TRIGGERS, TRANSITIONS, AND TRIP DECISIONS FROM 1976 TO 2019: WHY UTILITY CYCLISTS IN CAPE TOWN CHOOSE TO 'DITCH THEIR CARS', AND WHY BICYCLE ADVOCACY SAYS THEY SHOULD

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ABSTRACT

Almost all cycling research in South Africa to date has focused on utility cyclists living with low incomes, the so-called 'captive' user who does not have access to a private car. Individual car drivers (particularly of single occupants), however, are a target of the City of Cape Town's policy direction, which aims to grow cycling, displacing private travel, to mitigate road traffic congestion and the city's carbon emissions profile. These utility cyclists with greater mode use options have received comparatively little research attention. Attempts to increase bicycle mode share among this cohort have so far seen little reward.

The literature posits that to shift cycling practices in low-cycling countries, there is value in considering the role and influence of narratives of cycling choices, and in understanding what cycling means and why it is already attractive to those who do choose to cycle in low-cycling contexts.

To this end, this research selects individuals from within this group of car-owning middle- to high-income adults in Cape Town who do cycle as transport ('choice' or intentional cyclists), and examines why they started cycling and what has motivated them to shift and sustain their cycling practice in their adult life. It does so through in-depth interviews with intentional cyclists (n=36) and a survey of individuals (n=36) who share characteristics with the above but who ride as sport only. Interviews were captured as mobility biographies, and segmented in terms of Prochaska and DiClemente's Transtheoretical or Stages of Change model.

Using thematic and narrative analysis, the research considers how cyclists frame the triggers and motivations for adopting, increasing, and maintaining their cycling practice, and whether these motivations differ at different behavioural stages. Qualitative method, and particularly a narrative approach, is well suited to exploring and gaining an in-depth understanding of a specific group of people, such as this group of interest.

The research then compares these motivations to the arguments engaged in the advocacy discourse (media, speeches, official policy, civil society activism, letters to the press) regarding the value of bicycle transport and why individuals 'should' adopt this mode. Analysis was underpinned by theories of individual behaviour change, including Triandis' Theory of Interpersonal Behaviour, and Ajzen's Theory of Planned Behaviour.

Key findings are that of the individuals who do cycle as transport, most cycled during childhood; a substantial number kept cycling if they attended university and also for sport. It is rare for an adult new to cycling to use a bicycle as transport. When considering ways to travel other than by car, interviewees were able to draw on memories of the freedom, 'fun', and joy of childhood cycling and their current sports practice. They have high levels

of self-efficacy and behavioural control (with respect to capability, knowledge, social power, finances, agency), and operate within normative contexts where cycle commuting is either acceptable or encouraged, or where non-normative behaviour identifies them as part of a desired sub-culture.

What influences individuals to start a cycling practice, and what influenced them to maintain it, are different. Interviewees initially are drawn to the opportunity to save money on grudge costs such as parking, to avoid driving in traffic, to supplement race training, and to make better use of time. When increasing and sustaining their practice, personal wellbeing is more motivating, as are self-concept and identity. These identities become more entrenched, and increasingly dominant motivations, the more often and for more purposes they ride. Fitness is a motivator across all stages of change. Interviewees most often increase their cycling by seeing, meeting, or riding with others who do so, than they are by other forms of advocacy; the 'doable' nature of bicycle transport is a more influential message than the public good that cycling might deliver. What sustains cycling practices is not so much habit but personal identity, commitment, and the wellbeing impact of cycling; where individuals are less identified as cyclists, they appear to be more likely to use their cars when circumstances are challenging.

The research finds a mismatch between advocacy and individuals' motivations, particularly during later stages of cycling behaviour. Advocacy tends to focus on the affordability of cycling, its public health benefits, its ability to ease road traffic congestion, and its social and environmental benefits. These assume altruistic motives for cycling. Among interviewees, the side-effects of carbon mitigation and the opportunity to performatively permeate social divides are welcomed but are not primary motivations. Interviewees enjoy saving money on grudge spend such as parking, but affordability, as such, is not a major concern to this cohort who own their own cars as well as relatively high-end bicycles.

Implications for advocacy is that positioning cycling for this cohort as a virtuous activity is not necessarily successful, and that 'fun' is a legitimate reason for choosing cycling. Segmenting cyclists by stage of change, and developing interventions that might either catalyze an initial cycling practice or support a longer-term practice, is one approach. Segmenting cyclists by implicit motivation rather than by trip purpose – personal benefit, normative needs, or altruism – is another.

Both the theories of Planned Behaviour and of Interpersonal Behaviour have good explanatory potential; the latter more so, as it takes into account the frequency of past behaviour, and the importance of emotion. Interviewees are mostly motivated by personal benefit, and unless an individual loves cycling, they are unlikely to cycle-commute, no matter what the benefits might be.

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Plagiarism statement

I know that plagiarism is wrong. Plagiarism is to use another's work and pretend that it is my own work.

This thesis represents my own work, both in concept and in execution.

'As soon as you want to put down your foot, don't'.

The acknowledgements have been the most difficult part of this PhD to write. There are so many people to acknowledge, not necessarily for their role in this research, but for their role in ensuring that I had a life outside of this research. Without them, I would have completed this PhD many years earlier – or possibly not at all. And one thing I now know: almost every mountain biking mantra is eminently transferable to writing a thesis.

To my interviewees, thank you for your time, your eloquence, your insights. It was always a joy to listen to your stories. And thank you for cycling. Just by being on the road, you'll contribute to the change we need in Cape Town.

Umberto Eco wrote that you should never thank your supervisors in your acknowledgements, as they are simply doing their job. Perhaps so, but I think teaching a qualitative researcher how to use spreadsheets, charts, and Sankey diagrams, goes beyond the call of duty. So thank you Roger and Mark! Thank you too to Gordon Pirie – without your early guidance I'd still be suffering from 'magazine-itis'. And then thank you to Winnie, my co-PhD-journeyer over the last few years.

To the other Dr Jennings' in my family – your encouragement and support played an immeasurable role in me getting this done. And to Leonard and to SP, there really are no words enough.

There once was a cycling commuter

who pondered his own safety future.

Conditions warlike,

yet when on a bike

ev'rything beaut's so much beauter.

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ABBREVIATIONS

CCT	City of Cape Town
CITP	Comprehensive Integrated Transport Plan
city	Cape Town
City	City of Cape Town (local government)
CMC	Cape Metropolitan Council
HHO	Hawkins Hawkins & Osborne
ITP	Integrated Transport Plan
MEC	A Provincial Premier is elected by the Legislature and appoints Members of the Executive Council (MECs) as political heads of each provincial department.
MMC	Mayoral Committee Member for Transport (local government political appointment)
NDoT	National Department of Transport
NMT	Non-Motorized Transport
PGWC	Provincial Government Western Cape
PPA	Pedal Power Association
SOV	Single Occupant Vehicle
TDM	Travel Demand Management
TIB	Theory of Interpersonal Behaviour
TPB	Theory of Planned Behaviour
TRA	Theory of Reasoned Action
UCT	University of Cape Town
WPPPA	Western Province Pedal Power Association
WSSD	World Summit for Sustainable Development

Advocacy

Advocacy (or bicycle advocacy) is this thesis refers to support for a cause, policy, or idea. Its main aim is to influence or bring about change.

Choice and captive cyclists

The City of Cape Town uses the term 'choice' to describe 'persons who, due to their socio-economic circumstances, have a choice of travel options at their disposal (CCT, 2005, p. 4). Captive users are those who are perceived to have no or limited choices, and who may walk, cycle, or use public transport as they are not able to afford their preferred means or desired means of transport.

Coding (inductive and deductive)

Theory-driven or deductive coding/ analysis uses themes that emerged or were identified from previous research; an inductive approach develops the themes as they emerge from the data, without trying to fit it into a pre-existing frame) (Braun and Clarke, 2006).

[Critical] Discourse Analysis (CDA)

Critical Discourse Analysis combines a 'critique of discourse and an explanation of how it contributes to existing social reality and practice, and an understanding of action'. In social theory, discourse is used to refer to different ways of structuring areas of knowledge and social practice; these do not simply reflect or represent social relations and meanings, but they constitute or construct them (Fairclough, 1993). It is these social effects of discourse that are focused on in discourse analysis (essentially, critical linguistics is concerned with the behavioural meanings of language – what 'stories' do we tell ourselves to create meaning and legitimacy, and explain our actions and motivations). I am a linguist, with a Master of Arts (MA) degree using critical discourse analysis (CDA) to understand advertising discourse and private car sales/promotion – it was therefore tempting to structure this research using CDA. However, for the purposes of this research, which is broad, I use CDA only as a high-level mechanism to identify a thread of advocacy discourses and framing over a number of decades; I do not engage in detailed text analysis.

Discourse

Discourse, in this thesis, refers to language in use (whether written or spoken) in relation to a particular social, political or cultural context, and playing a role in the structuring,

constructing or re-telling of social and institutional practices (Candlin, 1997)[1]. Discourses essentially are coherent texts (connected discourses) that represent a part of the world from a particular perspective, or 'clusters of ideas, images and practices that provide ways of talking about a particular topic' (Fairclough, 1993; Hall, 1997, p. 6).

Discourse can be both personal or public (that of officials or institutions, or published in the media), and can have an explicit advocacy intention regarding social change (Cresswell, 2007, p. 22).

Epistemology

The way in which something, a 'reality', can be known.

Framing

Framing refers to the central organizing idea or story line that provides meaning to an unfolding series of events (Cacciatore *et al.*, 2016).

Intentional cyclists

I use this term as an alternative to 'choice' cyclists: the individual who rides a bicycle as transport even though they own or have access to a private car. I do not use the term 'intentional' to describe someone who intends to take up cycling, but someone who has chosen to cycle, on purpose, with deliberate intent, despite a number of other options that may seem more attractive to a similar cohort.

Low-cycling city / country

I use the term low-cycling rather than the term 'starter cycling city', as 'starter cycling cities are cities where cycling for transport is residual, with a cycling modal share below 10%, and therefore have no cycling tradition and technical know-how' (Silva, Teixeira and Proença, 2019, p. 638). By this definition, Cape Town is not a starter cycling city as – although it has a modal share very much below 10% – there is a relatively high level of technical know-how and there is a cycling tradition. This aspect of starter cycling cities does ring true for Cape Town, though, as a city having taken 'but timid incursions towards cycling, limiting actions to less effective measures.' Low-cycling cities or countries have also been referred to as cities with low cycling development and maturity (LCM) (Félix, Moura and Clifton, 2019).

[1] Discourse, in Linguistics, does not necessarily refer to discussion, interaction, or dialogue.

Motive or motivation

A reason or incentive to 'do' something; for the purposes of this thesis, to 'do something' could also mean to engage in a behavioural intention, such as to contemplate action, to prepare to act, to take action, or to maintain an action.

Narrative, and narrative analysis

The term 'narrative' can be assigned to any text or discourse (Cresswell, 2007, p 54) where stories or experiences (such as life course stages or biographies) told by individuals are ordered chronologically and used to make sense of individual experience. Thus personal discourses can also be referred to as narrative discourses or narratives (stories) (there are a multiplicity of definitions and a lack of consensus in the literature). 'A narrative discourse can be imbued with important explanatory power, and is one that gives an account of an event / action or series of events actions chronologically connected (Polkinghorne, 1988; Cresswell, 2007, p. 54). These narrative discourses include personal experiences and emotions, and an individual's interpretation of a story or events.

In addition to a narrative being the object of a study, the term can also refer to an overarching research approach and an analysis method (narrative analysis). Narrative analysis is a method of interpreting human experience and motivations by examining the stories or narrative people tell, often through identified themes.

Data for narrative analysis can include discourses or texts, and these discourses or texts can include interviews and conversations, policies, strategies, newspaper articles, oral histories, blogs, social media, journals, biographies, letters, or field notes (Riessman, 2008).

Policy

Policy in this thesis refers to a deliberate set of guidelines to guide decisions and achieve an outcome, a principle or course of action 'adopted or proposed by an organization or an individual'[2]. This therefore can include a strategic document, a framework, a guideline, toolkit, or other such document but not only a formal policy.

Ontology

The nature of 'reality', or how 'reality' can be understood.

(A) practice

A practice is essentially any recognizable activity, including language use, discourse, or cycling (Watson, 2014, p. 489).

[2] languages.oup.com

Trigger

In the context of this thesis, a 'trigger' is an impetus or catalyst, a force that creates pressure or facilitates change.

Utility cycling or utility cyclists

This research defines 'utility cycling' (or a utility cyclist) as using a bicycle as a mode of transport rather than for recreational or sports purposes – thus it could mean travelling to work, shops, education, social/religious trips etc). The term is used interchangeably with 'cycling mobility', 'bicycle travel', 'mobility cycling', 'riding a bicycle as a mode of transport', or 'bicycle commuting', simply for purposes of language variety.

These definitions can differ to those in the literature from developed world contexts (see section titled Segmenting the market: categories and identities).

1 INTRODUCTION

1.1 BACKGROUND AND CONTEXT

'Although the City of Cape Town has committed substantial resources over the past decade or so to creating a cycling-friendly city, we have not succeeded as yet in convincing more residents to accept and use cycling as a legitimate mode of transport.'

Cllr Brett Herron City Mayoral Committee Member: Transport for Cape Town (CCT, 2016a)[3]

Although local government and bicycle advocates have a desire for Cape Town to be a 'cycling city' (Ndenze, 2011a; Jennings, 2016), the city has not experienced a measurable surge in the mode despite the policy, infrastructure, and programmatic interventions since 1994. Cycling mode share has remained very low and relatively unchanged in Cape Town (CCT, 2017c, 2018), at around 1% of trips.

This is not a challenge unique to South Africa. Other car-centric, low-cycling cities[4] and countries globally face challenges when attempting to increase bicycling as a mode of transport (Aldred, 2013; Handy, van Wee and Kroesen, 2014). In London, despite a decade of ambitious cycling targets and infrastructure, cycling trips (at 2%) have increased but the numbers of individuals cycling have not increased at pace (Green *et al.*, 2010; Steinbach *et al.*, 2011; Goodman, Green and Woodcock, 2014). Where there has been some evidence of success in policies and programmes in the United States, it has come from understanding the attitudinal factors among individuals and in explaining individual cycling behaviour more generally (Lee, Underwood and Handy, 2015, p. 14).

In 2006 the local authority, the City of Cape Town (CCT), published visions for Travel Demand Management (TDM), with mention of car-free events and cycle promotion, but little concerted marketing effort has taken place since (CCT, 2017e, 2018). Private car ownership doubled in Cape Town between 1994 and 2018. In 2015, average commute distances were double that of developed cities, at 27 km a day – and average travel times well above global averages, at 90 minutes (Hitge and Vanderschuren, 2015). Since 2000, car mode share has remained at between 45-50% of trips. Car occupancy is low – in the central city in 2011, 79% of private cars had single occupancy (Behrens *et al.*, 2015)[5].

Diesel and petrol account for the city's energy use, and the growth in consumption is associated with Cape Town's long travel distances, high and growing single occupancy

[3] Quotations from interviewees are in italics and single inverted commas; quotations from the literature or advocacy discourses are in single inverted commas only.

[4] In both England and Australia, for example, less than 2% of trips are made by bicycle (Bonham and Wilson, 2012; Leyendecker, 2020).

[5] Later City plans, such as the Comprehensive Integrated Transport Plans of 2015 and 2018, do not give updated percentages but do note that reducing single vehicle occupancy is a primary strategy (CCT, 2018).

vehicle (SOV) usage, and an inadequate public transport system predominantly reliant on fossil fuels. In 2017 transport was responsible for 33% of carbon emissions in Cape Town, and consumed 64% of energy in the city (CCT, 2015a, 2017d). In 2015, within the transport sector, passenger transport was responsible for 81% of energy consumption (commercial transport 19%), and within the passenger transport sector, 91% of energy consumption was by private cars and only 9% by buses and minibus-taxis (CCT, 2015c).

Cape Town's Energy Futures reports have modelled that an increase of cycling from 1% to 7% could reduce vehicle emissions by 10%[6] (CCT, 2011f, 2015b). In 2017, Cape Town's TDM Strategy (CCT, 2017e) thus turned its attention to single-occupant vehicles (SOVs), and supported by a standalone Cycling Strategy (CCT, 2017c) began to amplify the activist call to 'leave your car at home' (Jennings, 2021a).

This Cycling Strategy aims to promote cycling as a mode of transport, and increase cycling's mode share from 1% to 8% by 2030. The Strategy proposes actions to increase utility cycling in order to 'contribute to a reduction in congestion and greenhouse gas emissions', reduce 'delays on our road and public transport networks', and support economic growth and 'generate jobs' (CCT, 2017c, p. 13). Easier local movement, reduced air pollution and noise, and improved public health, are also objectives. Success will be measured by an increase in the numbers of cyclists, improved safety, and the kilometre extent of new cycling infrastructure (Jennings, 2021a).

Cape Town has few protected bicycle lanes, a high rate of bike-jacking and cyclist fatalities (almost twice the mode share) and long commute distances (Jennings, 2016; Vanderschuren and Jennings, 2017). Why commuters who have many travel choices would decide to ride a bicycle instead, is not well understood by transport planners in South African cities – yet attracting more such commuters is a goal of Cape Town's various transport plans. The City envisions a city where cycling 'significantly …contribute[s] to a substantial reduction in congestion and GHG emissions …by 2030 (CCT, 2017c, p. 12).

In 2017 Cape Town reported 213.9 km of shared pedestrian-cycle use routes and 240.1 km of cycle routes, although only 46.7 km are separated from road traffic. Of the proposed final network of cycle routes, only 11.1% was reported to be complete in 2017 (CCT, 2005, 2015), with 'piecemeal implementation of cycling routes' undermining the City's efforts to grow cycling. 'Existing bicycle routes are often incoherent and do not lead to popular destinations' (CCT, 2017a, p. 37).

Policies to increase the rate of bicycle transport in South Africa to date tend to emphasize the need to create physical bicycling infrastructure (CCT, 2005, 2015e), despite 'soft', non-infrastructural measures such as policy and behaviour change having been identified by

[6] … if at the same time cars shifted from a 59% to a 52% share of passenger km (with public transport staying the same, at 41%).

scholars as a key missing element in planning for cycling in low-cycling and car-dominated national and city contexts (Bamberg *et al.*, 2011). Non-infrastructural measures take both a supply side and a demand-side approach – considering changing individuals' trip-making decisions, and including a better understanding of individual travel behaviour (Müggenburg, Busch-Geertsema and Lanzendorf, 2015, p. 1).

Cape Town's Cycling Strategy recognizes that attracting people to 'take up cycling requires more than the provision of cycling infrastructure' (CCT, 2017a, p. 64). To this end, authorities will promote behavioural change through legislation, 'car-free days', and by 'marketing cycling as a smart travel option … highlighting the cost savings, environmental benefits, and health benefits' (CCT, 2017c, 2018, p. 212; Jennings, 2021a). Among proposed actions to 'grow utility cycling' are travel demand management (TDM) programmes, and the communication and promotion of cycling through media campaigns, forums, public engagement and events, all aiming to 'make cycling more attractive' (CCT, 2017c, p. 13).

If we are to understand how to make cycling more attractive and encourage car-owning individuals to cycle, there is value in attempting to understand what cycling means and why it is already attractive to those who do choose to cycle in low-cycling, affluent neighbourhoods in Cape Town.

Here, Aldred & Jungnickel posit that to shift cycling practices in low-cycling contexts, bicycle promotion would do well to consider the narratives around transport choice in addition to focusing on infrastructure–such as the role and influence of narratives of cycling choices (Aldred and Jungnickel, 2014), of lifestyle and attitudes, and of desired ethical and aesthetic goals (Steinbach *et al*., 2011). The literature further suggests that in low-cycling, highly motorized and stratified cities, the effectiveness of a strategy to persuade car-drivers to cycle will depend on their priorities, values, identities, and other meanings that might resonate; as Horton puts it, 'movement is always more meaningful than a [utility] approach to transport implies' (Horton, 2006, p. 10).

For these reasons, this thesis investigates why individuals start, increase, or stop cycling as a mode of transport, but with a focus on attitude, identity, meanings, norms, and other of 'the [soft] determinants of bicycle commuting' (Heinen, Maat and Van Wee, 2011, p. 102).

1.2 AIM AND RATIONALE

Cycling is already 'attractive' to at least some individuals who are the target of the City of Cape Town's policy direction to grow cycling by displacing private car travel, in a bid to mitigate road traffic congestion and the city's carbon emissions profile. The attention of

this research is on this 'choice' user, or as I have termed it, 'intentional' user[7]: the individual who rides a bicycle as transport even though they own or have access to a private car.

In low-cycling cities, interventions to encourage cycling have too often been based on 'informal conceptualizations, designed without prior research and focused mostly on providing information about the negative consequences of using the automobile' (de Souza, Sanches and Ferreira, 2014, p. 112). Knowing that driving a private car has a negative impact on urban quality or the environment, for example, is not sufficient to motivate a mode shift away from private cars (de Souza, Sanches and Ferreira, 2014, p. 112). The success of campaigns and interventions to reduce private and single occupancy car use and shift to sustainable modes such as cycling should depend instead on understanding the multiple factors that influence an individual in their modal choice.

The bulk of cycling research in South Africa to date has focused on understanding the barriers to utility cyclists living in low income – the so-called 'captive' user who does not travel by private car. For the intentional cyclist, on the other hand, the City's identified challenges of access to bicycles, poor integration with public transport, and lack of safe and effective cycle networks and routes, are not deterrents. Yet there is very little understanding of what motivates rather than prevents a growth in cycling among this (or any other) cohort in Cape Town – why individuals do rather than do not cycle.

These 'choice' users are a primary target of travel demand management policies not only in Cape Town but in similar policies in South African cities – for 'green', carbon-mitigation and 'lifestyle' goals (Jennings, 2021b). In Cape Town, the City aims to get people out of their cars, to use more public transport, walk, or cycle and to 'promote cycling … rather than private cars' (CCT, 2017e, p. 1). Media reporting on the provincial or city government cycling promotions frequently frame cycling as car-competitive, firmly situating cycling as an alternative to private car use (see for example Bantom, 2021, p. 24). Reducing the number of cars on the roads is seen as necessary where the transport sector is the second biggest contributor to carbon emissions in the City of Cape Town. Provincial government, for example, aims to 'get people to make use of bicycles instead of commuting with their cars', which will require 'a change in human behaviour' (Bantom, 2021, p. 24).

Like the United Kingdom, Australia, and the United States, South Africa is a 'low-cycling' country, where in the cities less than two percent of trips are made by bicycle (STATS SA, 2020). In low-cycling contexts such as this, an understanding of 'choice users' that encompasses 'why people start, increase, or stop bicycling' is crucial for developing effective policies and programmes' (Janke and Handy, 2019, p. 31).

[7] The term 'intentional' is not used to describe someone who intends to take up cycling, but someone who has chosen to cycle, on purpose, with deliberate intent, despite a number of other options that may seem more attractive to a similar cohort.

If policies and programmes are to succeed in 'getting people out of their cars' (CCT, 2017e, p. 10), these need to be based on an understanding not only of the barriers to increased cycling, but also on a deeper, richer understanding of what motivates 'choice' or 'intentional' users to ride. It may be that the cohort under study are currently outliers in Cape Town, but it is at the margins that the greatest potential for understanding behaviour change often lies (Anable, Lane and Kelay, 2006). Transitions are often propelled by 'niches' – actors outside of the hegemony or regime – who may 'reshape mainstream thinking and behaviour in the longer term' (Scheiner, 2018, p. 50).

Motivations for behavioural change, including that of travel behaviour, are extraordinarily complex (Jackson, 2005; Anable, Lane and Kelay, 2006; Giessen, 2007). Anable *et al* describe the 'attitude-behaviour gap' as 'one of the greatest challenges facing … all attempts to influence individual behaviour' (Anable, Lane and Kelay, 2006, p. 62). The provision of knowledge or information alone is seldom enough to change behaviour. In an evidence review of public attitudes to climate change and travel behaviour, for example, Anable *et al* conclude that the deficit model of change (a simple connection between provision of information and outcome) is untenable, and that economic rational choice models as explanations of change are also rarely adequate (Anable, Lane and Kelay, 2006, p. 61). What matters is the way in which knowledge, attitudes and behaviour interact or intersect – and what modifies knowledge, attitudes, and behaviour. At times what modifies this triad are external or extrinsic factors, such as bicycle infrastructure; this thesis, though, is concerned with subjective factors, such as values, personal identity, and meanings, perceived behavioural control, social or personal norms[8], and other intrinsic factors.

Deficit and rational choice models of behaviour change (see Theoretical framework: How does travel behaviour change) see a relatively linear process of knowledge leading to attitude leading to behaviour. Psycho-social theories place 'intention' as the key antecedent to behaviour, and see intention as influenced by salient beliefs, attitudes, norms, identity, and other subjective factors such as those noted above.

Attitudes – 'the degree to which an individual has a positive or negative evaluation of performing a particular act' (Anable, Lane and Kelay, 2006, p. 67) – perceptions, norms (as above), can further be influenced or formed by a variety of factors, including positive experiences by the framing of the public advocacy discourse.

This research investigates revealed cycling behaviour across different stages of intention, and each stage's antecedents of attitude, belief, norms, *et al*, by exploring the motivations given by individuals for their cycling practice at these various stages of behavioural

[8] A social norm is an accepted standard of appropriate behaviour for a given group; it could be perceived, informal, or formal. In the context of this research, it could be whether it is appropriate for a senior manager to arrive at work in sports clothing or without make-up, or for an adult woman to be seen wearing shorts.

change. Intentions are often what reveal the motivational factors that influence a behaviour (Ajzen, 1991, p. 181). The motivations proposed by public advocacy are also explored. Of interest is whether the public advocacy discourse frames motivations for cycling in the same way as cycling individuals do – in the end, exploring whether advocacy, which aims to bring about change, is working with a set of behavioural change assumptions that aligns with revealed behaviour. By situating this study within theories of individual change, the research is also able to offer findings about theories of change that best 'fit' behavioural change processes of the study cohort.

Figure 1: Media example positioning Cape Town as a pro-cycling city, Cape Argus, 2017.

1.3 SCOPE AND INTENTION

This research explores the under-researched group of 'choice' or intentional transport users in Cape Town who are key to the City achieving its energy, carbon, and congestion goals. This study is not a critique of the way in which cycling has been promoted to date in Cape Town; nor is it a study of whether specific bicycle interventions or promotion activities have or have not increased bicycle mode share. Instead, its purpose is to enhance cycling advocacy's understanding of why, in a low-cycling city where cycling conditions are hostile, individuals who can choose the way in which they travel, decide to travel by bicycle. Its overall aim is to share interpretations of the findings around triggers and motivations for cycling, and thereby facilitate reflection on the way in which utility cycling is framed in the public advocacy discourse, and implications for the way in which utility cycling is promoted.

The intention is to contribute to more effective policy and programmatic approaches to shifting behaviour within this difficult-to-change cohort[9].

1.4 RESEARCH QUESTIONS

The following are the research questions for this study:

- Research question 1: *What are the key events in bicycle policy, infrastructure implementation, and advocacy between 1976 and 2019 in Cape Town? This time frame has been selected because 1976 sees the beginning of bicycle activism in Cape Town, and 2019 sees the first explicit activation of interventions proposed by Cape Town's 2017 Cycling Strategy.*
- Research question 2: *What are the arguments engaged in the public advocacy discourse regarding the value and purpose of bicycle transport, and the reasons individuals 'should' adopt bicycle transport.*
- Research question 3: *In their personal discourses, how do intentional utility cyclists frame the triggers and motivations for adopting, increasing, and maintaining their cycling practice? Do these motivations differ at different transitions or stages of behavioural intention in their cycling biographies?*
- Research question 4: *What are the shared or divergent motivations for and framings of bicycle transport between these personal discourses and the public advocacy discourses?*
- Research question 5: *What insights – in terms of behavioural theory, segmentation, and advocacy – may be offered to bicycle advocacy and policymakers as a result of this investigation into the influencing factors at various transitions in bicycle use?*

1.5 RESEARCH APPROACH

This research is situated within an interpretivist paradigm[10] and takes an inductive approach, collecting longitudinal data from the group of interest and establishing patterns in the data before applying or developing theory. Qualitative method, and particularly a narrative approach, is well suited to exploring and gaining an in-depth understanding of a specific group of people, such as this group of interest. Such an approach has been missing in travel behaviour research, but could substantively improve opportunities to design interventions (Barr *et al.*, 2022).

[9] Findings by Nkurunziza *et al* in Dar es Salaam, Tanzania (Nkurunziza, Zuidgeest, Brussel and Van Maarseveen, 2012; Nkurunziza and van Maarseveen, 2013) suggest that the individuals least likely to contemplate cycling as a transport mode are educated people who currently drive.

10 Ie, focuses on the meanings, purposes, and intentions (interpretations) people give to their own actions and interactions with others.

Narrative research has a long history in social science (eg, anthropology, psychology, ethnography), and the humanities (history, literature, biography, memoir). It is also valuable for retrospective inquiry, which is key to this research (as respondents will be reflecting not only on their current bicycle practice but also on their transitions to the present), and to understand change and the way in which people understand their world (Polkinghorne, 1988; Clandinin and Connelly, 2004).

'Reality', within the interpretivist position this research takes, is socially constructed and is one wherein motivations and meaning or meanings can be expressed in language and discourse (Braun and Clarke, 2006, p. 85). Within a social constructivist position, which is allied to an interpretivist position, not only are meanings expressed in discourses, but meanings are also created by means of discourses. Here, discourse is a social practice, a method of constructing and reflecting beliefs, values, and desires, and forming and reflecting social processes and power. Discourse constitutes social identities, social relations, and systems of knowledge and can help reproduce and maintain existing social identities, relations, and systems of knowledge and belief (Fairclough, 1995, 2010; Braun and Clarke, 2006).

This approach focuses on motivation among individuals rather than the socio-cultural and structural conditions that enable individual narratives (Braun and Clarke, 2006). Thus, for this research, what individuals say (in interviews) or write (in policies, the media, speeches) about why they made certain decisions, or believe certain consequences, does not need to be validated or triangulated against some 'other' reality to ascertain whether it is 'true'. The narratives or discourses that form that dataset directly reflect the experiences of the interviewees (Fairclough, 1995). As a researcher I have access to – and thus 'know' – the attitudes, intentions, practices, and meanings of interviewees through language exchanges and discourses: the stories, or narratives, that individuals share can be regarded as 'real', legitimate sources of insight and evidence.

In summary, within this paradigm, reality is socially constructed. The research goal of this thesis is to explore and to gain an in-depth understanding of a specific group of people rather than developing generalizable, representative, and predictive knowledge across a large group; the knowledge generated comprises 'meaning' and understanding. This thesis research takes an inductive approach, collecting data and establishing patterns in the data before applying or developing theory. Qualitative method is well suited to this paradigm.

The research does not aim to make statistical generalizations, although the methods of analysis (both thematic and narrative analysis) do permit a quantitative output (eg data visualization). Truth claims are based on what Maynes *et al* refer to as 'sociological generalization': that a personal narrative illuminates a particular social process (Maynes, Pierce and Laslett, 2008, p. 132). By increasing our understanding of the ways in which

particular mobility practices (such as cycling) are constructed, it should be possible to begin to identify points of intervention (Watson, 2014).

Primary data was collected through non-random, purposive, snowball sampling, by means of (i) one-on-one in-depth interviews with 36 participants who do cycle as transport, and (ii) online surveys with 36 participants who cycle as sport but not as transport. Interviews were captured as longitudinal, retrospective mobility biographies.

Secondary data of public advocacy discourse includes media releases, speeches, policy documents, and media texts that offer arguments as to why individuals should cycle for transport, or set out the benefits of bicycle transport (for individuals and as a public good). Where it relates to Cape Town, national policy is included in this dataset.

I use both thematic and narrative analysis to answer the research questions. I conduct an initial thematic analysis (understanding the way in which an interviewee structures their own narrative) of the in-depth interviews, guided by Prochaska and DiClemente's revised Stages of Change model (Prochaska and DiClemente, 1983; Prochaska, DiClemente and Norcross, 1992). In this way, I structure the mobility biographies according to stages of bicycle use – stages of behavioural intention – rather than by life events. The Stages of Change model describes how individuals make health-related changes (self-change) in behaviours, and was developed from the authors' earlier Transtheoretical Model (a name by which the model is often known) (see Table 1). It was conceptualized as a way in which to assess an individual's readiness to take action to end addictive behaviours, and then to tailor interventions accordingly (Prochaska and DiClemente, 1983; Shaffer, 2013). The model has since been applied in a number of travel behaviour studies (see Table 2).

Table 1: The six primary stages of behavioural change, adapted from Prochaska and DiClemente, 1983. I have not included Stages of Relapse or Return.

Behaviour stage	Pre-contemplation of new behaviour
Behaviour stage	Contemplation of new behaviour
Behavioural stage	Preparing to take action to engage new behaviour
Behavioural stage	Action
Behavioural stage	Maintenance of new behaviour
Behaviour stage	Termination of previous behaviour (ie, no longer a desire to return to previous, addictive behaviour); Relapse, on the other hand, means a return to the previous behaviour.

I then conduct a second thematic analysis of the structured biographies (personal discourses) and the public discourses, with themes (motivations or triggers) identified

within and across all discourses. To do this, I drew up a list of codes, using an inductive approach, and then rationalized these into themes.

Through narrative analysis, exploring the 'why' of the themes identified, I then develop insights into the behaviours, decisions and motivations identified in the thematic analysis.

Transcripts were coded using DeDoose software[11].

Consistent with an interpretivist paradigm, this research does not start with a positivist hypothesis, but rather takes a line of enquiry, and looks for (and reflects on) emerging patterns during the process of data coding and analysis. Interviewees were not prompted with possible motivations or triggers (ie, they were given no pre-selected or possible choices).

The purpose of the data analysis is to surface the connections between the discourses of those who construct their own cycling narratives (personal discourse) and those who construct cycling narratives to motivate and influence change (public discourse). (Riessman, 2008; Cacciatore *et al.*, 2016). Interpretation takes place within the framework of theories of personal behaviour change.

The detailed research approach and method are to be found in the chapter titled Method.

