finally, walking practices were found to be heavily influenced by the climate and season. Walking was reported to be much more common in summer and in fine weather, while walking in the rain was considered somewhat abnormal. Though one participant said she enjoys walking in the rain, others either avoid walking in anything more than light spitting, or used rain jackets, scarves, music, and a faster pace to make it more tolerable. Moreover, due to concerns about walking in the dark, participants described difficulties finding time to walk during winter, when daylight hours are shorter.

3.2.4. Cycling environments



Photo credits: Left – Triple Teez; Right – Ōtara Bike Burb

Similar to walking, cyclists in the study biked in a range of places, but expressed strong preferences for where. The physical environment is mostly defined by a lack of dedicated infrastructure, though this varies across the two suburbs studied: in Māngere Central, protected bike lanes were recently installed on some collector and arterial roads, while in Ōtara and across most of the rest of Māngere, very little dedicated cycling infrastructure exists. Together with high traffic volumes, this built environment influences cycling practices in different ways.

Cycling participants described enjoying riding anywhere, but particularly to or at scenic locations, around the local neighbourhood, and to other suburbs. E-bikes were valued in this context for making further away destinations reachable and opening up new cycling opportunities. Participants especially liked to discover and explore new pathways and routes.

Even more so than for walking, the traffic environment was reported to influence cycling practices and decisions. Even experienced cyclists often felt uncomfortable on the roads, as a result of high traffic volumes and driver behaviour such as trying to cut cyclists off or run them off the road. Some participants were able to laugh off the threat from drivers:

“I’ve had it, I’ve had many cars beep at me, and then I chase them, catch them and I was like ‘what was that for?’ And they’re like ‘no, no, no, no, I was just trying to make sure you knew I was coming.’ It’s like ‘no, no, you were trying to run me off the road...’ (laughing). Heaps of times.” (Promoter, Ōtara)

However, cyclists described being selective about the times of day they ride and the routes they take, preferring to ride in groups, trying to keep out of the way of cars, and being constantly

alert to potential dangers. On the other hand, high levels of traffic congestion also contribute to the incentive to cycle for some: one cycling promoter described enjoying the feeling of riding past cars, and another talked about getting faster from A to B on a bike compared to in a car.

Relatedly, cyclists in Māngere and Ōtara reported and were observed cycling on the footpath, on the road, and where bike lanes were present, in bike lanes. Footpath use was observed more with younger cyclists, women, less experienced cyclists, and those in Ōtara, though some experienced male cyclists in Māngere also reported preferring the footpath. Newer cyclists were especially wary of traffic and tended to feel much safer on footpaths, with some indicating that riding on the road would never be an option for them. For many, cycling on the footpath was simply seen as much safer than riding on the road:

“[It’s] safer for kids to ride on the footpath than it is on the road. I mean they say ‘oh, reversing cars’ but you get hit by a car that’s driving 5k’s reversing, it’s different from getting hit by a car that’s travelling 50k’s going forward.”
(Promoter, Ōtara)

Others preferred the road because of the speed and joy of riding past cars, and because they generally felt that it was where cyclists belonged. Road cycling tend to be associated with faster cycling, as well as more frequent use of safety gear such as helmets and hi-vis clothing. Bike lane use appeared to partially overlap with both footpath and road cyclists: in places where they were available, some road cyclists would use them, and some footpath cyclists, while a significant proportion of each continued to use the road or footpath. This was noted in observations as well as reported in interviews. Some participants described concrete kerb-separated on-road bike lanes in Māngere as feeling safe because cars could not cross into their lane, while others were concerned there was not enough separation from vehicles, the concrete barriers would cause injury if someone were to lose their balance and fall on them, or that glass and debris that collected in the lanes could puncture their tyre. Moreover, they were described as being inconsistent and not sufficiently linked up to be useful, and some participants indicated that the installation of these bike lanes in space previously available to cars had contributed to animosity toward cyclists and the local cycling group.

As with walking, many cyclists also managed the lack of dedicated or fit-for-purpose cycling infrastructure by using the infrastructure available in unconventional ways. For example, cyclists were sometimes observed switching from using the footpath to using the road or vehicle signal phases to cross a road or intersection more efficiently than were they to cross like a pedestrian:

“We see a cyclist not long after we settle in. He rides along the footpath on the other side of East Tāmaki Rd heading west, then at the intersection continues straight onto the road and across to the traffic lane on the other side, where he turns next to southwestern pedestrian island to turn right and come towards us... When the lights change in his direction he then rides with the traffic heading north up Bairds Rd, past us.” (Observation, Ōtara town centre, Thursday afternoon)

Finding or creating dedicated cycling spaces was a further theme in the data. Cycling events took place in a range of locations, but often involved space usually dedicated to walking or driving and parking cars being marked off and temporarily used for cycling. Shared paths and new cycling infrastructure are also often explored as part of group ride events for Māngere cyclists. In addition to cycling spaces, promoters talked about the importance of having visible bike hubs in town centres to increase awareness and availability of their services to the local community.

The social environment was raised by cycling participants much less often than those walking, possibly in part due to the predominance of male interview participants who bike. However, unleashed dogs were also described, and in one case experienced, as an issue during bike rides. Bike theft was not mentioned as a challenge by any participants, though one did point to the need to have a good quality padlock to be able to leave a bike in a public place, and another had to rebuke a kid for sitting on his bike outside the supermarket.

Perhaps even more so than walking, cycling was described as seasonal and as not only unpleasant, but less safe in the rain. Participants described increased traffic volumes, poorer visibility, and slippery roads in wet weather as increasing the likelihood of a crash, and some avoided riding in the rain at all. As well as colder temperatures and more rain in winter, shorter daylight hours were described as discouraging winter cycling, as participants often did not feel safe riding in the dark, especially alone and on the road.

3.5. Competences

3.1.5. Walking competences



Photo credits: Left – Author (RT); Right – Author (EF)

A surprisingly broad range of walking competences were identified in the data as contributing to or being necessary for walking, either for exercise or transport. These are closely linked to ability, either physical or mental, but tend to involve skills that can be learnt. At the most basic level, people need to be able to walk and to negotiate their environment. Some of the competences people use to do so have already been described in strategies in the Environment section; some others are outlined here.

Physical competences include pace and gait, that is, how fast people walk and their manner of walking. Most people were observed walking at a slow to moderate pace around Māngere and Ōtara, with the occasional person walking fast or jogging, mostly those dressed in sports-looking clothing, or people speeding up to get out of the way of waiting vehicles. A variety of gaits were observed, partially related to ability, but also to clothing and style. For example, people walking in shoes that appeared to be too large for them were seen shuffling, those in jandals and slides walked more cautiously in wet conditions.

Participants also mentioned their pace of walking as critical to their practice, with those walking for exercise often preferring to walk quickly, but having to modify their pace to suit others when walking in a group. Finally, participants talked about how their pace changed over time as they walked regularly and became more fit, with one walking group organiser regularly changing and

extending route lengths to continue to provide a challenge as members became faster and more confident.

Several mental skills were also mentioned by participants as important. These include the right mindset to enable either regular walking for exercise practices or to choose to walk somewhere instead of driving. Achieving the right mindset was felt to be something that took consistency and effort over time:

“Once you get to that headspace that you have to make time for yourself, to self-care, to do things outside your norm. And once you get into that routine it just becomes natural again. You don’t have to think about it or dread going.”
(Female, Māngere)

Challenges to achieving such a mindset mentioned included unhealthy food, alcohol, laziness, and a mentality that walking was too slow or a waste of energy. A related competence was an awareness of walking routes and how long it took to walk them. For example, one participant talked about how people who mostly drive tend to overestimate how long walking takes, and those who walked for fitness discussed how they knew the route that worked for them in terms of how long it took at their pace and what obstacles (such as difficult crossings, lots of traffic, dogs, potholes) they faced along the way. A certain level of resilience was also apparent among those walking regularly, for example, in shrugging off traffic discomfort and risks or walking in uncomfortable weather conditions. For them, walking was a higher priority than some of the risks they faced, so they simply went ahead with it and prayed for the best:

“I’ll have a mindset, nothing to stop me from completing my walk. If I come across something then just pray up while I’m on the street and keep moving forward and just making a note.” (Female, Māngere)

Relatedly, finding time to walk was a commonly mentioned competence. Participants talked about the work and family responsibilities they were juggling and how they squeezed walking in between other duties and activities. Most did not have a consistent walking schedule due to shift work, variable child care hours, and often the weather, but prioritised walking when they could. This was strongly supported through one of the walking groups which had a ‘criteria’ of putting aside time for oneself. Most fitness walkers preferred to walk in the morning where possible, but would go at any hour of the day, even sometimes at night if they did not get another opportunity. Compared to going to the gym, this ability to fit walking into a busy and changing schedule was seen as a key advantage.

Social skills were also part of some types of walking practices. This may be particularly the case for girls and women, who are often encouraged or prefer to walk in pairs or groups rather than alone. These include building and maintaining friendships in order to have others to walk with, conversational skills, supporting one another’s walking efforts, and adapting to the pace and needs of others. Further, while not necessary competences for walking, neighbourhood care was mentioned by some participants as part of their walking practices, including reporting unregistered or unleashed dogs, and potholes and pathway issues to the local authorities, picking up rubbish, and gathering and returning trolleys encountered along a route to the supermarket car park.

3.2.5. Cycling competences



Photo credits: Left – Ōtara Bike Burb; Right – S Double S Services

As for walking, some critical cycling competences have already been addressed in the Environment section. Others are similar to the skills described for walking, though participants emphasised them in different ways. In general, biking can be seen as requiring many of the same competences as walking, plus additional manual skills and confidence.

First and foremost, the physical skill of being able to ride a bike is critical to cycling. This was something that participants reported learning when they were children, then often not used for decades before returning to cycling as an adult. It then took time to build the manual skills back up again and, critically, their confidence on a bike. This was described as a process requiring dedicated, off-road facilities, either temporary or permanent, and ongoing training.