[11] https://www.dedoose.com

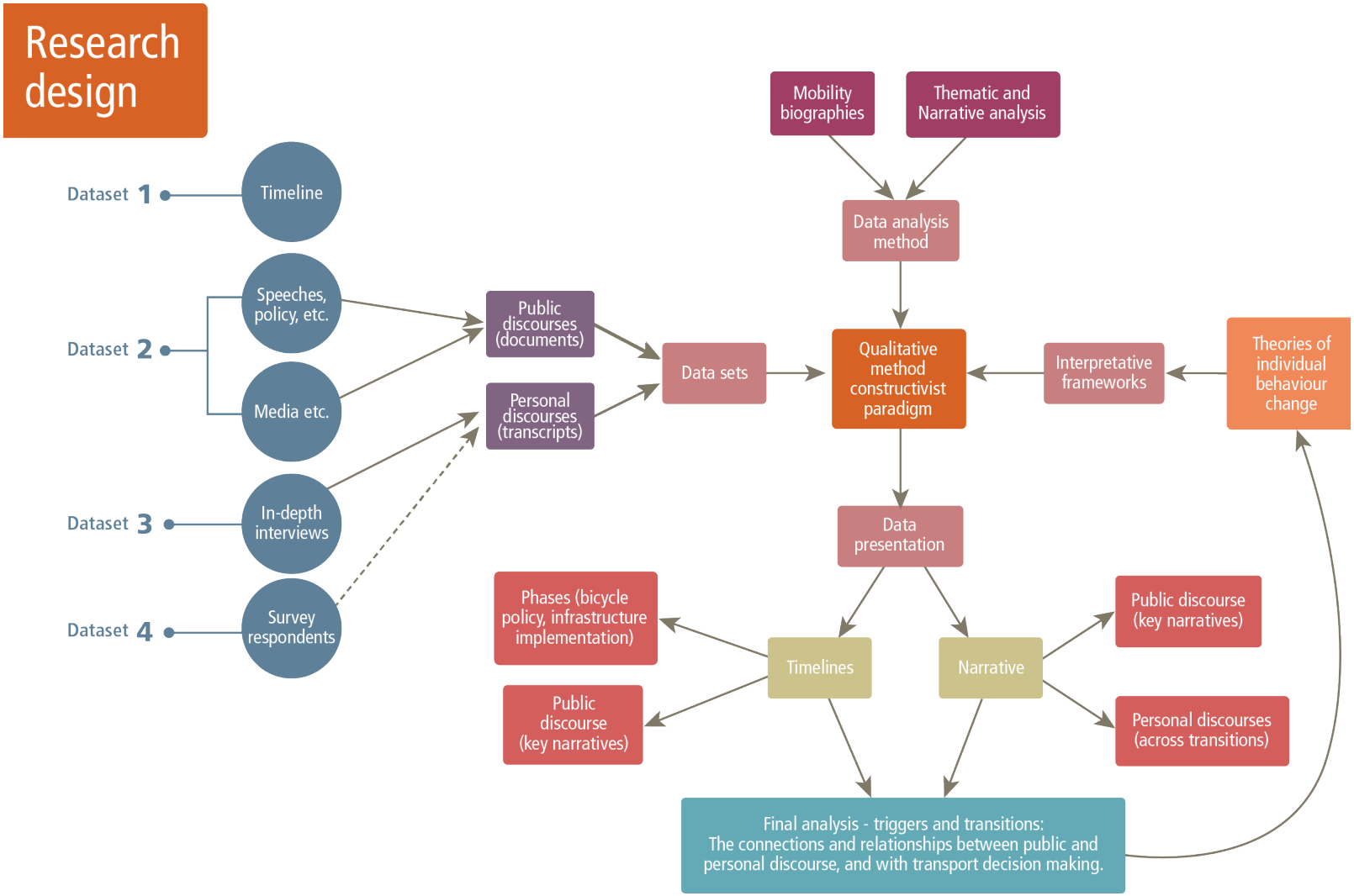

Figure 2: Diagram showing research design, including details of datasets and data presentation.

1.6 ETHICS APPROVAL

The research was approved by the ethics committee of the Faculty of Engineering and the Built Environment, University of Cape Town, South Africa, and informed consent obtained in writing. The consent form is included in the Appendices under the heading Consent form. Ethics approval is included in the Appendices under the heading **Ethics approval.**

1.7 STRUCTURE OF THIS THESIS

Chapter 1 (this chapter) has presented background to this study, as well as the study's aims, scope, and rationale for the research approach and selection of theory. The research approach has been broadly described, including an explanation of the ontological and epistemological position this research takes regarding the nature of 'being' or 'reality' or how this can be understood and the way in which something, that 'reality', can be known. The research questions have also been introduced.

Chapter 2 constitutes a review of current knowledge relevant to this study. This chapter presents a review of relevant current knowledge about (i) when and why travel behaviour (not only cycling) has been shown to change, (ii) what triggers individuals to start a utility cycling practice, and (iii) and what motivates them to continue.

A further category of literature of interest is that of cycling identities and meanings, which are posited as key to understanding motivations for cycling in low-cycling countries, and therefore of value for bicycle advocacy and promoting change.

The ways in which cyclists have been segmented for a better understanding of motivations (typologies of cycling) in a number of cycling contexts is noted, including those that have used the Stages of Change model.

In addition, the chapter considers the way in which cycling is framed in the advocacy discourse, and why this matters for the research. This literature is drawn from both low cycling and high cycling contexts.

Finally, the chapter identifies knowledge gaps and looks ahead to the intended contribution of the research.

Chapter 3 considers theories of how behaviour changes. The Stages of Change model is explained, as a model describing the stages necessary for sustainable change steps and identifying the stage at which an individual might be, to assess readiness or openness to change. To explain why behaviour changes, I consider primarily theories that suggest (i) behaviour is motivated by an individual's own best interest (such as utility theories and rational choice) or personal utility and societal perceptions (subjective or social norms and seeking society's approval); and (ii) behaviour is motivated by altruism or social good.

Chapter 4 describes the research method in detail, including data selection, sampling, collection, saturation, and the approach to data analysis. It also presents details of the coding and thematic analysis process, including the structuring of personal discourses into Stages of Change. Essentially, this explains how the qualitative data (interviews and texts) is reduced to units of analysis (codes and themes).

Chapter 5 answers research question 1, and presents a timeline of key events in bicycle policy, implementation, and advocacy. The timeline is divided into five phases: 1976–1979 (from the beginning of formal bicycle advocacy actions (1976) until the draft of Cape Town's first bicycle master plan); 1980–1993 (from the launch of Cape Town's bicycle demonstration project, until the second iteration of South Africa's bicycle and pedestrian infrastructure guidelines); 1994– 2007 (from South Africa's first democratic elections to the publication of South Africa's public transport strategy); 2008-2013 (from the publication of South Africa's NMT Policy until the second national household travel survey; and 2014-2019 (from the year of Cape Town's Design Capital status until the implementation of the Cape Town's first travel demand management media campaign).

Chapter 6 draws on the findings presented in chapter 5, to answer research question 2: What are the arguments engaged in the public advocacy discourse regarding the value and purpose of bicycle transport, and the reasons individuals 'should' adopt bicycle transport. The chapter takes the form of a narrative history of key events and interventions and associated advocacy framing – national, Western Cape, and Cape Town – that relate to bicycle travel.

Chapter 7 presents the narrative data from the survey and interviews, structured according to these Stage of Change. It is a lengthy chapter, and its sub-structure is detailed in the chapter introduction. The chapter answers research question 3: In their personal discourses, how do intentional utility cyclists frame the triggers and motivations for adopting, increasing, and maintaining their cycling practice? Do these motivations differ at different transitions or stages of behavioural intention in their cycling biographies?

Chapter 8 answers research question 4: What are the shared or divergent motivations for and framings of bicycle transport between the[se] personal discourses and the public advocacy discourse? To answer the question, the chapter draws on the data presented in chapter 6 (the advocacy discourse), which sets out how advocacy 'shows the positive aspects of cycling', and compares it with the data presented in chapter 8 (the personal discourses), which sets out how individuals describe the shows the 'positive aspects of cycling'.

Chapter 9 answers research question 5: What insights – in terms of behavioural theory, segmentation, and advocacy – may be offered to bicycle advocacy and policymakers as a result of this investigation into the influencing factors at various transitions in bicycle use?

To answer the question, this chapter draws on the findings of research questions 1-4, and considers the motivations given by interviewees in the light of the implicit or explicit assumptions policy and advocacy makes when attempting to influence change. The chapter also draws on the theoretical framework set out in chapter 3. By situating this study within theories of individual change, the research is also able to offer findings about theories of change that best 'fit' behavioural change processes of the study cohort.

Chapter 10 is the conclusion, and includes a summary of the response to the research questions, implications for policy and advocacy, recommendations for further study, and an outline of the contribution to new knowledge.

2 REVIEW OF CURRENT KNOWLEDGE: WHEN AND WHY DOES TRAVEL BEHAVIOUR CHANGE, AND WHAT MOTIVATES AND SUSTAINS CYCLING

2.1 INTRODUCTION

This chapter presents a review of relevant current knowledge about when and why travel behaviour (not only cycling) has been shown to change, what triggers individuals to start a utility cycling practice, and what motivates them to continue. The chapter also considers the way in which cyclists have been segmented or categorized for analysis or marketing purposes, and the concept of framing as a way in which to understand the role of public discourse in shaping public opinion and behaviour, and setting the public or civic agenda.

Further, the chapter reviews relevant literature as it relates to gaps in the knowledge and the limitations of the method (in this case, retrospective data collection by means of bicycle mobility biographies). The chapter notes the intended contribution of this thesis, in the light of the gaps identified.

The literature selected is that which focuses on (but not exclusively) low-cycling countries or cities, and, where possible, higher-income individuals. With respect of identifying gaps in the knowledge, the chapter focuses on scholarly work in Africa and more specifically South Africa.

In this chapter I do not draw on the multitude of studies about propensity to cycle, the barriers to cycling, the benefits of cycling, or hard infrastructure incentives, among others. Instead, I focus on literature that considers travel behaviour change, and on cycling motivations within differing typologies of cyclists and within different life stages or behavioural stages.

2.2 CYCLING STUDIES IN SOUTH AFRICA

In South Africa and the continent as a whole there is limited scholarly work regarding non-motorized transport (NMT[12]). Where it does exist, the research emerges from the engineering or public health sector (Sagaris *et al.*, 2021), and focuses on hard transport measures, where the aim is to modify the external environment in some way (Bamberg *et al.*, 2011, p. 229). The aim of soft transport measures, on the other hand, is to directly

[12] In South African policy, NMT is a 'form of transport that is solely dependent on human or animal power for movement and does not require a motor for propulsion regardless of power source i.e. it is transport that does not involve the use of a motor. … It is also referred to as "sustainable transport", or a sub-category thereof, as it (directly and indirectly) produces a low amount of greenhouse gases relative to motorized forms of transport' (CCT, 2017a, p. 41).

influence decision-making by motivating and empowering [individuals] to switch to alternative travel options (Bamberg *et al.*, 2011, p. 229).

Within the umbrella of NMT, scholarly work across Africa is more likely to pay attention to pedestrian rather than to bicycle transport[13] – and often, how to retain pedestrian mode shares rather than increase them (Benton *et al*, 2023). There are few scholarly publications where the primary focus is utility cycling in Africa. For example, a book published in 2017, Non-motorized transport integration into urban transport planning in Africa (Mitullah, Khayesi and Vanderschuren, 2017) included 15 chapters, of which only one focused on cycling (Jennings, Petzer and Goldman, 2017). As Mogaji put it, in 2022, 'academic interest and theoretical insight [about cycling in Africa] are in short supply' (Mogaji, 2022).

Where cycling is under study, the focus falls largely into three categories: (i) planning & infrastructure provision and critique (Frieslaar, 2006; Randall, 2015; Vanderschuren *et al.*, 2015; Gordge, Laing and Wentzel, 2017); (ii) bicycle-share schemes (Jennings, 2014; Beer and Valjarevic, 2015); and (iii) a consideration of cycling potential and network development (Musakwa and Selala, 2016; Vorster and Zuidgeest, 2019; Hitge and Joubert, 2021, 2023; Jennings *et al.*, 2021; Da Silva and Onderwater, 2022). An exception is work undertaken by Morgan in Johannesburg, which draws on transitions theory and explores whether the provision of bicycle infrastructure could be the catalyst to a utility cycling culture. He argues that without the key elements of 'positive symbolic meanings', a commuting cycling culture is unlikely to emerge (Morgan, 2019, p. 106).

There have been very few studies examining why individuals *do* cycle in South Africa, or what might influence shifts in behaviour – whether 'captive' or 'choice' users. Within South Africa, research largely considers why people <u>do not</u> cycle, particularly why non-car-owners do not cycle. Research focuses on how these barriers could be overcome to realize the cycling potential within low-income communities (Bechstein, 2010; Boulle, 2013; Petzer, 2016; Irlam and Zuidgeest, 2018). This cohort has traditionally been regarded as 'captive' – and is a grouping of cyclists who neither own nor use private cars, and instead combine bicycle trips with walking or public transport[14].

[13] Within the walking literature, the focus tends to be on (i) infrastructure or facilities guidelines and quality (Ribbens, 1985, 1996, 2003; Ribbens and Gamoo, 2006; Gwala, 2007; Ithana and Vanderschuren, 2013; Labuschagne and Ribbens, 2014; Okoro and Lawani, 2022); (ii) discussions of infrastructure, planning and policy challenges (Pretorius and Bester, 2004; Khayesi, Monheim and Nebe, 2010; Mashiri *et al*., 2013; Pretorius, 2018; Khayesi, 2020; Oviedo, Okyere, *et al*., 2021a; Wood, 2022); (iii) analysis of NMT travel data (eg Behrens and van Rensburg, 2009); or (iv) safety (eg Jobanputra, 2013; Behrens and Makajuma, 2017; Isiagi, 2019). The literature describes walking experiences (Porter, 2010; Porter *et al*., 2016; Oviedo, Frimpong, *et al*., 2021; Oviedo, Okyere, *et al*., 2021b; UN Environment, 2021), and more recently, work has begun to consider the physiological stress and wellbeing impacts of walking in sub-optimal conditions in African cities (Neale, Boukhechba and Cinderby, 2023).

[14] Recent work by da Silva and Onderwater attempts to understand, through a cross-sectional survey, why middle-income leisure cyclists do not commute by bicycle (Da Silva and Onderwater, 2022).

2.3 WHEN DOES TRAVEL BEHAVIOUR CHANGE?

Investigations into successful travel behaviour change strategies have of late focused on identifying the 'windows of opportunity' in a life-course, wherein individuals deliberate and search for information to help them change the way in which they travel (see for eg Verplanken *et al.*, 2008; Busch-Geertsema and Lanzendorf, 2015; Müggenburg, Busch-Geertsema and Lanzendorf, 2015; Behrens, Moyo and Zuidgeest, 2022). Such work focuses on identifying when behavioural change occurs, and whether information to support a mode shift is sought before, or after, an identified change-trigger event.

Habits are a focal point of these investigations – what triggers individuals to rethink habits, and potentially form new ones. Habit is an automatic behaviour, acquired through 'repetition and positive reinforcement and triggered by cues' (such as location, preceding actions in a sequence, or the presence of particular people) (Schwanen, Banister and Anable, 2012, p. 523). Habitual behaviours are those unmediated by attitudes, subjective norms, perceptions of control, or intentions (Ajzen, 1991, p. 203) – and they simplify the process of continued decision-making (Bamberg, Ajzen and Schmidt, 2003; Busch-Geertsema and Lanzendorf, 2015). Thus, to some extent, once (or if) an individual has processed information or made computations about the utility or satisfaction of a mode, they no longer need to deliberate or weigh up options and alternatives, but simply execute the behaviour (Gärling and Axhausen, 2003). This is not necessarily mindless habit though, but a kind of 'choice-lite' approach: Gärling and Axhausen propose the concept of 'script-based' choices, where once an earlier deliberated choice has been made, with a positive outcome, the decision-script is simply retrieved from memory and re-enacted as such with minimal further deliberation. Attitudes, subjective norms, perceptions of control, or intentions, may well have played a role in the initial deliberate decision or choice (Schwanen, Banister and Anable, 2012, p. 523).

Schwanen *et al* are of the view that habits are largely practical, and that deliberation or reflection can be back-dated [my own term] upon experience of the practice (Schwanen, Banister and Anable, 2012, p. 524). Further, they regard habit as a tendency or force rather than an automatic response by an individual, and one that is strongly linked to morality and ethics. Heinen *et al* propose that cyclists are less dependent on habit than are other transport users, as they have a number of changing daily factors, such as weather and transport load (Heinen, Maat and Van Wee, 2011).

Habit, or frequent behaviour, is itself able to shift behaviour, particularly with regard to cycling, where 'lived experience' is the basis for knowledge. Through an 'iterative and co-

constructive' relationship between experience and reflection, especially cycling within a car-centric context, individuals may shift their cycling practice without an external window of opportunity (Lee, 2016).

The more frequent a past behaviour, the more entrenched its habitual nature is likely to become. Building new habits and changing non-deliberate behaviours can be 'extraordinary challenging', and require 'concerted effort' unless, for example, the triggers or cues change (Schwanen, Banister and Anable, 2012, p. 524).

These triggers or cues are likely to change at transition points variously termed 'key events', 'life events', 'life shocks' or 'stressors' (Verplanken, Aarts and Van Knippenberg, 1997; Verplanken *et al.*, 2008; Behrens *et al.*, 2015; Busch-Geertsema and Lanzendorf, 2015)[15]. It is during these transition points, or windows of opportunity, that behavioural choices are more likely to again become deliberate and 'rational', and new information or knowledge will be sought to assist in decision-making: these life events could include changing residential or work location, getting married or divorced, having a first (or second) child, having a car stolen, or losing one's job. Such disruptions might also shift individual's values and facilitate different mode choices (Verplanken *et al.*, 2008).

Ingrained habits (the 'stubborn' user, see Choice and captive cyclists) are an important reason why travel mode choice or behaviours are difficult to change (Bamberg, Ajzen and Schmidt, 2003).

In Cape Town, research has found that the way in which motorized commuters travel to work is by and large habitual and non-deliberative (Adjei and Behrens, 2013; Behrens, Moyo and Zuidgeest, 2022), with an average interval of change of six years; shifts or transitions are usually from public transport to private cars, not from private cars to bicycles / public transport. Commuters to and from central Cape Town who have recently experienced a life shock are identified as the most susceptible to change (Behrens *et al.*, 2015, p. 425) – these 'life shocks' are primarily changes in employment, residence, and car ownership. These commuters tended to seek information on mode change approximately a month before a planned life course event or 'shock', and most commonly searched for information about operational cost, comfort, travel time, convenience of mode use, and safety. Commuters considered what they would gain by shifting mode rather than what they would lose (Adjei and Behrens, 2013), and indicated that they were not influenced by what others thought about their mode choice before making a change.

[15] In this thesis I consider each 'window' to be or include trigger that shifts an individual from one Stage of Change to another, for example where individuals begin cycling (shifting from another mode) or where they move from one phase of cycling to another.

2.4 WHAT TRIGGERS AND MOTIVATES CHANGES IN CYCLING BEHAVIOUR?

A decade ago, 'surprisingly' little research had investigated behaviour change and cycling, with most research taking a cross-sectional approach to determining the characteristics of cyclists and non-cyclists rather than the circumstances and motivations surrounding changes to cycling behaviour (Chatterjee, Sherwin and Jain, 2013, p. 183). 'Without directly studying why change occurs, and the context in which it takes place, we are left with partial and potentially misleading explanations of influences on behavioural change' (Chatterjee, Sherwin and Jain, 2013, p. 186).

To mitigate this research gap, the authors drew on the concept of 'life events', above, to develop a theory to explain changes in cycling behaviour. This theory, based on work in the UK, centres on the concept of a 'cycling trajectory', which represents an individual's 'thoughts, feelings, capabilities and actions related to cycling'. Individuals arrive at their current cycling behaviour, they propose, 'within trajectories that developed over the course of their lives and are shaped by life events and the contexts that they encounter' (Chatterjee, Sherwin and Jain, 2013, p. 183). Such contexts include individual characteristics, socio-cultural environments, organisational/physical environment, economic/policy – in most cases, it is a contextual change that leads to conscious deliberation and triggers a change in cycling behaviour.

The authors explain potential turning points in cycling behaviour thus: deliberation about mode choice happens as a consequence of two categories of trigger: (i) life change events (changes in employment, number of children, health, residence, etc) prompt reconsideration of habitual behaviours, and (ii) changes to the external environment (social, cultural, organizational, physical, policy/economic factors that support or constrain cycling). The deliberation process is mediated by an individual's personal cycling history, intrinsic motivations, and existing facilitating conditions in the external environment (eg, cycle lanes)(Chatterjee, Sherwin and Jain, 2013, p. 187).

What leads people who already cycle to shift to a more regular practice? Mostly, a life event rather than a change in the external environment: a new employer or educational location, often because they are closer to an individual's home, or changes in the travel patterns or employment status of an individual's partner. Changes in residence or relationships also have been shown to influence the amount of cycling, as these changes might place individuals in contexts where others cycle more often, or where there is cycling infrastructure (Chatterjee, Sherwin and Jain, 2013). The arrival and developmental changes of children may lead to more, or less, cycling, and 'health scares' appear to shift cycling behaviours among men. Cycling as a leisure or fitness interest, and changes in car and bicycle availability, have also been identified as triggers to changed cycling behaviours,

among people who already do cycle. Perceived improvements to the physical cycling environment – cycle routes, maps, signage, and workplace facilities – prompted people to take action to start cycling in their study. For these study respondents, a past experience with cycling played a key role in taking up cycling later in life.

Among the studies to deploy longitudinal studies to understand shifts within cycling practices (although not utility cycling only) is that of Bonham and Wilson (Bonham and Wilson, 2012) – also in a low-cycling country, Australia. The study looked at the circumstances and spatial contexts in which women started cycling more often, or reduced their cycling. The authors found different influences depending on the ages of the women: younger women were influenced by social relationships, while women older than 30 started cycling for health and fitness reasons. Changing the 'amount' of cycling (including for leisure or recreation, or exercise) usually followed a 'precipitating event' (Bonham and Wilson, 2012, p. 200), which could include becoming mothers or grandmothers, moving to a new house, changing jobs, attending a different school, having children or having children leave home, a change in health or employment status, or changes in personal relationships.

For the women in the above study, transitions were not sudden, but driven by gradual 'micro' triggers that enabled them to put plans into action; these included being 'loaned or given a bike, watching others and thinking "I can do that", or having a friend or partner provide the right kind of encouragement' (Bonham and Wilson, 2012, p. 200). Cycling for this group is part of their 'repertoire of mobility practices' (Bonham and Wilson, 2012, p. 201) – it is not necessarily a daily choice, but neither is it a dramatic shift; depending on the weather, their energy levels, or after-work commitments, this cohort will choose cycling, driving, public transport, or walking.

In London, peers or role models, or having someone to cycle with, are identified as important psycho-social triggers to sustain cycling (Green *et al.*, 2010, p. 7). Personal support, especially in low-cycling contexts, and distinctive experiences of places, enable individuals to keep up a cycling practice.

In the city of Davis, California, Janke and Handy investigated the way in which life-course events triggered changes in cycling attitudes and behaviour (Janke and Handy, 2019). The work used data from an earlier study (interviews conducted in 2010), where interviewers asked participants about their experiences and attitudes toward cycling (not necessarily commuter cycling) during pre-categorized six stages of life: elementary school, junior high, high school, college age, young adult (26-10), and older adult (40-60). In their study, triggers to changing levels of cycling were changes in residential location (to a more, or less, bicycle-friendly environment), 'acquiring' a partner who was either positive or

negative toward cycling, exposure to new social norms (for example through changes in the workplace), and the birth or life stage of a child. These life-events did not exert simple linear changes, the authors note, but by changing social norms they could facilitate new interests, opportunities, activities, and destinations.

Félix *et al* set out to understand the 'decisive factors' that influenced cyclists' decisions to ride in low-cycling Lisbon[16], in what they describe as a pseudo longitudinal study[17]. In their study[18], ' motivations for considering cycling, or taking up cycling, are compared between people self-categorized as either cyclists or non-cyclists. In a closed-ended survey they asked those who identified as cyclists to recall the barriers they experienced before choosing to cycle, as well as their motivations to cycle – and analyzed the data in the context of periods of investment in infrastructure, facilities, and public policy initiatives for bicycle transportation over three time periods. The triggers that participants identified as most relevant for their behavior change were (in order), environmental concerns; speed over other modes; owning a bicycle; physical fitness; affordability; personal health; and the expansion of the cycling network. Other motives were an interest in conveying a political message; the influence of friends; and the participation in Critical Mass rides. These cyclists were not influenced by the availability of bicycle parking, or by 'commercial, municipal, and work campaigns' (Félix, Moura and Clifton, 2019).

In my research, I take a longitudinal approach (see Method), but rather than a life-course study I use mobility biography. The latter focuses on events and role transitions, while the biographical approach sees transitions as a consequence of 'self-reflective, meaningful action', and 'reconstructs the subjective meanings someone associates with their own life' (Rau and Scheiner, 2020, p. 7). Rather than stages of life, I use stages of change as categories. Thus, in my thesis, rather than divide a biography into life-stages, I divide it into mobility stages. I assess what changed in terms of mobility, and then investigate what might have triggered this change and what motivates individuals to continue or increase their practice.

2.5 WHAT MOTIVATES AND SUSTAINS A BICYCLE PRACTICE?

The emotional benefits of cycling – 'which should be more widely studied and publicized' – play a vital role in cycling practice (Aldred, 2012a, p. 33). Attitudes (evaluative reactions) and perceived behavioural control (skills and ability) toward cycling have been shown to

[16] About 0.6% of trips are by bicycle: https://ecf.com/news-and-events/news/move-lisboa-what-horizon-cycling-lisbon

[17] Like this thesis, Félix *et al* have identified two key gaps in the knowledge: that the literature more often focuses on barriers rather than motivators, and that there is little by way of research about what motivates cyclists to ride in low-cycling environments.

[18] Lisbon has a bicycle mode share similar to that of Cape Town, of 0.5-1% of trips.

be important predictors[19] of commuter cycling in low-cycling countries such as Canada, Japan, Australia, and the UK, but social norms (what peers or respected others think about cycling) less so (Dill, Mohr and Ma, 2014). Attitudes, in terms of wellbeing and commuting, have become an increasingly studied field of work (Chatterjee *et al.*, 2020).

While a desire to improve health is a motivator to take up cycling, environmental concerns were less so in the study in the UK cited above. Although climate does generate concern among a different study population in the UK, it is not a 'front burner' issue (Anable, Lane and Kelay, 2006, p. 11) among people who have made changes in their behaviour, they do not believe that their behaviour makes much difference. Independence, speed, efficiency, and health benefits – which the researchers clusters as 'automobility' motivators – are more able to sustain a practice.

Like Félix's *et al's* study, above, as well as that of this thesis, Rérat's interest in high-cycling (and high-income) Switzerland in 2019 was to understand the intrinsic motivations of individuals who continue to cycle to work, beyond the more commonly studied extrinsic motivations such as infrastructure (Rérat, 2019): cycling is an 'entanglement of movement, meaning, and experience', he notes, with 'mobility [being] loaded with meanings – from an individual and social point of view – that may be found in representations, discourses and narratives about the fact of moving' (Rérat, 2019, p. 92). In the online survey study, participants were asked to rate to what extent they agreed with certain listed factors that motivated them to cycle to work routinely. Findings were that 'almost all' indicated the importance of an opportunity to exercise. This was followed by flexibility and freedom (90%), pleasure (88%), respect for the environment (88%), and the opportunity to take one's mind off things and to disconnect from work (80%). Less than half of the participants mention social activism or the positive image of a bike among their friends or colleagues. This study led to a categorization of individuals who cycled to work according to their cycling motivations and importance given to 'wellbeing', 'civic engagement', or 'independence' in a survey: 'active' cyclists (exercise), 'civic' cyclists (the environment), 'individualist' cyclists (independence), and 'enthusiast' cyclists (no particular priority). Key contributors to wellbeing[20], in Rérat's analysis of responses, are related to the 'experience of mobility, to sensations and more precisely to the benefits of cycling, both physical (exercise) and mental (pleasure, means of escape) (Rérat, 2019, p. 96).

[19] Note that this thesis does not attempt to predict potential for change, nor does it attempt to categorize windows of opportunity for change. Instead, it focuses on the triggers that played a role in shifting individual mobility practices from one 'stage of change' to another. My primary interest is not so much which life-event is associated with change, but which personal narrative or motivation is associated with change (which might, or might not, have been triggered by a 'life-event'). Note too that my research does not consider shifts from one mode to another, but shifts in intensity of practice within the same mode of practice.

[20] The meaning of which, Rérat notes, is highly variable.

Barr *et al*, who segmented study participants in a university context in low-cycling Exeter by mode[21] in order to understand motivations (Barr *et al.*, 2022), like Rérat found personal wellbeing to be a prime motivator. Their study, findings of which were drawn from focus group workshops, included engaging with the local urban and natural environment, the embodied experience of cycling, and meaningfully spent time, as examples of personal wellbeing. Harnessing the power of the 'lived reality of the joys … of daily commuting' has great value for social marketing, Barr *et al* suggest (Barr *et al.*, 2022, p. 8). A meta-study of cycling narratives in the UK has a similar finding: 'the main reasons that make people want to cycle are linked to their wellbeing' (Caimotto, 2020, p. 404) – happiness is a consequence of a number of changes cycling brings, posits Caimotto, including losing weight, falling ill less often, relaxing outdoors, or engaging with other people.

In Biernat *et al's* study in low-cycling Poland[22], they identify primary motivations among cyclists as 'utilitarian' (improving health and fitness, pleasure and pro-environment); 'necessity' (no time for other physical activity and no alternative for cycling); and 'convenience' (reducing the time distance, avoiding crowds in public transport, saving money) (Biernat, Buchholtz and Bartkiewicz, 2018).

Of new cyclists studied in a university context in the UK, mostly relatively affluent, the majority reported that 'enjoyment' was highly motivating: enjoyment included a sense of achievement, the thrill of cycling fast, good weather, being outside, and overtaking slow-moving traffic (Gatersleben and Appleton, 2007).

Enjoyment is key to cyclists in Davis, California[23], who note that essentially, unless someone has 'internal satisfaction' from cycling, they are unlikely to ride even if the mode has multiple other benefits (Heinen and Handy, 2012, p. 272). These cyclists enjoyed the freedom of cycling, the relaxation it brings, and how they are able to avoid the stress of driving.

Sport commuting has been 'written off' as the 'antithesis of inclusive commuter cycling,' suggests Larsen (Larsen, 2018, p. 42), yet longer distance commuting is more likely to achieve fitness, health, and environmental benefits – otherwise 'why expose oneself to inclement weather, physical work and fatigue when there is a car in the garage?' Recreational cycling in a low-cycling country could, in fact, be the 'gateway' to cycle-commuting; at least one study in Larson's review has shown that 'the odds' of an individual starting to cycle for utility increases dramatically if they cycle for fitness. Fitness,

[21] Unlike in this thesis, which segments participants by category within a mode.

[22] Where the authors note cycle commuting is an 'occasional activity'.

[23] A very high rate of cycle trips compared to other US cities, at 17%: https://nacto.org/wp-content/uploads/2011/03/City-of-Davis-Comprehensive-Bike-Plan-2006.pdf

stress relief, and 'a happy state of mind' appear to be major motivators to cycle-commute for more than 6 km, but environmental concern is less so (Banerjee *et al.*, 2022).

In Auckland[24], Wild and Woodward (Wild and Woodward, 2019) claim that 'cyclists [are] the happiest commuters'. Through in-depth interviews with 26 e-cyclists, the authors found their study participants to be motivated by their high levels of travel satisfaction, brought about by a high degree of commuting control and 'arrival-time reliability'; enjoyable levels of sensory stimulation and time outdoors; the 'feel better' effects of moderate intensity exercise; greater opportunities for social interaction. They propose that 'promoting the health benefits of cycling requires a move beyond seeing cycling as a 'virtue' or a healthy habit, towards a keener appreciation of the physical, psychological, and social pleasures of everyday cycling' (Wild and Woodward, 2019, p. 6).

2.6 SEGMENTING THE MARKET: CATEGORIES AND IDENTITIES

Where cycling rates are low, bicycle users are potentially more closely identified with their choice of vehicle than those using other transport modes are: 'in a city with low rates of cycling, the cycle potentially identifies its user in ways in which other transport choices do not' (Steinbach *et al.*, 2011, p. 1123). Users also identify themselves differently to those using other modes: it is rare to find someone describing themselves as a 'pedestrian', 'a motorist' or a 'bus passenger', but it is not uncommon to find individuals describing themselves as cyclists (Green *et al.*, 2010).

The literature from the UK, US, and Australia[25] reveals these cycling identities as inherently alternative (Stehlin, 2013), marginal (Steinbach *et al.*, 2011), autonomous and independent (Aldred, 2010), 'revolutionary' (Furness, 2010), foreign (Sirkis, 2000; Jennings, 2016) or low-status and stigmatized (Aldred, 2012b, 2013).

In London, these identities or identifiers are variously 'environmentally friendly', 'independent', 'a bit of a leftie', 'vegetarian', 'morally worthy', 'smug', or sources of pride because of 'inclusion of a small club' (Green *et al.*, 2010). Cycling also signifies, to some, a white, mostly male, 'specifically bourgeois sensibility' (Steinbach *et al.*, 2011, p. 1123); a 'good citizen' because of the social, health, and environmental benefits of cycling; or 'environmental warriors', 'health freaks', or deviant risk-takers' (Aldred, 2010, 2012b, p. 201). Women have described the risks of cycling as 'empowering'. Independence – the way

[24] A bicycle trip rate of between 1-5%: https://at.govt.nz/media/1974167/auckland-cycling-10-year-plan-july-2017.pdf

[25] There is an absence of studies relating to higher-income cyclists in South Africa.

in which cycling provides the same flexibility (and more) as private car travel – is highly valued in London (Green *et al.*, 2010).

These are meanings that extend beyond those narrowly tied to transport requirements (Horton, 2006), particularly where policies associate cycling with health and environmental behaviour. Horton describes the role the bicycle has played in a number of social movements, from feminism, socialism, and anarchism to more recent environmentalism: riding a bicycle may be symbolic of a commitment to a 'slower' world, democratic and equitable, less consumerist and with a more humanized urbanscape. Essentially, for some, 'riding a bicycle directly performs the personal as political' (Horton, 2006, p. 46).

Both Furness (Furness, 2010) and (Mapes, 2009) describe a revolutionary or resistance culture in the United States that fuelled rising bicycle mode shares in early 2000s. Anti-capitalist, anti-automobile, and pro-environmental narratives (Morhayim, 2018) and a desire to engage radically and critically with city spaces and to search for alternatives, underpin a number of cycling practices in the US West Coast, and critical mass and night 'crash' events in South Africa too (Jennings, 2012). '"Participants", if that is the word, typically express disdain for suffocating organized, scripted … authoritarian, competitive, and consumer-based cultural experiences and spaces' (Morhayim, 2018, p. 1314). This is in line with how Machin and van Leeuwen explain how people signify personal identities through appearances; people are able to 'announce' their affiliations and values through various attributes (Leeuwen, 2007; Caimotto, 2020, p. 401).

In bicycle unfriendly, 'disabling' environments, bicycle commuting identifies individuals as able to cope with high mental and physical intensity, able to deal with risk (Larsen, 2018); this is especially the case when individuals cycle what Larsen describes as long-distance commutes of over 15 km, combining sport and commuting.

Identifying and segmenting user groups is key to promoting behaviour change: where car-oriented cities with little cycling tradition have managed to grow bicycle share[26], Buehler *et al* (Buehler, Teoman and Shelton, 2021) propose that this is partially because they have identified distinct user groups for different bicycling facilities, and distinguished the infrastructure needs of different groups. This is in line with Behrens' observations that in Cape Town, Travel Demand Management (TDM) strategies need to be targeted rather than taking a general approach (Behrens *et al.*, 2015).

Outside of South Africa, there have been a number of studies to segment bicycle users or potential users. Much of this work has been drawn from cross-sectional studies, which describe or comparing individual characteristics with contexts and settings, or developing

[26] Washington DC and Frankfurt have managed to grow cycling mode share since the 1990s from 1% to 5%, and from 6% to 20%, respectively.

categories of cyclists, to understand propensity to cycle and associated barriers and to design targeted interventions.

What constitutes being a 'cyclist' or cycling for transport is not the same across all research studies. For example, Spotswood *et al* define utility cyclists as those who are *contemplating* [my own italics] cycling as transport more or using their cars less (Spotswood *et al.*, 2015). Heinen, Maat and van Wee define bicycle commuters as those who cycle the complete journey. Within their definition of bicycle commuters, those who cycle to work every working day are considered to be a full-time cyclists, while those who alternate modes, and only occasionally cycle, are considered to be part-time cyclists (Heinen, Maat and Van Wee, 2011, p. 102). In Félix *et al* (Félix, Moura and Clifton, 2019), cyclists are those who travel by bike 'almost always' or 'sometimes', and non-cyclists are those who 'do not ride a bike but [I] am interested in doing it.'

Aldred proposes that the term 'utility' be replaced by 'everyday cycling', a term that would give more credence to trips taken 'purely for enjoyment' rather than only a mode of transport (Aldred, 2012a, p. 29).

In Poland, Biernat, Buchholtz and Bartkiewicz identified categories of cyclists based on stated motivations (survey questions): 'conscious cyclists' are those who are generally low-income and who do not own cars; 'forced cyclists' are those who have no alternative to cycling, also generally of lower income and without cars; 'pro-health' are those who value fitness and health and who are more likely to own a car; and 'lifestyle cyclists' are those who choose cycling for its travel time and congestion-mitigation potential. This latter category comprises mostly young, urban, men, generally of higher-income, and more likely to own cars (Biernat, Buchholtz and Bartkiewicz, 2018).

Cycling regularly is defined by Chatterjee *et al* as cycling at least once a week (Chatterjee, Sherwin and Jain, 2013); Nkurunziza as 'almost every day' (Nkurunziza and van Maarseveen, 2013). Acheamong, working in Kumasi, defines occasional cyclists as those who do not cycle more than one day in one week, and frequent cyclists as cycling three or more days in a week (Acheampong, 2016); Acheampong's work considers how attitudes toward cycling vary depending on whether they have cycled before, and how frequently they do so.

The Stages of Change Model (also known as the Transtheoretical Model of Change) (discussed in greater detail earlier, see page 26, Research approach) has recently become more commonly applied in scholarly work to segment or categorize cycling behaviour, either to predict change or design targeted interventions. While the model has been identified in scholarly work as a useful tool to understand what could shift people towards action and create targeted policies (Gatersleben and Appleton, 2007; Thigpen, Driller and

Handy, 2015; Félix, Moura and Clifton, 2019), a 2017 integrative review finds that interventions to increase cycling, based on these categories, have tended to abandon the nuances of the stages when designing programmes (Friman, Huck and Olsson, 2017).

In an early mixed methods approach to understanding why individuals cycle to work, and what motivates different groups, Gatersleben and Appleton surveyed students and staff at the University of Surrey, assessed their 'stage of change', and then recruited 22 new cyclists to participate in a two-week cycling intervention where they kept a diary of feelings and experiences on the work commute (Gatersleben and Appleton, 2007). Like much of the work considering motivations for cycling, this work also compared cyclists with 'non-cyclists' to attempt to understand under what circumstances individuals might be willing to start cycling, or cycle more.

Also a university-based study, Thigpen *et al* (Thigpen, Driller and Handy, 2015) in a survey at the University of California, Davis, explored whether differences in socio-demographic characteristics, travel attributes, and travel attitudes explain individual cyclists' position in different stages of change. The study allocated individuals to a 'stage' based on self-reported travel intention – their past week of travel and the amount of cycling – and responses to the questions 'Have you thought about bicycling to campus?' and ''How likely are you to bike to campus in the next six months?

Their findings were that attitudes toward cycling and perceptions of barriers are important determinants of stage of change. They found that individuals most likely to be in 'maintenance' phase were those who lived near to the trip destinations, and who liked riding a bicycle. Liking riding a bicycle, they note, 'has proven to be an excellent predictor of bicycling rates across different settings and populations' (Thigpen, Driller and Handy, 2015, p. 53).

Among researchers who have used this model for studying cycling in Africa is Nkurunziza, studying the potential cycling market in Dar es Salaam[27] (Nkurunziza, Zuidgeest and Van Maarseveen, 2012; Nkurunziza, Zuidgeest, Brussel and Maarseveen, 2012; Nkurunziza and van Maarseveen, 2013). Nkurunziza used this approach to segment the market by studying the motivators, influences, and barriers for cycling within each stage of change, and considered the implication of different motivators among people in different stages of change for cycling policies and promotional strategies (see Table 2. Findings suggest that – in that particular city – the individuals least likely to contemplate cycling as a transport mode are the cohort under study in this thesis, ie, educated people

[27] A city with 1% bicycle transport share.

who currently drive[28]. Their work aimed to identify groups with 'high switching potential' (Nkurunziza, Zuidgeest and Van Maarseveen, 2012, p. 79), and segment cyclists differently from the more typical characteristics of income, car-ownership, gender, and travel mode use. Their work, as well as later work in Quelimane[29], Mozambique, focuses on 'hard' interventions as influences within each stage, such as 'separate bicycle paths', 'special bicycle infrastructure', or 'shorter travel distances', or external factors such as 'cycle training and education on traffic rules', 'reduction of bicycle prices', 'enforcement of road safety rules', or educating car drivers to change their attitude towards cyclists' (Mendiate, Soria-lara and Monzon, 2020; Mendiate *et al*., 2022b).

The Stages of Change model was used not only as a category for segmentation, but also as the basis for a behaviour change experiment, in a 30-day Bike-to-Work campaign in Varmland, Sweden, in 2018 (Olsson *et al.*, 2021). 380 volunteers participated in the study to understand progress from stage to stage, and were allocated to a 'stage' based on self-reported survey responses, which included assessments of both instrumental and affective attitudes[30], and measured perceived behavioural control (see page 69). Researchers provided different groups (from within the same stage) different 'nudge' messages – focusing on financial motivations, environmental motivations, and 'fun – and measured change after three months. Although none of the messages were manifestly more successful than the other, motivation to change mode use increased across all groups.

2.6.1 Segmenting cyclists in South African policy and literature

The City of Cape Town divides 'NMT users' into utility users and recreational users, and further divides utility users into 'commuter' users, 'service' users, 'learner' users, and 'commercial users (CCT, 2017a, pp. 26–27). Commuters travel to work, service users travel outside peak periods, learners travel to education institutions, and commercial users 'carry out services and the transport of goods'.

In 1999, the South African National Department of Transport (NDoT) attempted to categorize user groups by introducing six categories based on their willingness or necessity to travel by public transport. This guiding document entitled Moving South Africa (NDoT, 1999a) named user groups as: stubborn (only use a car); selective (can afford a car, willing to use public transport); sensitive (captive to the best option of public transport); survival

[28] In their study, those preparing to shift into 'action', and possibly take up cycling, are unlikely to own a private car, and public transport is their current mode.

[29] A town with 35% bicycle mode share.

[30] Instrumental attitudes relate to an assessment of an outcome or consequence of an action, while affective attitudes relate to associated feelings (stress, happiness, etc).

(captive to the cheapest public transport mode); stranded (cannot afford public transport); or strider (prefer to walk).

A more commonly used differentiation is that between 'captive' and 'choice' user groups. The City of Cape Town uses 'choice' to describe 'persons who, due to their socio-economic circumstances, have a choice of travel options at their disposal (CCT, 2005, p. 4). The Provincial Government Western Cape uses both 'choice' and 'discretionary' users: those who ride a bicycle as a transport mode even though they may have access to a motorized mode: '… choose to use NMT, primarily cycling, as a form of transport because of the many benefits associated with NMT use, even though they may have access to a motorised mode. These discretionary users require a high quality of services and infrastructure, and may revert to motorised travel if quality is not adequate' (PGWC, 2009, p. 33).

In scholarly work about cycling in South Africa, the users under study are largely those who would be categorized in the policy discourse as 'captive users', or the 'survival' and 'stranded' categories (see Choice and captive cyclists) – in other words, individuals living in low income (Bechstein, 2010; Nkurunziza, Zuidgeest, Brussel and Van Maarseveen, 2012; Boulle, 2013; Jennings, 2014, 2016; Petzer, 2016; Morgan, 2017; Irlam and Zuidgeest, 2018). Captive users are those who, 'due to their socio-economic circumstances, have a very limited choice of travel and, as a result, are forced to use modes of transport with no/low capital and/or operational costs' (CCT, 2017a, p. 6). More recently, Cooke *et al* (Cooke *et al.*, 2022) have conceptualized this cohort as vulnerable NMT users, making a distinction between people walking or cycling as being vulnerable physically compared to motorized road users, and people being living in vulnerable circumstances who therefore use NMT as a mode.

In South Africa there has to date been only one study I have encountered that concerns high-income earners who choose to cycle as a mode of transport; this study was conducted in Johannesburg in 2019, and found that very few high-earners cycle as transport (Morgan, 2020). All in all, in South Africa, however, the 'virtual absence of utility cycling' means that there is very little data about cycling characteristics among any cohort (Hitge and Joubert, 2021, p. 4). Hitge and Joubert consider the middle- to high-income group in Cape Town to have a low potential to contribute to a shift in cycling, and that 'the marketing effort to target the high-middle and high income groups' may not warrant the effort' – unless interventions are clearly designed with appropriate messaging for different target groups (Hitge and Joubert, 2021, p. 5).

2.7 FRAMING CYCLING IN THE ADVOCACY DISCOURSE

Framing, suggest Anable *et al*, is under-studied with respect to travel behaviour. Frames, they note, are 'deeply held worldviews and assumptions that people hold'. Over time, individuals develop 'habits of thought and expectation and configure incoming information to confirm to this frame' (Anable *et al*, 2006, p.88).

Overall, travel behavioural change programmes need to meet the psychological needs and motivations of the target audience (Anable *et al*, 2006). This thesis explores the psychological needs and motivations of car-owning cyclists who choose to ride as transport, 'intentional' cyclists, but also the motivations given in public advocacy discourse – in other words, how utility cycling is framed – in policy, media reports, and opinion pieces (among others).

This interest in framing and the public advocacy discourse is not because I claim individuals are necessarily directly influenced in decision-making by the advocacy discourse under study; what a policy says, or what a media release says, is unlikely to catalyze a behavioural shift in and of itself. As noted earlier, providing information, or exhorting an individual to cycle because of any number of reasons, is not a tenable theory of change. My research interest is instead multi-fold. Firstly, as Caimotto notes – in a critical discourse analysis (see also section titled [Critical] Discourse Analysis (CDA)) of interview data collected as part of the Cycling Cultures project (Aldred, 2012a) in the UK – the arguments individuals use for choosing cycling over other transport are likely to prove effective in promotional material and other attempts to shift behaviour (Caimotto, 2020). As Leyendecker puts it, 'knowing a group's different attitudes and preferences is vital for strategic communication' (Leyendecker, 2020, p. 4). Thus, this insight is likely to be of value in segmenting target audiences and developing evidence-based behaviour change programmes.

Secondly, the arguments used in the public advocacy discourse produce meaning and reinforce what Scheffels *et al* describe as the 'common sense' or 'taken-for-granted' lexicon of transportation (Scheffels, Bond and Monteagut, 2019). Discourse (see section titled Discourse) plays a role in the structuring, constructing or re-telling of social practices (Candlin, 1997). These discourses represent a part of the world from a particular perspective, or cluster ideas, images, and practices that provide ways of talking about a particular topic. This is why the public advocacy discourse matters.

There is a wide body of literature that recognizes and explores the role of public discourse in shaping public opinion and behaviour, and setting the public or civic agenda (see for example the concept of 'framing', Kitzinger, 2007) and the theory of agenda-setting, McCombs, 2013). Agenda-setting refers to the view that public discourse 'tells' people what

to think based on issues being covered more or less frequently (Cacciatore *et al.*, 2016). In focusing on particular concepts, the public discourse 'transfers salience to audiences' (Cacciatore *et al.*, 2016, p. 6). Opinion, perceptions, salience are key here: again, this is not to say that advocacy discourse tells people how to behave, but is able to play a role in developing the attitudes and salient beliefs that are important antecedents to change.

Thus the media, as one example of public discourse, plays an important role in constructing the dominant discourses of mobility and 'normality' (Murray and Doughty, 2016) and establishing, sustaining and changing the relations of power between the 'normative' and the new (Fairclough, 1989, 1993).

Scholarly research consistently finds that the media does influence public perceptions, including perceptions around travel behaviours (Goddard *et al.*, 2019). When the media positively frames bicycle transport, it does so in a number of ways. These include a concern for 'the environment', the joy of riding a bicycle, convenient, 'fun', economical, health-promoting and relief from traffic congestion (Rissel *et al.*, 2010; de Souza, Sanches and Ferreira, 2014), independence from the fuel-economy, and a contribution to the dismantling of social barriers (Jennings, 2016).

The way in which the public discourse frames cycling has particular salience, as it can 'shape public understandings of issues and influence policy and behaviours' (Rissel *et al.*, 2010, p. 1). This is not to say that there is a straightforward causal relation between media representations and public attitudes – in other words, this is not a variation of the 'deficit' model of change (see p. 68) – but that as 'individuals engage with, and seek to make sense of, media representations of cycling, their attitudes will be influenced by those representations' (Nielsen and Bonham, 2016, p. 232). Opinion or perceptions change is not necessarily triggered directly by media but occurs indirectly, 'mediated by influential opinion leaders more likely to attend to mass-mediated messages and in turn pass on messages to other members of their social network' (Cacciatore *et al.*, 2016, p. 12).

Improved portrayal within the public discourse of people who do cycle is likely to play a role in increasing bicycle mode share (Caimotto, 2020, p. 52). Goddard *et al* found that even just one single article is enough to alter readers' perceptions around road safety and cycling or walking, for example (Goddard *et al.*, 2019). Thus, Caimotto warns, for example, as framing cyclists as morally superior to others (by cycling to work for example) – angers even people who behaviour in environmental ways (for example, where cost-related reasons are framed as 'material', but cycling for the environment is framed as 'moral').

There is little scholarly work that investigates cycling and the media, or the relationship between cycling promotion, changing perceptions, and the public discourse (Rissel *et al.*, 2010; Aldred, 2013; Nielsen and Bonham, 2016; Caimotto, 2020). Likewise, little research

has been published about how cycling and cyclists are represented or viewed within the public discourse – of which the media is the most accessible (Fairclough, 1989) – and how this might influence people's bicycling behaviour (Daley and Rissel, 2011). Aldred & Jungnickel (Aldred and Jungnickel, 2014) note that relationships between promotional interventions (advocacy) and infrastructure is an under-researched area, and that the direction of causality is a disputed one. The interest in the representation of cyclists in the public discourse has grown since the first draft of this thesis (see for eg Fevyer and Aldred, 2022; Egan and Caulfield, 2024).

Note that this thesis does not investigate the way in which advocacy discourses do or have influenced cycling behaviour. The reason for this outline here is to show that the public advocacy discourse can and does influence perceptions and behaviour, and that there is therefore value in exploring overlaps and alignments across personal discourses and advocacy discourses. I make no claim that advocacy discourse directly causes changes in personal opinion and behaviour, but that it may be part of the process by which individuals construct meaning. This thesis sets out to understand whether and where the discourses intersect.

[Table 2 starts on the next page]

Table 2: Relevant bicycle behaviour studies in low-cycling contexts, indicating location of study, method/approach, sample size, study population, conceptual framework, and study purpose. Works referred to in this study, where primary data collection has been undertaken, have largely taken cross-sectional quantitative approaches, and collected data by means of surveys (intercept or online) and occasionally focus groups. This table continues across five pages.

Study	Location	Method/Approach	Sampling and sample size (excluding non-response)	Study Population	Conceptual framework of analysis (behavioural theory)	Study purpose	Conclusions
(Barr *et al.*, 2022)	A two-year project on Engaged Smart Transport, which aimed to examine the ways in which a combination of digital technologies and public engagement could be used to reduce commuting congestion and increase active travel in the city of Exeter in South West England	A two-stage strategy involving a large-scale online survey which was followed by five discussion-based workshops with individuals representative of behavioural mobility segments	3 050 survey responses	Commuters into and within Exeter (walking, cycling, public transport)	Social marketing approaches	To demonstrate how understanding the meanings of travel decisions can lead to more nuanced behaviour change interventions	There are philosophical differences in how travel behaviour is understood and the political framework within which behavioural change policies operate (Marsden et al., 2014), but from a pragmatic perspective, we argue that a great deal can be added to quantitative segmentation techniques and their application through social marketing policies by harnessing the power of human expression and experience, and becoming familiar with the lived reality of the joys and many frustrations of daily commuting

Study	Location	Method/Approach	Sampling and sample size (excluding non-response)	Study Population	Conceptual framework of analysis (behavioural theory)	Study purpose	Conclusions
(Félix, Moura and Clifton, 2019)	Lisbon	Closed-end online survey, distributed by social media, in print, in cycling advocacy groups, etc	1 457	Lisbon's residents, workers, and frequent visitors	Travel decision theories, theories of planned behaviour and social learning, Stages of Change	Comparing barriers and motivators to bicycle of cyclists and non-cyclists	Triggers vary over time, and are likely to also change as cities transition to higher cycling maturity levels
(Biernat, Buchholtz and Bartkiewicz, 2018)	Poland	Quantitative, cross-sectional, probabilistic	Nation-wide survey by telephone and personal, n=1 159+300, commissioned by Ministry of Sport and Tourism	Cyclists and non-cyclists	No stated conceptual/theoretical framework	To identify the motivations and barriers to commuting by bicycle in Poland	Motivations to cycle are primarily health and fitness related, of necessity (no other mode of travel), or convenient (faster, saving money, avoiding crowds in public transport)
(Swiers, Pritchard and Gee, 2017)	University students at a UK university in Liverpool	Quantitative. Online cross-sectional survey of attitudes, behaviours, barriers and motivators to cycling. Likert scale	Survey, online, self-completed n=194, of which 55% were male	Convenience sampling of young adults (18-25); incentivised by a prize draw of supermarket vouchers	Grounded theory	Exploring the motivations and barriers to cycling among university students	Cycling motivators were health and fitness; weather and safety were important barriers. Levels of cycling are higher within university settings than elsewhere in the UK
(Acheampong, 2016)	Kumasi, Ghana	Intercept survey, quantitative, probability	500 adults	'General population'	Theory of Planned Behaviour	To determine whether there are differences in how males and females who have different cycling experience perceive cycling for commuting purposes	Attitudes and perceptions regarding the environmental, financial, exercise and potential health benefits of cycling for transportation were very positive generally

Study	Location	Method/Approach	Sampling and sample size (excluding non-response)	Study Population	Conceptual framework of analysis (behavioural theory)	Study purpose	Conclusions
(Piatkowski and Marshall, 2015)	2012 and 2013 surveys of Bike-to-Work Day participants in Denver, Colorado	Quantitative, cross-sectional, self-administered, Likert scale	2030 (of which 337 only cycled at the bike to work day event)	Email addresses drawn from those who registered for the Bike-to-Work event	Attitudinal theories	To investigate the role of attitudes, socio-demographics, and the build environment, in bicycle commuting	There are distinctions between the decision to start commuting by bicycle and the decision to increase the frequency of bicycling to work
(Spotswood *et al.*, 2015)	Commercially sourced panel, British people aged 16-64 years	Online survey n = 3885, stratified random sampling. Likert scale. Ten in-depth interviews and nine focus groups with thematic analysis	A re-examining of two studies by the authors in 2010 and 2011	Commercially sourced panel, British people aged 16-64 years	Social Practice Theory (which is more often applied to the consumption literature)	Exploring social practice theory rather than psychologically based models of behaviour	Critique of 'soft' measures and individualistic approaches
(Jones, Chatterjee and Gray, 2014)	Bristol	Qualitative, longitudinal, narrative, biographical approach	33 participants, face-to-face interviews	Purposive sampling, Parent-child dyads. Selected for gender-balance but with variations in level of education, occupation, residence, and current engagement in walking and cycling	Life-course perspective, Narrative analysis	Development of cycling trajectories by type, based on assessment of similarities and differences, with resulting typologies	Typologies of behavioural development is a credible approach to understanding how behaviours increase diminish, persist, cease or are adapted through the life course

Study	Location	Method/Approach	Sampling and sample size (excluding non-response)	Study Population	Conceptual framework of analysis (behavioural theory)	Study purpose	Conclusions
(Nkurunziza and van Maarseveen, 2013)	Dar es Salaam	Quantitative. Cross-sectional. One-on-one intercept survey questionnaires at key trunk routes with commuters, to develop a life-course history, Likert scale	448	All individuals who currently use or have used bicycles in the past for trips	Stages of Change: Transtheoretical Model (Prochaska, DiClemente and Norcross, 1992)	To examine the potential for modal change	Eliminating physical barriers alone is unlikely to impact bicycle commuting. Cost of bicycles, quality of bicycles, and cycle training, are primary influencing factors
(Chatterjee, Sherwin and Jain, 2013)	11 'Cycling Towns' in England	Before/after a particular cycling investment programme. Qualitative, retrospective longitudinal (over three years). Travel behaviour timeline, across three years	144 face-to-face interviews (74 male and 70 female, aged 16-85)	Current cyclists (to varying degrees)	Development of new theory emerging from TPB and Habitual behaviour	Probing the reasons for changes in bicycle use after a particular intervention	Turning points in travel behaviour are triggered by contextual change (a life-changing event or change in external environment) and mediated by intrinsic motivations, facilitating conditions, or personal history
(Bonham and Wilson, 2012)	Adelaide, Australia – as part of a Women Returning to Cycling project in 2009	Qualitative (in-depth interviews), longitudinal retrospective mobility biography, helmet-mounted video cameras	49 face-to-face interviews	Women who had previous experience of cycling and were in the process of returning to cycling, recruited by online newsletters of cycling organisations and email networks	No stated conceptual/theoretical framework	Understanding women's experiences of cycling through the life-course	Becoming mothers or grandmothers, moving house, changing jobs, or changes in personal relationships, led to changes in cycling

Study	Location	Method/Approach	Sampling and sample size (excluding non-response)	Study Population	Conceptual framework of analysis (behavioural theory)	Study purpose	Conclusions
(Steinbach *et al.*, 2011)	London	Qualitative interviews, cross-sectional (focus on gendered, ethnic, and class identities)	78 face-to-face interviews	'A range of those who already cycled for transport, those who were actively considering taking up cycling, and those who did not cycle'	No stated conceptual/theoretical framework	Explore why the meanings of cycling might resonate differently across urban, gendered, ethnic, and class identities in London.	The symbolic goals of cycling – autonomy and productive time – appeal largely to white men and women, less so to those with other class, gender and ethnic identities
(Gatersleben and Appleton, 2007)	Exeter	Online survey	178	University staff and students, University of Surrey	Stages of Change: Transtheoretical Model (Prochaska, DiClemente and Norcross, 1992)	Examines who cycles and why in order to determine how more people can be persuaded to cycle	As people progress from pre-contemplation to action, their attitudes towards cycling become more positive and their perceptions of various personal and external barriers change

Table 3: Relevant bicycle behaviour studies in high-cycling contexts, indicating location of study, method/approach, sample size, study population, conceptual framework, and study purpose. Works referred to in this study, where primary data collection has been undertaken, have largely taken cross-sectional quantitative approaches, and collected data by means of surveys (intercept or online) and occasionally focus groups. This table continues across four pages.

Study	Location	Method/Approach	Sampling and sample size (excluding non-response)	Study Population	Conceptual framework of analysis (behavioural theory)	Study purpose	Conclusions
(Xu *et al.*, 2022)	Ten communities in Beijing	Online survey of 35 questions rated on a 5-point Likert scale; discrete-choice model	608	Random sampling within the 10 communities	Stages of Change, Theory of Planned Behaviour	Explore the mechanism of transition from driving to bicycling, which can support policy makers' decisions at the level of bicycle travel promotion, guidance and facility planning	The perceived environment affects every stage, but the objective environment only affects transition from preparation to action
(Olsson *et al.*, 2021)	Varmland, Sweden	30-day and three month follow up study to test an intervention (experiment), self-reported survey	380 volunteers	Participants in a bike-to-work campaign in Varmland, 2018	A combination of nudge theory, Theory of Planned Behaviour, and Stages of Change	Whether or not bike campaigns can change mode use and/or the degree of motivation to change, using three different 'nudge' messages	Bicycle campaigns, using nudge messaging, can be successful
(Rodriguez-Valencia *et al., 2021)*	Bogota, Colombia	Quantitative, random sample of cyclists obtained by intercept survey in queues where cyclists had stopped, in 2017 at 16 locations	434 complete and valid surveys of 1 578 trials	Surveys in six spatial areas of Bogota	Attitudinal theories	Individual-level studies, looking at attitude, motivations and influences and how they differ between cyclists who started riding within the previous 3 years, compared to those who started cycling earlier	Recent and experienced cyclists differ in how they view cycling for transport. New cyclists were more motivated to switch to cycling to save money and to shift from a poor-quality transit system, while longer-term cyclists were more motivated

Study	Location	Method/Approach	Sampling and sample size (excluding non-response)	Study Population	Conceptual framework of analysis (behavioural theory)	Study purpose	Conclusions
							by a passion for cycling
(Janke *et al*, *2009*	Davis, California, US	Qualitative, in-depth interviews, mobility biographies (using interviews already conducted in 2010 (Lee, Underwood and Handy, 2015)), non-representative	54	English-speaking residents of Davis, California, US, between 25-65	Theory of Planned Behaviour (in particular, attitudes)	To understand causality; how life-course events trigger changes in bicycling and attitudes toward bicycling over time, using pre-defined stages of life (elementary school, junior high, high, college age, young adult (26-40), and older adult (40-60)	'Life events trigger a deliberation process, change social norms, unleash a latent demand for cycling, and change interest in destinations and activities'
(Rérat, 2019)	Switzerland	Online, cross-sectional survey, Likert scale relating to motivations and barriers to cycling to work	13 700	44,726 or so members of PRO VELO's Swiss Bike to Work database (employees who do cycle to work)	Cresswell's theory of a Constellation of Mobility	To address the motivations of and barriers to cycling to work in Switzerland, through developing a typography	A cycling policy should focus on network, experience, and meanings
(Heinen, 2016)	Utrecht, Netherlands (high-cycling)	Cross-sectional, quantitative, Likert scale; 14-day travel diary	1 062 adults	'Municipality data were used to randomly approach individuals over 18 and living in [Utrecht]' – 20 000 requests to participate in the online survey were sent by regular mail.	Theory of Planned Behaviour, Identity theory	To predict intention to change	Close identification with a transport mode correspond with its use
(Thigpen, Driller and Handy, 2015)	Davis, California (high-cycling – cycling is the norm)	Annual online survey data of students, staff and faculty at UC Davis	4 327 adults for whom cycling is potentially feasible	Students, staff and faculty	Stages of Change	To understand how differences in socio-demographic characteristics, travel attributes, and travel attitudes between	Travel attitudes matter more to progression toward regular commute bicycling than travel attributes, tentatively

Study	Location	Method/Approach	Sampling and sample size (excluding non-response)	Study Population	Conceptual framework of analysis (behavioural theory)	Study purpose	Conclusions
						individuals explain their membership in different stages of change. They use this model to explore the potential of various intervention strategies to move individuals through the stages of change toward becoming regular bicycle commuters	supporting the efficacy of 'soft' policies focused on changing travel attitudes
(Lois, Moriano and Rondinella, 2015)	Vitoria-Gasteiz, Spain (6.9% bicycle users)	Telephone survey; quantitative, probabilistic. Preceded by a qualitative study, using thematic analysis, of 21 semi-structured interviews of cyclists and non-cyclists	595	Commuters, recruited through places of work. Incentivized by a draw prize	Theory of Planned Behaviour and Social Identity	Assessing intention. Examine social identity as a predictor to improve the Theory of Planned Behaviour and predict cycle commuting intention – develop a new model	There is a strong link between identifying as a cyclist (self-identity) and perceived self-efficacy with respect to cycling. Psycho-social variables are key in predicting car users' intention to start commuting by bicycle
(Lee, Underwood and Handy, 2015)	Adults living in Davis, California	Qualitative: life course study	54 in-depth interviews, with self-administered demographic questionnaires before-hand	Volunteers recruited through local advertisements. Cycling was not required in order to participate. Incentivised by a gift card	Attitudinal theories	Exploring the effect of crashes and other incidents on attitudes towards cycling, across six defined life stages	Crashes were especially damaging to attitude toward cycling.
(Lind *et al.*, 2015)	Urban Norway	Quantitative, probabilistic, self-completed/reported questionnaire survey	1 043	Sample commercially sourced	Value-belief-norm theory	To investigate whether the value-belief-norm theory can explain mode shifts to sustainable modes	Personal norms are significant predictors of reported travel mode choice

Study	Location	Method/Approach	Sampling and sample size (excluding non-response)	Study Population	Conceptual framework of analysis (behavioural theory)	Study purpose	Conclusions
(Panter *et al.*, 2013)	Cambridge, UK (high cycling town in a low-cycling country)	Quantitative. Seven-day recall diary, self-reported. Postal questionnaires in 2009 and again a year later	655	Adults (aged 16 and over) who lived within 30 km of the city centre and travelled to work in Cambridge	No stated conceptual framework	To assess the predictors of uptake and maintenance of walking and cycling and of switching to car travel	Convenient cycle routes, and lack of workplace parking, are important predictors of cycling or alternatives to private car use
(Chatterjee, Sherwin and Jain, 2013)	11 'Cycling Towns' in England	Before/after a particular cycling investment programme. Qualitative, retrospective longitudinal (over three years). Travel behaviour timeline, across three years	144 face-to-face interviews (74 male and 70 female, aged 16-85)	Current cyclists (to varying degrees)	Development of new theory emerging from TPB and Habitual behaviour	Probing the reasons for changes in bicycle use after a particular intervention	Turning points in travel behaviour are triggered by contextual change (a life-changing event or change in external environment) and mediated by intrinsic motivations, facilitating conditions, or personal history
(Heinen, Maat and Van Wee, 2011)	Utrecht (a high-cycling city in a high-cycling country	Cross-sectional, quantitative, Likert scale to investigate attitudes	Not clear	Internet survey conducted among a sample of employees from several large companies in the Netherlands and residents of Delft, Zwolle and Pijnakcer-Nootdorp; Incentivized with chance to win lottery tickets	Theory of Planned Behaviour, Identity theory	To analyse the influence of commuters' attitudes toward the benefits of bicycle travel	Attitudes and other psychological factors have a relatively strong impact on choice to commute by bicycle

2.8 RETROSPECTIVE DATA COLLECTION

Researchers have employed a number of methods to assess travel behaviour changes over periods of time, including panel surveys, before and after studies, travel diaries, and stated preference surveys (Schoenduwe *et al.*, 2015). Semi-structured interviews are the most common retrospective survey methods in social sciences, although are among the least common methods employed when preparing mobility biographies (Rau and Manton, 2016): surveys are the most common (see also Table 2).

Schoenduwe *et al* propose that longitudinal surveys and qualitative methods should be favoured over cross-sectional surveys when it comes to behavioural change, because 'only the former make it possible to analyze cause-impact relationships and a deeper understanding of the process of behavioural change and the interrelationships between spatial contexts, attitudes, and travel behaviour' (Schoenduwe *et al*., 2015, p. 99). Insights into individual cycling over time could be valuable for informing policies to support the use of these modes across a life course (Jones, Chatterjee and Gray, 2014).

Longitudinal studies such as life-course approaches were as recently as 2020 described as 'novel' within mobility and transport studies (Rau and Scheiner, 2020, p. 2), although the field has grown substantially since the early 2000s (Rau and Scheiner, 2020, p. 3). Much of the work is still quantitative, and relies on statistical data analysis (Rau and Scheiner, 2020).

Life-course mobility studies have focused on estimating the effects of life-course events on travel – most frequently what changes in social role or status, and associated life events or turning points, trigger change in travel behaviour or offer a greater likelihood of shifting mobility behaviours (Scheiner, 2018). These approaches are mostly at an individual level, considering mid- to long-term trends.

Such studies have also emphasized discrete life events and mobility milestones (life events such as obtaining a driving licence) (Rau and Manton, 2016) – in other words, the impact of 'clearly defined life events and more or less sudden transitions on mobility practices'– such as relocation (work or residence), marriage, retirement, etc, or changes in transport provision or infrastructure (Rau and Scheiner, 2020, p. 6). There is less work that considers more gradual life changes, but an increasing focus on life events outside of mobility-specific events (such as moving house) (Rau and Scheiner, 2020). More gradual processes of change have also received less attention: this knowledge gap is partly related to a 'lack of conceptual work on what constitutes a life event, including how non-conspicuous events can fundamentally reshape mobility practices, eg a book or documentary that transforms a person's perspective' (Rau and Scheiner, 2020, p. 7).

Moreover, Jones *et al* note, with reference to their mobility biography work, that although retrospective data collection means that past experiences are reported with awareness of present outcomes and in light of the intervening experience, this does not diminish their authenticity. 'Instead … participants could reflect on the significance of a change for the trajectory, and the extent to which it was precipitated by contemporaneous factors, preceding events or indeed future orientations' (Jones, Chatterjee and Gray, 2014, p. 188). Despite criticism of the validity of reconstructed biographies, this approach offers what Jones *et al* describe as 'credible and confirmable insights on how these behaviours increase, diminish, persist, cease, are restored or adapted through the life course' (Jones, Chatterjee and Gray, 2014, p. 183). They add that recall is more problematic when it relates to an 'ordinary' or 'normalized' mode, and that such modes require more probing and questioning. As utility cycling in Cape Town is neither an ordinary nor a normalized mode, recall is less likely to be a challenge for respondents.