Types of manual cycling skills were found to vary by bike type, cycling location, and cycling style and identity. For bike types, different seating, pedal, and arm positions require slightly different skills, as do e-bikes, and participants noted that it takes time to learn how to ride a different bike. Bike size and condition also play a role, which may be especially relevant in Māngere and Ōtara considering many ride second-hand bikes which may not be quite the right size or in good condition:

“The bike I was given is somewhat low, but I think it is still okay and will not be hard to ride... I liked the smaller bike because my foot could reach the ground if I needed to stop or slow down. I am still trying to build my confidence in cycling because it has been over 20 years since I have cycled. But, I should have swapped bikes... As I am riding, I notice it is way harder to ride this bike compared to the bike I rode during the [previous cycling event]... It was hard to cycle, and the seat was quite uncomfortable.” (Observation, Ōtara cycling event)

Riding on the road was also described as requiring additional skills compared to riding on the footpath, such as maintaining pace, keeping left, and staying out of the way of cars. Skills learnt through Grade 2 training, such as knowing the road code were considered important, and compared to driving skills. On the other hand, youth cyclists were often observed or described as doing wheelies and other tricks, which require a different set of manual skills.

As with walking, cyclists rode at different speeds and in different positions. Youth cyclists were observed sitting mostly quite upright and casually, at variable speeds, with one seen leaning his forearms onto his handlebars and others riding with one hand. Older and on-road cyclists tended to bike faster and to lean forward more. Those wearing lycra and on road bikes tended to be the most bent over and to ride the fastest, as well as to negotiate vehicles most confidently.

Bike maintenance and repair were also competences described in the interviews as part of their cycling practices. For example, being able to repair a puncture while out riding. Cycling promoters encouraged people to check their bikes before riding and taught bike repair skills, as well as repairing bikes themselves. Interestingly, one participant talked about having learnt their bike repair skills when they were young, out of financial necessity, skills they now used to fix community members' and donated bikes:

“You sort of get to that growing up in Māngere and you couldn’t afford to buy things (laughing). So I learned how to swap things over... I think a lot of us got their skills from then.” (Male, Māngere)

Finally, similar to walking, participants mentioned scheduling, mental, and social competences that were part of their riding practices. Knowing which routes to pick, how long trips took, and, for those who had the option, which type of bike would be most appropriate for which journey were all mentioned by participants. E-bikes were described as especially useful when it came to scheduling because they were faster and did not require a shower or change of clothes on arrival: *“because I’m cycling as a mode of transport rather than particularly for sports, I want to just feel that I’m dressed and ready to go when I arrive” (Male, Māngere)*. Cycling was also preferred for some trips, particularly during rush hour, because it was faster than driving. On the other hand, while bringing children to cycling events was usually encouraged, and social support for one another’s practice was described as an important part of group rides, riding for transport tended to be viewed as an individual activity, with travel involving more than one person justifying use of a car instead.

3.6. Meanings

3.1.6. Walking meanings



Photo credits: Left – Stuff.co.nz, Walking Samoans; Right – Author (EF)

The data show walking to have a wide range of meanings for people in South Auckland (focused mainly on Māngere due to lack of interview data for Ōtara). Participants mostly spoke about what walking means to them, what motivates them to walk, and the benefits they experience. The data also pointed to some wider community meanings associated with walking, which also contributed to participant practices.

The most common association participants had with walking was exercise and physical health, and especially weight loss, with participants valuing things like 'being active', 'training', 'cardio', or 'getting the heart rate up'. Health-related benefits such as weight loss, improving or maintaining fitness, or reducing the effects of long-term disease tended to be the primary motivator for people to walk. Realising these benefits also further motivated people to continue walking, for example, one walking group member in Māngere reportedly experienced significant improvement in her diabetes symptoms, in part from regularly taking part in the walking group. Interestingly though, while some participants considered transport walking part of their fitness regime, or valued it for its physical health benefits, others only counted dedicated walks for the purpose of exercising as contributing to their physical health. Similarly, when asked about how walking was viewed more widely, participants tended to talk about walking as a positive "form of exercise in Māngere" (Male, Māngere), with transport walking less frequently mentioned. In some instances, walking for exercise appears to be understood as so closely linked to weight loss that it does not make sense for those who are not trying to lose weight:

"My husband's like 'I don't know what weight you have to lose.' (laughing)... He goes 'I think you're just putting those [other walking group members] off, you're the smallest one in that group.' (laughter) But you know, he doesn't get it, like this is just something for me, you know. It's exercising, it's not trying to be the smallest one. It's just something I enjoy and I'm in the [walking group]."
(Female, Māngere)

Walking was also strongly associated with mental health and taking care of oneself among participants in the study, something that was not necessarily widely understood. As shown in the above quote, walking tended to be experienced as an enjoyable practice and often a form of self-care. It was also viewed as a form of independence and freedom to be able to do things for oneself and not have to worry about children or family. While it did not generally feature as a reason for people to start walking, it was emphasised as a major benefit of walking and motivation to walk for those who did so regularly already. Participants described walking as an opportunity to 'get some fresh air' or to "dump stress back into the community" (Female, Māngere), after which they came back feeling lighter or with "a second wind of energy" (Female, Māngere). These meanings applied to walking for transport purposes, as well as to those specifically for exercise:

"It's like... peaceful, I guess. Gives me, it's almost like 'stop and smell the roses' kind of thing for me... Yeah, it's just that space that I get to myself... just that time to flush out what's important and what I need to do now, what I need to get done now, and then like do away with everything else... I usually use my time to walk as like, space to just breathe in some fresh air... Like just have a time out, and not to get so stuck, just with all the daily... the daily struggles... So it's just being able to sift through, a time just to sift through things. Quickly. Yeah. That's kind of, yeah, I think that's why I choose to walk places." (Female, Māngere).

Social connection was another meaning or benefit of walking described in the data. This could be both walking and talking together with others such as friends or family members, as well as

seeing and acknowledging other people out walking at the same time. Participants talked about enjoying “gossiping” or “bonding time” with loved ones, and greeting other people who have “the same buzz as you” (Female, Māngere). Social connection was also linked to personal safety, wherein participants, especially women, reported feeling much safer walking with others than alone, as well as feeling safer when other people were out walking. Broader community views reported by participants appeared to reflect these meanings, with especially positive comments about families and groups walking together in the warmer months. Social connection was sometimes described as a secondary benefit of walking – one that motivated people to keep walking once they had started for the initial purpose of improving their physical health:

“Interviewer: What gets people walking?”

Participant: I think it's health. I think for us, here [in this walking group], it's definitely the health or how unhealthy they are. Their doctors have said 'you need to do something' so it is more to do with, yeah they need to lose weight or they need to reduce their diabetes or they want bariatric surgery or they want their knees replaced but you have to lose weight to get any of those surgeries, you have to prove that you've been mobile to get those surgeries. And then the carry on from that though is just the friendships they make. Yeah.” (Promoter, Māngere)

On the flip side, walking in company took away from some of the perceived mental health benefits for some participants, particularly those for whom walking was viewed as a form of self-care and freedom from household pressures. While some participants discussed chatting with their walking companions in a way that was similarly beneficial for their mental health as walking alone, for other participants, walking in company reduced the mental health benefits they experienced. This was either because they did not get time alone with their thoughts, or because accommodating others' walking needs left them unable to enjoy their practice: *“I tried to take my eldest [daughter] with me and that was so stressful. She is so slow.” (Female, Māngere)*. In contrast, social connection with other people out walking, through smiling, waving, or greeting them, was universally valued among participants.

Related to social connection is a connection to one's neighbourhood and community. Participants talked positively about observing changes in their local area and noticing things that they had missed in the car, for example, a house being sold or a new development. Similarly to social connection, community connection was often a secondary motivation for walking, rather than being what got them into it in the first place: *“after a while it became like, 'oh, you actually see what exactly is going on around anywhere.' Plus also, I think you wanna keep in touch with your community and see what's out there.” (Female, Māngere)*.

Finally, some participants talked about how walking would get them somewhere faster during rush hour than would driving, for example to the shop. This provides an interesting counterpoint to association among some participants of walking with being slow and taking too much time compared to driving, which tended to be seen as the default method for getting around. Insistence on driving during rush hour, despite its relative slowness, was also linked in some circumstances to making the road less safe for cyclists too:

“They wanna be able to squeeze in through that gap but because I'm there as a bike they can't fit through... And that's just road rage, just impatient people trying to get somewhere. You know, and I've seen it many times on our street. We live five minutes' walk from the shops, from the shopping centre. And I've got my next door neighbour, she'll get in the car and drive it. And then at five o'clock our street is peak hour, and then you jump out for a five minute drive to

the shop, of course you're gonna want to get around those cars, 'cause it's only meant to be a two minute drive. When if you jumped out and you walked there you would've beaten all those cars there." (Promoter, Ōtara).

3.2.6. Cycling meanings



Photo credits: Left – Ōtara Bike Burb; Right – Triple Teez

One of the most prominent meanings of cycling was simply that it was fun. This was reflected throughout participant interviews as well as clearly apparent in the observations carried out. Participants talked about how *“you just go riding, you just get out there to have fun and enjoy the day”* (Male, Māngere). It was often described cycling as a kind of adventure, like being *“in another world”* (Promoter, Māngere), where you might have a certain destination in mind, but it was the thrill of getting there and seeing different places along the way that provided the most enjoyment, as well as exploring their own neighbourhoods. This was reflected in community cycling and skills training events, where a light-hearted atmosphere was cultivated around cycling but also through the use of music, humour, and prizes. Children in particular tended to be full of excitement and the joy of riding:

Lots of kids of all ages from around 5 to 10 years old are cruising around on their bikes, with a few on scooters. Most are wearing helmets but I notice at least a couple of them are quite loose. They look carefree and like they're having fun zooming around. Though they interact with each other, they don't seem to move in groups – each is on their own path. A boy of about 10 somehow rides up some stairs (4-5 steps) behind us, whoops and rides down the ramp on the other side. (Observation, Ōtara cycling event)

Even more so than other types of bikes, e-bikes were especially associated with fun, as evidenced by event observations: *“after the workshop ended people continued riding around the car park because, above everything, riding an e-bike was fun”* (Observation, Māngere cycling event); as well as participant explanations: *“even before I had an e-bike I was enjoying it. And then jumping on the e-bike the enjoyment just got better (laughing)”* (Male, Māngere).