At the same time, Rau and Scheiner propose that a 'narrow preoccupation with reliability' and the quality of retrospective data deflects from the ontological position that personal biographical narratives are examples of oral history (Rau and Scheiner, 2020, p. 4) and thus able to shift and shape current action (Fairclough, 2010). Personal narratives of change and influence reflect personal interpretations of a personal history rather than a linear, cause-effect reality. In this sense, policy and advocacy need be as concerned with what individuals believe or perceive to influence their behaviour than some objective 'reality' (for example, perceived behavioural control).

A mobility biography approach has been criticized for its primary focus on the household or individual level (Rau and Scheiner, 2020), given what critics say is the social context of mobility practices. Criticism has also been levelled at the lack of attention to interdependencies between household members (Rau and Scheiner, 2020). While this thesis does focus on individuals, I have also listened for narratives that describe how other people have influenced or sustained individuals' cycling practices.

The 'overemphasis on the time period before, during and after particular critical life events' that Rau and Scheiner (Rau and Scheiner, 2020, p. 4) suggest is a methodological weakness of much mobility biography is mitigated here by my interest in a longer sequence of change; I have considered behavioural shifts (eg increased frequency, longer commuting distances) within one mode (cycling), not from mode to another, and am interested in how individuals understand what has influenced these shifts.

The dominance of quantitative approaches, with statistical associations between variables, has been cited as a further weakness, as the nature of biographies means that they do not necessarily provide linear, cause-impact links (Rau and Scheiner, 2020). While these weak linkages might appear to be a fundamental weakness, Rau and Steiner (Rau and Scheiner,

2020) are of the view – as am I – that this is one of the strengths and richnesses of biography, offering insight into values, attitudes, and perceptions.

2.9 IDENTIFYING KNOWLEDGE GAPS AND INTENDED CONTRIBUTION

This literature review has surfaced gaps in the knowledge that this thesis intends to mitigate. The intention is that contributions will include: (i) new knowledge about why individuals who own private vehicles do cycle in Cape Town; (ii) new knowledge about the role of soft rather than hard infrastructure in facilitating cycling in South Africa; (iii) a focus on cycling rather than 'NMT' as a single entity; (iv) a note on the transferability of this knowledge generated in Cape Town between developing world cities and those of those of the global North; (v) new knowledge about why car-owners shift to cycling; (vi) an addition to the body of knowledge about the longitudinal, mobility biography method; (vii) new knowledge about the intersection between individual motivations and motivations espoused in the advocacy discourse; and (viii) an exploration of theories of behaviour change applicable to the interviewees and (ix) how this might lead to approaches to segmentation.

The influences of modal choice are largely not accounted for by most popular behavioural models (Anable, Lane and Kelay, 2006). Fernandez-Heredia *et al* propose that while time and cost variables relating to bicycle promotion have been studied to a large degree, the identification of psycho-social factors has been limited. They identify a need to assess 'factors related to cyclists' emotions, feelings and personal perceptions' – in order to better understand user behaviour and thus determine appropriate actions to encourage bicycle use (Fernández-Heredia, Monzón and Jara-Díaz, 2014, p. 2).

Models that consider affect, self-identity, and habit, and that preface moral or personal norms, personal values, and attitudes, could show greater promise in both motivating and sustaining travel shifts.

In countries with high cycling rates, the decision to ride is largely pragmatic and to some extent 'mainstream' (Pucher, Dill and Handy, 2010) – although in the Netherlands, Heinen *et al* (Heinen, Maat and Van Wee, 2011) found that the influence of beliefs regarding bicycle transport were stronger than the influence of beliefs about other modes; people's opinions about cycling were often stronger than opinions about other transport modes.

Of low-cycling countries, a body of work argues that identity, choices, attitudes[31], and lifestyle meanings significantly influence ongoing transport choices (Steinbach *et al*., 2011).

[31]Attitudes, here, can be described as 'affective evaluations (favourable or unfavourable) with regard to particular objects or behaviours' (Kroesen, Handy and Chorus, 2017, p. 190), or the broad set of things that people think and feel about bicycling… positive or negative evaluations of a person, event, idea, or other object' (Lee, Underwood and Handy, 2015, p. 14).

But where changing individual behaviour has been the focus of policies to reduce car use and promote cycling, many such initiatives fail, posits Heinen, because of a belief that individuals make decisions based on time, cost, and effort; promotion initiatives in low-cycling spaces pay insufficient attention to the role played by personal identity in the decision to ride (Heinen, van Wee and Maat, 2010).

There is a large body of work outside Africa that considers the factors that contribute to high shares of cycling; these studies draw from exemplar cycling cities to show how the role of high-quality infrastructure, end-of-trip cycling facilities, and a compact urban form, among others, render cycling, to quote the classic work of Pucher *et al*, 'irresistible' (Pucher and Buehler, 2008a, 2008b; Pucher, Dill and Handy, 2010).

'Cultural habits' and conventional travel behaviour differs substantively between Sub-Saharan African and developed world cities, posit Mendiate *et al*, in a bibliographic review of cycling studies across African and developed world cities (Mendiate *et al*., 2022a). These studies from African cities reflect largely low-income, or captive cyclists, who would otherwise be walking or using public transport. By considering findings in Cape Town in the context of the international literature, this thesis intends to contribute to an understanding of the applicability of policy transfer between Cape Town and other low-cycling cities, including the global north.

Further, this thesis is not concerned with the physical or environmental determinants of cycling, nor with the barriers to cycling (which in South Africa largely align with the absence of these physical or environmental interventions (Irlam and Zuidgeest, 2018). Instead, this thesis investigates the factors that contribute to cycling in a low-cycling city: what does encourage and motivate a particular category of individuals in Cape Town to cycle as transport when they do have the option of a private car, and travel in an urban environment where there is a paucity of high-quality infrastructure and end-of-trip cycling facilities, and a sprawling rather than a compact urban form. By comparing these motivations to those given in the advocacy discourse, and by analyzing these within a behavioural theory framework, this research will contribute to evidence-based bicycle advocacy approaches in Cape Town. This thesis thus sets out to understand the motivations that have empowered or enabled individuals to switch from driving to cycling, and to uncover the narratives individuals develop of their decisions to ride.

In addition, this thesis intentions to address an identified epistemological gap by taking a retrospective, longitudinal, mobility biography approach, using in-depth one-on-one interviews, to explore the triggers to a particular cohort of people beginning, shifting, or ending a bicycle practice over a course of time. I also intend that my work contributes to the understanding of the role of non-conspicuous events; this research explores the shifting potential of, for example, attending a workshop, meeting a new colleague, entering a

cycling race or travelling to a cycling city – what Rau and Scheiner describe as the under-researched but budding area of inquiry of 'linked lives' (Rau and Scheiner, 2020).

By situating this study within theories of individual change, the thesis is also able to offer findings about theories of change that best 'fit' behavioural change processes of the study cohort. I consider the explanatory potential of a number of theories of change, rather than only the more commonly used Theory of Planned Behaviour; I do not consider intention to change, but 'retrofit' theories from revealed cycling behaviour. The dominance of the Theory of Planned Behaviour is shown in Table 2 and Table 3, above. Although this is a popular theory on which to base travel behaviour research, there is still 'scant research' on combined models of planned behaviour and stage-based motivation in relation to cycling (Olsson *et al*., 2021).

The maintenance phase of the Stages of Change model is the 'end' phase in the studies cited in the literature (see page 43); none consider the sixth stage of change, termination, at which the individual is no longer tempted to return to the initial behaviour. Thigpen *et al* describe the maintenance phase, instead, as the 'homeostasis' stage. For this thesis, on the other hand, I do include 'termination' as a phase – the phase of primary interest at which cycling becomes the first or default choice, despite not being the only choice (Thigpen, Driller and Handy, 2015).

2.10 CONCLUSION

This chapter has outlined the knowledge relevant to this thesis in terms of understanding when travel behaviour has been shown to be most likely to change; what motivates individuals to cycle in both high- and low-cycling cities; and how scholarly and practitioner work has attempted to segment cyclists. The review particularly reflected on the role of habit and the concept of life events – also referred to as triggers or precipitating events – to explain changes in cycling behaviour. The literature considers decisive factors or motivations that influence cyclists' decisions to ride, such as environmental concerns, speed, fitness, affordability, wellbeing, and health, among others. In much of the scholarly work, cyclists are categorized in terms of stated or explicit motivations, attitudes, extent of choice, trip purpose, and self-perceptions or identity.

The chapter has also reflected on the literature as it relates to the limitations of my selected data collection method, that of retrospective biography.

Finally, this chapter draws attention to the gaps in the knowledge that this thesis intends to mitigate, particularly that the research in South Africa has focused on the barriers to increased cycling among individuals living with low-income, and on cycling policy and infrastructure design.

The next chapter presents an introduction to the Stages of Change model and an overview of the behavioural theories that underpin the research. These theories attempt to explain behaviours or motivations identified in this chapter, particularly with respect to how and what values, attitudes, emotions or other intrinsic factors influence deliberation outcomes or decision-making about cycling.

3 THEORETICAL FRAMEWORK: HOW DOES TRAVEL BEHAVIOUR CHANGE

3.1 INTRODUCTION

This chapter presents an overview of the behavioural theories that underpin the research of this thesis, particularly research question 5 (this section does not answer this research question)*: What insights – in terms of behavioural theory, segmentation, and advocacy – may be offered to bicycle advocacy and policymakers as a result of this investigation into the influencing factors at various transitions in bicycle use?*

The chapter focuses on (i) the Stages of Change model (which describes behavioural shifts), as this is the model that guides the initial thematic analysis in this thesis, and on (ii) theories of personal change that attempt to explain shifts in behaviour in terms of normative, rational, attitudinal, or habitual antecedents to change.

The Stages of Change model is not a causal theory of change itself, but a model describing the steps or transitions of intentional change. Various theories of change can therefore be applied to the Stages of Change model, which attempt to predict or explain change or transitions rather than identify phases of change.

This thesis does not set out to examine any of these theories in detail; nor does it set out to offer a substantive critique of any of these approaches or develop new theory. Further, while I recognize that there are other theories that have value for understanding travel behaviour and decision making, the theories presented below have been selected as most appropriate to the extent and type of data in this study, and the focus on personal or individual behaviour. I consider primarily theories that suggest (i) behaviour is motivated by an individual's own best interest (such as utility theories and rational choice); (ii) behaviour is motivated by societal perceptions (subjective or social norms and seeking society's approval); and (iii) behaviour is motivated by altruism.

3.2 DESCRIBING BEHAVIOURAL SHIFTS: THE STAGES OF CHANGE

In this thesis I have used Prochaska and DiClemente's initial and revised Stages of Change models (Prochaska and DiClemente, 1983; Prochaska, DiClemente and Norcross, 1992) (see Research approach and Coding) as a narrative structuring device to categorize transitions from one intensity of cycling practice to another. This model is not a theory of behaviour change itself, but a model describing the stages necessary for sustainable change steps and identifying the stage at which an individual might be, to assess readiness or openness to change. What motivates or moves individuals from one stage to another is not the purpose of the model (Prochaska and DiClemente, 1983, p. 5).

The Stages of Change model was developed from models to assist people to stop smoking. Here, the stages include contemplating stopping smoking (or another addictive behaviour), taking action to stop, maintaining their action, and termination (ie they are no longer smokers, they have terminated their behaviour as habitual smokers – not that they have terminated the attempt to stop smoking). Thus 'termination' is an attained steady state or sustained end state.

Table 4: The six primary stages of behavioural change (a reminder), adapted from Prochaska and DiClemente, 1983. This study is primarily concerned with stages 3-6, Preparation, Action, Maintenance, and Termination. I have not included the stages of Relapse and Return.

1	**Behavioural stage**	Pre-contemplation of new behaviour
2	**Behavioural** stage	Contemplation of new behaviour
3	**Behavioural** stage	Preparing to take action to engage new behaviour
4	**Behavioural** stage	Action
5	**Behavioural** stage	Maintenance of new behaviour
6	**Behaviour** stage	Termination of previous behaviour (ie, no longer a desire to return to previous, addictive behaviour); Relapse, on the other hand, means a return to the previous behaviour.

3.3 EXPLAINING TRAVEL TRANSITIONS: WHAT INFLUENCES DECISIONS TO SHIFT MODE

3.3.1 The deficit model: what's missing from individual knowledge

The 'deficit model' of behaviour change suggests that if only individuals had more knowledge and better, more accessible information from experts about why they should change their behaviour, they would make the change (Burgess, Harrison and Filius, 1998). This deficit model – which assumes an ignorant public and a linear progression between knowledge, attitude, behaviour, or information – has been a predominant model in pro-environmental behaviour change programmes[32] but such an approach has repeatedly been shown to be flawed (Kollmuss and Agyeman, 2002).

[32] Note that utility cycling cannot necessarily be regarded as 'pro-environmental' behaviour (Jennings, 2021a).

3.3.2 Complex utility computations and rational choices: what's best for individuals

Until recently, the most widely accepted theory explaining how individual travel choices are made was that of rational choice/utility – 'the idea of a rational individual who maximizes the net benefit of travel, whereby benefit is valued against the generalized costs of travel' (Scheiner, 2018, p. 42). In other words, utility theories hold that individuals 'weigh up the comparative travel times, costs, and other modal attributes when deciding how to get from A to B' (Cervero, 2002, p. 266).

Within rational choice models, travel is viewed as being an 'effort', a form of 'suffering, to be relieved – which is possibly why theories of travel behaviour change have been influenced by or drawn from health behaviour (individual suffering) (Scheiner, 2018).

Critics of utility theories suggest that a rational consideration of all 'facts' and alternatives is rarely possible (Kollmuss and Agyeman, 2002), and that emotions, habits, personal preferences, social norms[33], trends, fashions, attitudes, competencies, values, and a multitude of intangibles, have significant influence. To this end, updated rational choice models propose that instead of exhaustive internal computations and calculations, individuals make choices that are most 'satisfying' rather than of maximal benefit (so-named 'bounded rational choice) (Simon, 1957).

3.3.3 Theory of Planned Behaviour: what matters most to individuals

Arjen's Theory of Planned Behaviour (TPB) (Ajzen, 1991) predicts behaviour and likelihood of change based on intentions – whereby behaviour follows intentions.

TPB proposes that an individual's intention to perform a particular behaviour correlates strongly with that individual's attitude toward about a behaviour: although an individual might have many beliefs about a particular behaviour, it is those that are *salient* (that 'matter') that determine intentions and actions[34]. In terms of TPB, attitudes toward a behaviour are related to a set of (i) salient behavioural beliefs (a belief about the consequence of enacting a behaviour), (ii) salient normative beliefs (beliefs about the views of respected others, and whether they would approve or disapprove of a behaviour), and (iii) salient power or control beliefs (beliefs about what could support or inhibit enactment) about the behaviour. The motivation to comply is an assessment of how important it is to have approval of respected others. Intentions reveal the motivational factors that influence a behaviour (Ajzen, 1991, p. 181). The combination of an intention to perform a behaviour,

[33] 'The felt obligation to bring [one's] own behaviour in line with personally important internalised self-standards) (Bamberg et al., 2011, p. 8).

[34] A belief, essentially, is something an individual believes to be true.

and the required opportunities and resources, increase the likelihood of an individual achieving the behaviour.

Important in the TPB model is what individuals perceive to be factual, perceive to be within their control, or perceive to be the views of others. 'Facts' are filtered through an individual's set of salient beliefs. These perceptions, or beliefs, could be 'wrong'. Thus in this view, while 'knowledge' doesn't necessarily lead to behaviour change, new information (through the media or other interventions) may change the cognitive foundation of intentions and behaviours (Bamberg, Ajzen and Schmidt, 2003, p. 177).

The importance of perceptions rather than an 'objective reality' are what differentiates this model from Arjen's earlier Theory of Reasoned Action (TRA) (Ajzen, 1991; LaCaille, 2013). Perceived behavioural control is a core issue – what the individual believes they are capable of enacting, depending on for example knowledge, the skills, the time, resources, capability, control.

This theory has emerged as the most influential and commonly cited model of behaviour, and most frequently used to study intentions and attitudes in order predict travel behaviour change from one mode to another (Anable, Lane and Kelay, 2006, p. 67). Studies have included cycling behaviour (Dill, Mohr and Ma, 2014; Lois, Moriano and Rondinella, 2015; Heinen, 2016; Acheampong, 2017; Friman, Huck and Olsson, 2017; Bird *et al.*, 2018; Félix, Moura and Clifton, 2019; Xu *et al.*, 2022). (See also Table 2 and Table 3.) Values are not part of this model, wherein values are seen as long-term, big-picture considerations not as likely to be immediate antecedents to intention (Anable, Lane and Kelay, 2006, p. 87). Emotion (affect) and habit are also not part of this model.

3.3.4 Norm Activation Theory and Value-Belief-Norm Theory: what matters for others

Norm Activation Theory (NAT) was initially developed to explain pro-social, or altruistic, behaviour (Schwartz, 1977). This theory differs from TPB, above, in that moral and personal norms play a greater role than do social norms. These norms are activated by feelings of personal responsibility and an awareness of the harmful consequences of actions (triggering guilt), and lead to altruistic acts that are consistent with these norms. Social norms are what contribute to the development of personal norms, ie, what behaviour is expected from a 'good group member' (Rollin and Bamberg, 2021, p. 2). Moral norms are 'self-expectations' that manifest in feelings of obligation to engage in behaviour.

NAT was expanded upon by Stern *et al* (Stern *et al.*, 1999) to explain social movements and pro-environmental values, attitudes, and behaviour, as the Value-Belief-Norm Theory (VBN). Here, the salient difference is that not only does an individual feel personal

responsibility, but feels personally responsibility for the consequences (known as ascription of responsibility).

Unlike TPB, VBN focuses on social rather than personal benefit, and internal moral influences rather than external. Behavioural intention, and perceived control over behaviour, are not part of this model (Anable, Lane and Kelay, 2006, p. 72), but Wall *et al* found that in a study of commuting mode choice (across modes), perceived behavioural control could moderate personal norms and motives (either in favour or not of a new behaviour) (Wall, Devine-Wright and Mill, 2008) .

3.3.5 Theory of Interpersonal Behaviour: the power of habits and emotions

In what is not a true interpersonal theory, as individual decision making is still at the centre of this model, Triandis places greater weight on social factors and habit than do Ajzen *et al*, in what is known as the Theory of Interpersonal Behaviour (TIB). Although TIB also regards intentions to be the immediate antecedents to actual behaviour, the frequency of past behaviour, which then becomes a habit, has as much influence on ultimate behaviour as do intentions. In this model – in addition to attitudes (formed by beliefs, and evaluation of outcomes) – social factors (norms, roles, and self-concept/self-efficacy or social identity) and affect (emotions) lead to intention. Intention together with habits, depending on facilitating conditions, lead to behaviour.

In their review of behavioural models and travel behaviour, Anable *et al* (Anable, Lane and Kelay, 2006, p. 74) found few applications of this model to travel behaviour other than a study by Bamberg and Schmidt (Bamberg and Schmidt, 2003). By 2022, De Vos *et al*, in a review, noted that this was still a rarely used approach (De Vos, Singleton and Gärling, 2022). In their 2003 study, however, which looked at the 'predictive power' of TIB, NAT, and TPB in car-use among university students, Bamberg and Schmidt found that TIB's focus on habit increased the predictive power of TPB (Bamberg and Schmidt, 2003, p. 264).

3.3.6 Self-Perception Theory: retro-fitting self image

There is a risk that straightforward directional understandings of causality – from attitude to behaviour – result in attempts to influence behaviour through influencing attitudes only (Kroesen and Chorus, 2020). Behaviours are also able to influence attitude: physical interventions themselves may influence attitudes, subjective norms, and perceptions of behavioural control, and thus intention (Bamberg, Ajzen and Schmidt, 2003).

In telling their stories and creating personal narratives, individuals search for causes and effects that explain their world and their lives in such a way as to benefit their own self-images (McRaney, 2014). Thus, in a travel behaviour context, behaviour and attitudes influence each other over time. In what Bem terms Self Perception Theory (Bem, 1972),

'forcing' an individual to take a particular mode or adopt a particular travel behaviour may eventually lead to a positive attitude toward that behaviour (Bem, 1972; Kroesen, Handy and Chorus, 2017). Current behaviour can often influence future attitudes, as ultimately, individuals search for cognitive consistency (acting in accordance with one's beliefs or attitudes) rather than live with cognitive dissonance (Dalege *et al.*, 2016; Kroesen and Chorus, 2020).

Self-perception theory has been one framework underpinning studies regarding travel behaviour after the Covid-19 travel restrictions of 2020 (Behrens and Newlands, 2022; Behrens, Moyo and Zuidgeest, 2022); where even forced-upon experiences were positive, for example trip substitution, individuals expressed strong intentions to break their 'pre-Covid' travel patterns.

3.3.7 Typology of facilitators of change

Wall *et al* (Wall, Devine-Wright and Mill, 2008), in an extensive review of behavioural theories and their application to travel behaviour, concluded that ultimately NAT/VBN and TPB are complementary. Anable *et al,* drawing on Kollmus and Agyeman (Kollmuss and Agyeman, 2002), propose that instead of developing a behavioural model that incorporates all travel behaviour factors, a typology of barriers (and thus enablers) to travel behaviour change, would be more effective (Anable, Lane and Kelay, 2006, p. 84). Individual subjective barriers (or enablers) include values, frames, moral norms, perceived behavioural control, self-efficacy/agency/locus of control, attitudes, and identity and status. Objective individual barriers or enablers include knowledge or awareness of consequences, habit, personal capabilities, and actual resource constraints.

3.4 CONCLUSION

The theories presented above will be drawn upon for the analysis chapters that follow (chapters 5–9). For example, when developing themes and presenting the narrative analysis, I consider whether interviewees describe having shifted cycling behaviour as a consequence of receiving information they had not had before (the 'deficit model'), or perhaps because they had weighed up travel times, costs and other attitudes and come to a rational conclusion that bicycle travel was a more satisfying mode. At what point in their mobility biographies do interviewees search for information about cycling, and what type of information do they search for? Do interviewees describe their cycling behaviour as a habitual? If so, what cues trigger this habit? What life-events have offered the opportunity for deliberation and change? What beliefs do interviewees hold about cycling, and which of those beliefs matter most? What do interviewees believe might be the consequence of their actions or non-actions, and how confident are they in making behaviour changes? What do they value – believe to be right, wrong, moral, or unethical? How do they 'feel'

about their mode of travel, and does this influence decision-making? How does their travel mode align with their self-image, and values? What behaviour is expected of them, based on their profession, perhaps?

These theories are also applied to the advocacy discourses, in that I assess what behavioural theories are implicit or what motivations are assumed of individuals in these texts.

Before getting to these analysis chapters, however, the research method is described in the next chapter. This chapter (chapter 4) will explain the data collection: data constitutes (1) timelines of critical events within which the discourses are situated, (2) policy, media and civil society advocacy discourses, (3) individual cyclist discourses, and (4) survey data of non-utility-cyclists). It will also explain how qualitative data (interviews and texts) are reduced to units of analysis (codes and themes).

4 METHOD

4.1 INTRODUCTION

This chapter provides the detailed description of the research method introduced in chapter 1. The chapter presents details of the data selection of all four datasets (historical data, texts, interviews, and survey data), including sampling, recruitment, approach to diversity, sample size, saturation, and collection mechanisms.

This chapter next presents details of the coding and thematic analysis process. It will describe the first phase of analysis, which structures the interview data into behavioural stages or transitions, as individuals do not always relate a biography chronologically, nor necessarily explicitly identify stages of change. The second phase of analysis involves code development, reducing the narrative data to quantifiable themes for further narrative analysis.

This chapter, chapter 4, provides only the codes, themes, and code or theme counts with minimal narrative analysis and interpretation. Chapters 5 and 6 will answer research question 1 and 2. Chapter 7 will present the substance of the data and response to research question 3. It includes both narrative analysis and interpretation (which are acceptably presented as one chapter in the qualitative tradition).

4.2 DATA SELECTION, SAMPLING, AND COLLECTION

To answer the research questions (see section titled Research questions), I collected four datasets.

1. Key events in bicycle policy, infrastructure implementation, and advocacy from 1976 to 2019. This dataset served as the filter through which dataset 2 was selected.
2. Public advocacy discourse: Cape Town-specific media releases, speeches, policy documents, newspaper texts, letters to the newspaper, and other texts that offer arguments as to why individuals should cycle for transport, or set out the reasons why individuals should ride of bicycle transport (for individuals and as a public good). Where it relates to Cape Town, national discourse is included in this dataset.
3. Individual narratives/discourse: In-depth interviews with 36 individuals who own or have access to a car within their household, but who choose to ride a bicycle as a form of transport ('choice' utility cyclists/ intentional cyclists).
4. Individual narratives /discourse: Survey data from 36 matching individuals who do not cycle for transport purposes, but who do cycle on Cape Town's roads for sport or recreation.

These datasets are described in greater detail below, including considerations of sampling, recruitment, collection method, and representativity.

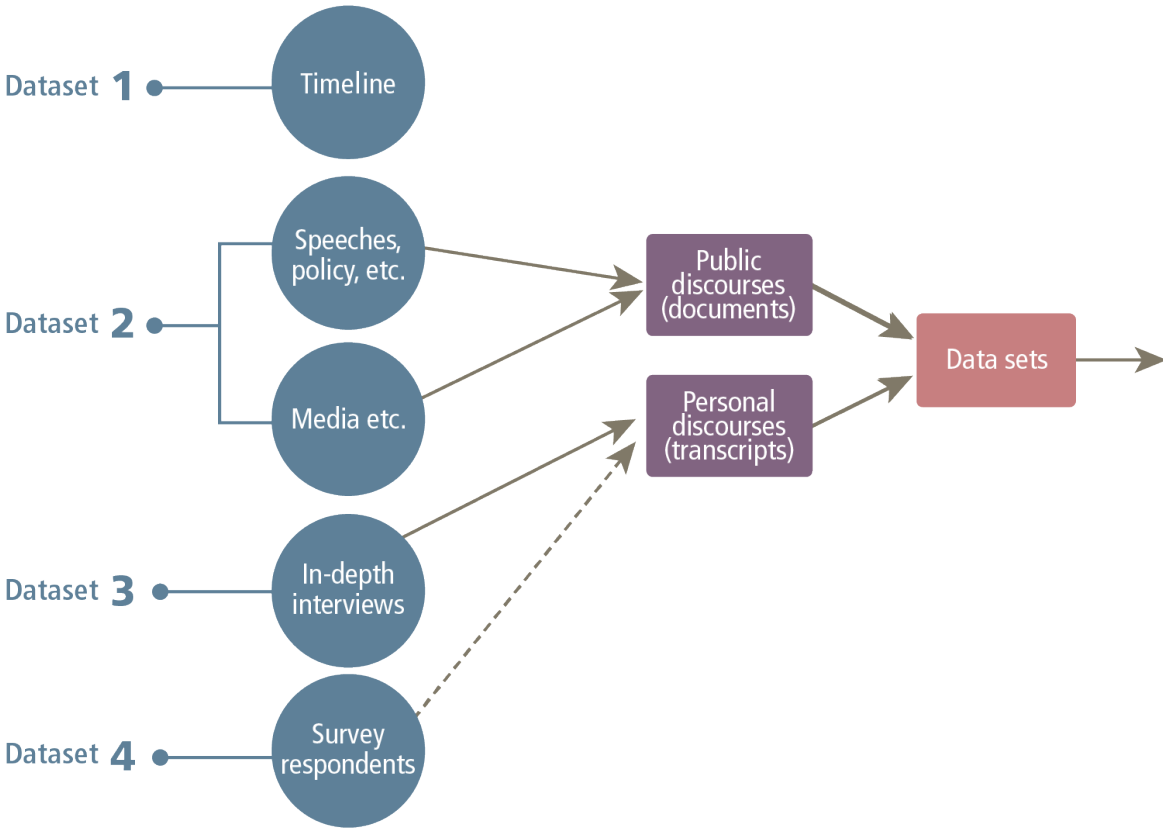

Figure 3: Visual showing inputs into datasets for analysis.

4.2.1 Dataset 1: Key events in bicycle policy, infrastructure intervention, and advocacy

This dataset will answer research question 1. It was collated by means of a literature and documentation search – of policy, strategy, plans, media releases, official speeches, city reports, cuttings, media articles, and personal correspondence, as they relate to transport and bicycle policy, strategy, infrastructure, and advocacy, as well as my own lived experience and knowledge gathered as an individual involved in bicycle research and advocacy since 2002 in Cape Town. The purpose of this dataset is to identify the critical discourse moments that will be used as the guide to select the advocacy discourse for analysis (dataset 2).

This dataset is presented as a series of timelines, in the chapter titled Research question 1: Timelines of key events in bicycle policy, implementation, and advocacy, 1976–2019.

4.2.2 Dataset 2: Public advocacy discourse

This dataset will answer research question 2, and together with datasets 3 and 4 will answer research questions 3, 4 and 5.

Discourses essentially are coherent texts (connected discourses) that represent a part of the world from a particular perspective, and can be both personal or public (that of officials or institutions, or published in the media). They can have an explicit advocacy intention regarding social change (Cresswell, 2007, p. 22).

This public advocacy discourse includes media releases, speeches, policy documents, and media texts that offer arguments as to why individuals should cycle for transport, or set out the benefits of bicycle transport (for individuals and as a public good). Where it relates to Cape Town, national policy is included in this dataset.

This dataset includes, to the best of my knowledge, all relevant or salient policies, plans, strategies, frameworks that refer to bicycle planning and utility cycling, in South Africa as a whole (national policy), and the Western Cape and Cape Town (provincial and metropolitan policy).

The media and civil society discourse, on the other hand, is not comprehensive: in other words, it does not include every media text about utility cycling. The timelines developed as the output to research question 1 are used as the filter or guide through which to select the discourse for inclusion in this dataset; in other words, I focused on texts that are associated with the critical discourse moments identified in the timeline. I selected texts that were extant or available[35]; then from these focused on 'soft news' such as human interest, commentary, opinion pieces, or features, ie texts that included a specific advocacy agenda rather than 'hard' or 'breaking' news; and finally, I exclude social media (Facebook, Twitter, Linked-in, blogs, etc) and have included only traditional media sources (print and online versions of newspapers, newsletters, magazines), largely to ensure consistency across the timeline under study (social media did not exist for most of the period under study).

This dataset is presented as a narrative, in the chapter titled Research question 2: 'Lur[ing] motorists from private vehicles' – Advocacy discourse, 1976-2019. For quantitative data details see Appendices, Dataset 2: Public advocacy discourse.

[35] Through my own archives (since 2002), the archives of the local print media, online resources, and on the archives of Louis De Waal, who has collated media cuttings on cycling since his involvement in advocacy in 1976 (see further, section titled Cape Town 1976-1979: early activism and unintended outcomes).

4.2.3 Dataset 3: Personal narratives /discourse – Individual utility cyclists

This dataset provides the data that will, together with datasets 2 and 4, respond to research questions 3, 4 and 5. It comprises transcripts of in-depth interviews of 36 individuals who meet the recruitment criteria: an individual who either owns or has access to a private car in their own household.

Sampling method

Because the purpose of the research is to achieve depth of understanding and insight within a particular group rather than make generalizable findings, I used purposive or criterion sampling (non-random, non-probability), combined with snowball (chain) sampling. Purposive sampling involves identifying and selecting information-rich cases related to the phenomenon of interest (Creswell, 2007; Palinkas *et al*., 2015). Snowball (chain) sampling means identifying cases of interest from sampled individuals who know others that generally have similar characteristics who, in turn, know others who also have similar characteristics (Palinkas, 2015).

Recruitment

I am relatively immersed in the bicycling advocacy and bicycle commuter network in Cape Town, and have worked as a research consultant in the field of cycling (and other mobilities) for 20 years. I therefore began by approaching individuals (by email) who I knew fulfilled the sampling criteria (in other words, purposive sampling). Qualitative research uses small sample sizes, with groups who have similar characteristics or that are relatively homogeneous. Therefore I asked interviewees to refer me to friends or colleagues who likewise met the same sampling criteria (snowball or chain sampling).

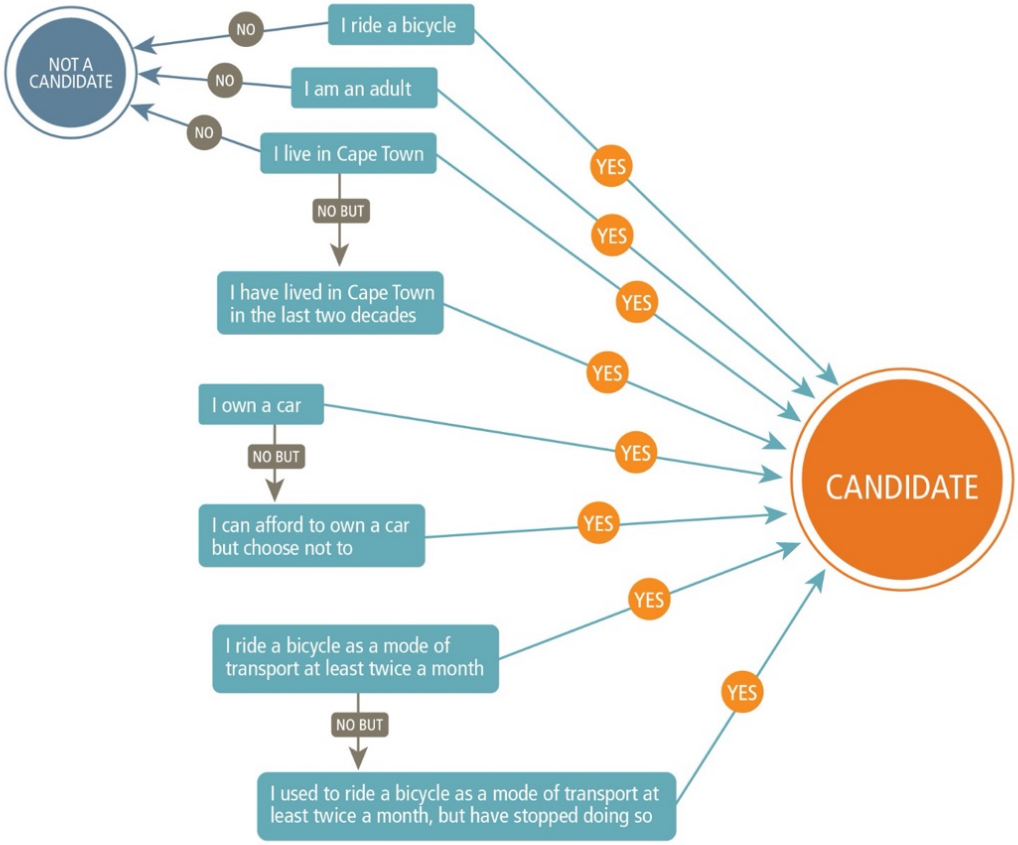

Figure 4: Visual showing eligibility for in-depth interview as an intentional cyclist. There was no initial selection for gender, geography, or other diversity.

The individuals who were interviewed were those who own or have household access to a private car, but who currently choose to cycle as a mode of transport. However, there are no universal practitioner or scholarly definitions of 'cyclist', 'non-cyclist', or 'utility' cyclist (see section titled Segmenting the market: categories and identities). I therefore developed the definition that drew from the South African policy context and from the literature (Jennings, 2021a). I include cycling to a public transport stop as 'bicycle commuting' (ie, as a feeder not a complete journey), and do not make a distinction between 'full-time' or 'part-time' cyclists.

My operational definition of 'choice' cyclist is an individual who either owns or has access to a private car in their own household. My operational descriptor, or category, of such individuals is that of 'intentional' cyclists: car-owning individuals who explicitly choose a minority mode within a car-hegemonic city.

Table 5: Operational definition of current utility cyclists and current non-utility cyclists.

Do you currently use a bicycle as a form of transport to non-recreational destinations (ie commute to work or ride to the shops (Or have you until recently used a bicycle in this way?) Here, we define 'currently' as at least 3-4 times a month.
Do you currently ride a bicycle for sport or recreation fairly regularly (or have you until recently been a regular rider)? For the purposes of this survey, we are defining 'regular' as at least once a month, or that you try to ride at least once a month.

Diversity and variables

The variables of primary interest are the meaningful statements of knowledges, attitudes or motivations at transition or stage of change: in other words, what motivates an individual at contemplation, action, momentum, and termination stage within a cycling practice. This is not cross analyzed across other variables such as gender, travel distance, demographics, occupation, place of residence, how long they have been cycling, geography, employment, for example. The sample recruited need only fulfil the criteria described in Figure 4.

Gender

In low-cycling cities, most cyclists are male (Götschi, Garrard and Giles-Corti, 2016; Félix, Moura and Clifton, 2019). In a low-cycling high-income city such as London, cycling for transport is a mode more visibly used by affluent, educated white men (Parkin, Wardman and Page, 2007; Steinbach *et al.*, 2011). In South Africa, of those who cycle as transport, the majority are lower-income men (Bechstein, 2010; Beer and Valjarevic, 2015; Morgan, 2020). Where higher-income individuals cycle as transport (Morgan, 2020), Morgan found that in Johannesburg, approximately 2/3 of his study were highly educated white men between the ages of 30-49, in the 'upper reaches' of South Africa's income distribution. Petzer (Petzer, 2016), in conducting focus groups in a middle-income area in Cape Town, found that of 10 people who responded and attended, two were female, and eight male; in lower-income focus groups, no women attended.

For this reason, this research did not strive to achieve an equal balance of male versus female respondents. Eventual gender split of dataset 3 was 23 male and 13 female.

Geography

Interviewees were drawn from each of Cape Town's four service delivery areas: North (Durbanville, Melkbos, Milnerton, Cape Town, Observatory, Sea Point, Hout Bay), East (Khayelitsha, Somerset West); Central (Belville); and South (Noordhoek, Constantia,

Newlands, Rondebosch, Muizenberg). The majority are from higher-income areas (as expected of the target group).

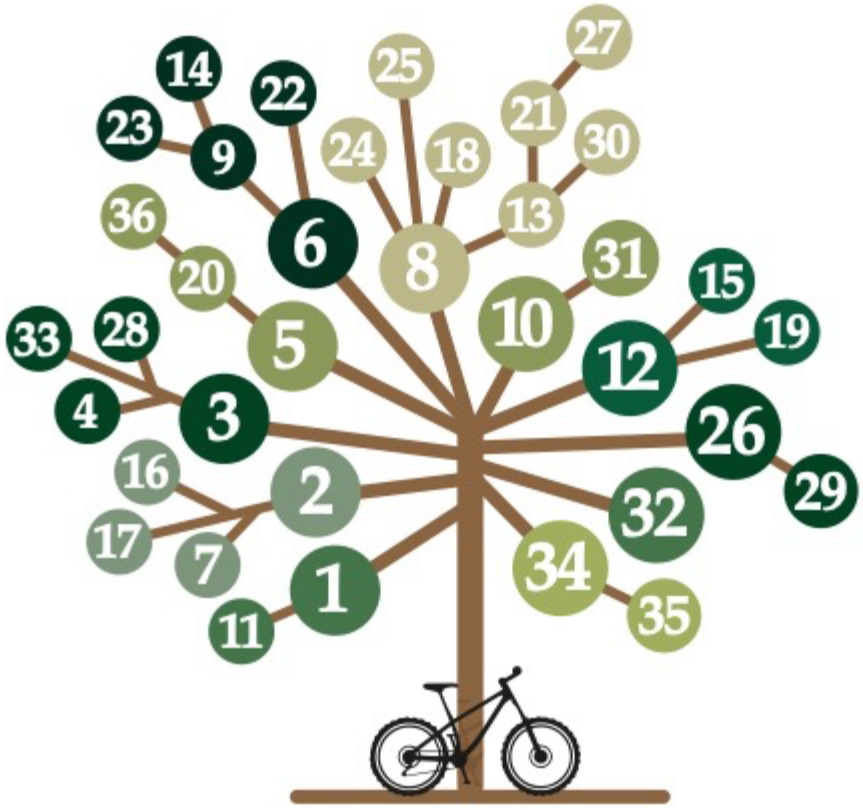

Figure 5: Sampling tree, showing snowball sampling approach; in other words, Interviewee 1 introduced me to Interviewee 11; Interviewee 2 introduced me to Interviewees 7, 16, and 17, and so on. I began by approaching individuals (by email) who I knew fulfilled the sampling criteria (purposive sampling).

[Figure 6 is on the next page]

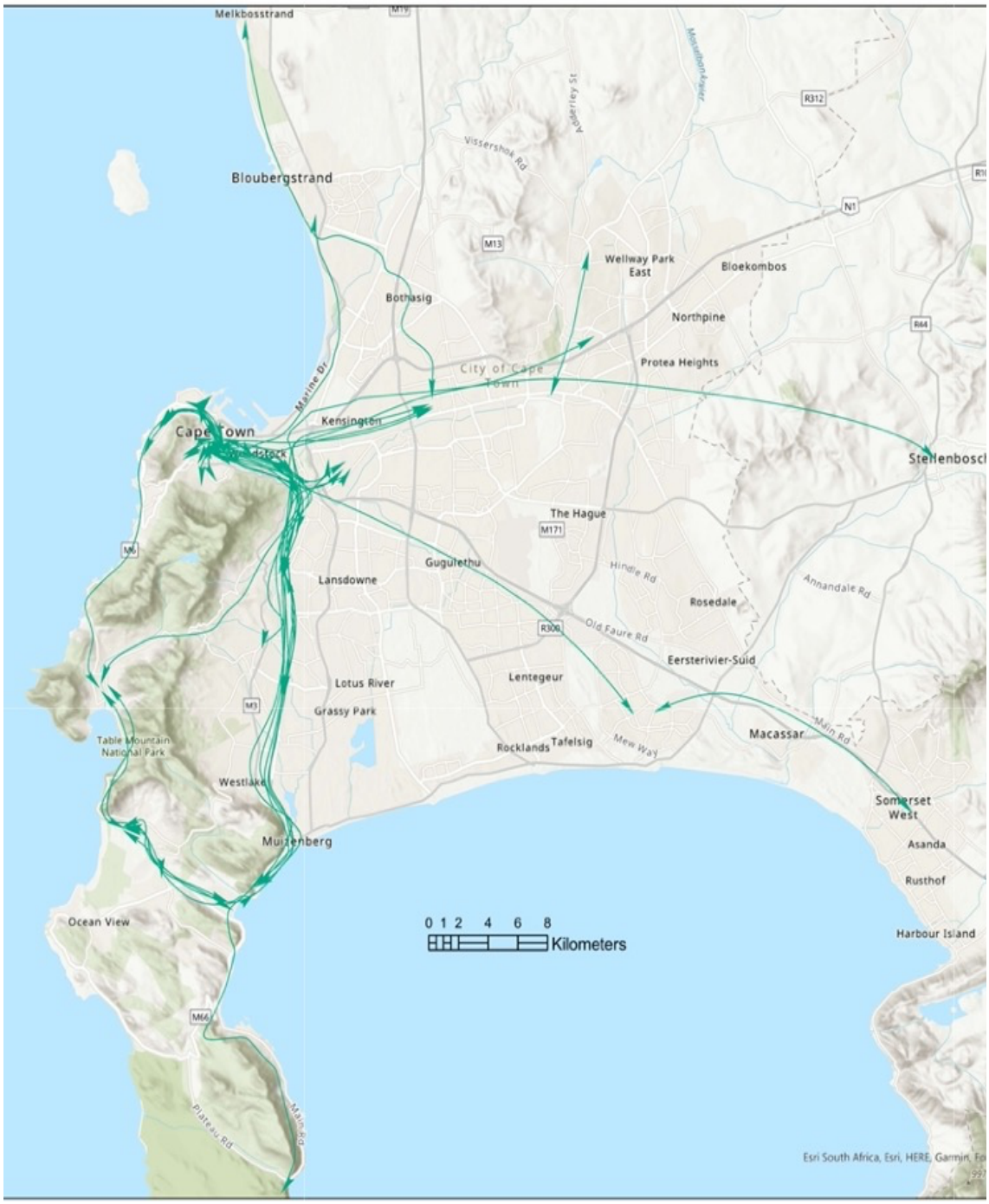

Figure 6: Map showing primary bicycle transport routes of Interviewees; the thicker the line, the more interviewees used these routes. Most interviewees travel between the Southern Suburbs and Cape Town (North and South service delivery areas). Source: Leonard Gardner.

Sample size and saturation

The literature identifies anything from two (2) upward as a suitable sample for a narrative approach, but suggests that saturation may be achieved at around 18-20 people (Guetterman, 2015; Palinkas *et al*., 2015)[36]. Literature dealing with qualitative sample size in biographic approaches suggests 'a trade-off between ... a manageable body of data to work with and the number and distribution of cases that would render a broad insight into the phenomena' (Jones, Chatterjee and Gray, 2014, p. 182). This thesis has a dataset of 36 individuals, interviewed to saturation point in terms of their given overarching motivations for starting, increasing, and sustaining a cycling practice. Note that I have selected motivations rather than triggers as the variable for saturation, as it is motivations rather than triggers that I compare with dataset 2.

Saturation is essentially when, during the course of interviewing, the same frames, patterns, and ideas, emerge repeatedly (diminishing returns). In this instance, the two graphs below show, on the left (y) axis, the number of motivations given for shifting to bicycle transport. The right (x) axis indicates the interviewee number.

In the first graph, Figure 7, saturation is based on codes: so, Interviewee 1 shared 6 primary motivations for shifting to and sustaining a cycling practice. Likewise, Interviewee 2. Interviewees 3 and 4 shared two new motivations, and Interviewee 5, five new motivations. Interviewees 20 to 36 shared no new motivations.

In the second graph,

Figure 8, saturation is based on themes (consolidated codes): only Interviewees 1, 2, 12 and 14 share new motivations. These are explained in the section titled Coding .

Interviewees are numbered according to interview timing (ie, Interviewee 1 is the first individual I interviewed), not according to their identification as a participant.

[36] In a recent qualitative study of cycling in Lagos, the authors interviewed 28 cyclists (Mogaji, 2022).

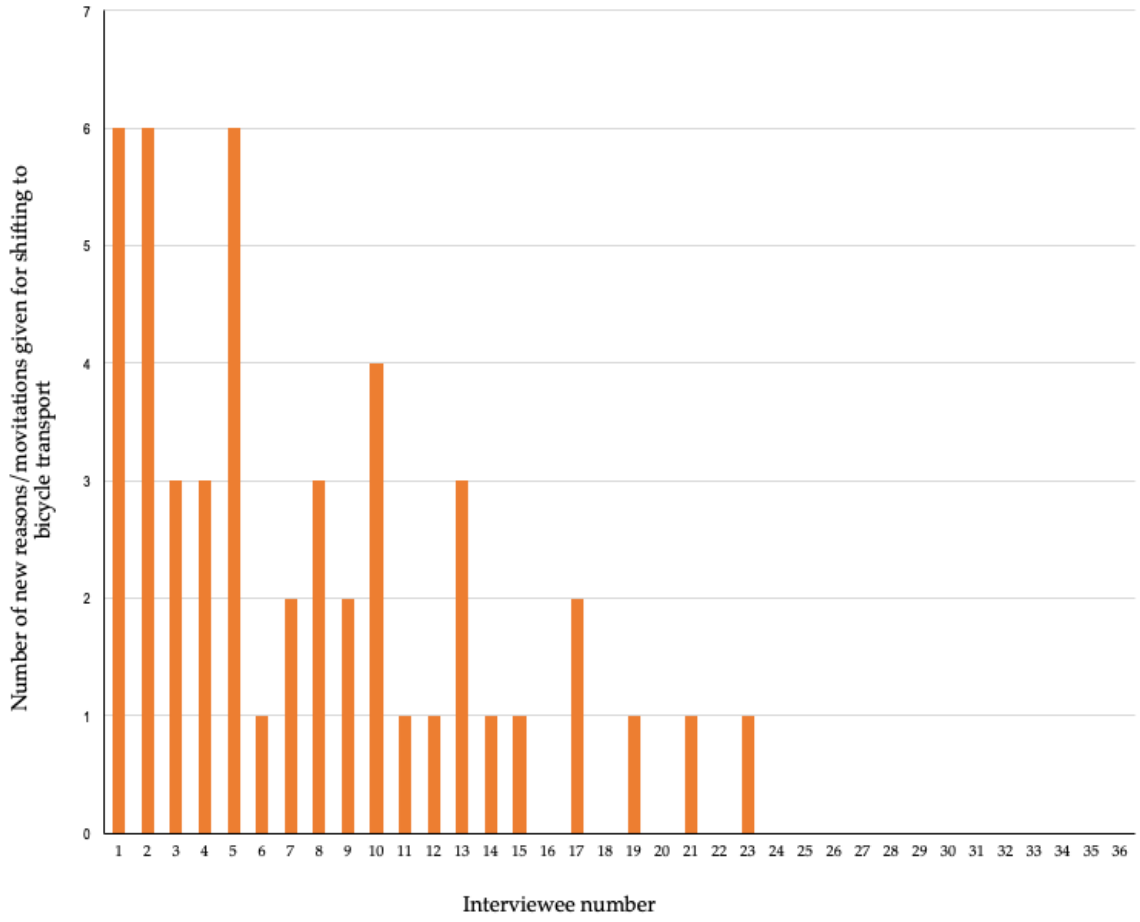

Figure 7: Graph showing interview saturation achievement in respect of motivations for cycling, using unconsolidated codes. Forty-eight (48) different motivations are given by interviewees Saturation is achieved at 23 interviews. Coding and consolidation into themes is explained in chapter 4.

[Figure 8 is on the next page]

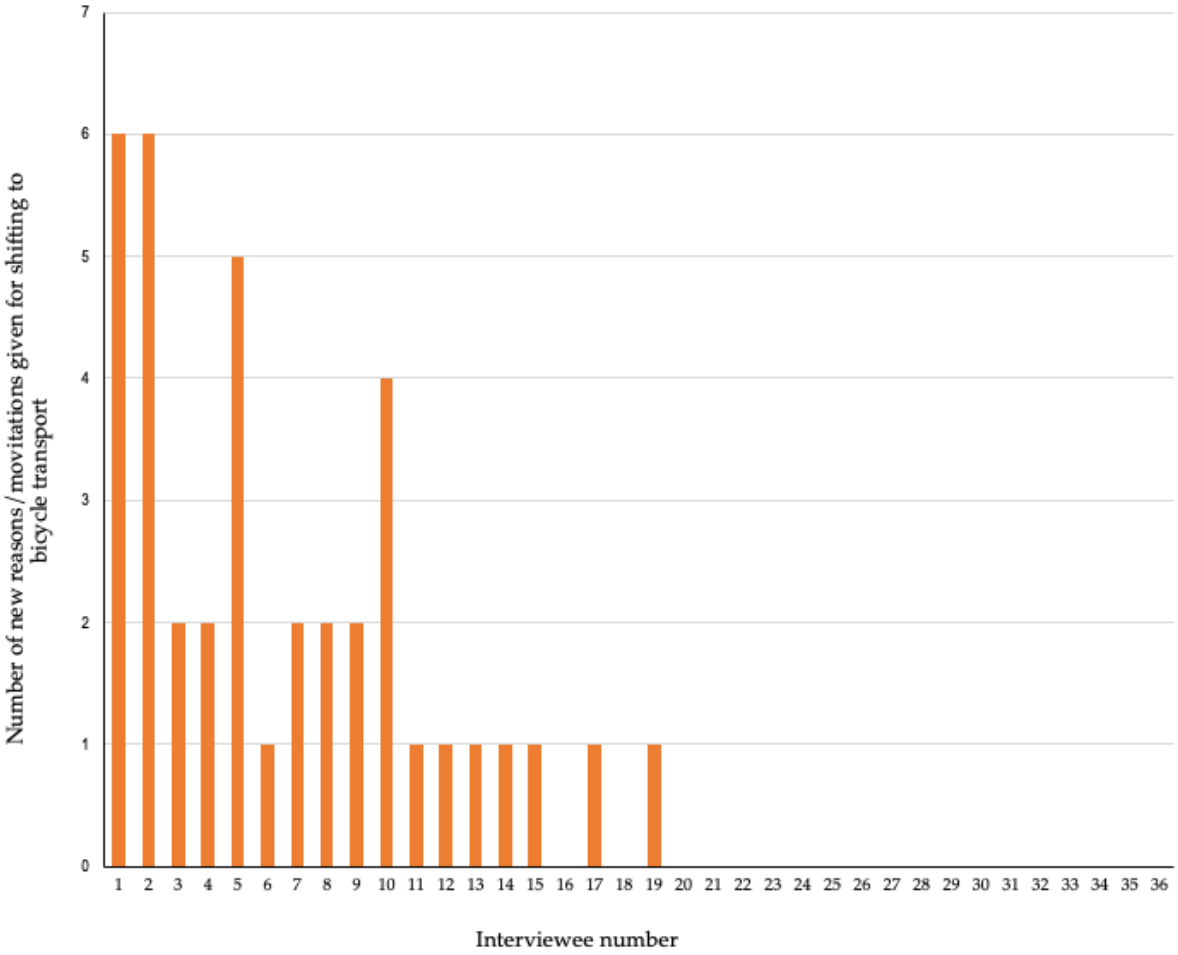

Figure 8: Graph showing interview saturation achievement in respect of motivations for cycling, using themes (consolidated codes). Of the 10 overarching themes developed from the groups of codes, interviewees 1-15 covered 8 of the identified themes, and interviewees 17 and 19 the further 2. Saturation is achieved at 19 interviews. Coding and consolidation into themes is explained in chapter 4.

Data collection

During 2019 and early 2020 I interviewed 36 individuals (intentional cyclists), either in person, or using on-line software (Zoom meetings) during the Covid-19 pandemic in 2020.

Interviews were structured as mobility biographies – retrospective, longitudinal accounts of personal mobility histories. In collecting the data I was less interested in a complete life-course mobility history but in the triggers to and transitions in adult cycling behaviours (what motivated, shifted, and sustained a cycling practice until it became a 'default' behaviour, in other words 'termination'). I nevertheless included life-events as an interview or biography prompt, to assist memory.

Mobility biography interview structures improve the reliability of retrospectively collected data, as 'sequential cueing' enhances memory capacity and links additional events more easily (Schoenduwe *et al.*, 2015). Mobility biographies, when linked to life events, ensure

that the memory of the travel behaviour change 'is attached to an event that is much more memorable, and respondents consequently report no major difficulty in recalling it' (Behrens and Del Mistro, 2006, p. 1). This is supported by Rau and Manton (Rau and Manton, 2016), who assert that retrospective surveys have been shown to be reliable tools for recalling important events.

Interviewees were not prompted with possible triggers and motivations – they were given no pre-selected or possible triggers or motivations from which to choose. I did not use a questionnaire or survey, but rather an interview guideline (see Appendix titled Interview guideline). Questions changed and emerged, as was to be expected in this process (Creswell, 2007). To each interviewee, I suggested the following:

'*Think of your life as a cyclist (the past and the present) as if it were a biography or autobiography, a story. Each chapter tells a different section of your life story, with a plot, a turning point, a new realization, life stage events and changes, new motivations and incentives, interactions, new people, setbacks, continuities, and themes.*

'I am interested in hearing about your cycling biography, and each of these sections through a cycling angle.

'So if you were to divide your cycling life into chapters, your chapter headings might include when you first learned to ride a bicycle, what you first used a bicycle to do, and each step you took to the point of riding a bicycle regularly as a mode of transport.

'In thinking about your cycling biography, who or what had the most important impact on each turning point? What were your motivations or reasons for changing your travel mode. What was the impact of the person, event, or intervention? What was your most overwhelming experience and realization at each turning point? If you ever don't feel like cycling, how do you motivate yourself to do so anyway?

Each interview was recorded, and then transcribed by an agency, Top Transcriptions, in KwaZulu-Natal, South Africa. No identifying information was shared with the transcription team. I re-listened to each of the interviews to check for accuracy against the transcriptions.

4.2.4 Dataset 4: Personal narratives /discourse – non-utility cyclists

This dataset provides the data that will, together with datasets 2 and 3, respond to research questions 3, 4 and 5. It comprises online survey responses of 36 individuals who meet the recruitment criteria.

Sampling

My research interest is why individuals who fit the sampling criteria do cycle. However, to develop a more complete picture of the Stages of Change, I included data from individuals who cycle for sport, but do not cycle as transport. This was to include data in the 'pre-contemplation' and 'contemplation' stages, from individuals who have not considered, or have considered but rejected, cycling as a transport mode. This data does not form a primary part of the findings or analysis.

Recruitment

To recruit individuals for this survey, I asked each interviewee to share the survey with a friend or colleague who fulfilled the sampling criteria in all respects other than that they do not (yet) cycle as a transport mode. The intention was to match dataset 3 as closely as possible. The survey can be found in the Appendix titled Online survey. In the narrative analysis, dataset 4 is presented before dataset 3, as 'pre-contemplation' and 'contemplation' stages are earlier stages of change, but dataset 3 was collected first.

For the purposes of this survey, I was only interested in people who:

- do not ride as a form of transport (ie, do not commute to work by bicycle or use a bicycle for other non-recreational purposes), but who do ride a bicycle for sport or recreation on public roads regularly;
- people who own or have access to a private car (including ride share or e-hailing modes) as an alternative travel mode;
- ride in for sport/recreation in Cape Town and surrounds.

The survey was set up to disqualify any respondents who did not strictly fit the criteria (eg, if they were mountain bikers only, and did not cycle on Cape Town's roads with mixed traffic) as my interest is in people who cycle for sport under as similar conditions as possible to those who do ride as transport.

Sample size and saturation

Like with dataset 3, this dataset samples 36 individuals to saturation point.

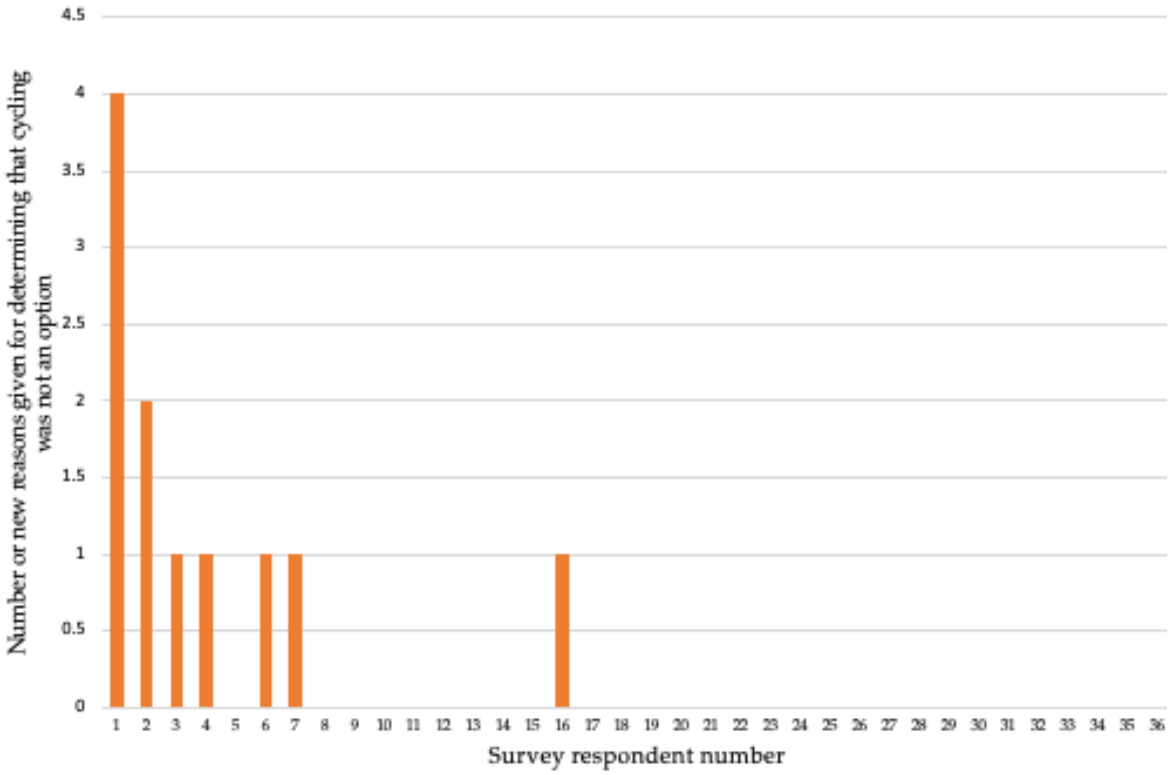

Figure 9: Graph showing survey saturation achievement in respect of reasons given for not cycling, using drop-down selections. Saturation is achieved after the 16th interview (x-axis).

Data collection

To collect data, I used online survey software (SurveyMonkey) with responses from 36 individuals who met the same sampling criteria as the first set of respondents with the exception that they do not ride as a mode of transport. The survey can be found in the Appendices entitled Online survey.

The survey was open for 10 weeks in 2019.

There were two reasons for approaching this cohort by online survey rather than individual interview:

- where only one or two 'phases' or 'chapters' in a mobility biography are to be captured, there is less need for an in-depth interview;
- I wished to ensure that participants felt free to share why they did not cycle as transport without any bias toward telling me what they thought I might want to

know, for example, telling me that they are indeed considering cycling, or feeling that there might be an element of judgement if they had no intention of changing their practice.

Survey development

Survey respondents were able to capture their own reasons for not-cycling or for why they might consider cycling, or select from a drop-down of options. These options were drawn from the literature and from arguments in the Cape Town advocacy narratives as to why individuals do not, or 'should', ride as transport.

For example, the City of Cape Town has stated that 'few Capetonians consider regularly travelling by bicycle, despite the obvious health and cost benefits and that bicycles can be significantly faster than cars in peak traffic … A major problem with bike commuting is that moving through traffic is difficult and dangerous, while obstacles and uneven surfaces make pavements a frustrating and unreliable alternative. On top of this, the distances may be discouragingly far and there is the risk of bad weather, punctures, fatigue and crime' (CCT, 2010b). Petzer's work (Petzer, 2016) briefly engaged with a middle-income, minority cycling group within the far south area of Cape Town, and found that what deterred people from cycling was safety – both road safety and personal safety. Recent work undertaken by Da Silva and Onderwater among car-owning recreational cyclists nationally (online study) examined why this cohort does not consider bicycle travel (Da Silva and Onderwater, 2022); these align with the City's assessment, above.

In Dar es Salaam, Tanzania, Nkurunziza *et al* (Nkurunziza, Zuidgeest, Brussel and Van Maarseveen, 2012) gave respondents options such as hilliness, weather, far distances, no safe parking, no showers, no bicycle signals, no cycling paths, many commitments before and after work, not confident in cycling skills, social status, or social insecurity, as selected options for why individuals do not cycle.

4.3 DATA ANALYSIS PROCESS

I use both thematic and narrative analysis to analyse datasets 2, 3, and 4. This section presents the way in which themes are developed for thematic analysis, using coding. The thematic analysis follows the approach of Braun and Clarke, and of Boyatsiz (Boyatsiz, 1998; Braun and Clarke, 2006). Thematic analysis identifies, organizes, analyzes, and reports patterns or themes across a dataset, and can be used across a range of theoretical and epistomological approaches (Boyatsiz, 1998; Braun, 2006).

Thematic analysis requires a process of developing codes and themes. This section now presents the initial codes, revised codes, initial themes, and revised themes, for analyzing

the triggers and motivations to shifting bicycle behaviour, using the biographies as structured in respect of the Stages of Change.

Narrative analysis is a method of interpreting human experience and motivations by examining the stories or narrative people tell, often through identified themes. Narrative analysis is used to present and discuss the data and findings in chapters 6–9.

4.3.1 Explaining thematic analysis

When analyzing qualitative data (texts or interviews, in this case) a researcher first has to categorize the data to establish the patterns or themes, and ensure that they are understood by someone other than the researcher.

Developing codes and themes is the way in which to do this, by assigning names or labels to words or phrases. This can be done manually, as simply as reading texts line by line, highlighting phrases/words and assigning a code, or by using software to do so.

For readers not well versed in social science method this explanation might assist: for example, some of the scholars cited in the literature review set out to understand motivations for cycling, using quantitative method (for eg, see Nkurunziza, Zuidgeest, Brussel and Van Maarseveen, 2012, above). They developed a set of questions to which an interviewee could answer yes or no, or respond on a scale of 1-5 (a Likert scale). They are likely to have developed these questions using insights that emerged from the literature or from previous research (a theory-driven or deductive approach); they could ask an interviewee, for example, 'why do you cycle', and offer a number of answers from which to choose. The answers would be coded numerically (this many people said yes to question 1, and so on). The research would report findings based on patterns identified in the responses. (This is similar to the approach I took to collect dataset 4, the survey data, although I also collected narrative data, were each respondent could answer at length to tell their own story).

Thematic and narrative analysis also report on patterns, and can reduce narrative data to numeric outputs (as I in fact do in this thesis), but the intention is not to make broad statistical or generalizable claims (qualitative researchers collect data from very much fewer individuals, for example). A key difference is that the data is not numeric but narrative (words). Interviewees will have a broad idea of the research question, while policy and media release writers will have no knowledge of the questions I will ask of their texts. In some respects, the questions only emerge after all the data has been collected and read a number of times (an inductive approach): after reading the data, it might emerge that individuals cycle for environmental reasons. This is evident because they say 'I cycle because of the climate' (coded as climate), 'I worry about the future of our environment' (coded as environment), or 'bicycles are non-polluting' (coded as non-polluting). I, as the

researcher, determine that they have, in this sense, answered 'yes' to a question: 'I am [or you should be] motivated to cycle by environmental concern'. These codes will ultimately will be grouped together based on similarity, and in the examples given, consolidated into the theme, Environmentally friendly.

Thus, the first step in thematic analysis is to generate initial codes. A code represents a response within the dataset that has particular relevance to the research question – these need not be the most prevalent ideas, statements, frames, or motivations in the dataset but those that capture something important in relation to the research question. What constitutes a code or theme depends to a large extent on researcher judgement.

In this research, I look for responses in the interviews, or statements in the texts, that answer the research questions: what are interviewees, or text writers, saying about why they started, stopped, or continued cycling, what motivates them, or why an individual should start cycling.

A code could be present only once across the entire data set, or 50 times; in this research, for example, even if only one interviewee says they started cycling to lose weight, it is included as a code.

Codes are then clustered into potential themes based on similarlity, which are then reviewed against further reading of the data. Themes are then further refined and final names given to the themes.

I developed three sets of codes and themes: one to allocate interviewee or survey data into a Stage of Change; a second to analyze triggers; and a third to analyze motivations for cycling within each Stage of Change. The third set of themes is the basis of the analysis in chapters 8 and 9, as the research questions focus on motivation rather than triggers.

Themes can be developed primarily in two ways:

- Theory-driven or deductive coding (themes that have developed or identified from previous research);
- Inductive coding (developing the themes as they emerge from the data, without trying to fit it into a pre-existing frame) (Braun and Clarke, 2006).

I have used a hybrid method of deductive and inductive identification of themes, in that I drafted codes and themes for the Stages of Change based on the literature, and coded the transcripts and texts inductively and then reviewed in the context of the literature.

4.3.2 Structuring the interviewee and survey data (datasets 3 and 4) into Stages of Change

Already mobility biographies had been used as an interview structure and a memory aid for interviewees. I then use Prochaska and DiClemente's initial and revised Stages of

Change model (Prochaska and DiClemente, 1983; Prochaska, DiClemente and Norcross, 1992) to structure the mobility biographies, rather than structuring the biographies by means of life events. As indicated in the Introduction (Research approach), the Stages of Change model was conceptualized as a way in which to assess an individual's readiness to take action to end addictive behaviours, and then to tailor interventions accordingly (Prochaska and DiClemente, 1983; Shaffer, 2013). The model has since been applied in a number of travel behaviour studies (see Table 2).

I used a theory-driven (deductive) identification of codes and themes for this analysis phase. The themes are the Stages of Change. The codes are statements or phrases that are clustered or consolidated to fit the themes.

The criteria by which other researchers have allocated individuals to a particular Stage of Change are not identical in all studies. For example, a number of studies group respondents into one of the five stages on the basis of two variables and a weighting or Likert scale analysis (Thigpen, Driller and Handy, 2015; Félix, Moura and Clifton, 2019). Both Nkurunziza and Gatersleben (Gatersleben and Appleton, 2007; Nkurunziza, Zuidgeest, Brussel and Van Maarseveen, 2012), on the other hand, grouped respondents by similar discrete survey categories (self-reported) (see also the section titled Segmenting the market: categories and identities).

To allocate individual behaviours to Stages of Change categories for my research, I returned to the original work of Prochaska and DiClemente (see Table 6: Operationalizing the Stages of Change model to indicate transitions in cycling practice., below), to develop operational or normative statements. Statements that align with these normative statements are coded as the appropriate stage of change/theme.