Similarly to walking, fitness and mental health were also important meanings and motivations for cycling. While fitness was considered a major benefit of cycling and a general reason to ride, it tended to be the mental health benefits that motivated participants to go cycling on any given day. It was variously described as ‘therapy’, ‘medication’, a way to ‘blow out’ or ‘wind down’ after work, to feel ‘alive and energised’, and an escape from the pressures of home and daily life. For some, going out for a ride gave them a sense of achievement they valued. Biking was

also described as an easy way to be active or get fit, as compared to more intensive forms of exercise:

“A lot of that are ladies, women coming through just to get bikes, just for that, just for fitness. To get back on the road, have a few families come through, health issues and they need to get back into fitness and I’ve encouraged them riding instead of trying to get on a treadmill or walk the road or something. Just get on a bike, it’s a lot easier. And you don’t even notice that you’re actually getting a workout from riding.” (Promoter, Ōtara)

Cycling was also linked to social connection and community building in the data. Cycling events cultivated a sense of community and shared experience, with people who were strangers before that moment making jokes; *“I’ll be crawling into church tomorrow!” (Observation, Ōtara cycling event)* and helping one another when problems arise. Cycling was also described as an open and welcoming activity, that anyone could get involved in (and did):

“Everyone rides together, everyone rolls together. Even, you know, the community will see a bunch of, a group going through, they’ll jump in, they don’t care (laughing). It’s like, ‘okay, where are we going guys? Where did you find – did you find a new track?’ Like, you get questions like that all the time.” (Promoter, Ōtara)

This was reinforced by the general friendliness of people at community cycling events towards our (often obviously non-local) researchers, and the relationships built by attending several events over time. While cycling for transport may generally be more of an individual activity, even those who regularly biked alone talked about cycling with others as being more fun and *“a real buzz” (Male, Māngere)*. As with walking, it was also described as much safer to ride in a group than alone on the road, and participants pointed to the ways in which they supported each other’s riding by, for example, staying at the back of the group to ensure no one falls behind, as an important part of group ride dynamics. Finally, seeing others cycling was described as motivation for non-cyclists to consider taking up cycling themselves, for example, to be able to ride with friends or family members:

“A couple of months ago we had a guy come in and bring a tricycle that he’d purchased from Hamilton and it was for a 72 year old father who’d never ridden a bike before. But because the father had seen his (grand-) kids riding he felt like he wanted to ride. So he brought the tricycle in and I got it all fixed up, and now the grandad rides with the kids to school and home.” (Promoter, Ōtara)

Cycling was also linked in some cases to economic activity and opportunities, both positively and negatively. One example of this was a cyclist who came to one of the promoters in the study needing his bike fixed by the following day so he could get to work, since his wife had started taking their car. Conversely, it was also reported to be associated with trouble making and gang activity, particularly youth cycling in Ōtara, due to it being a common first step into gang initiation:

“There’s a process where you start off on a pushbike. And once you’ve mastered the pushbike and you can wheelie that pushbike left, right and centre, all the moves, then you upgrade to a dirt bike. Once you’ve done it on a dirt bike then you upgrade to the Harley.” (Promoter, Ōtara).

This was a challenge for cycling promoters to counter, and formed part of their motivation to promote biking as a positive activity and potential means of financial empowerment. One

cycling promoter described how he encouraged the children in his cycling programmes to think about future opportunities in professional cycling careers such as racing, BMXing, and motocross, as well as bike mechanics. He also described emphasising the prices of bikes to impress them, indicating that this is a way of increasing the status of push bikes in their eyes. Furthermore, as well as the expected problems associated with gang activity in the area, associations between biking and gang activity were considered to contribute to driver animosity toward local cyclists more generally.

“Here in Ōtara, when you see someone riding a bike... the automatic assumption is you’re one of those guys that are doing wheelies on the wrong side of the road. And so they try and run us off the road. And it’s like ‘dude, I’m wearing a helmet, I’ve got lights on my bike, I’m not doing wheelies.’ But it’s just the way it is.” (Promoter, Ōtara)

In addition to the above, cycling promoters and one of the regular transport cyclists described environmental and societal benefits as being a central motivation for them to ride bikes. They talked about *“doing their bit”* (Male, Māngere), as well as trying to get people out of cars, and in particular, to reduce traffic and improve road safety and air quality around schools. Finally, as with walking, cycling was sometimes associated with getting places more quickly, particularly during rush hour traffic, and this served as further motivation to ride for some of the cyclists interviewed.

4. OVERVIEW: TYPES OF WALKING AND CYCLING

4.1.1. Walking

Table 3: Types of walking described and observed

Type	People	Materials	Environments	Competences	Meanings (personal/wider norms)
Family walking	<ul style="list-style-type: none"> • In groups • Families and couples, including children • Predominantly Pacific and Māori 	<ul style="list-style-type: none"> • Sports clothing and shoes • Children sometimes on bikes 	<ul style="list-style-type: none"> • On footpaths around local neighbourhood • Common on summer evenings • Increased during Covid-19 lockdowns 	<ul style="list-style-type: none"> • Basic fitness • Traffic negotiation at intersections and crossings 	<ul style="list-style-type: none"> • Fitness and health • Getting 'fresh air' • Enjoying fine weather • Social connection
Walking for exercise and weight loss	<ul style="list-style-type: none"> • Individual or in couples or groups • Young to middle-aged Pacific women (walking) • Young Māori and Pacific men (jogging) 	<ul style="list-style-type: none"> • Sports clothing and shoes e.g. jacket and leggings, sports shoes, often a hat <i>Sometimes:</i> • Hi-vis clothing • Rain jacket • Music and head phones • Protective stick for dogs • Water bottle • Car to get to preferred locations 	<ul style="list-style-type: none"> • On footpaths around local neighbourhood, on scenic walkways, in parks and sports fields • Usually for 30-60 minutes • Mostly during daylight hours, sometimes before dawn/after dark • More common in summer, fine weather 	<ul style="list-style-type: none"> • Basic (walking) to moderate (jogging) fitness • Knowledge of appropriate routes • Traffic negotiation at intersections and crossings/ driving skills • Making time • Confidence to be seen if alone 	<ul style="list-style-type: none"> • Fitness and health • Weight loss • Training for sport e.g. rugby league (jogging) • Stress release, getting 'fresh air' • Enjoying fine weather • Getting to know neighbourhood • Social connection (in groups) • Time for self (individually) • Safety in numbers • Being seen
Children walking	<ul style="list-style-type: none"> • Individual or in groups 	<ul style="list-style-type: none"> • School uniform or casual clothing • Backpack 	<ul style="list-style-type: none"> • To school, to park, to basketball courts 	<ul style="list-style-type: none"> • Basic fitness 	<ul style="list-style-type: none"> • To get or from school, to hang out on weekend • Safety in numbers

	<ul style="list-style-type: none"> • Children and teenagers • All genders to school, boys at other times • Mostly Māori and Pacific 	<ul style="list-style-type: none"> • Basketball (boys) 	<ul style="list-style-type: none"> • Footpaths on side streets and main roads • During daylight hours only 	<ul style="list-style-type: none"> • Traffic negotiation at intersections and crossings 	
Errand and short distance transport walking	<ul style="list-style-type: none"> • Individual • All ages but more common among older adults • All genders • Mostly Pacific and Māori 	<ul style="list-style-type: none"> • Casual clothing – western or traditional e.g. 'ie lavalava • Jandals, slides, or sneakers • Handbag, phone • Often carrying 1-2 grocery items e.g. bread, drink 	<ul style="list-style-type: none"> • Short distances e.g. 10 minutes • To local shop, to church • Footpaths on (familiar) side streets and main roads • During daylight hours, fine weather 	<ul style="list-style-type: none"> • Basic fitness • Traffic negotiation at intersections and crossings 	<ul style="list-style-type: none"> • Easier or quicker than driving • Getting 'fresh air'
Town centre walking	<ul style="list-style-type: none"> • Individual or in couples or families • All ages but few teenagers and young adults • All genders • In Māngere, mostly Pacific • In Ōtara, all ethnicities 	<ul style="list-style-type: none"> • Mostly casual clothing - western or traditional • Jandals, slides, or sneakers • Handbag, trolley bag, reusable shopping bag • Pushing trolley, pram, using walking stick, cane, wheelchair, mobility scooter • Carrying takeaways, drinks, toys, groceries • Usually a car to get there • Local music and dance performances 	<ul style="list-style-type: none"> • Around markets, town centre, shops, car parks • During day, all weather 	<ul style="list-style-type: none"> • Minimal fitness • Traffic negotiation in car parks 	<ul style="list-style-type: none"> • Shopping • Social connection
Longer distance transport walking	<ul style="list-style-type: none"> • Mostly adults • All ethnicities • Girls and young women often in 	<ul style="list-style-type: none"> • Casual or work clothing • Handbag or backpack 	<ul style="list-style-type: none"> • To uni, public transport, town centre • Can be long distances e.g. up to an hour walking 	<ul style="list-style-type: none"> • Basic fitness • Traffic negotiation at intersections and crossings 	<ul style="list-style-type: none"> • Safety in numbers • Lack of driver licence or car • Low cost

	groups of two or more		<ul style="list-style-type: none"> • Footpaths on side streets and main roads • During daylight hours 	<ul style="list-style-type: none"> • Friendships (girls and young women) 	
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4.2.1. Cycling

Table 4: Types of cycling described and observed

Type	People	Materials	Environments	Competences	Meanings (personal/wider norms)
Casual leisure cycling	<ul style="list-style-type: none"> • Either individually or in groups • Mostly boys and young men • Pacific or Māori 	<ul style="list-style-type: none"> • Casual clothing – mostly neutral-coloured, sneakers • In Ōtara – ProClub t-shirts, often white assoc w gangs • Mountain bikes, often slightly too small or large, sometimes modified e.g. sirens – sometimes BMXs • No helmet, usually no hi-vis • Sometimes carrying small item in hand or on handlebars 	<ul style="list-style-type: none"> • Seen more often in Ōtara, especially individual cycling • To town centre, to play basketball, to meet friends, possibly some to school, just for fun • Mostly on footpaths along main roads and side streets, sometimes on-road or in bike lanes at intersections/to cross road or if low traffic, sometimes riding on wrong side of road • In groups around town centres and markets 	<ul style="list-style-type: none"> • Good bike skills and confidence • Traffic negotiation at intersections, occasional on-road riding • Tricks e.g. wheelies • Bike maintenance/adaptation 	<ul style="list-style-type: none"> • To get somewhere or for fun • Carefree or reckless youth • Associations with gang membership/initiation in Ōtara
Fast road/sports cycling	<ul style="list-style-type: none"> • Mostly individually on weekday 	<ul style="list-style-type: none"> • Cycling clothing e.g. lycra shorts and t-shirt or jacket, sports shoes 	<ul style="list-style-type: none"> • To get to work and/or for exercise 	<ul style="list-style-type: none"> • Strong bike skills and confidence 	<ul style="list-style-type: none"> • Health, fitness • Highly fit/sporty men

	<p>mornings/evenings</p> <ul style="list-style-type: none"> • Often in groups on weekends • Mostly adult men • Mostly Pākehā 	<ul style="list-style-type: none"> • Road bikes, hybrid bikes • Bike lights • Often a backpack • Helmet and brightly coloured clothing or a hi-vis vest 	<ul style="list-style-type: none"> • On-road along main arterials, sometimes in on-road bike lanes where available 	<ul style="list-style-type: none"> • Strong traffic negotiation skills • Bike maintenance/puncture repair 	<ul style="list-style-type: none"> • Relatively wealthy to afford gear • Passing through suburb
Everyday work cycling	<ul style="list-style-type: none"> • Mostly individually on weekday mornings/evenings • Mostly adult men, a few women – possibly more so in Māngere Bridge • Pacific, Māori, Pākehā, Asian 	<ul style="list-style-type: none"> • Casual sports or work clothing e.g. shorts, work boots • Mountain bikes, hybrid bikes • Often a backpack, panniers/crate, or basket • Mostly helmets, sometimes hi-vis vest • Sometimes bike or helmet lights 	<ul style="list-style-type: none"> • To get to work, town centre, supermarket, to run errands • Anywhere – on-road, on footpaths, and in bike lanes 	<ul style="list-style-type: none"> • Good bike skills and confidence • Traffic negotiation at intersections • Knowledge of fastest and least dangerous routes • Bike maintenance/puncture repair 	<ul style="list-style-type: none"> • Mode of transport • Beating traffic • Health, fitness • Lack of choice
Family and child cycling	<ul style="list-style-type: none"> • Young children cycling alone or with siblings • Families biking together, parents sometimes on foot 	<ul style="list-style-type: none"> • School uniform or casual clothing, often colourful, girls often in pink • Children's bikes, mountain bikes • Mostly wearing helmets 	<ul style="list-style-type: none"> • Families in Māngere, both children and families in Ōtara • To parks, children to school • On footpaths and pedestrian crossings 	<ul style="list-style-type: none"> • Basic bike skills and confidence • Traffic negotiation at intersections and crossings 	<ul style="list-style-type: none"> • Family bonding time • Fun for children

5. PROMOTING WALKING AND CYCLING IN SOUTH AUCKLAND

Walking and cycling practices in Māngere and Ōtara are promoted by several local organisations catering to specific areas and identities. Their efforts and the key elements of walking and cycling promotion in these communities are described in this section.

5.1. Walking

5.1.1. Overview of walking programmes

Table 5: Types of programmes aimed at promoting walking

Type	People	Materials	Environments	Competences	Meanings (personal/wider norms)
Organised walks	<ul style="list-style-type: none"> • Regular walking groups • Pacific men and women • Older adults, people with diabetes or weight-related mobility issues • Often accompanied by grandchildren 	<ul style="list-style-type: none"> • Sports clothing and shoes • Sometimes a supermarket trolley or other walking support • Sometimes a car to get to meeting location • Health and safety items e.g. first aid kit (organiser) 	<ul style="list-style-type: none"> • Regular walking routes on footpaths around local neighbourhoods/parks • Places with seating, toilets • During day, mostly on weekdays • Not in winter 	<ul style="list-style-type: none"> • Minimal fitness • Often neighbourhood conscientiousness e.g. picking up rubbish, collecting trolleys • First aid training (organiser) 	<ul style="list-style-type: none"> • Fitness and health • Weight loss • Social connection
Informal clubs/online support groups promoting walking	<ul style="list-style-type: none"> • Fitness club • Pacific women 	<ul style="list-style-type: none"> • Sports clothing and shoes • Sometimes: <ul style="list-style-type: none"> • Hi-vis clothing • Rain jacket • Music and head phones 	<ul style="list-style-type: none"> • Social media • Regular walking routes on footpaths around local neighbourhoods/parks 	<ul style="list-style-type: none"> • Basic fitness • Traffic negotiation at intersections and crossings 	<ul style="list-style-type: none"> • Fitness and health • Weight loss • Competition • Taking time for self

		<ul style="list-style-type: none">• Protective stick for dogs• Water bottle	<ul style="list-style-type: none">• Mostly during day, when have time	<ul style="list-style-type: none">• Knowledge of routes and pace• Confidence to be seen if alone	<ul style="list-style-type: none">• Social accountability and support
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5.2.1. Themes

Based on the two walking promotion programmes included in the study, as well as a small amount of information on other groups, walking promotion in South Auckland tends to be targeted to specific groups or identities. For example, to Pacific women, to medical clinic patients, or to older Samoan people. The primary motivation for walking promotion is generally based around getting people active and improving their personal health, and activities tend to be focused on dedicated recreational walking, rather than walking to and from places, though this is not always the case.

The programmes take different shapes, with some involving regular scheduled walks to which members are encouraged to come, and others creating a network, primarily online, of women who support and compete with one another to complete walking and other fitness challenges. Walking promoters emphasised that it was important to be flexible to cater to different people's needs, particularly where people with very low levels of fitness were involved, and in order to minimise the barriers for people to participate. Getting people to come along to walks was said to often require quite a bit of effort:

“So you can tell people heaps that there’s a walking group, but they don’t always want to come. There’s always some excuse, ah the weather – ‘okay, well it wasn’t raining, yes it was cold, but if you walked you’d be warm’. Umm, then they say ‘oh, the kids’, ‘you can bring the kids, there’s no rules about bringing the kids, bring your dog, bring whatever’. And yeah, there’s a lot of excuses when it comes to people, and it’s once they start coming then usually they’re okay. We can keep them in... for some people it’s not enough what we offer, because they’re quite fit, yeah. They’re either quite fit or they’re really unfit. It’s either too much or it’s not enough, yeah.” (Promoter, Māngere)

However, once people started, they would usually stick with it, and often get other family members involved too. Both walking programmes are run by dedicated promoters, who are funded by their organisation to run the programmes, as part of a wider set of job responsibilities. Facebook is a central method of communication with members (and potential members), particularly for the women's walking club, for which an interactive Facebook group was created. Other methods used by the walking group include phone calls, for example, to remind people to attend, and through doctor recommendations and signage at the local medical clinic.

Both programmes were described as including some elements of accountability to weight loss or other fitness goals, particularly the women's walking club, which was centred around two week 'activations', during which the members would be encouraged to complete a certain amount of physical activity each week. For example, they would complete four one-hour fitness sessions each week for two weeks, followed by a two-week maintenance period. Accountability was achieved through the use of teams and sometimes weigh-ins, as well as members sharing photos or other evidence of their activation, and further incentivised through prizes:

“The women are quite competitive so they always want to win something at the end, so there is a prize at the end. And then they post up on the page and then we do weigh-ins and we do different activities, like do little challenges. Like we do a TikTok challenge, a cooking challenge, a wacky look challenge, you know, different things just to keep them going while they’re still doing their normal.” (Promoter, South Auckland)

The walking promoters aimed to get members to a point where they were able to sustain their walking and other physical activity practices without necessarily needing the accountability of the group. For example, members driving from other suburbs to attend organised walks were encouraged to find walking groups or companions in their own areas once they became confident and fit enough to no longer need the support of the walking group.



Photo credit: Stuff.co.nz, Walking Samoans

5.2. Cycling

5.1.2. Overview of cycling programmes in data

Table 6: Types of programmes aimed at promoting cycling

Type	People	Materials	Environments	Competences	Meanings (personal/wider norms)
Organised rides	<ul style="list-style-type: none"> Organised by community cycling promoters Volunteer staff Families, children, and young to middle-aged adults Some rides specifically targeted to adults, genders, or other groups Predominantly Pacific or Māori 	<ul style="list-style-type: none"> Casual sports clothing, dressups and bright colours for special events All kinds of bikes - mountain bikes, children's bikes, cruisers, road bikes, compact bikes, e-bikes, specialty bikes Backpacks Puncture and first aid kits Snacks and drinks Sometimes speakers Helmets and hi-vis vests, often different colours for participants and staff 	<ul style="list-style-type: none"> Māngere: around local area, visiting new bike facilities, visiting other suburbs, special purpose rides – on-road, on shared paths, in bike lanes Ōtara: around local area and parks – on shared paths, on footpaths along arterials, on-road on quiet streets Mostly evenings, weekends, and public holidays 	<ul style="list-style-type: none"> Basic/good bike skills and confidence, depending on route Supporting and looking out for one another 	<ul style="list-style-type: none"> Bringing community together Social connection Getting active Having fun
Organised cycle skills training and events	<ul style="list-style-type: none"> Run by community cycling promoters Volunteer staff Targeted to specific age groups e.g. year 6 children; or skill sets, e.g. e-bike riding 	<ul style="list-style-type: none"> Casual sports clothing Bike types dependent on event types - often mountain bikes, folding bikes, e-bikes Helmets and hi-vis vests Puncture and first aid kits 	<ul style="list-style-type: none"> At bike hubs, community centres, in schools, in local car parks, around parks and bike trails For non-school events, mostly evenings, 	<p>Depending on programme:</p> <ul style="list-style-type: none"> Basic bike skills and confidence BMX riding Bike repair skills 	<ul style="list-style-type: none"> Bringing community together Learning cycling skills Providing new opportunities Having fun