Using the interview transcripts, I first assigned codes to phrases or statements that suggest a transition or shift. The two tables below show the types of phrases or codes that will be allocated to which behavioural phase. These phrases are drawn from Prochaska and DiClemente and from other literature (deductive coding). So, for example, the statement 'I never really think about or consider cycling', would be categorized Pre-contemplation.

Table 6 shows operational statements from the literature, for coding statements for allocation into a Stage. Table 7 shows the operationalization of the Stages of Change approach in this research, and indicative phrases to indicate how I coded and categorized behavioural stages from within each mobility biography[37].

[37] These same actions might be repeated after an individual has already put the behaviour or practice into action, maintaining the behaviour/practice and seeing it gain momentum, or reaching termination ('default'). Likewise individuals might repeat the same or similar narratives at different phases. Further, what might shift one individual to start cycling might be the trigger for another individual to increase their practice; there is inevitable overlap.

Table 6: Operationalizing the Stages of Change model to indicate transitions in cycling practice.

Stage of Change (Prochaska and DiClemente, 1983)	Processes of change	Operational statements in Nkurunziza *et al* (Nkurunziza and van Maarseveen, 2013)	Operational statements in Gatersleben (Gatersleben and Appleton, 2007)	Operationalization as used in this study (statements that align with these normative statements are coded as the appropriate stage of change/theme
Pre-contemplation	Fewest processes of change in this stage. Includes consciousness raising, environmental re-evaluation, risk assessment, evaluation of outcomes	'I never really think about or consider cycling.'	Had never used a bicycle to travel to work and had never considered using one.	Not yet aware that utility cycling is even an option. Aware that utility cycling is an option but do not consider or intend to consider doing so.
Contemplation	Includes consciousness raising, trying new behaviours, overcoming barriers, social support.	'I have never used a bicycle but sometimes I think about cycling.'	Had never used a bicycle to travel to work, but had (rarely, sometimes or often) considered using one.	Aware that utility cycling is an option and are thinking about doing it (in some instances this may mean they have thought about it and decided against doing so).
Preparation	A stage that combines intention and behavioural action (a phase the authors originally called 'decision-making'. This includes skills improvement, goal setting, coping with barriers, and social reinforcement.	'I rarely or sometimes cycle but seriously consider riding a bicycle.'	Rarely or sometimes used a bicycle to travel to work and that they rarely, sometimes or often considered using one.	In the 'preparation' phase, individuals are 'seriously' thinking about starting to cycle as a transport mode. This phase involves actions such as seeking information about routes or bicycles, public transport integration, purchasing a bicycle, investigating whether other people also travel by bicycle, or other relevant actions.
Action	This is the stage where individuals modify their behaviour, experiences, or environment. This is where social support, self-help groups, and value-clarification, are key.	'I cycle fairly often.'	Often used a bicycle to travel to work.	In the 'action' phase, individuals make a start as cycling as a mode of transport; this does not necessarily mean that they cycle regularly, or routinely, but that they have taken a first step.
Maintenance and Momentum	This is a stage where individuals work to prevent relapse and consolidate the gains; it is a continuation of change. Coping skills are key.	'I cycle regularly and almost every day.'	Always used their bicycle to travel to and from work.	Starts cycling more often, longer distances, in less favourable circumstances, for more varied purposes. This could involve removing of 'high-risk' stimulus, such as giving up car-ownership, or more simply, finding or describing ways in which the action is maintained. This phase, and the phase of 'increasing the new action', are cyclical.

Stage of Change (Prochaska and DiClemente, 1983)	**Processes of change**	**Operational statements in Nkurunziza *et al* (Nkurunziza and van Maarseveen, 2013)**	**Operational statements in Gatersleben (Gatersleben and Appleton, 2007)**	**Operationalization as used in this study (statements that align with these normative statements are coded as the appropriate stage of change/theme**
Relapse		'I no longer cycle.'		The individual no longer cycles.
Termination (no desire or intention to return to original behaviour)	The behaviour becomes habitual or normative, and the individual feels no desire or inclination to return to a original behaviour.			Cycling becomes habitual or normative, and the individual feels no desire or inclination to return to a previous behaviour.

Table 7: The operationalization of the Stages of Change approach, and indicative phrases to indicate how I coded and categorized behavioural stages from within each mobility biography or survey response.

Stage of Change	Operationalization or Action	Indicative phrases for coding
Pre-contemplation	Not yet aware that utility cycling is even an option. Aware that utility cycling is an option but do not consider or intend to consider doing so.	'I have never considered bicycle commuting' 'It was actually the first time that I noticed …'
Contemplation	Aware that utility cycling is an option and are thinking about doing it (in some instances this may mean they have thought about it and decided against doing so).	'I would like to cycle to work but…' 'I have considered riding instead of driving, but…' 'It had never occurred to me until…' 'I have considered riding instead of driving, but…' 'I like to ride my bicycle but…' 'There was no cycling culture…'
Preparation	In the 'preparation' phase, individuals are 'seriously' thinking about starting to cycle as a transport mode. This phase involves actions such as seeking information about routes or bicycles, public transport integration, purchasing a bicycle, making a decision to ride, investigating whether other people also travel by bicycle, or other relevant actions.	'I must cycle when I get [back] home…' 'And then I met…' 'That's when I decided that that's what I needed' 'Something triggered in me…' 'Made me realize this thing is possible…'. 'I read about …' 'I heard about…' 'I met…' 'I'm going to buy a bike…'
Action	In the 'action' phase, individuals make a start as cycling as a mode of transport; this does not necessarily mean that they cycle regularly, or routinely, but that they have taken a first step.	'And so we started riding…' 'I need to actually do this…' 'I can't exactly say no…' 'X got on my case …' 'I participated in… 'I discovered that…' 'I met…' 'I decided to…' 'I moved closer to …' 'I started a new job at …'
Maintenance and momentum	Starts cycling more often, longer distances, in less favourable circumstances, for more varied purposes. This could involve removing of 'high-risk' stimulus, such as giving up car-ownership, or more simply, finding or describing ways in which the action is maintained. This phase is cyclical.	'I have always cycled' 'It really was this big change…. 'Because what happened is that everything started snowballing…' 'And from there is just started to be a regular thing…' 'I sold my car'… 'I worked out how to …' 'I bought…' 'I found out about…' 'I met…' 'I moved closer to …' 'I started a new job at …'
Relapse	The individual no longer cycles.	'There was no culture of cycling…' 'I used to ride but…'
Termination	Cycling becomes habitual or normative, and the individual feels no desire or inclination to return to a previous behaviour.	'It goes without saying …' 'It just makes more sense…' 'It's just silly…'

4.3.3 Coding

The initial coding process yielded codes 61 codes as triggers to transition points and coincidentally 61 as motivating and sustaining narratives. After this initial coding, I then clustered or consolidated the codes, sorted into a code tree, and named overarching themes. I then reread all the transcripts and texts, re-reviewed all the coding, and made any necessary reallocations based on the consolidated codes. I used this final set of themes to analyze the data (22 triggers to transition points and 10 motivating narratives).

Inductive coding

This phase of thematic analysis used inductive coding – in other words, coding closely linked to the texts themselves – to categorize and analyze triggers and motivations. A theory-driven thematic analysis or coding, on the other hand, is guided by the body of literature. I took this approach because the cohort of individuals selected for research is under-studied (ie, car-owning, middle-high income individuals in a sprawling, inequitable, car-dominated city with marginal cycling infrastructure, who choose to cycle nonetheless), and it was not apparent that any thematic sets developed elsewhere (in the global north, in cities with high cycling, or in studies that investigated 'captive' and 'choice cyclists') would be transferable or applicable.

Coding for triggers to transitions

In the context of this thesis, a 'trigger' is an impetus or catalyst, a force that creates pressure or facilitates change.

Chatterjee *et al* (Chatterjee, Sherwin and Jain, 2013) have used the concepts of 'mediating factors', 'life-change' events, and 'changes to external environment', as inputs into the deliberation that leads to a turning point in cycling behaviour. These mediating factors could include a wish to avoid parking costs, an enjoyment of cycling, a wish to increase fitness, or joining a bicycle user group at work. Changes to the external environment could include a school (life-change events have more usually been considered in the literature as changes in places of work, residence, status in respect of health, relationship, children's developmental stages, etc).

Thus I have included what might have been considered mediating factors, above, life-change events, or changes to the external environment, as triggers to change.

Table 8, below, depicts the 61 codes as triggers to transition points. **Error! Reference source not found.** shows the above 61 codes consolidated into 22 themes for analysis.

Table 8: Complete list of initial, unconsolidated codes applied to interviews regarding triggers for pre-contemplation, contemplating, preparing, taking action, maintaining, and termination (sustaining) cycling. This table continues across three pages.

1.	A friend was also commuting by bicycle
2.	Attended free bicycle riding classes
3.	Attended Open Streets Cape Town
4.	Became a one-car household
5.	Became active on social media
6.	Bicycle commuting outside of SA
7.	Joined a Bike bus
8.	Brother encouraged me
9.	Bus strike
10.	Car was stolen
11.	Change in residential location
12.	Changed work location
13.	Colleagues persuaded me to start
14.	Confidence because of an e-bike
15.	Cycled in Europe or US
16.	Cycling community support
17.	Employer pushed me to cycle
18.	Entered the Cape Epic
19.	Event launching MyCiTi bike lanes
20.	Everyone else was cycling
21.	FIFA World Cup 2010
22.	Gave up access to a car
23.	Getting fitter therefore able to commute more often and further
24.	Got lights for the bicycle

25.	Got a friend to ride with to show the route/way
26.	Having access to a bicycle at work
27.	Increase in cycle racing activity
28.	Increased public acceptance of cycling
29.	Increased social power/agency
30.	Meeting an individual who cycled
31.	Moonlight Mass
32.	Moved to a location where there were bike lanes
33.	MyCiTi permitting bicycles on board
34.	No access to parking
35.	No longer have access to a car
36.	Office location with a shower
37.	Own company, able to set up locker rooms etc
38.	Participated in cycling events and realized could ride longer distances
39.	Personal burnout
40.	Presence of infrastructure
41.	Purchased a bicycle
42.	Purchased a folding bicycle
43.	Purchased a new/different bicycle
44.	Purchased an e-bike
45.	Purchased panniers
46.	Read about cycling
47.	Read about cycling as a mode
48.	Returned to South Africa
49.	Saw how their children were using bikes internationally

50.	Saw someone bicycle commuting
51.	Sense of obligation
52.	Started cycling as sport
53.	Started studying
54.	Started working and had to travel in traffic to work
55.	Started a new job closer to work
56.	Started volunteering at a bicycle NGO
57.	Studied city planning, read the theory
58.	Studied in a country where people cycle commute
59.	Was given a bicycle
60.	Watched Al Gore's Inconvenient Truth
61.	Watched the Argus/Cape Town Cycle Tour

Clustering of codes into themes (triggers)

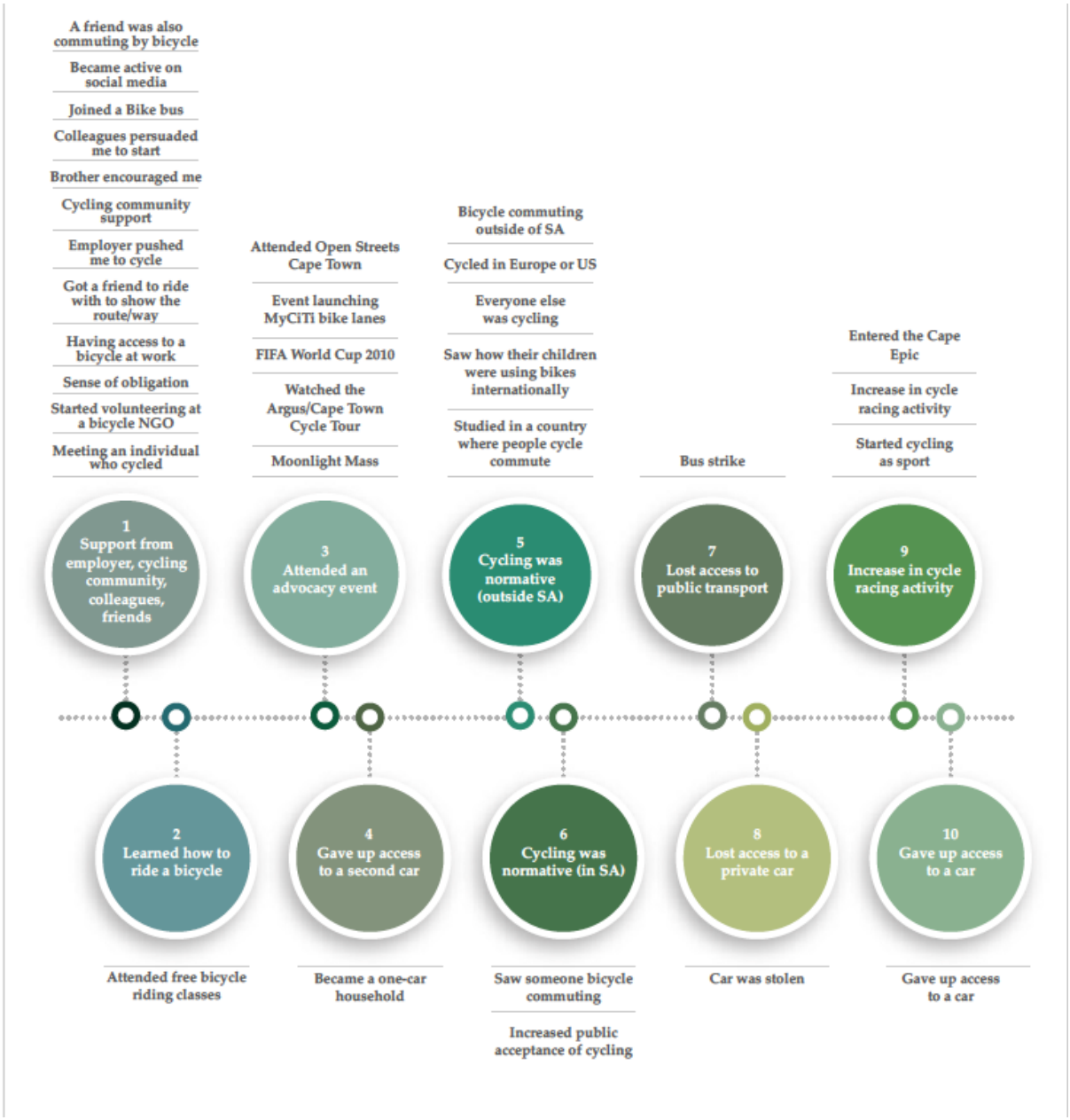

Figure 10: Figure showing the 61 codes consolidated into 24 themes applied to regarding triggers for pre-contemplation, contemplating, preparing, taking action, maintaining, and termination (sustaining) cycling. This figure continues across three pages.

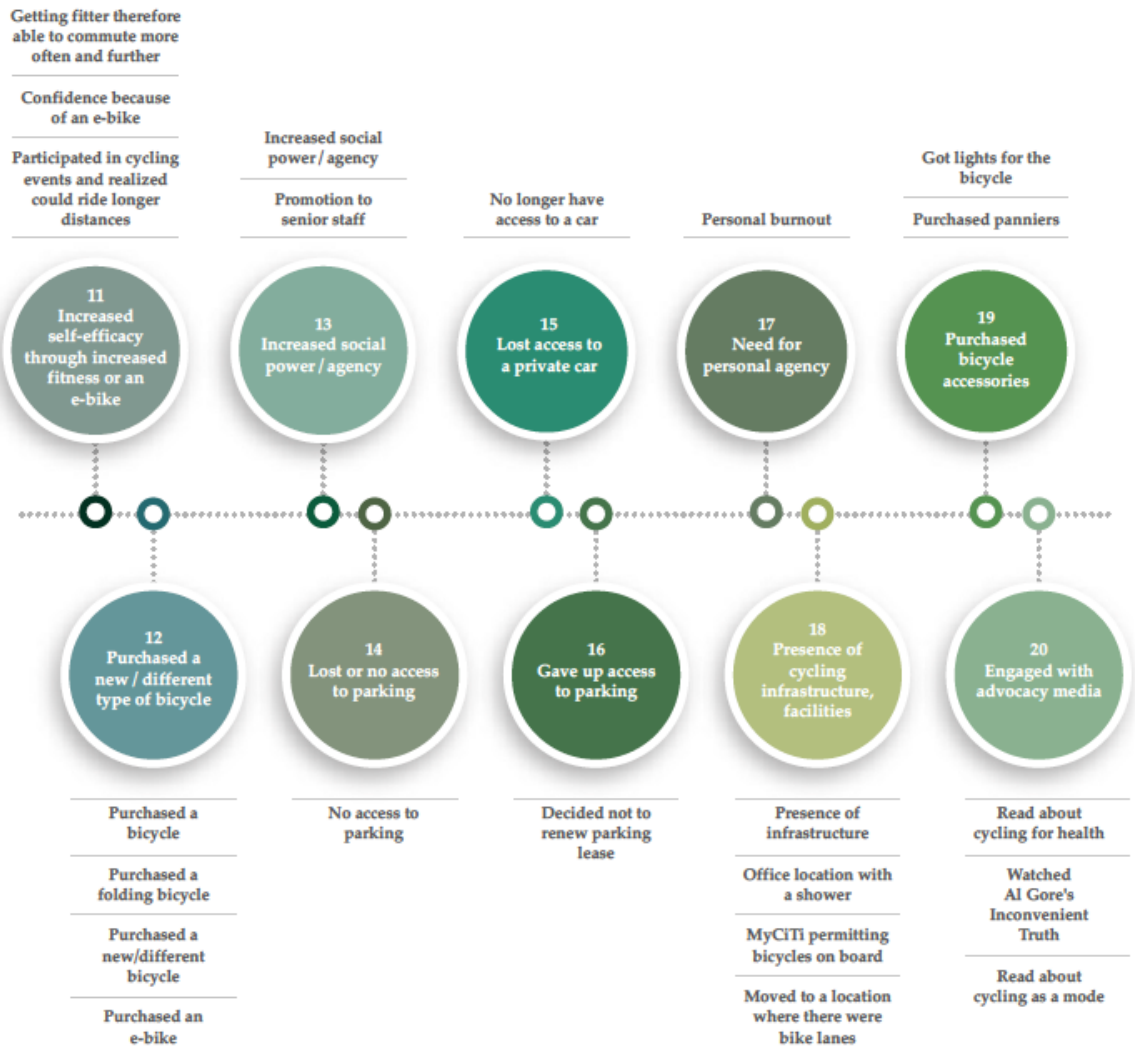

Figure 11: Continued from above. Figure showing the 61 codes consolidated into 24 themes applied to regarding triggers for pre-contemplation, contemplating, preparing, taking action, maintaining, and termination (sustaining) cycling.

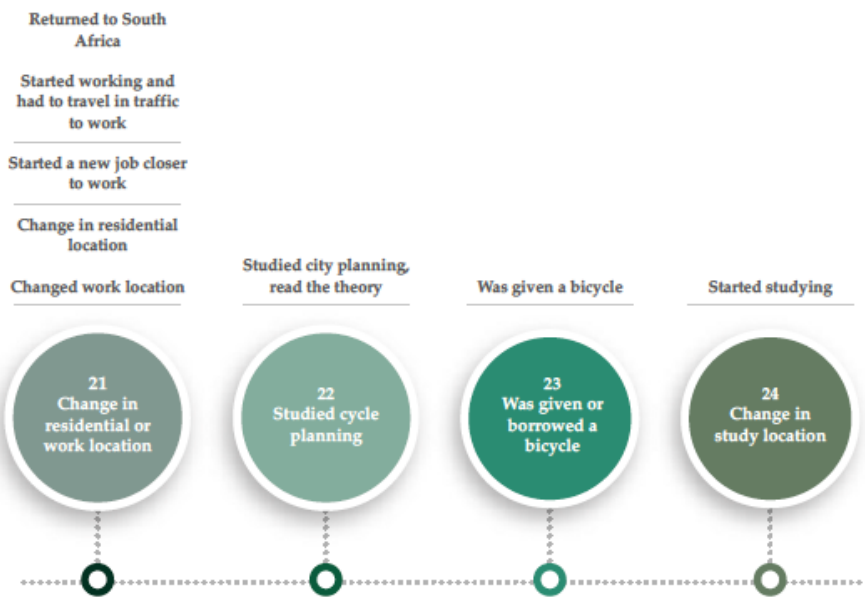

Figure 12: Continued from above. Figure showing the 61 codes consolidated into 24 themes applied to regarding triggers for pre-contemplation, contemplating, preparing, taking action, maintaining, and termination (sustaining) cycling.

Coding for motivations to cycle

I have used 'motivation' in a similar way to that in the literature (Aldred, 2012a; Biernat, Buchholtz and Bartkiewicz, 2018; Félix, Moura and Clifton, 2019; Rérat, 2019) – a reason or incentive to 'do' something; for the purposes of this thesis, to 'do something' could also mean to engage in a behavioural intention, such as to contemplate action, to prepare to act, to take action, or to maintain an action. Motivations are the 'stories' we tell ourselves to create meaning and legitimacy, and explain our actions. Thus, in this analysis, I have included what might have been considered mediating factors, above, life-change events, or changes to the external environment, as motivations that facilitate action and sustain change (the 'why' of individuals' cycling practice).

Table 9, which follows, presents the complete list of initial, unconsolidated codes applied to advocacy texts and interviews regarding motivations for contemplating, starting (action), increasing (maintenance and momentum), and continuing (termination) cycling.

Table 9: Complete list of initial, unconsolidated codes applied to advocacy texts and interviews regarding motivations for contemplating, starting (action), increasing (maintenance and momentum), and continuing (termination) cycling. This table continues across three pages.

1.	Alleviates poverty
2.	Better use of city resources
3.	Better land use
4.	Cost effective for government / better use of rates and taxes
5.	It helps energy security
6.	Beats traffic congestion
7.	Consistent travel time
8.	Don't have to look for parking
9.	Don't like driving
10.	Most efficient mode of travel
11.	Predictability/reliability
12.	Faster than walking
13.	Reduces the number of cars on the road/mitigates congestion
14.	Builds a bicycle culture
15.	Encouraging others to ride
16.	Better air quality
17.	Better for climate change
18.	Carbon footprint/low carbon
19.	Cleaner than other modes
20.	Reduces noise pollution
21.	Reduces vehicle emissions
22.	It's energy efficient

23. Greener
24. Cheaper than being a two-car household
25. Cheaper than the cost of car ownership (insurance, licence)
26. Cheaper than the cost of parking
27. Saves on fuel
28. Don't have to pay peripherals (car guards, toll fees)
29. Financial incentives from work
30. Draws on memories of childhood
31. Empowering
32. Happiness
33. Hate traffic
34. Engaging with privilege
35. It’s fun
36. Likes being outside
37. Love the adventure
38. Loves cycling
39. Productive time/ Multitasking
40. Public health improvements
41. Diabetic
42. Lose weight
43. Discovery app incentives
44. Putting planning theory into practice
45. Social cohesion / mobility justice
46. Supports economic growth, a healthy economy, and creates jobs
47. Supports equitable investment in road space

48.	Supports liveable communities and inclusive public spaces
49.	Supports spatial transformation
50.	Meeting other communities
51.	Training for a race/event / fitness
52.	Embedded exercise
53.	Personal values
54.	It's bad-ass
55.	It's cool
56.	It's counter-culture
57.	Conscious living
58.	Crazy, passion
59.	Example for my children
60.	Example of discipline and commitment
61.	It's a basic life skill

Clustering of codes into themes (motivations)

Themes are groups of organized codes. Thus codes are first consolidated into potential themes, which are then reviewed against further reading of the data. Themes might then be further refined.

In the initial process, I clustered all codes into eight themes (see Figure 13, below); among these eight themes, the theme 'Affordable' included codes relating to saving money by individuals, and saving money by government; and the theme 'Improves physical health' included codes relating to fitness as well as health more generally.

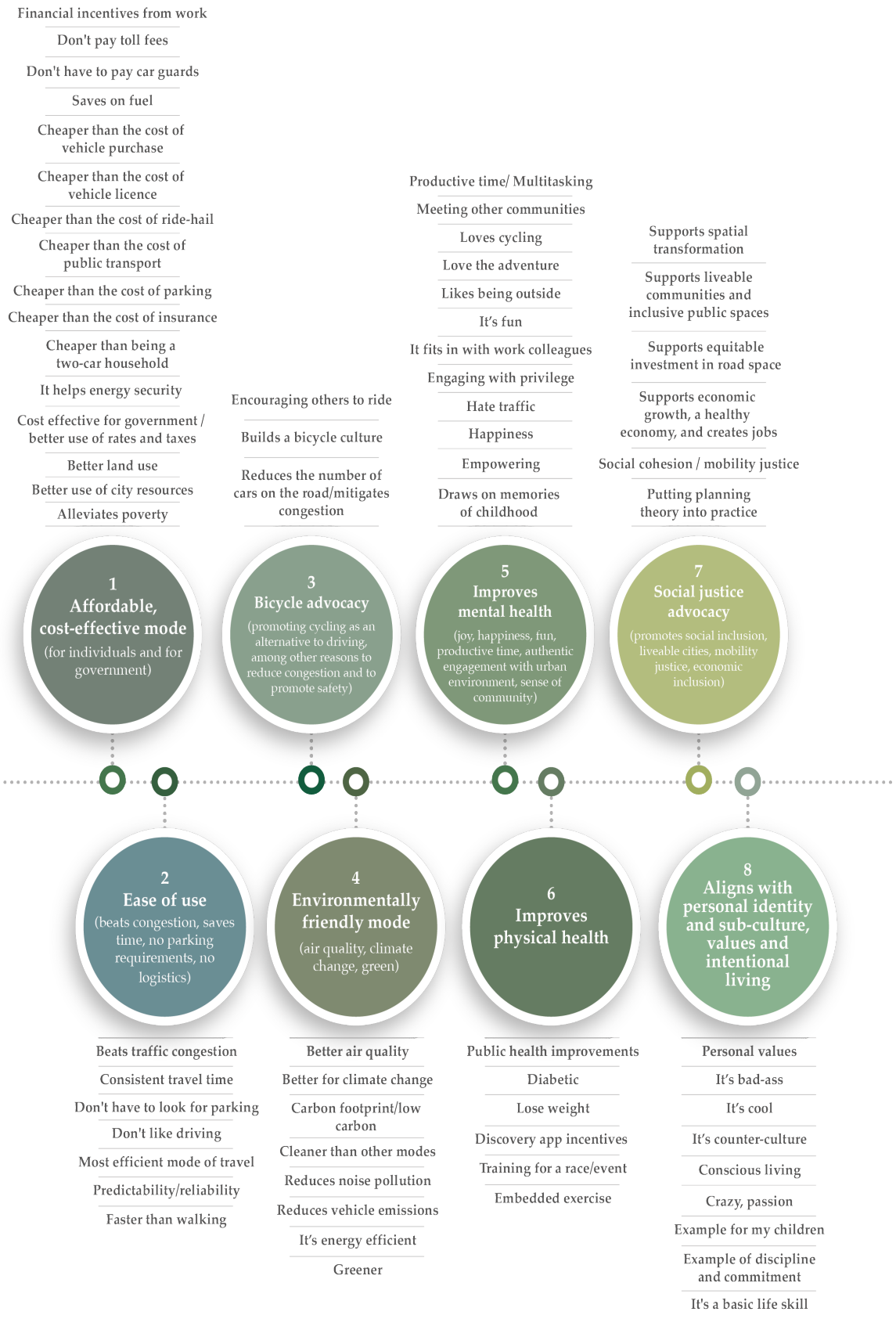

Figure 13: Code tree, showing eight themes developed from an initial clustering of codes.

Upon further review and interrogation of the data it emerged that separating 'Affordable' and 'Saving money', and 'Physical health' and 'Fitness', enabled a more nuanced analysis. 'Wellbeing' was initially entitled 'Improves mental health'. This led to the following ten final themes (see Figure 14, on the next page).

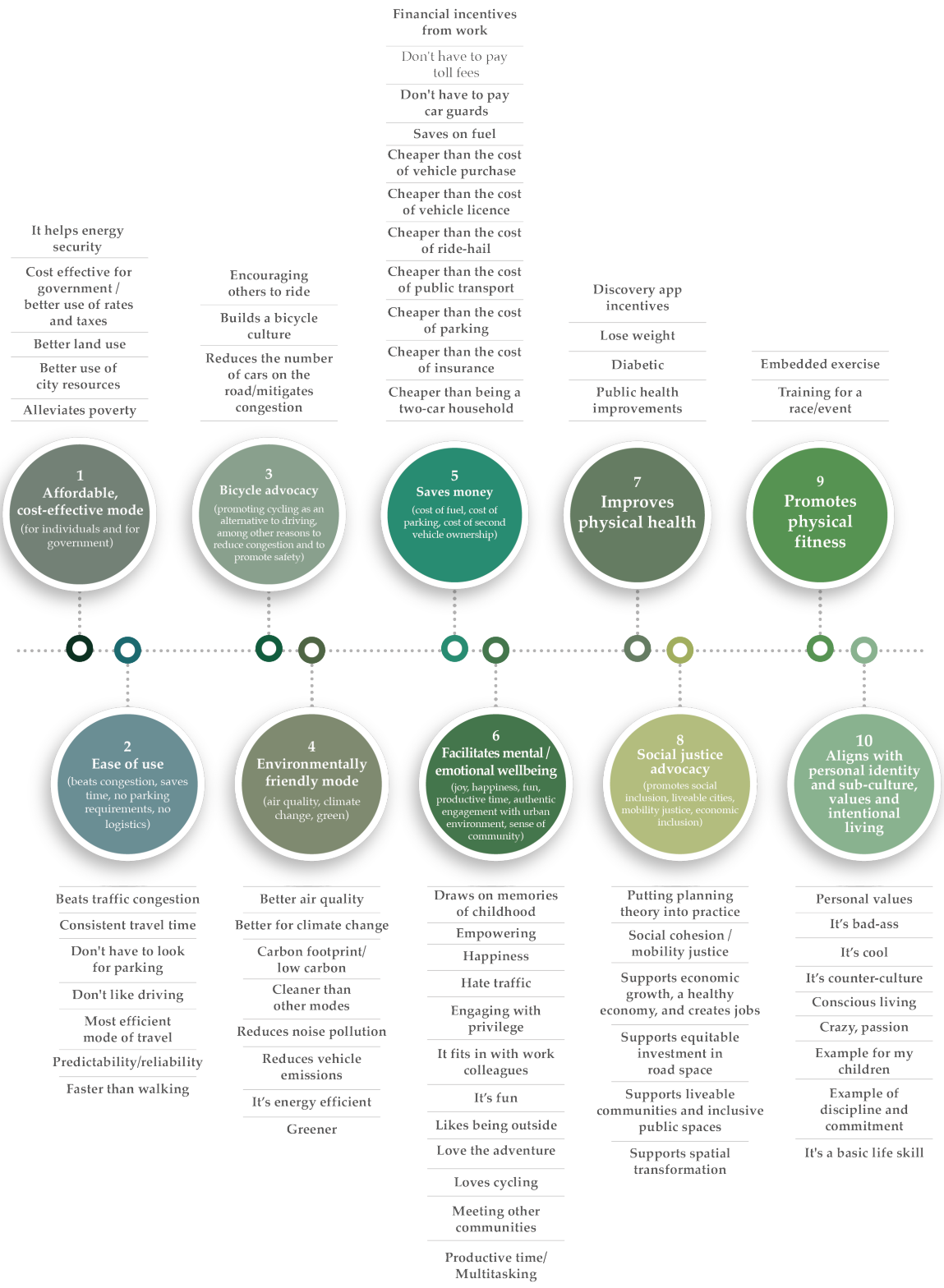

Figure 14: Code tree showing all codes now clustered into 10 final themes, based on a review of the interview and advocacy discourse.

4.4 CONCLUSION

This chapter has discussed the research method. The thesis uses four datasets to answer the research questions: a series of timelines showing key events bicycle policy, infrastructure implementation, and advocacy from 1976 to 2019; public advocacy discourse including media and policy; in-depth interviews with 36 intentional cyclists; and online survey data from 36 sports cyclists. Sampling of interviewees and survey respondents is purposive (non-random, non-probability), combined with snowball (chain) sampling, as the purpose of the research is to achieve depth of understanding and insight within a particular group rather than make generalizable findings.

The variables of primary interest for analysis are the meaningful statements of knowledges, attitudes or motivations at transition or stage of change: in other words, what motivates an individual at contemplation, action, momentum, and termination stage within a cycling practice. This is not cross analyzed across other variables such as gender, travel distance, geography, or employment. Interviewees were drawn from each of Cape Town's four service delivery areas. Saturation is achieved at 23 interviews with respect to motivations. Motivations rather than triggers are used as the variable for saturation, as it is motivations rather than triggers that I compare with the advocacy data.

To explain the data analysis process, the chapter presented the way in which themes were developed for thematic analysis, using coding. The personal discourses (in-depth interview transcripts) were first categorized into Stages of Change, and themes were developed to understand triggers to transitions between stages, and motivations for cycling within each stage. The initial coding process yielded codes 61 codes as triggers to transition points and 67 as motivating and sustaining narratives. After this initial coding, the codes were reviewed and consolidated or clustered into themes to analyze the data (22 triggers to transition points and 10 motivating narratives). These themes were presented as a table and as a code tree. The final themes for analysis of motivations are: Affordability; Ease of use; Bicycle advocacy; Environmentally friendly mode; Saves money; Facilitates wellbeing; Improves physical health; Social justice advocacy; Promotes physical fitness; and Aligns with personal identity.

Chapters 7–9 will draw on these themes to present the narrative analysis and interpretation of interviewee's motivations to bicycle commute. But before getting to those chapters, the thesis returns to datasets 1 and 2, the beginning of bicycle advocacy in Cape Town, to present the contexts in which interviewees ride and to answer research questions 1 and 2.

5 RESEARCH QUESTION 1: TIMELINES OF KEY EVENTS IN BICYCLE POLICY, IMPLEMENTATION, AND ADVOCACY, 1976–2019

5.1 INTRODUCTION

This section answers presents dataset 1 and answers research question 1: *What are the key events in bicycle policy, infrastructure implementation, and advocacy between 1976 and 2019 in Cape Town?*

This time frame has been selected as 1976 sees the beginning of bicycle activism in Cape Town, and 2019 sees the first explicit activation of interventions proposed by Cape Town's 2017 Cycling Strategy. The period 1976 to 2019 is divided as follows, in the timeline and in the narrative analysis in the following chapter.