	<ul style="list-style-type: none"> • Predominantly Pacific or Māori 	<ul style="list-style-type: none"> • Snacks and drinks • Signage and branding 	weekends, and public holidays		
Bike donations and repairs	<ul style="list-style-type: none"> • Cycling promoters • Volunteer mechanics • Wider Māngere and Ōtara communities 	<ul style="list-style-type: none"> • Donated bikes • Repair toolkits • Spray paint • Some bikes cost money 	<ul style="list-style-type: none"> • At bike hubs, in town centres • At cycling events 	<ul style="list-style-type: none"> • Bike repair skills 	<ul style="list-style-type: none"> • Supplying community with bikes • Providing new opportunities • Creating safe spaces in community

5.2.2. Themes

Cycling promotion in Māngere and Ōtara was found to work quite differently from walking promotion. Three organisations were included in the study, all of which were largely run through volunteer work, with partial funding from different sources for some services and programmes. The cycling promoters spoken to were passionate about cycling and about their communities, often having started up their own cycling organisation to service their community. Obtaining sufficient funding to support ongoing work and expansion of services was said to be a constant challenge, particularly in Māngere.

Cycling promotion organisations provide a wide range of services to their communities, including:

- Fixing bikes for a donation
- Bike donations (bikes are donated to organisations, fixed up, and donated or sold on cheaply to community members)
- Bike giveaways
- Cycling skills programmes
- Bikes in Schools
- Getting bike racks into schools
- Bike repair skills programmes
- Community cycling events and expos
- Organised group rides
- Bike hubs
- Cycling activations in parks, town centres, local housing developments
- Providing bikes, helmets, and hi-vis vests for cycling programmes
- Working with other local providers to create safe spaces and feed community members
- Providing basketballs for kids to play basketball
- Gym equipment and workout space
- Safe community spaces for children and adults.

They also work with a huge range of community providers, cycling organisations, local government and authorities, politicians, bike companies, and health clinics across their different programmes. This is probably linked in part to the voluntary nature of much of their work and insecurity of funding sources, as well as the community-building nature of their work. While generally widely known and admired across the Auckland cycling world, they were described in some cases as struggling to engage with local authorities and agencies and obtain funding or support for their priorities:

“I think that’s how our communities work. They’re not ones to go out and look for sponsorship... They just do the doing. Heads down. And then by doing heads down, they miss a lot that they’re able to tap into. So yeah, like, so that’s quite good. Māngere’s quite, you know, they’re quite blessed with a lot of services that are around the neighbourhood. Maybe, like, 10, 11 maraes, yeah, so we’re quite blessed with what’s already in the community. So I think it’s just connecting the community and growing that.” (Promoter, South Auckland)

However, some were described as having found it easier than others. For example, one organisation was able to get a physical bike hub running out of a container in the town centre within a year, while for another it has taken over seven years to obtain permission for a similar setup. Additional challenges mentioned included sourcing enough appropriate bikes,

particularly for older children and adults, achieving greater visibility within the community, and finding safe places for people to learn to ride and increase their confidence.

Differently from the walking promotion programmes in the study, cycling promotion organisations and events were built around broad community identities, rather than targeting specific groups: *“We target the community... any age, all good, we’re all one.”* (Promoter, Ōtara). Some of their services were designed to meet certain needs, such as cycling skills for children, or were targeted by gender, with group rides for women and girls in different evenings from those for boys and men in Ōtara, and some cycle skills programmes were reportedly split into girls’ and boys’ classes. However, in general their events and group rides were observed as aimed to appeal to local residents and families as members of the local community overall, and often celebrated belonging to their neighbourhood. Moreover, the cycling hubs were described as safe spaces in the community, and observations indicated that cycling events tend to create trusted environments where children were often free to run or bike around independently and without direct supervision.

All cycling promoters in the study reported communicating with their communities primarily via social media, mostly Facebook, and also Instagram. They each had their own pages and used these to inform the community of upcoming events, newly donated bikes, bike repair workshop hours, and to share photos and videos and other biking and community-related information. Some of them also used their pages to answer questions, as well as posting on other community group pages. One organisation also sometimes created flyers for events and distributed these through health clinics and other community organisations, and used online registrations and email reminders to track who was attending. In addition, word of mouth was said to be an important way of reaching people and promoting attendance at events in both Māngere and Ōtara:

“when there’s big families, they bring the crowds. Word of mouth, they’ll bring the family... They’re like, ‘oh yup, [bike organisation]’s having a ride, six o clock, be down at the [bike hub]’. So that’s pretty much how they get it out. Nobody got phones, emails, yeah.” (Promoter, Ōtara)



Event flyers: Top Left – Triple Teez Bike Expo; Top Right – Ōtara Bike Burb Koha Fix Day; Bottom – Ōtara Bike Burb Bike Rave

6. DISCUSSION

Summary of findings

Asking walking and cycling participants and promoters in Ōtara and Māngere to reflect on what local active transport looks like produces some interesting insights. Health is often front and centre as a motivator for engaging in walking and cycling, but once people begin it is often other parts of the experience, including mental health benefits, the opportunity to have some time for self-care or to 'blow off steam', and opportunities to connect with other people and care for the neighbourhood which sustain the practices. These are also often common themes within other studies on walking and cycling experience, where improvements in physical and mental health, social contact, and enjoying feeling more 'immersed' in neighbourhood life are commonly cited as benefits by active transport participants (Wild and Woodward, 2019).

Of course not everything about feeling more 'immersed' in local environments is pleasant. Unrestrained dogs, traffic dangers, personal security, and to a lesser extent poor weather are all listed as off-putting aspects of walking and cycling more. People seemed to have a number of strategies for 'pushing through' some of these tough parts. Doing stuff together, as groups, seems to be key to making people feel safe and engaged, and therefore making walking and cycling more 'sustainable'. These groups appear to be particularly important for supporting women to get walking or cycling more. Community cycling groups seemed more common amongst men; although regular group 'events' run by cycling organisations seemed to attract more women and kids.

Much of the discussion about walking and cycling was about exercise and leisure, which, as in previous research, tended to be valued more highly than active travel, particularly for walking (Thorne, 2019). However, observations aided in identifying a range of transport walking and cycling subcultures as well, along with the different materials, competences, and people that practised them. As well as walking and cycling in organised groups or with friends, family walking in the evenings and walking around town squares or markets (usually after having driven there) were also seen as valued walking experiences.

Walking for transport was mentioned less frequently, although it was seen as more common for the young and the old: a way to get to school or church, or to grab a few items from the shops. For those who do walk for transport, they mentioned that they find that walking in congested conditions can often help them get places faster; although the perception of local drivers is often that walking will be 'too slow'. Saving time and money relative to driving are reportedly the strongest motivators for transport biking as well as walking, though participants also experience and value many of the same benefits as for recreational walking and biking. However, driving continued to be the default option much of the time, with sustainable active transport habits taking time and ongoing support to form.

Some of the subcultures observed around the two neighbourhoods closely resembled the practices of local walking and cycling organisations, namely, walking with family and friends for exercise or 'fresh air', and some types of cycling. Of note is that in each of the two suburbs, the most frequently observed cycling culture resembled that of the local cycling organisation. 'Everyday work' cycling, observed primarily in Māngere, looked similar to that promoted by the local cycling organisation in terms of the materials used (casual clothing, high-visibility vests, helmets), though it was less consistently on-road when practised by solo cyclists compared to the organised group rides. Meanwhile, 'casual leisure' cycling reflected the relatively slow-

paced footpath cycling promoted by organisations in Ōtara, but with some differences in materials: helmets and high-visibility vests were used in organised cycling but rarely around the neighbourhood.

Gender

Walking and cycling were found to be gendered, an observation both reflected in and probably influenced by the gender of participants. Walking, especially for exercise, was more frequently described as something women did, despite gendered concerns about personal safety. Conversely, both boys and girls engaged in cycling as children, but among teenagers and adults it was primarily males riding for both transport and group leisure trips. However, local cycling organisations seemed to have a keen sense of the potential benefits of cycling for women and children. Their events, which created opportunities for families to ride together, attracted women and young children as well as men, and many of their cycling skills and bike donation programmes targeted children.

These findings are consistent with other studies from Aotearoa that show that women are slightly more likely to engage in walking than men, and much less likely to participate in cycling (Russell et al., 2021; Shaw and Russell, 2016). In Aotearoa, three quarters of regular cyclists are male (Shaw et al., 2020). These findings are also consistent with other local and international studies that show that, in low-cycling countries, adolescence is a time when cycling tends to drop off for girls (Frater and Kingham, 2018). In high-cycling cities and countries, however, women are not less likely to cycle (Aldred and Dales, 2017; Bonham and Wilson, 2012) suggesting that more difficult conditions for cycling act as a particular deterrent to women's participation.

Materials and competences

There were lots of interesting issues raised around the 'materials' that people have available to them for walking and cycling. Proper walking shoes were described as critical but were often lacking. For cycling, there were indications that right-sized bicycles could be difficult to find, and that bicycles are rarely set up for carrying items (for example, with a carrier or panniers). These issues, common in low-income communities (Barajas, 2018; Lugo, 2018; Lusk et al., 2017; McCullough et al., 2019; Moore-Monroy et al., 2016), inevitably reduce the practicality of everyday cycling.

The idea that many people have a 'skills gap', because they haven't cycled for a long time, potentially even since they were kids, also came up several times. Footpath cycling, rather than on-road cycling, seemed more popular amongst many local cyclists, and there was a general emphasis on the value of having more 'off-road', low-stress cycling paths that people could use to practice on, since they have been away from cycling for awhile. E-bikes get a mention as a potentially valued new bike type, that is particularly 'fun' to use. Cycling, in general, was positioned as a 'fun' but not necessarily particularly safe or common way to get around for transport.

Features of walking and cycling promotion

There are other things that stand out in the study. Local walking promotion seems very centred around using regular scheduled group walks to provide connection, accountability and competition to keep people motivated. Cycling promotion however, seems more centred around bike and skills provision, group family events, and making local cycling hubs attractive places to hang out and learn more about cycling, through providing a wider range of services,

including kai (food) and safe community spaces for kids to hang out. It was also interesting to note the comments by one of the participants that there was an existing DIY local bike repair tradition that had been an important resource for setting up local bike hubs.

Like in many other low-income communities, local cycling promoters seem to have important insights into the value of promoting the potential economic benefits of getting involved in biking, including the potential for learning bike mechanic skills, as well as taking part in competitive riding. These findings echo the conclusions of a number of other, mainly US-based studies that conclude that in order to be successful, cycling promotion in low-income ethnically diverse communities needs to go beyond cycling skills training to engage with the broader issues of social and economic marginalisation experienced by these communities, including 'their experiences of racism, unemployment, housing insecurity, and 'over policing'' (Golub et al., 2016; Kinney, 2016).

There are particular parallels with Lubitow et al's (2016) study on the success of the West Town Bikes/Ciclo Urbano (WTB/CU) community-led bicycle training centre and repair shop in Chicago. They conclude that the WTB/CU project was so popular because it provided important practical links between cycling and the issues facing the low-income Puerto Rican community. As well as providing opportunities to learn cycling skills, WTB/CU emphasised the social and economic opportunities available to the community through cycling, including providing job training skills to young people, and removing financial barriers to youth participating in their city.

Walking practices described in the study also indicate that while some people have integrated walking into their regular habits, for many it remains a challenge, despite valuing its benefits. Similar to previous studies, vehicle-dominated neighbourhood streets, security concerns, lack of time, and indications that walking is a low status activity people are embarrassed to be seen doing, contribute to a context in which walking requires dedication and encouragement to be sustained (Thorne, 2019). Thus, while currently reaching only small pockets of the community, the walking programmes described in this study provide critical support and motivation for people to overcome these challenges.

Flexibility and consistency of services were stressed by promoters as important elements of existing programmes. High rates of mobility issues linked to chronic diseases such as diabetes, and the cycling 'skills gap', as well as a heavy reliance on vehicles generally, appear to mean walking and cycling are not as accessible to the community as they might be in other neighbourhoods. As such, programmes need to cater to a range of skill and confidence levels, including building up basic walking and biking competences, and to provide these in a supportive environment that takes account of the many other circumstances people are dealing with.

Supporting the 'supporters' who organise cycling and walking programmes is critical. Participants reported that support for these organisations is patchy, and that many are still under-resourced, making it difficult to provide consistent services and support. The bike hubs seem like an important opportunity to share critical bike repair skills in communities that are less likely to have bike shops. They also seem like a valuable way for people to access bikes; although it wasn't clear if people could always easily access a bike that was the right size for them. The bike hubs also provide a range of other important community resources that is likely to broaden their appeal to a diverse range of potential new riders.

Infrastructure

Groups, connection, and fun seem key to sustaining participation. Designing wide, high quality, off-road walking and cycling spaces that provide for group rather than just solo riding and

walking is likely to be an important part of growing the successes of these local groups. Being immersed in your neighbourhood, with friends or family, moving at a speed where you can relax, notice and chat seem to be positioned as 'local' ways of walking and cycling that are more appealing than the preference of 'outside' active commuters to move fast, on their own, through communities. Likewise, off-road infrastructure can provide space for these organisations to nurture the walking and cycling skills and enjoyment that help to build and sustain walking and cycling practices more widely. This reflects studies in other low-income communities, in which cycling infrastructure that supports riding for non-commuting purposes, or for marginalised ethnicities and communities, is preferred but rarely prioritised (Golub et al., 2016; Russell et al., 2021; Spinney, 2009). While on-road infrastructure catering to through-neighbourhood active travel undoubtedly has a place in South Auckland, as it does in other Auckland suburbs, the data point to off-road infrastructure as critical for growing and sustaining walking and cycling participation as an enjoyable, safe, and locally-valued form of mobility.

Personal security

Wider street safety, matters, also, and particularly for women. This mirrors a number of other studies in Aotearoa where concerns about street violence are identified as a particular barrier for participation in active transport amongst women (Russell et al., 2021; Thorne et al., 2020). Research by Russell et al. (2021) on cycling amongst Māori and non-Māori women in Wellington identified that women, and particularly young and middle aged women often experience a 'triple safety burden' associated with riding: worries about traffic danger; concerns about personal safety as women; and the feeling that you must be safety-conscious because of their responsibilities for others as a mother and a carer. With slightly different emphasis (more concern about personal safety, somewhat less about traffic), the same safety burdens appear to apply to women walking in these communities as well.

Previous studies in Aotearoa have also shown that concerns about personal safety as a barrier to active transport are higher amongst both Māori and Pacific peoples. One study (Lin et al., 2017) examining barriers to active transport uptake amongst children in Auckland found that "people danger" was the most significant concern for Māori, and that they were more likely to identify this as their primary concern (60.6%), followed by Samoan (44.7%) and other Pacific peoples (45.5%), with only half as many Europeans listing this as a the key barrier (35.7%). In this study Māori were also most likely to list "everywhere" as places of concern in their neighbourhood (24.2%) , followed by 18.4% for Samoans and 11.4% for other Pacific Peoples, and compared to only 3.6% of Europeans (Lin et al., 2017). Finally, stray dogs as a safety threat has also been raised in previous studies on active transport use in Māngere (Thorne et al., 2020).

National and ethnic trends

The fact that walking was more common than cycling is consistent with active transport patterns throughout Aotearoa, where there is much stronger provision of walking infrastructure, such as footpaths (though not always high quality), than cycling infrastructure. This difference may also be reinforced by historical transport patterns and norms among local people of Pacific heritage (Thorne, 2019), with one of the researchers (EF) noting that in many Pacific Islands, rough roads, sometimes made of volcanic rock or coral, make walking common, but cycling difficult. Previous research also shows Pacific households have less access to working bicycles than non-Pacific households (Shaw and Tiatia-Seath, 2022), and Pacific people are less likely than non-Pacific people to have ever learnt to ride a bike (Sullivan and O'Fallon, 2006).

Holistic approaches

Organised social events and groups are shown to be a critical element of walking and cycling participation in these two South Auckland communities. These events need to be adequately funded and supported. And cycling promotion, in particular, often appears to incorporate a much wider range of community goals, including providing access to kai, safe spaces for kids to play, and broader economic skills training. Once again, active transport funding opportunities need to be holistic enough to incorporate these broader range of goals and benefits. A narrow focus on funding only things 'directly related' to cycling, like cycling skills training, is to prioritise active transport promotion models traditionally used in more privileged, Pākehā/white communities.

This study also highlights a range of other ways that it is important to understand the specific 'strengths' and resource needs of diverse communities. As participants noted, both a strong volunteering culture, and a culture of DIY bike repair are considerable strengths that exist and can be built upon to support active transport initiatives in these communities. As one participant reflected, however, this strong volunteering culture has often emerged out of a sense that the community must look after itself, without funding. Connecting these strong volunteer networks, with their deep local knowledge and their base of active transport DIY skills, with more sources of funding provides a powerful opportunity for activating active transport transitions within these communities.

Alignment with earlier literature reviews

The findings of this study reinforce several conclusions of the literature reviews conducted earlier into walking and cycling cultures in low-income and ethnically diverse communities internationally as well as in Aotearoa (Hirsch et al., 2021; McCarthy et al., 2021). These include the role of wide, family-friendly walking and cycling facilities, but also the importance of community concerns beyond physical infrastructure, such as security while travelling, and access to the skills and materials necessary for these practices (Hirsch et al., 2021). The meanings and motivations associated with active mobility also varied and did include some negative connotations as indicated in the walking literature review (McCarthy et al., 2021), for example 'lack of choice', slow, and involvement with gangs, particularly with regard to walking and cycling for transport purposes. However, as described earlier, local groups and events appeared particularly valuable for supporting practices of both walking and cycling in the face of these challenges. They achieved this through addressing skill and material gaps, providing safety in numbers, and creating a sense of belonging, identity, and purpose that helped participants overcome social barriers to their practice.

Relevance to active transport planning

Finally, this study provides important further support for the value of in-depth studies of the local conditions, priorities, and experiences of walking and cycling in diverse communities. Active transport promotion and planning need to become more inclusive, and in-depth studies of the 'what works' and 'why' in diverse communities is a critical part of this process (Green, 2009; McCullough et al., 2019). Like in many Anglo-European countries, active transport planning in Aotearoa tends to rely on a combination of models of active transport standards, delivery and promotion developed in predominantly Western communities, together with some basic statistics, informal observations, and limited, project-specific consultations with local people. While active transport practitioners often develop valuable and important knowledge and understanding of local issues through consultation, these processes can also sometimes

give precedence to the opinions and practices of dominant groups, often drivers, and struggle to obtain sufficient information from more marginalised community members. Formalising and systematising at least part of these 'data collection' exercises by conducting qualitative studies like this one, will help us to combine our knowledge and build a collective and more rigorous local active transport knowledge-base.

7. CONCLUSION

This study provides an important contribution to efforts to understand the diverse needs and experiences of active transport users in Aotearoa New Zealand. It offers, through the ‘active mobilities cultures framework’, a novel and practical methodological tool for conducting in-depth, strengths-based studies on active transport needs in diverse communities in Aotearoa. In-depth studies like this are helping us to build rich knowledge of how active transport is practiced in our communities. Thus, this paper seeks to make both a methodological and an empirical contribution. It asks what active transport looks like in South Auckland, but it also seeks to support efforts to collect data on local active transport needs in a more systematic way. As with mode-share data, qualitative research on local active transport cultures should be considered ‘baseline data’ that is collected as a foundation for understanding the possibilities and challenges of active transport promotion in a community. This approach foregrounds existing practices as important ‘community resources’ and emphasises that understanding the *possibilities* and *pleasures* of local active transport experiences, is as critical as attention to *barriers* to their use (Wild and Woodward, 2019).