1976–1979: From the beginning of formal bicycle advocacy actions (1976) until the draft of Cape Town's first bicycle master plan

1980–1993: From the launch of Cape Town's bicycle demonstration project, until the second iteration of South Africa's bicycle and pedestrian infrastructure guidelines

1994– 2007: From South Africa's first democratic elections to the publication of South Africa's public transport strategy (and its focus on BRT and NMT feeder route improvement)

2008-2013: From the publication of South Africa's NMT Policy until the second national household travel survey

2014-2019: From the year of Cape Town's Design Capital status until the implementation of the Cape Town's first travel demand management media campaign

The purpose of this dataset is to identify the critical discourse moments that will be used as the guide to select the advocacy discourse for analysis (research question 2) (see Method, Dataset 2: Public advocacy discourse).

This dataset was collated by means of a literature search – policy, strategy, plans, media releases, official speeches, city reports, and media articles, and personal correspondence, as they relate to transport and bicycle policy, strategy, infrastructure, and advocacy – as well as drawn from my own lived experience and knowledge gathered as an individual involved in bicycle research and advocacy since 2002 in Cape Town. For a reminder, see also section titled Dataset 1: Key events in bicycle policy, infrastructure intervention, and advocacy.

Five timelines are presented in the next pages, one per time period (at times split into part 1 and part 2, to fit on a page).

5.2 TIMELINE SERIES

[These follow on the next seven pages]

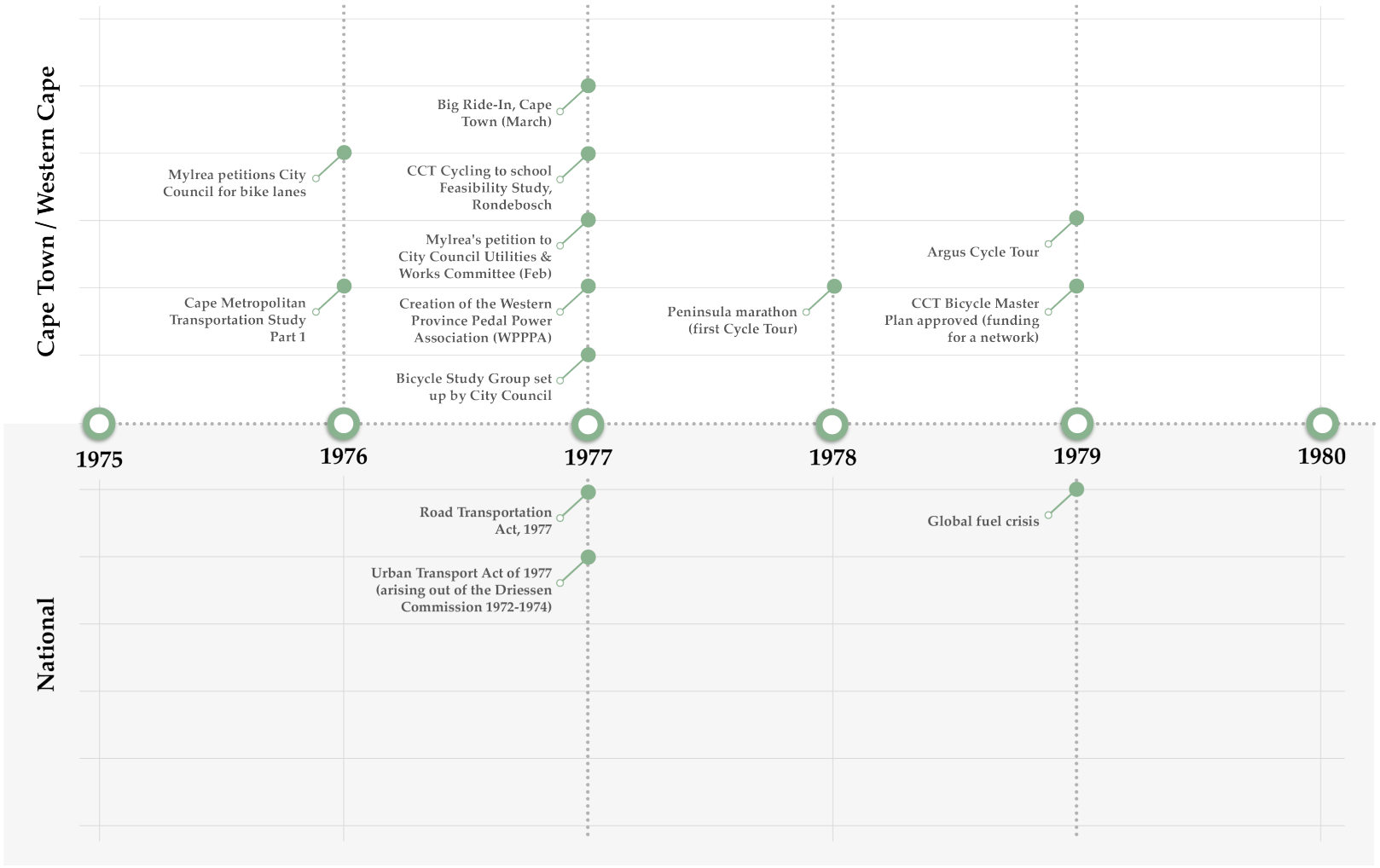

Figure 15: Timeline of key events in bicycle policy, advocacy, and implementation, 1976-1979.

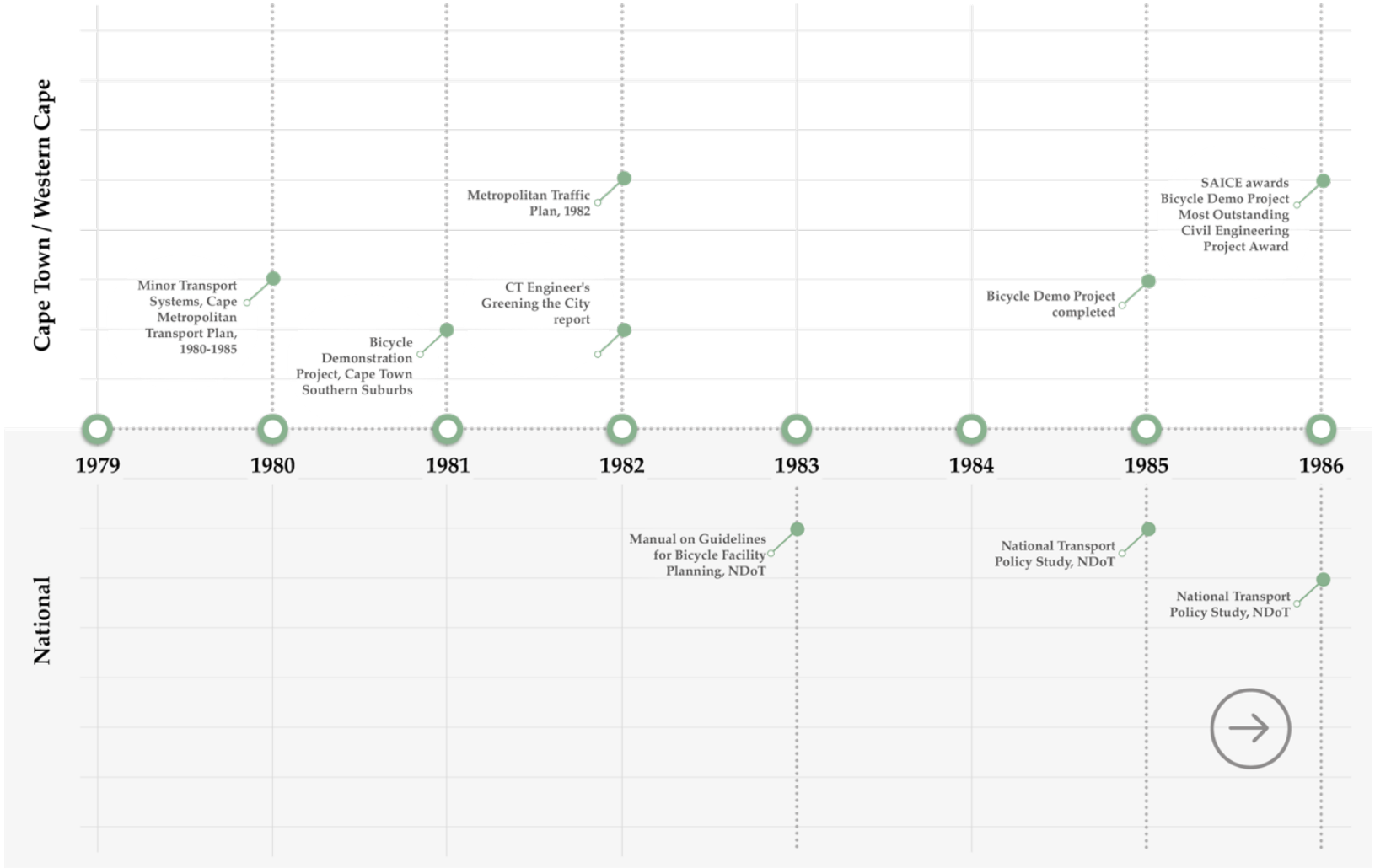

Figure 16: Timeline of key events in bicycle policy, advocacy, implementation, 1980-1993 (part 1).

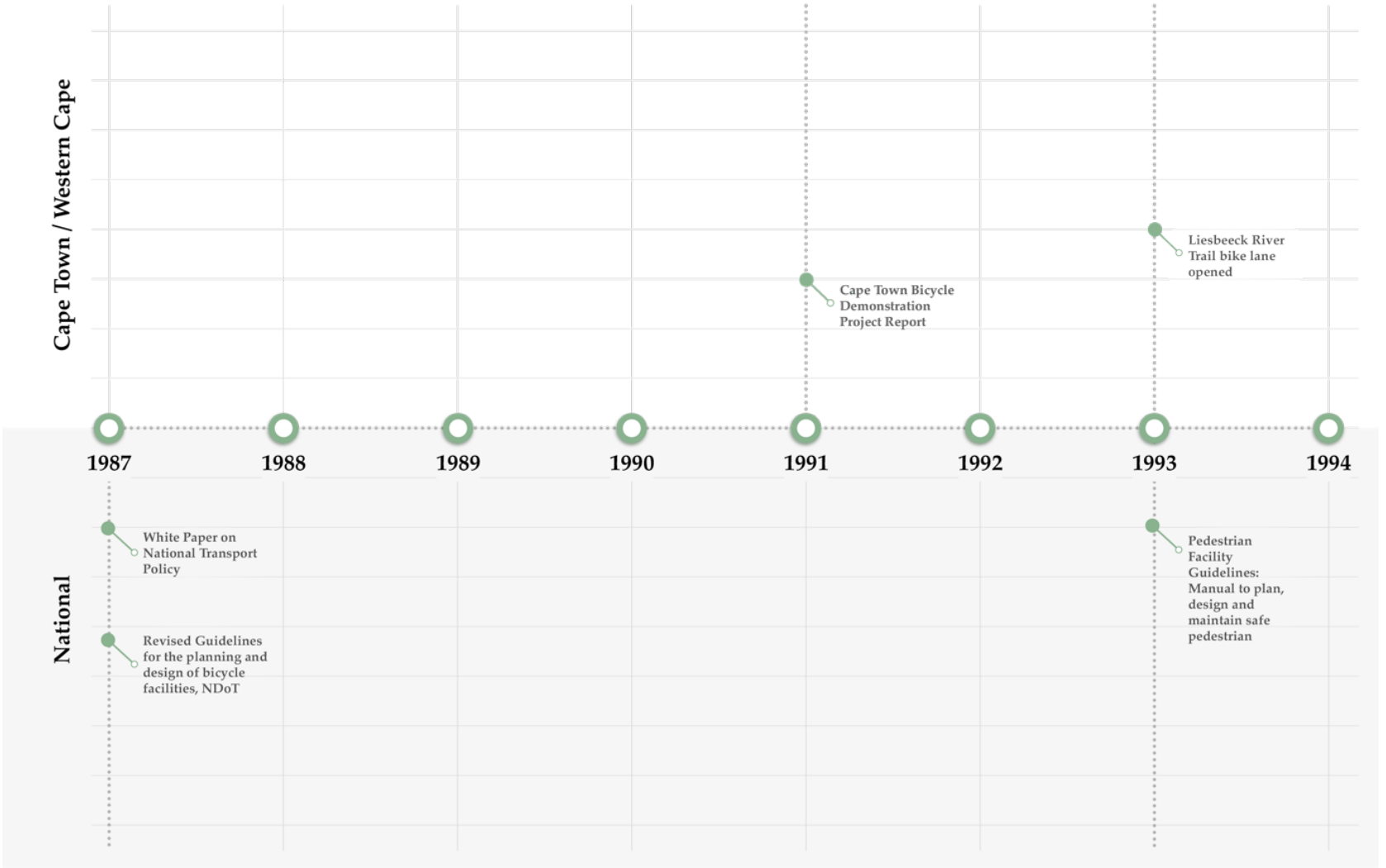

Figure 17: Timeline of key events in bicycle policy, advocacy, implementation, 1980-1993 (part 2).

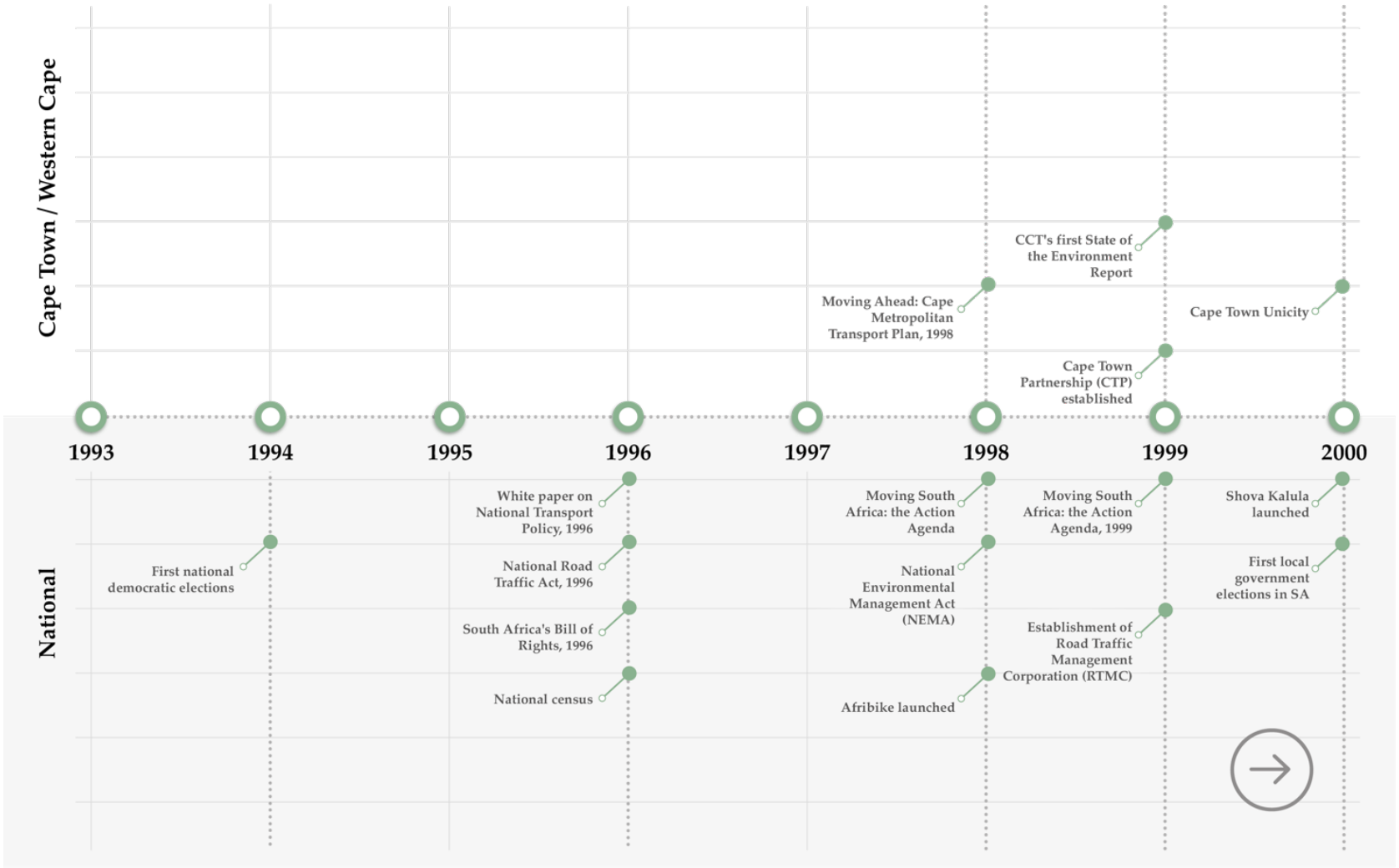

Figure 18: Timeline of key events in bicycle policy, advocacy, implementation, 1994-2007 (part 1).

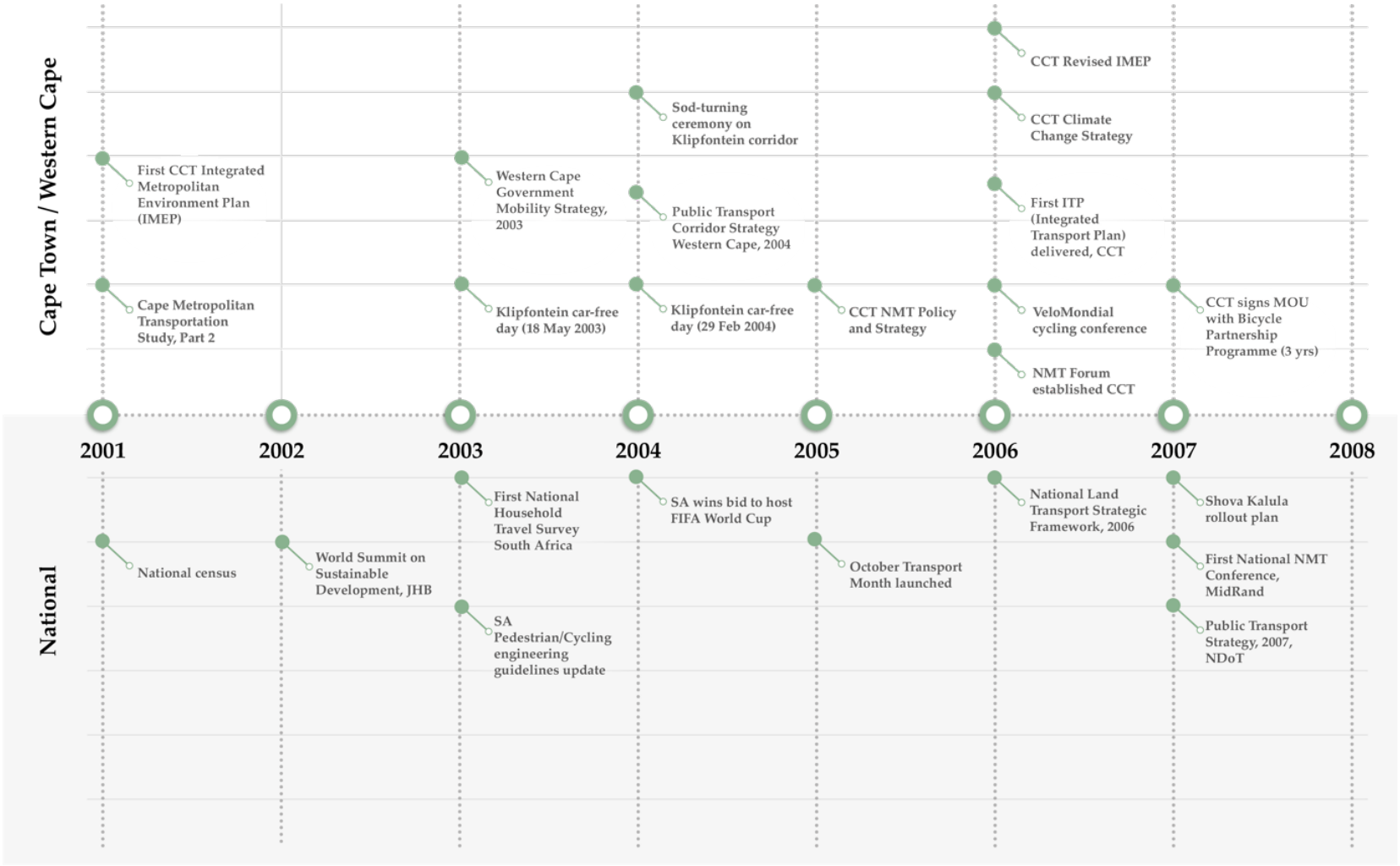

Figure 19: Timeline of key events in bicycle policy, advocacy, implementation, 1994-2007 (part 2)

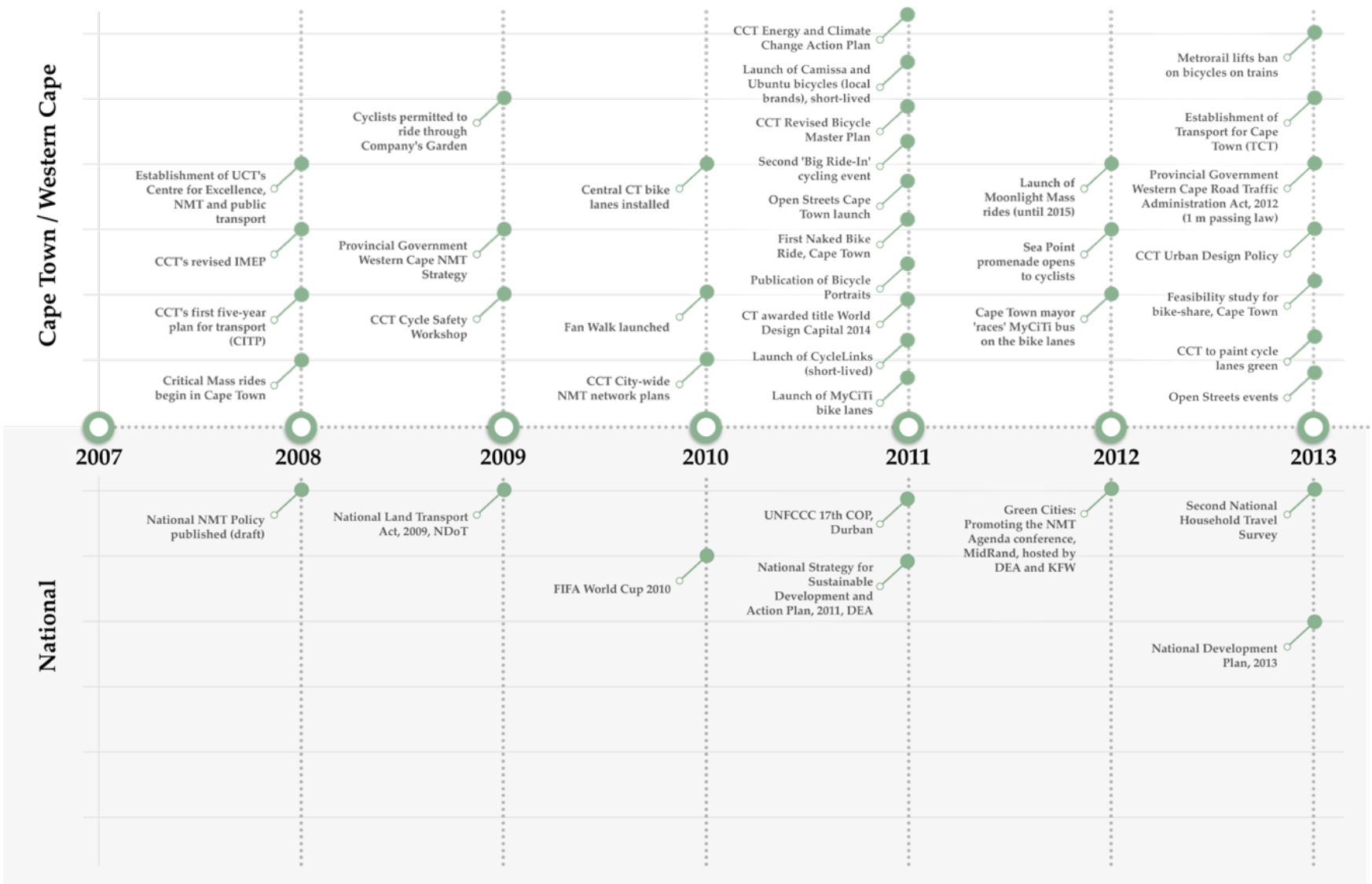

Figure 20: Timeline of key events in bicycle policy, advocacy, and implementation, 2008-2013.

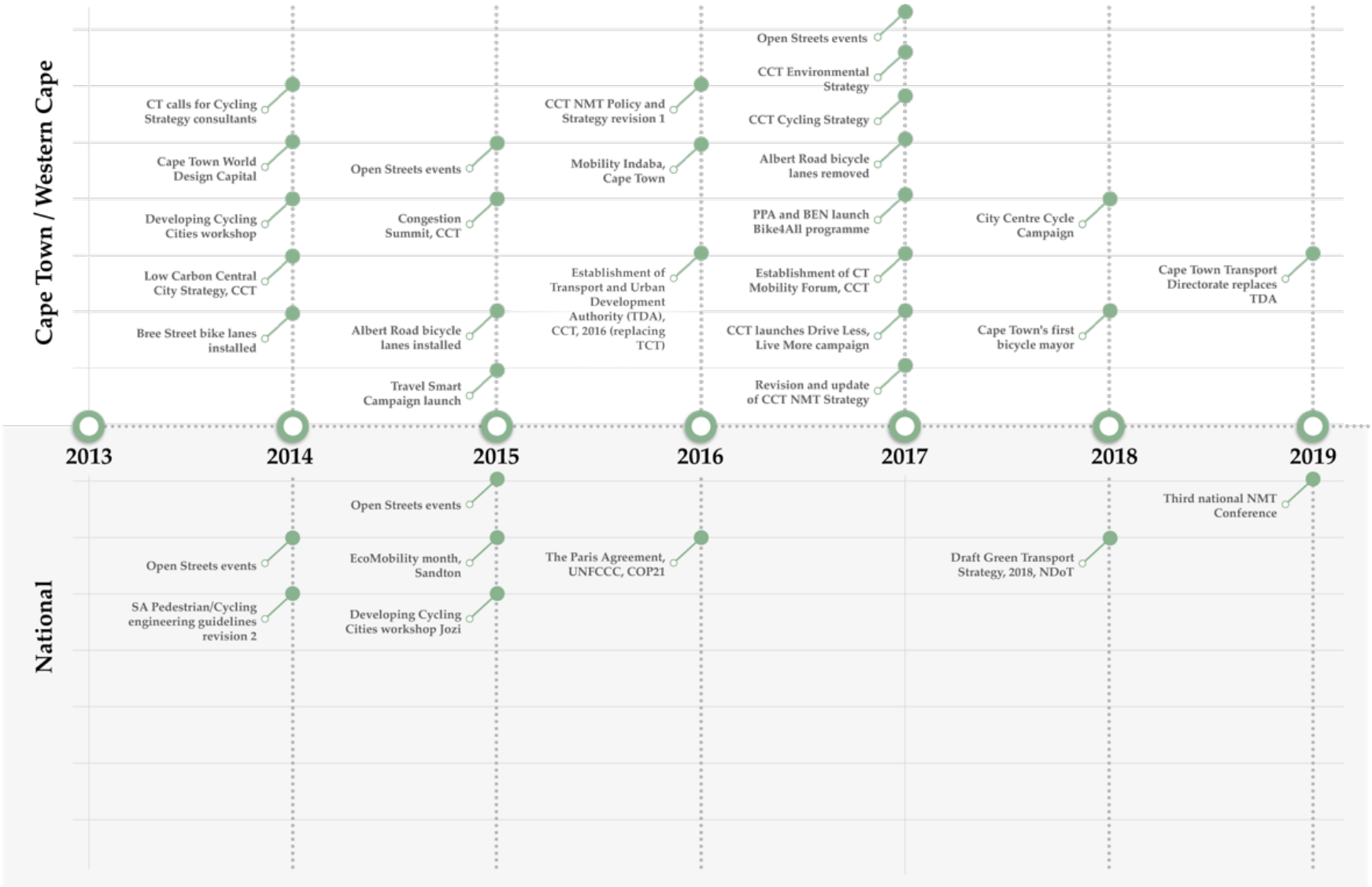

Figure 21: Timeline of key events in bicycle policy, advocacy, and implementation, 2014-2019.

5.3 CONCLUSION

This chapter has presented dataset 1, depicting, in a series of timelines, the key events relating to bicycle policy, activism, infrastructure development, and advocacy, from 1976 to 2019, in South Africa and then in Cape Town and the Western Cape specifically. It constitutes the response to research question 1.

The purpose of this dataset is to identify the critical discourse moments that will be used as the guide to select the advocacy discourse for analysis (dataset 2), which is presented in the next chapter.

6 RESEARCH QUESTION 2: 'LUR[ING] *MOTORISTS FROM PRIVATE VEHICLES*' – ADVOCACY DISCOURSE, 1976-2019

"'We need our residents to take to the streets and to start a cycling revolution,' says Councillor Herron" (Brophy, 2017) [38]

6.1 INTRODUCTION

This chapter presents dataset 1, and draws on the response to research question 1 (see previous chapter) to answer research question 2: *What are the arguments engaged in the public advocacy discourse regarding the value and purpose of bicycle transport, and the reasons individuals 'should' adopt bicycle transport.*

The chapter takes the form of a narrative history of key events and interventions and associated advocacy framing – national, Western Cape, and Cape Town – that relate to bicycle travel. The chapter first considers the national transport and environment context, as described above, before and after 1994 (a year that brought a fundamental shift in policy direction), and then those in Cape Town from 1976 to 2019, divided as outlined in the previous chapter.

The chapter investigates how bicycle mobility is positively described or encouraged in the advocacy discourse: texts setting out the value and purpose of utility cycling, arguing why individuals 'should' ride as transport. This discourse comprises media releases, speeches, policy documents, magazines, newsletters, newspaper articles, reports, and other texts that are largely designed for the cohort under study and that in some way either attempt to persuade individuals to cycle for transport, or argue why bicycle transport should be included in a policy or programme. These texts approximate to what Bacchi describes as practical texts: texts including public policy and public service campaigns 'written for the purpose of offering rules, opinions and advice on how to behave as one should … to constitute the eventual framework of everyday conduct' (Bacchi, 2009, p. 34). I exclude social media commentary because of overwhelming volume, and the relatively recent emergence of the medium.

The majority of quotations are taken from policy, newspaper, magazine, or newsletter texts, referenced by institution (such as CCT, ie, the City of Cape Town) or the name of the journalist or writer. Unless indicated otherwise, names referenced do not refer to speakers.

So to be clear, this chapter does not constitute content analysis (for example, quantifying and comparing the percentage of positive versus negative media coverage about cycling); nor is it

[38] Page numbers are given for quotations taken from policy or journal papers; where quotations are taken from speeches, newspaper articles, media releases, newsletters or magazines, for example, the title is given in the reference rather than the page number.

an example of critical discourse analysis (a detailed examination of individual texts). Specifically, this thesis considers only positive framings of cycling (cycling advocacy), to develop the basis from which to compare this discourse with the interviewee data. Content analysis, a quantitative output, requires a complete dataset. Unlike content-analysis driven research, which usually excludes opinion (because they rarely reflect popular norms, and are less likely to be 'balanced' or 'neutral'), my interest particularly is the 'advocacy' nature of the discourse as published, and its deliberate intention to shift the hegemonic discourse and influence opinion, knowledge, and perceptions. and usually excludes opinion, because these texts rarely reflect popular norms, and are less likely to be 'balanced' or 'neutral'.

6.2 NATIONAL TRANSPORT AND ENVIRONMENTAL PLANNING BEFORE 1994

Little attention was paid to transport planning and user needs in South African policy and legislation before 1994. The emphasis was on regulating those who wished to provide public passenger transport services (Jennings and Browning, 2013). The focus was on the vehicle rather than the user (Kane, 2006); until 1990, transport policy largely focused on what Pirie describes as 'dismantling bus apartheid' (Pirie, 1990) and deregulating public transport, with a variety of commissions set to resolve concerns about road traffic congestion and public passenger transport. Bicycle transport was not a major concern.

Likewise, pre-1994, environmental policy was largely driven by conservation lobby organizations and small groups of 'technical' experts – public participation was 'limited to information distribution' (Rossouw and Wiseman, 2004). Like with transport policy, democracy ushered in a new environmental discourse, around justice, rights, and socio-economic issues (Rossouw and Wiseman, 2004).

In South African cities as elsewhere, the growth of private car ownership after the Second World War began to create traffic congestion. In South Africa the response took the form of the 1972-1974 'Commission of Inquiry into Urban Transport Facilities in the Republic' (known as the Driessen Commission) (Jennings and Browning, 2013). The Driessen Commission report led to the Urban Transport Act of 1977 (NDoT, 1977), an Act that required that the 'core city' of each metropolitan transport area prepare an Interim Transport Plan every year, and submit it to the Department of Transport.

Bicycle transport was excluded from the Urban Transport Act – 'in all … the speeches and discussions held at the Driessen Commission, no mention [was] made of cycle paths or the use of cycling' (Mylrea, 1976).

6.3 NATIONAL TRANSPORT AND ENVIRONMENTAL PLANNING AFTER 1994

The Reconstruction and Development Programme of 1994 'argued for the need to break down apartheid geography through more compact cities and good public transport', redressing imbalances in infrastructure, transport, and basic services, and promoting access to employment opportunities and urban resources (Watson, 2001). This was to influence the way in which bicycle and pedestrian transport was viewed in transport policy.

In 1996, the White Paper on National Transport Policy (NDoT, 1996) did not mention NMT, but focused on developing inter-modal transport facilities and creating an environment that was conducive to the empowerment of customers and which would enable transport service providers to improve on efficiency, productivity, and competitiveness. Moving South Africa (NDoT, 1999b) focused on spatial inefficiencies and public transport's poor financial viability, and the follow up document, the 1999 Action Agenda (NDoT, 1999b), set out to use transport to meet pressing national and social objectives, in a sustainable way.

One of the outcomes of this policy direction was the 2007 Public Transport Action Plan (NDoT, 2007a). The role of cycling as a sustainable, equitable intervention, able to increase urban as well as rural access, now appears in South Africa's national policy statements from this Action Plan onward[39]. The societal and individual benefits of cycling are variously described in this discourse as able to alleviate policy and social exclusion, improve local access, reduce travel costs, and contribute toward a healthier lifestyle and public health, sustainable livelihoods, climate mitigation, emissions reductions, and other environmental benefits.