This study has both strengths and limitations. It provides rich, in-depth data on active transport practices in South Auckland. However, only two South Auckland communities were included, and more interviews were conducted in Māngere. Leisure practices, rather than transport walking and cycling were also potentially overrepresented. We were not able to recruit any so-called ‘survival cyclists’ (low-income cyclists who cycle to work, due to lack of transport choice), for instance. This is despite the fact that low-income communities have been shown to have overall higher rates of survival cycling in Aotearoa (Jones et al., 2020). The short timeframe of data collection also meant seasonal differences and trends over time could not be explored. We also explored a narrow range of ‘active mobility practices’: focusing on walking and cycling. Other local studies provide more in-depth analysis of other types of active transport practices, including the use of wheelchairs and mobility aids (Meher et al. 2021), and electric scooter use (Curl and Fitt, 2020).

These findings may not, therefore, be generalisable to other low-income or ethnically diverse communities in Aotearoa. There is a developing local evidence base that suggests, however, that many of the findings are. Generalisability in qualitative research develops not through a single snapshot but through a gradual accumulation of deep empirical findings from which commonalities slowly emerge (Sutton and Staw, 1995). This study has many similar findings to other local studies on the experiences of diverse, marginalised and low-income active transport users in Aotearoa: their transport experiences are embedded in webs of social community and family life; needs and solutions are collective, and extend beyond individual access to technologies and skills to meeting a range of pressing social and economic survival needs; and multiple safety barriers to active transport use may be faced.

Collective approaches to community needs are a strength in Māngere and Otara, and access to more funding, and respect for ‘holistic’ active transport programmes and goals by funding agencies will provide powerful opportunities to make active transport more inclusive in Aotearoa.

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9. REFERENCES

- Adler, P.A., Adler, P., 2008. Of Rhetoric and Representation: The Four Faces of Ethnography. *The Sociological Quarterly* 49, 1–30. <https://doi.org/10.1111/j.1533-8525.2007.00104.x>
- Aldred, R., Dales, J., 2017. Diversifying and normalising cycling in London, UK: An exploratory study on the influence of infrastructure. *Journal of Transport & Health* 4, 348–362. <https://doi.org/https://doi.org/10.1016/j.jth.2016.11.002>
- Aldred, R., Jungnickel, K., 2014. Why culture matters for transport policy: the case of cycling in the UK. *Journal of Transport Geography* 34, 78–87. <https://doi.org/10.1016/j.jtrangeo.2013.11.004>
- Anderson, L., 2006. Analytic Autoethnography. *Journal of Contemporary Ethnography* 35, 373–395. <https://doi.org/10.1177/0891241605280449>
- Appleyard, B., 2017. The meaning of livable streets to schoolchildren: An image mapping study of the effects of traffic on children’s cognitive development of spatial knowledge. *Journal of Transport & Health* 5, 27–41. <https://doi.org/https://doi.org/10.1016/j.jth.2016.08.002>
- Barajas, J.M., 2018. Supplemental infrastructure: how community networks and immigrant identity influence cycling. *Transportation (Amst)* 1–24.
- Bird, S. R., Radermacher, H., Sims, J., Feldman, S., Browning, C., & Thomas, S. (2010). Factors affecting walking activity of older people from culturally diverse groups: An Australian experience. *Journal of Science and Medicine in Sport*, 13(4), 417–423. <https://doi.org/10.1016/j.jsams.2009.07.002>
- Bonham, J., Wilson, A., 2012. Bicycling and the life course: The start-stop-start experiences of women cycling. *International Journal of Sustainable Transportation* 6, 195–213.
- Bowen, D., 2008. Consumer thoughts, actions, and feelings from within the service experience. *The Service Industries Journal* 28, 1515–1530. <https://doi.org/10.1080/02642060802250344>
- Braun, V., Clarke, V., 2006. Using thematic analysis in psychology. *Qual Res Psychol* 3, 77–101.
- Carroll, A.M., Perez, M., Toy, P., 2004. Performing a community assessment curriculum. UCLA Center for Health Policy Research, Los Angeles.
- Curl, A., Fitt, H., 2020. Same same, but different? Cycling and e-scootering in a rapidly changing urban transport landscape. *New Zealand Geographer* 76, 194–206. <https://doi.org/https://doi.org/10.1111/nzg.12271>
- Fincham, B., 2016. Bicycle messengers: image, identity and community, in: *Cycling and Society*. Routledge, pp. 195–212.
- Frater, J., Kingham, S., 2018. Gender equity in health and the influence of intrapersonal factors on adolescent girls’ decisions to bicycle to school. *Journal of Transport Geography* 71, 130–138. <https://doi.org/https://doi.org/10.1016/j.jtrangeo.2018.07.011>
- Furness, Z., 2005. Biketivism and technology: Historical reflections and appropriations. *Social Epistemology* 19, 401–417.
- Garfinkel, H., 1967. *Studies in ethnomethodology*. Prentice-Hall, Englewood Cliffs.

- Gatersleben, B., Murtagh, N., White, E., 2013. Hoody, goody or buddy? How travel mode affects social perceptions in urban neighbourhoods. *Transportation Research Part F: Traffic Psychology and Behaviour* 21, 219–230.
<https://doi.org/https://doi.org/10.1016/j.trf.2013.09.005>
- Gatersleben, B., Uzzell, D., 2007. Affective Appraisals of the Daily Commute: Comparing Perceptions of Drivers, Cyclists, Walkers, and Users of Public Transport. *Environment and Behavior* 39, 416–431. <https://doi.org/10.1177/0013916506294032>
- Ghosh, B., Ramos-Mejía, M., Machado, R.C., Yuana, S.L., Schiller, K., 2021. Decolonising transitions in the Global South: Towards more epistemic diversity in transitions research. *Environmental Innovation and Societal Transitions* 41, 106–109.
<https://doi.org/https://doi.org/10.1016/j.eist.2021.10.029>
- Golub, A., Hoffmann, M.L., Lugo, A.E., Sandoval, G.F., 2016. Introduction: Creating an inclusionary bicycle justice movement, in: Golub, A., Hoffmann, M.L., Lugo, A.E., Sandoval, G.F. (Eds.), *Bicycle Justice and Urban Transformation: Biking for All?* Routledge, New York, pp. 1–19.
- Green, J., 2009. Walk this way: Public health and the social organization of walking. *Social Theory and Health* 7, 20–38. <https://doi.org/10.1057/sth.2008.19>
- Harries, T., Rettie, R., 2016. Walking as a social practice: dispersed walking and the organisation of everyday practices. *Sociology of Health & Illness* 38, 874–883.
<https://doi.org/10.1111/1467-9566.12406>
- Hirsch, L., Legg, K., Wild, K., Mackie, H., Woodward, A. (2021). *Cycling Cultures: A literature review. A report prepared by Mackie Research and The University of Auckland for Healthy Future Mobility Solutions.*
- Hodgson, R., Hawley, G., Macmillan, A., Field, A., Witten, K., Kearns, R., Connor, J., Moore, T., McKerchar, C., 2020. *Shaping Cities for Youth. Key Findings and Recommendations : Volume 1.*
- Hume, L., Mulcock, J., 2004. *Anthropologists in the field: Cases in participant observation.* Columbia University Press, New York.
- Imran, M., Pearce, J., 2015. Discursive barriers to sustainable transport in New Zealand cities. *Urban Policy and Research* 33, 392–415.
<https://doi.org/10.1080/08111146.2014.980400>
- Intergovernmental Panel on Climate Change (IPCC), 2022. *Climate Change 2022: Impacts, adaptation and vulnerability. Summary for Policymakers.* Switzerland.
- Jones, R., Kidd, B., Wild, K., Woodward, A., 2020. Cycling amongst Māori: Patterns, influences and opportunities. *New Zealand Geographer* 76, 182–193.
<https://doi.org/https://doi.org/10.1111/nzg.12280>
- Kinney, J., 2016. It's time for cycling advocates to stop ignoring people of color. *Spoke Magazine.*
- Lin, E.-Y., Witten, K., Oliver, M., Carroll, P., Asiasiga, L., Badland, H., Parker, K., 2017. Social and built-environment factors related to children's independent mobility: The importance of neighbourhood cohesion and connectedness. *Health & Place* 46, 107–113.
<https://doi.org/https://doi.org/10.1016/j.healthplace.2017.05.002>
- Lloyd, M., 2016. 'It's on video, every second of it': A micro-sociological analysis of cycle rage. *Visual Studies* 31, 206–220.

- Lubitow, A., Zinschlag, B., Rochester, N., 2016. Plans for pavement or for people? The politics of bike lanes on the 'Paseo Boricua' in Chicago, Illinois. *Urban Studies* 53, 2637–2653. <https://doi.org/10.1177/0042098015592823>
- Lugo, A.E., 2018. *Bicycle/Race: Transportation, Culture, & Resistance*. Microcosm Publishing.
- Lugo, A.E., 2013. CicLAVia and human infrastructure in Los Angeles: ethnographic experiments in equitable bike planning. *Journal of Transport Geography* 30, 202–207.
- Lusk, A.C., Anastasio, A., Shaffer, N., Wu, J., Li, Y., 2017. Biking practices and preferences in a lower income, primarily minority neighborhood: Learning what residents want. *Prev Med Rep* 7, 232–238.
- Mackie, H., Macmillan, A., Witten, K., Baas, P., Field, A., Smith, M., Hosking, J., King, K., Sosene, L., Woodward, A., 2018. Te Ara Mua-Future Streets suburban street retrofit: A researcher-community-government co-design process and intervention outcomes. *Journal of Transport & Health* 11, 209–220.
- Martens, K., 2013. Role of the Bicycle in the Limitation of Transport Poverty in the Netherlands. *Transportation Research Record* 2387, 20–25. <https://doi.org/10.3141/2387-03>
- McCarthy, L., Hawley, G., Thorne, R. (2021). *Walking Cultures: A literature review. A report prepared by Mackie Research for ACTIVATION Research Programme.*
- McCullough, S.R., Lugo, A., Stokkum, R. van, 2019. *Making Bicycling Equitable: Lessons from Sociocultural Research.*
- Meher, M., Spray, J., Wiles, J., Anderson, A., Willing, E., Witten, K., 'Ofanoa, M., Ameratunga, S., 2021. Locating transport sector responsibilities for the wellbeing of mobility-challenged people in Aotearoa New Zealand. *Wellbeing, Space and Society* 2, 100034. <https://doi.org/https://doi.org/10.1016/j.wss.2021.100034>
- Moore-Monroy, M., Wilkinson-Lee, A., Lewandowski, D., Armenta, A., 2016. No hay peor lucha que la que no se hace: Re-negotiating cycling in a Latino community., in: Golub, A., Hoffmann, M.L., Lugo, A.E., Sandoval, G.F. (Eds.), *Bicycle Justice and Urban Transformation: Biking for All?* Routledge, New York.
- Rouse, J., 2007. - Practice theory, in: Turner, S.P., Risjord, M.W. (Eds.), *Philosophy of Anthropology and Sociology, Handbook of the Philosophy of Science*. North-Holland, Amsterdam, pp. 639–681. <https://doi.org/https://doi.org/10.1016/B978-044451542-1/50020-9>
- Roy, M.J., 2017. The assets-based approach: furthering a neoliberal agenda or rediscovering the old public health? A critical examination of practitioner discourses. *Critical Public Health* 27, 455–464. <https://doi.org/10.1080/09581596.2016.1249826>
- Russell, M., Davies, C., Wild, K., Shaw, C., 2021. Pedalling towards equity: Exploring women's cycling in a New Zealand city. *Journal of Transport Geography* 91, 102987. <https://doi.org/https://doi.org/10.1016/j.jtrangeo.2021.102987>
- Sahlqvist, S., Song, Y., Ogilvie, D., 2012. Is active travel associated with greater physical activity? The contribution of commuting and non-commuting active travel to total physical activity in adults. *Preventive Medicine* 55, 206–211. <https://doi.org/https://doi.org/10.1016/j.ypmed.2012.06.028>
- Sallis, J.F., Cervero, R.B., Ascher, W., Henderson, K.A., Kraft, M.K., Kerr, J., 2006. An ecological approach to creating active living communities. *Annu Rev Public Health* 27, 297–322. <https://doi.org/10.1146/annurev.publhealth.27.021405.102100>

- Shaw, C., Keall, M., Guiney, H., 2017. What modes of transport are associated with higher levels of physical activity? Cross-sectional study of New Zealand adults. *Journal of Transport & Health* 7, 125–133. <https://doi.org/https://doi.org/10.1016/j.jth.2017.09.010>
- Shaw, C., Russell, M., 2016. Benchmarking Cycling and Walking in Six New Zealand Cities: Pilot Study 2015, *Journal of Transport & Health*. Wellington.
- Shaw, C., Russell, M., Keall, M., MacBride-Stewart, S., Wild, K., Reeves, D., Bentley, R., Woodward, A., 2020. Beyond the bicycle: Seeing the context of the gender gap in cycling. *Journal of Transport & Health* 18, 100871. <https://doi.org/https://doi.org/10.1016/j.jth.2020.100871>
- Shaw, C., Tiatia-Seath, J., 2022. Travel inequities experienced by Pacific peoples in Aotearoa/New Zealand. *Journal of Transport Geography* 99, 103305. <https://doi.org/https://doi.org/10.1016/j.jtrangeo.2022.103305>
- Shove, E., Pantzar, M., 2005. Consumers, producers and practices: Understanding the invention and reinvention of Nordic walking. *Journal of Consumer Culture* 5, 43–64. <https://doi.org/10.1177/1469540505049846>
- Shove, E., Pantzar, M., Watson, M., 2012. The dynamics of social practice: Everyday life and how it changes. <https://doi.org/10.4135/9781446250655>
- Slavin, S., 2003. Walking as Spiritual Practice: The Pilgrimage to Santiago de Compostela. *Body & Society* 9, 1–18. <https://doi.org/10.1177/1357034X030093001>
- Smith, M., Hosking, J., Woodward, A., Witten, K., MacMillan, A., Field, A., Baas, P., Mackie, H., 2017. Systematic literature review of built environment effects on physical activity and active transport – an update and new findings on health equity. *International Journal of Behavioral Nutrition and Physical Activity* 14, 158. <https://doi.org/10.1186/s12966-017-0613-9>
- Spinney, J., 2009. Cycling the city: Movement, meaning and method. *Geography Compass* 3, 817–835. <https://doi.org/10.1111/j.1749-8198.2008.00211.x>
- Spinney, J., 2006. A place of sense: A kinaesthetic ethnography of cyclists on Mont Ventoux. *Environment and Planning D: Society and Space* 24, 709–732.
- Spradley, J., McCurdy, D., 1972. *The cultural experience: Ethnography in complex society*. Waveland Press, Prospect Heights, Illinois.
- Stats NZ, n.d. 2018 Census place summaries [WWW Document].
- Steinbach, R., Green, J., Datta, J., Edwards, P., 2011a. Cycling and the city: A case study of how gendered, ethnic and class identities can shape healthy transport choices. *Social Science & Medicine* 72, 1123–1130. <https://doi.org/https://doi.org/10.1016/j.socscimed.2011.01.033>
- Sullivan, C., O’Fallon, C., 2006. *Increasing cycling and walking: An analysis of readiness to change*. Wellington.
- Sutton, R.I., Staw, B.M., 1995. What Theory is Not. *Administrative Science Quarterly* 40, 371–384. <https://doi.org/10.2307/2393788>
- Taber, N., 2010. Institutional ethnography, autoethnography, and narrative: an argument for incorporating multiple methodologies. *Qualitative Research* 10, 5–25. <https://doi.org/10.1177/1468794109348680>

- Thompson, K., 2017. Qualitative research rules: Using qualitative and ethnographic methods to access the human dimensions of technology, in: Bearman, C., Naweed, A., Dorrian, J., Rose, J., Dawson, D. (Eds.), *Evaluation of Rail Technology*. CRC Press, London, pp. 75–110.
- Thorne, R., Wild, K., Woodward, A., Mackie, H., 2020. Cycling projects in low-income communities: Exploring community perceptions of Te Ara Mua – Future Streets. *New Zealand Geographer* 76, 170–181. <https://doi.org/10.1111/nzg.12276>
- Thorne, R.J., 2019. *Walking and Cycling in Māngere Community experiences of Te Ara Mua – Future Streets*. The University of Auckland.
- Vaiolenti, T., 2006. Talanoa research methodology: A developing position on Pacific research. *Waikato Journal of Education* 12.
- Westgarth, C., Christley, R.M., Marvin, G., Perkins, E., 2021. Functional and recreational dog walking practices in the UK. *Health Promotion International* 36, 109–119. <https://doi.org/10.1093/heapro/daaa051>
- Wild, K., Woodward, A., 2019. Why are cyclists the happiest commuters? Health, pleasure and the e-bike. *Journal of Transport & Health* 14, 100569. <https://doi.org/https://doi.org/10.1016/j.jth.2019.05.008>
- Winters, M., Buehler, R., Götschi, T., 2017. Policies to Promote Active Travel: Evidence from Reviews of the Literature. *Current Environmental Health Reports* 4, 278–285. <https://doi.org/10.1007/s40572-017-0148-x>

APPENDIX 1: INTERVIEW QUESTION EXAMPLES

Questions varied from interview to interview depending on participant type, direction of discussion, and available time. The following are some examples of questions that were asked:

Walking/cycling participant

- Where do you walk/bike to?
- How often/long/far do you walk/bike?
- Do you walk/bike in a hurry or slowly?
- When/what time of day do you walk/bike?
- What kind of bike do you ride? (*cycling participants only*)
- What do you like about your bike? (*cycling participants only*)
- What kinds of clothing and gear do you wear when you walk/bike?
- What things do you take with you?
- Do you walk/bike with other people? If yes, who?
- What do you like about walking/biking alone/with others?
- Has the way you walk/bike changed over the past few years?
- Who else do you see walking/biking here?
- What is special about how people walk/bike here?
- Would you say that walking/biking is an important part of your life?
- What does walking/biking mean to you?
- What makes you want to walk/bike somewhere?
- What are some of the challenges you face when you walk/bike around here?
- How do you deal with/overcome these challenges?

Walking/cycling promoter

- Could you tell me about your work and how it gets people walking/biking?
- Where do people often walk/bike (to)?
- Do different people walk/bike in different ways?
- What are the bikes like around here? (*cycling promoter only*)
- Do people dress a certain way when they walk/bike?
- Would you say that there is a local culture (i.e. a common style) of walking/biking in this area? If yes, what does that look like?

- What does walking/biking mean to people in this community?
- What are some of the challenges about walking/biking here?
- How do people overcome/manage these challenges?
- What kinds of walking/biking programmes are successful in this community?
- How do you get the word out to people about walking/biking activities?
- What could be done to support existing local walking/biking practices?

APPENDIX 2: OBSERVATION GUIDANCE EXAMPLES

Observation approaches varied depending on type of event or location being observed, whether observing walking, biking, or both, and people involved. General themes to look for included:

- Demographics
- People's behaviours, such as how they moved and interacted with others
- Physical infrastructure, including walking and cycling facilities and built environment
- Natural environment such as weather conditions and plants
- Materials/equipment worn, carried, or otherwise used for walking or cycling
- Signage and communications
- Sounds, e.g. music, talking, traffic noises
- Textures of materials, environment
- Colours
- Smells

Event observations involved participation and included some casual conversations with other people present about their experiences. These conversations were not formally recorded or quoted but contributed to the overall themes identified in the observation.