The Action Plan[40] regarded NMT primarily as a feeder mode to public transport (the proposed new Bus Rapid Transport, or BRT, services), and framed bicycles – as taxis and rental schemes for tourists – as able to offer job-creation opportunities. The Action Plan proposed the free distribution of bicycles to captive users with which to access public transport' (Jennings, 2016). BRT was to catalyze interest in the concept of NMT, as scope of works (SoWs) for BRT services included requirements for NMT consultants, the design of NMT infrastructure within catchment areas of the bus stations, and other associated facilities such as bicycle parking[41].

[39] Such as the NMT Policy (NDoT, 2008), the National Strategy for Sustainable Development and Action Plan 2011–2014 (DEA, 2011); the National Development Plan (Ch 5, Transition to a Low-Carbon Economy) (NPC, 2013), and the National Integrated Urban Development Framework (RSA, 2016; Jennings, 2021b).

[40] The Action Plan was to play a role in scuppering the full scale of Cape Town's Klipfontein corridor project, which provincial government was to deem 'unrealistic'; instead, the new proposed Cape Town BRT, MyCiTi, was sold as the new 'radical plan to ease traffic congestion'. This BRT, too, would include walking and cycling facilities (Ndenze, 2008).

[41] The Public Transport Strategy also described BRT as 'the mobility wave of the future and … the only viable option that can ensure sustainable, equitable and uncongested mobility in liveable cities…' (NDoT, 2007a).

South Africa's first post-1994 bicycle programmes, such as Afribike[42], were aimed at captive users, not choice cyclists, and primarily intended to relieve poverty. The National Department of Transport's own bicycle project, Shova Kalula, was founded in 2000 ahead of the Johannesburg-hosted World Summit for Sustainable Development (WSSD) in 2002. Shova Kalula intended to 'promote the use of bicycles as an alternative mode of transport especially for people in remote and resource-poor areas of South Africa' improve mobility and access to basic needs as well as social and economic opportunities for people especially in rural, remote and poorly resourced areas' (Radebe, 2007)[43]. Rural women, girls, and learners who walked long distances to school, were major target groups (Jennings, 2018, 2021a, 2021b). In 2002 in Cape Town, the Bicycling Empowerment Network (BEN)[44] was established to 'address poverty and mobility… providing access to opportunities through the use of a bicycle – giving hope and a step up to those who need it most.'

Cycling continued to be framed as primarily a mode for the poor. By 2003, the National Department of Transport had updated its 1987 (NDoT, 1987) and 1993 (NDoT, 1993) design guidelines, referencing the concern that 'pedestrians and cyclists are [still] the most vulnerable road user group.' The 2003 guidelines were intended to, among other reasons, pay greater attention to cycling: 'Although previously neglected in South Africa, bicycle transport is becoming more popular, [and] … provision of 'adequate bicycle facilities can be of great benefit to poor people – both rural and urban' (NDoT, 2003, p. 1). Poor safety, high cost, and 'lack of awareness of the advantages of cycling' were cited as barriers to increased use.

A further revision of the guidelines was undertaken in 2014, the main purpose of which was to 'provide guidance on the planning and design for safe pedestrian, bicycle, and other alternative low carbon modes of transport … to improve the physical environment and safety of NMT users' (NDoT, 2014, p. 13). Although cycling was described as 'low-carbon', the Guidelines situated themselves within the emerging transport justice, equity, and accessibility narrative, aiming to 'to improve the lives of all, a goal that is directly connected to the eight Millennium Development Goals (MDGs) … Access to food, education, health care and social activities is a direct consequence of improved NMT facilities' (NDoT, 2014, p. 1).

'Solitary drivers' came into the sights of national transport policy in 2005, with the national department announcing the introduction of a Passenger Car Trip Reduction Programme. Alternatives to single-occupant private car use were proposed as walking, cycling, and public

[42] Afribike was founded in 1998 as an NGO funded by the Danish Development Agency and the United Nations Development Programme (UNDP) (Cox, 2010).

[43] Quotations from interviewees are in italics and single inverted commas; quotations from the literature or advocacy discourses are in single inverted commas only.

[44] www.benbicycles.org.za, with support from Dutch funders.

transport (Adams, 2005). South Africa's 'first-ever' Non-Motorised[45] and Intermediate Means of Transport Conference and Exhibition, in February 2007[46] (NDoT, 2007b) linked cycling to 'alternative', 'affordable', 'healthy', and 'sustainable' ways to eradicate poverty, improve lives, and uplift people: the theme of the conference was 'Expanding the boundaries of non-motorised and intermediate means of transport for sustainable livelihoods'. Cities elsewhere in the world were prioritizing NMT, said the then Minister of Transport, Jeff Radebe, in launching the conference, 'as alternative interventions to address congestion, over-reliance on fossil fuel and also to create an economically, environmentally sustainable and healthy environment' (Radebe, 2007). In South Africa, NMT was not yet seen in terms of congestion mitigation, but slated instead 'to play a key role to improve accessibility and mobility especially in the poorly serviced areas' (Cokayne, 2007).

Poverty alleviation, health and lifestyle benefits for individuals, as well as energy and environmental conservation, were the cornerstones of South Africa's first draft national NMT Policy, which aimed to reverse the challenges of apartheid-era accessibility and mobility (NDoT, 2008): '… this NMT Policy is one of the Department of Transport's interventions towards reversing challenges of accessibility and mobility … and eventually putting NMT where it belongs, ie, as a recognised mode of transport.' The Policy describes cycling as 'a necessary mode of transport for the poor who can afford nothing else besides the other alternative, which is to walk' (NDoT, 2008, p. 3) and intended meet the 'mobility needs and improv[ing] the quality of life of marginalized peoples', using NMT to 'bridge the economic and social gaps between … first and second economies … ensure that cycling as transport plays a role in economic development and poverty alleviation' (NDoT, 2008, p. 3).

NMT is described positively throughout the draft Policy: as healthy, non-polluting, versatile, affordable, accessible, and reliable, NMT modes 'encourage local movement and hence support local community facilities' and deliver 'significant potential economic and environmental benefits to society.' The draft acknowledges that bicycle transport could attract the car-owner, describing the bicycle as a 'silent', 'economical' [fuel-saving], 'discreet' vehicle that is, 'above all ... faster than a car over short distances' (NDoT, 2008, p. 33). This narrative gains traction in Cape Town policies across the next decade, where bicycles are viewed as 'green', low-carbon, sustainable, non-polluting, healthy, climate-mitigating, fuel-saving, and parking and congestion-reducing vehicles.

At provincial government level, the Western Cape developed an NMT Strategy a year later, in 2009, to 'redress past imbalances', and 'inequity in urban development and transport provision' (PGWC, 2009a, p. 1).

[45] Official spelling conventions in SA use 's', although I use 'z' elsewhere in this thesis.

[46] 22 to 23 February 2007, in Midrand, Gauteng.

In South Africa's submission in term of the 2016 Paris Agreement[47], a priority was to eliminate poverty and eradicate inequality, in line with global trends; actions identified to do so include increased public transport use and shifts to bicycle travel (DEA, 2004, 2005, 2008, 2011; Jennings, 2021b).

In 2017, the national Green Transport Policy (NDoT, 2017) primarily framed cycling as an alternative to driving (ie, envisioned as an intervention for the relatively wealthy). The Strategy made no mention of poverty alleviation and spatial justice as a benefit of cycling, but regarded it as a 'low carbon climate resilient' and 'sustainable' mode (NDoT, 2017). Cycling's 'spatial footprint' was said to compare favourably to that of 'the private car'. Both walking and cycling were described as 'eco-mobile' or 'carbon-neutral' modes (NDoT, 2017, p. 19).

South Africa's draft NMT policy was never finalized, but instead NMT was incorporated into the Roads Policy of 2018 (NDoT, 2018). The Roads Policy noted that transport has traditionally 'been planned around the private vehicle user' and that 'NMT is a viable and sustainable alternative to the use of private vehicles… with many health and economic benefits, but the fact that it has zero carbon emissions aligns well with the global call for climate change' (NDoT, 2018, p. 137). The focus was primarily on pedestrian needs.

6.4 CAPE TOWN 1976-1979: EARLY ACTIVISM AND UNINTENDED OUTCOMES

'Be a liter-beater and go by bike' (Staff writer, 1978)

The cost of petrol 'fuelled' early bicycle policy and planning, which was on the agenda of the Cape Town City Council[48] in the 1970s, catalyzed by bicycle activist officials and elected councillors, and a campaign by engineer Bill Mylrea.

Mylrea, together with activists Eric Wale, Louis de Waal, Koos Slabber, and John Stegmann, on 15 December 1976 had filed a petition with the Cape Town municipality calling for safe cycling paths, and together with former mayor of Cape Town GE Ferry, Mylrea was at the forefront of the 'spate' of correspondence continuing to call for such cycle paths (Staff writer, 1976b). Cycling was clearly envisaged as a means of travel for people who would usually drive to work, in response to high fuel costs and to mitigate air pollution. The mayor of Cape Town, Frank van der Velde, himself cycled to work: 'he cycles and encourages his employees to cycle … saving minutes of precious time that up to hours every week (Chisholm, 1976). Mylrea proposed that cycles were the answer to the urban transport problem (Mylrea, 1976) – offering the convenience of door-to-door, saving fuel and reducing pollution, answering parking problems, offering exercise and the opportunity for local economic development:.

[47] http://cait.wri.org/indc/#/profile/South%20Africa.

[48] Cape Town City Council, in the 1970s, was one of many Cape Town municipal councils within the Regional Services Council.

The press agreed, and reported that 'in an age of soaring costs – of fuel, vehicle licences, car prices, insurance and so on – the pedal-cycle has become an increasingly attractive proposition' (Staff writer, 1976b). 'Office workers could have much needed exercise, and save on petrol!', and more bicycles would be good for the economy and commuters (Staff writer, 1976e). Cycle tracks, as they tended to be referred to, would 'ease traffic congestion and pollution' (Staff writer, 1976c; Staff writer 1977a).

The Cape Times, Tuesday, February 8, 1977

Call for bicycle lanes

ALL OF 2 727 enthusiastic bicycle riders have asked the Cape Town City Council for a network of bicycle lanes in the greater Cape Town area.

The request came in the form of a petition presented to the council's Utilities and Works Committee yesterday by the Mayor, Mr John Tyers.

The man behind it all is Cape Town artist Eric Wale.

The petition says that the extensive freeway programme on which bicycles are banned has entirely ignored the needs of cyclists who use their machines for essential transport and recreation.

The signatories believe it is essential that cycle tracks or lanes are provided for convenience and safety.

Mr Wale, who rediscovered bicycles when he was 55, says the areas round schools deserve special priority.

Because of congestion on the roads many parents believed it was not safe for their children to cycle to school so they took them to school by car, aggravating the congestion and making it even more unsafe for cyclists.

The Utilities and Works Committee has asked the City Engineer, Mr J G Brand, for a report on cycle lanes.

Eric Wale

Figure 22: Call for bicycle lanes, Cape Times, 1977, with photograph of petitioner Eric Wale.

The opportunity for 'pedal power' to serve as a vehicle for social inclusion, in the midst of apartheid, was not on the table: in one example, a 'pedal power' rally held in November 1976 in Cape Town was explicitly 'for whites only' (Staff writer, 1976d).

Mylrea's petition – signed by 2 727 people – was to be put before the City Council's Utilities and Works Committee in February 1977 (Staff writer, 1976a). The petition stated that: 'We believe it is essential that cycle tracks be provided for reasons of convenience and safety from dormitory suburbs to industrial areas, to schools, and particularly in the development of Mitchel's plan' (Staff writer, 1977a). This 'deputation' of petitioners was told that 'municipal funds were severely limited, and because the municipality [was] unaware of the existence of cyclists it could not justify expenditure on facilities that would not be utilized.' In response, Mylrea suggested [the formation of] a club to band together cyclists interested in cycling for transportation and recreation; having done that, that the club should again petition local authorities to provide safe and enjoyable facilities for cyclists' (Stegmann, 2006, p. 1).

By March 1977 such a cycling 'club' had been formed: the Western Province Pedal Power Association (WPPPA), with the objective of promoting cycling for recreation and transportation and demonstrating to Council 'that cyclists would appear if they were given safe, traffic-free roads to ride on' (Stegmann, 2006, p. 2).

Under the WPPA's auspices, on 5 September 1977, Stegmann and Mylrea organized what they called the 'Big Ride-In', to further demonstrate that such cyclists would appear: the event attracted more than 300 cyclists, including the then Mayor of Cape Town, Frank van der Velde. The Big Ride-In comprised five 'cycle trips' that began outside Cape Town on different routes, and finished at the Grand Parade – 'whereupon the mayor John Tyers addressed the group and lead a procession through the centre of town' (Staff writer, 1977c). Known as the 'cycling councillor', van der Velde said that 'in these times of increasing fuel prices and air pollution, cycling to work is a good idea, and the best way to encourage is by example…' (Staff writer, 1977b). In response, in 1977 Cape Town's Municipal Council set up a Bicycle Study Group to 'make specific proposals for the commencement of the provision of bicycle facilities (bicycle paths, bicycle lock-ups and traffic controls)' (Stegmann, 2006).

The next year, 1978, the ride – initially called the Peninsula Marathon – morphed into the 'Argus Cycle tour', sponsored by the *Argus* newspaper. The race attracted 500 cyclists and subsequently became one of Cape Town's greatest sports attractions[49]. The numbers weren't quite what was hoped for: WPPA had indicated that while 'council said there are only 6 000 registered cycles, and therefore it is not worth the trouble, if we can get 20 000 cyclists to turn out, we'd be able to say, 'they may not be registered, but here they are' (Niehaus, 1977). Nevertheless, cycling was clearly been conceptualized within the advocacy and policy narrative as an alternative mode of transport for drivers – not only sport (Robinson, 1978) – and 'one of the healthiest and most economic forms of transport yet devised'.

The press was again paying attention to bicycles during the 1979 fuel crisis, noting that 'the South African bicycle trade [was] expecting an upsurge in sales as petrol prices continue to rise, and the threat of rationing increases' (Staff writer, 1979b). 'Petrol rationing is almost inevitable,' and 'bicycles are becoming more important by the day '(Staff writer, 1979a). A letter-writer proposed: 'Be a liter-beater and go by bike' (Staff writer, 1978). Yet despite the 'possibility of fuel rationing' the City [still] 'does not help the cyclist' said Mylrea (Mylrea, 1979) – and 'instead of building bicycle lanes, increases licence fees' (Robinson, 1979).

In 1979, as a result of the Bicycle Study Group, above, funding was approved over three years for a 'network of bicycle paths', which constituted Cape Town's first Bicycle Master Plan (essentially, a map of proposed infrastructure). Very little of that scheme was built, though, and just over two years later 'the municipality abandoned it in favour of the 1982 Metropolitan Traffic Plan' (Stegmann, 2006, p. 3). The WPPPA subsequently switched its focus to promote competitive cycling, and much of the momentum around commuter cycling was lost.

[49] With some 40 000 entrants.

The City had been rather slow in developing facilities[50] – van der Velde noted in 1979 that he had been waiting for more than 18 months for the report from the City engineer's department on what could be done to improve facilities for cyclists (Robinson, 1979). 'Rondebosch schools were dismantling their bicycle sheds as parents, sensing the danger to their children on bicycles, opted to rather drive them to school. In doing so, of course they added to traffic congestion and subtly put out the message that the upwardly mobile had no use for bicycles.'

6.4.1 Summary

This early period of bicycle advocacy can be summarized as a call for bicycle infrastructure from middle-class private car users (the cohort under study for this research), motivated by the increasing cost of fuel and traffic congestion, who wished to cycle safely to work and who had highly visible and high-status role models who used this mode. I begin the next period with Cape Town's second bicycle master plan, and end with the publication of the first revision of South Africa's bicycle facility infrastructure guidelines.

6.5 CAPE TOWN 1980-1993: MASTER PLANNING AND GUIDELINES

'Bike it you'll like it. Stretch your legs and your rand at the same time.' (PPA, 1982)

Master plans, demonstration projects, and infrastructure guidelines, were dominant features of the 1980s – with the country's first classification of bicycle paths, as well as recognized signs, road markings, and traffic signals, in the form of the Department of Transport's first 'Manual on Guidelines for Bicycle Facility planning' (NDoT, 1983).

What was known as Cape Town's second Bicycle Masterplan appeared as Volume 8, Minor Transport Systems, in the 1980-1985 Cape Metropolitan Transport Plan, motivated by Cape Town's growing population, decreasing wealth, and a high fuel price (Garrod, 2006, p. 2). These 'minor' modes of walking and cycling, as they were referred to, were envisioned as able to play an important role in the overall movement in the city. This early masterplan used terminology that would only again emerge in the 2000s, and aimed to 'improve the mobility of the transport disadvantaged', conserve energy resources, and keep the real cost of transportation to a minimum (Garrod, 2006). The transport disadvantaged were then conceptualized as 'the young, the old, the infirm, the handicapped, and the poor.'

In terms of the Plan, in 1981 Council appointed Hawkins Hawkins & Osborn (HHO) to design a Bicycle Demonstration Project – a network of bicycle paths in Rondebosch, Newlands and Claremont mainly for schools, and 13 km of bicycle paths along what was then named

[50] Thirty years later, one of the WPPA founders was to concede that the Ride-In was a 'dismal failure', in that the pace of cycle lane construction has continued to be slow.

Lansdowne Road for adult commuters (Hawkins Hawkins & Osborne, 1991). In that same year, the Green and Sea Point Ratepayers and Residents Association asked for cycle lanes in their area too, citing low-cost solutions to fuel and congestion concerns (Staff writer, 1981).

Figure 23: In 1982, bicycle lockers were available at stations in the Southern Suburbs as well as in the Cape Flats. In the Southern Suburbs, these lockers were in 'constant use' (PPA, 1982).

Bicycle travel continued to be encouraged by a letter-writing campaign, as 'the most effective form of transport known: 'Bicycles don't pollute the air, need much road or parking space and don't make noise. They provide the exercise and enjoyment needed for healthy living' (Reynolds, 1983).

The Bicycle Demonstration Project was completed by 1985, and a final report delivered in 1991. In 1985 the project was awarded the Excellence in Civil Engineering Award by the SA Institute of Civil Engineers, 'chosen for its pioneering research a field in which there were no definitive guidelines on safety (Staff writer, 1986).

The success of this Project was said to be instrumental in Cape Town's Municipal Transport Planning's development of a bicycle path network in all the 12 municipalities of Cape Town at the time. 'The benefits are multi-faceted, including reduced road congestion, lower traffic pollution, and health factors' (Editor, 1988). The bicycle lane project was 'almost an incentive' for columnist John Scott to 'take up cycling again', as bicycles are 'entirely noiseless, and consume no fuel' (Scott, 1988). If cycling were to take off, it could save South Africa 50 million in foreign exchange, suggested de Waal, and building bicycle lanes a significantly better use of rates and taxes (Scott, 1988).

Toward the end of 1993, as part of the Greening of the City project, the Liesbeeck River Trail was opened. The City Engineer's Greening of the City Report (CMC, 1982) has been adopted by Council in 1984, and finally the Trail was linked with the bicycle paths that formed the Demonstration Project network.

6.5.1 Summary

The 1980s and early 1990s was typical of the pre-1994 policy and advocacy environment, in that the bulk of policy focused on motorized transport, and advocacy was led by a middle-income cohort for their own cycling needs. Where disadvantage or vulnerability were considered, these were understood to be relevant to children or the elderly. Narratives continued to focus on fuel saving, although the role of bicycles in a global economy, and their potential positive urban spatial impact, were noted in a few texts. Air quality and pollution ('fumes') were the environmental concerns. The next decade would see a shift in policy approaches, and a focus on cycling as a way to redress the inequity of the past. South Africa's re-emergence into the global arena would influence advocacy discourses too.

6.6 CAPE TOWN 1994-2007: PLANS, DREAMS, AND JUSTICE

'Swap Old Smokey for a set of bicycle wheels' (IOL, 2004)

Social justice, social cohesion, transport equity, and transport integration, were the dominant narratives of the 'new' South Africa, replacing the fuel-saving and congestion-mitigation focus of the 1970s and 1980s. The target audiences of bicycle interventions were also no longer those who drove, but those who had little access to motorized transport or private cars[51]. Bicycle infrastructure was a 'by-product' of the City's interest in early versions of high-quality public-funded transport services, in this instance the Klipfontein Corridor, and the City and Province themselves drove an advocacy narrative around car-free days and social justice, and urban mobility linked to the FIFA World Cup 2010.

In 1998 the Cape Metropolitan Council developed a new strategy for passenger transport, known as Moving Ahead (CMC, 1998), and in 2003, the Provincial Government for the Western Cape (PGWC) and the City of Cape Town[52] together developed a 'new vision for public transport', the Mobility Strategy (CCT, 2003a). Its goal was to transform and restructure public transport in what was then named the Cape Metropolitan Area (CMA); the Strategy included a desire to integrate bicycle and pedestrian travel with public transport (Frieslaar, 2006), and that 'by the year 2020, the City of Cape Town will have a safe, integrated, equitable,

[51] … although the narratives continued to conflate choice and captive users – a conflict that is investigated in (Jennings, 2021b).

[52] Known as the City of Cape Town since the amalgamation of subcouncils in the Cape Town area in 2000 into what became known as the Unicity.

affordable and sustainable transport system with frequent seamless journeys for all.' The Mobility Strategy intended to 'facilitate the transformation and restructuring process of the current private car-oriented transport system and implement a new model', focusing on 'putting public transport, people and quality of life first', and 'to ensure that access and mobility needs of all citizens, visitors, goods and services are well managed, delivered and met in a socially just, equitable and sustainable manner.' A core concept was that of public transport corridors, with Phase 1, the Klipfontein Road to Khayelitsha Corridor, and the encouragement of public transport and NMT 'over the use of the private car'. A pedestrian and cycle network were to run the length of the corridor, with bicycle storage facilities at key locations. The Strategy deployed many of the narratives that would later become central to bicycle activism: social inclusion, streets for people, accessibility, public space enhancement, and urban regeneration.

To publicize the public transport corridor concept, the first of three car-free days was held in Klipfontein in February 2003. It intended to 'bring different communities of the city together … [to enable people to] experience a stress-free day on this road without any screeching of brakes and hooting of impatient motorists.' The 'vehicle-free day' was further intended to demonstrate 'alternatives to using private vehicles' (Thiel, 2003). Improving air quality, reducing smog, and 'cleaner air' were slated as benefits of the corridor intervention. Tasneem Essop, the then Transport Minister (MEC) for the Provincial Government, said that 'the idea [is that] people can be aware that there are other ways of getting around… They can walk or cycle and they don't need to use their cars' (Williams, 2003). Where much of the press referred to a car-free day (despite the event taking place in an area where public transport was the norm), the use of 'vehicle-free' day in City publicity is notable (CCT, 2003b).

The second car-free day, in February 2004, invited people to 'swap Old Smokey for a set of bicycle wheels' and 'forget about driving a car down Klipfontein Road' (IOL, 2004). The car-free Sunday saw the 'usual mad traffic rush' replaced for a day. Framed by Essop, above, as a 'whole day of freedom', it was also an event to 'build[ing] cohesion among communities. …We believe that cycling can play a huge role in the lives of lower income groups – this includes saving on transport costs and improving health. In addition, it will ease congestion on the province's roads (Staff writer, 2004). If NMT was to take off, then construction efforts would enable the Western Cape to keep its promise to 'create jobs' – said the then Finance and Economic Affairs Minister (MEC) Ebrahim Rasool (Kemp, 2004). Further, the car-free day showed that 'people can live in peace next to each other' (Thiel, 2004).

Cape Town Partnership's[53]' planning for a 24-hour city saw bicycle networks as central to the economic renewal and sustainability of Cape Town's central city: 'to limit the number of cars

[53] The Cape Town Partnership, 1999-2017, was a Section 21 public-private partnership to develop and manage central Cape Town.

in the centre and to promote cycling' (Phillip, 2004). Cycling as a mode of transport had already been among the 'energy strategies' presented to Cape Town decision makers in 2003 (targeting single-occupant vehicle drivers). The *Cape Times* framed the City's strategies as air quality interventions primarily: 'if the City of Cape Town had its way, we would all be on our bicycles in an attempt to become lean, mean pedalling machines … and clean up the city smog at the same time…' (Dreyer, 2003). Cape Town's 2006 Energy and Climate Change Strategy (CCT, 2006b) followed Cape Town's involvement in the 2002 WSSD, and was one of Cape Town's contributions to the Johannesburg Plan of Implementation. Noting that 'the transport sector [was] responsible for more than half of the total energy use in Cape Town (54%) and account[ed] for approximately a third of Cape Town's total carbon dioxide emissions', planned interventions were to promote bicycle transport and upgrade cycle routes[54]. A low-carbon future was also one of the pillars of 'Moving Mountains', the City's Energy and Climate Change Action Plan (CCT, 2011e), developed as input into COP 17 (the 17th session of the Conference of Parties) hosted in Durban. Objective Five was to develop a more sustainable transport system and promote NMT as a way to 'help reduce single-occupancy vehicle use.' (CCT, 2011e, p. 28). At this point, the Klipfontein corridor, the inner city, and MyCiTi phase 1 were regarded as primary interventions.

Cycling among car-owners was explicitly encouraged by, for example, Jeff Radebe, the then national Minister of Transport: car-free days were a way of 'encouraging drivers not to drive alone [ie, single-occupant vehicles]', and to walk or cycle instead as 'part of a healthy lifestyle' (Mopp, 2005). Leaving 'your car' at home would also be healthier and cheaper (Johannes, 2005). Cycling could mitigate, for individuals, the challenges of road congestion, and solve one of the City's problems at the same time: 'if you are tired of rush hour', 'you could leave your car in the garage tomorrow and pedal your way to work for Bike To Work Day, organized by Pedal Power because they believe that bicycles hold the potential to ease the city's growing traffic burden' (Bucher, 2007).

[54] The connection between transport and climate was on the table at the WSSD in Johannesburg, in 2002, and furthered at the 17th Conference of the Parties (COP17) of the UNFCCC in 2011 in eThekwini. Launching the conference bicycle-share programme, the 2011 Minister of Transport Sibusiso Ndebele praised cyclists for 'demonstrating the urgency of the change we need to make, for the sake of our future' (Ndebele, 2011; Jennings, 2021a). Ndebele saw the cycling programme as evidence of 'South Africa's commitment towards reducing GHG emissions …[and] a priority intervention to promote access and mobility over private car use.'

Figure 24: Pedal Power Association 'urges all cyclists to use their bikes instead of their cars' in a poster for Bike to Work day, 2005. 'If we want to make a difference to bicycle facilities in Cape Town, we need to be seen on the road. Cycling is also a wonderful way to keep fit, so you don't have to find extra time to train in a busy day' (PPA, 2005).

Cape Town's first Non-Motorized Transport (NMT) Policy and Strategy, published in 2005 (CCT, 2005), on the other hand, focused primarily on the role of bicycles in poverty alleviation and redressing spatial inequity. The Policy acted as a catalyst for the construction of the first Klipfontein Road Corridor NMT projects in 2008 and the development of the City-Wide NMT Network Plans in 2009 and revised in 2014 (CCT, 2014a), a revised Bicycle Masterplan (CCT, 2011b), and a Universal Access Policy for the City of Cape Town (2014) (CCT, 2017c).

Written during a period of renewed bicycle activism globally as well as locally, the Policy drew from global narratives and was drafted by consultants who were early policy advocates of walking and cycling. Benefits of cycling, according to the Policy, include the following:

- 'NMT is more affordable than motorized traffic owing to reduced operating cost and the savings in parking fees. In congested urban areas it can also result in time savings.
- 'Increased NMT usage accompanied by traffic congestion reduction can result in improved mobility for non-drivers such as young people and the elderly.
- 'NMT is an independent form of public transport and facilitates low-cost mobility to the poorer communities.'

The press reported that this NMT plan, as they called the 2005 Policy and Strategy, would 'undo a city that has been built for cars', and focus on improving movement of cyclists

'commuting into town for work' (Powell, 2004). The focus was on 'lower income areas where mobility is currently restricted'.

The Policy noted that 'access for all citizens … is becoming more problematic and is fundamentally a result of inequity on various levels.' Its vision was to contribute toward improved access by 'increas[ing] cycling and encourage[ing] walking by creating a safe and pleasant bicycle and pedestrian network of paths...' A secondary objective was to 'effect social and economic empowerment through improved low-cost mobility' (CCT, 2005, p. 1). NMT was described as having environmental benefits, increased liveability, improved health, economic gains, and transportation benefits, able to confer socio-economic empowerment, support social and economic transformation, and ensure a fairer share of the available public space. The interventions proposed would not only legitimize NMT as a mode of travel, but also 'elicit more responsible NMT behaviour'. Environmental sustainability was described in terms of high transport energy consumption and long commutes (not so much by private car owners but by users of public transport, travelling from the outskirts of the city): 'Long commutes also require longer days away from home, [and] less productive time, which decreases quality of life, primarily for the poor' (CCT, 2005, p. 11).

Figure 25: Global warming becomes part of the environmental narrative, in addition to the usual fuel-price concern. Cartoon by Dr Jack, 2005.

The environmental narrative was, at the same time, starting to become more specific, with climate change and resilience as challenges, rather than the air quality, smog, pollution of earlier narratives. Bicycle travel was one way of cultivating resilience (CCT, 2006e).

Rather optimistically, the City reported that 'increasing traffic jams and fluctuating fuel prices' are encouraging thousands to turn to pedal power (CCT, 2006d). This perhaps to support Cape Town's hosting of international bicycle planning conference Velo Mondial in 2006. Cape Town's 'solid [NMT] policy' was to win the City 'gold status award' at the conference that March, and a conference closing declaration committed Cape Town and the Western Province to a 'course of action to address NMT planning' (CCT, 2006f).

'When it comes to cycling as transport, Cape Town is certainly not there yet, but it does have a solid policy in place' (CCT, 2006a), said conference convenors. Maddie Mazaza, the City's then director of Transport, said the City was 'working on awareness programmes to show that cycling is not just a sport … It's a way of travelling that uses less non-renewable energy and is healthy and cheap. It's an essential way in which to economically uplift the urban poor.' Although car-drivers are the implicit target of such programmes, the explicit narrative was one of 'upliftment' and poverty alleviation.

Cape Town's first Integrated Transport Plan (ITP), also in 2006, noted that NMT interventions needed to emphasize access for all, the importance of communities, the role of economic and social transformation, environmental sustainability, and integration and awareness (CCT, 2006c). The implicit target audience of car-users is there, alongside the poverty alleviation goals: the ITP noted that 'cars offer very good mobility to those who can afford them; hence any alternative should offer similar levels of mobility if car users are to be targeted' (CCT, 2006c, p. 69). A 'Sustainable Transportation' performance indicator identified in the ITP was the percentage of commuters who used NMT as a main mode [note that this includes walking] and the purpose was to 'minimize the consumption of non-renewable resources' (CCT, 2006c, p. 71). Access to cars and bicycle ownership were seen as important both in respect of access to private mobility (a benefit of bicycle transport is independent mobility). Infrastructure for NMT was to be a focus of City planning. As the ITP put it, 'smart living' in a modern urban environment means 'leaving your car behind for short trips' (CCT, 2006c, p. 22).

Despite goals to draw 'choice' users into the NMT fold – as contributors to congestion and the consumption of non-renewable resources – technical guidance sought from outside South Africa focused on captive users. In 2007 the City of Cape Town signed an MoU to receive international support from a Dutch-based network, Interface for Cycling Expertise (ICE), as a part of a Bicycle Partnership Programme. This programme aimed to, among other objectives, better address socio-economic, spatial and environmental issues, improve urban livelihoods and the environment (I-CE, 2008), and contribute to the achievement of Millennium Development Goals (specifically poverty alleviation) (BEN, 2007).

6.6.1 Summary

This advocacy narratives during this period of analysis were typical of the early post-1994 environment, with a reorientation of transport policy to passenger and public transport provision, and a recognition of the role walking and cycling could play in accessing public transport stops, mitigating poverty, and integrating communities. At the same time, with South Africa's re-emergence in the global arena, the global narratives such as climate change and obesity, and cycling to replace SOV use and mitigate congestion, become evident in the discourse. Where the disadvantage or vulnerability were considered, these were now understood to not only be children or the elderly, but individuals disadvantaged by apartheid's inequitable allocation of resources.

The next period of analysis will see the 'heyday' of cycling policy and advocacy in Cape Town, with high expectations around the visibility of cycling during the 2010 World Cup, plans to showcase cycling during Cape Town's tenure as World Design Capital, and – fuelled by the connectivity offered by social media – the emergence of multiple civil society organizations promoting bicycle travel.

6.7 CAPE TOWN 2008-2014: WORLD CUP MOMENTUM – CHANGE IS 'INEVITABLE'

> *'Aah, there was once so much momentum. … that was Cape Town's heyday.'*
>
> (Interviewee describing bicycle activism in the early post-2010 years in Cape Town)

This section is divided into five sub-sections, largely for readability purposes because of its length. The sub-sections are determined by theme. Sub-section headings are drawn from quotations referenced in the text.

6.7.1 'The long-term plan is to get you out of your car'

The City's five-year plan for transport, beginning 2008, aimed to 'move away from a historic commuter system to including people walking and cycling – the long-term plan is to get you out of your car' (CCT, 2008d). Congestion as a reason to ride was the hot topic with cycling envisaged as a solution[55]. For example, the City used October Transport Month[56] to 'actively promote the use of … alternative means of travel to counter the traffic gridlock ... that is

[55] implicitly making life easier for motorists.

[56] October had been declared Transport Month in 2005 during one of South Africa's innumerable transport summits, this particular instance referred to as the Transport Lekgotla. 'The Transport Month campaign is a government initiative geared towards strengthening the link between awareness-raising and policy measures to reduce traffic congestion by particularly promoting the use of public transport … and to promote sustainable transport solutions such as walking, cycling, public transport and car travel with two or more occupants and also to stimulate public reflection about the need to manage unsustainable car use especially in the metropolitan cities of South Africa (B Cele to brief media on Transport Month, 2 Oct | South African Government, no date).

causing increasing frustration for local motorists.' These measures include cycle lanes ... 'Cycling is a clean, healthy, inexpensive and pleasant way to travel…' (CCT, 2008b).

The City exhorted commuters to be part of the 'solution' to emissions and congestion: 'By cycling, walking short distances, driving as little as possible and using public transport, we will be part of the solution, not part of the problem. The benefits will be a reduction in carbon dioxide exhaust emissions, less congested roads, a reduction in road rage incidents and accidents and less time wasted in traffic jams. We all complain about congestion, but unless we change our thinking, our habits and our travel patterns, things will only get worse. If we all become part of the solution everyone will benefit' (CCT, 2008b).

By the above active promotion of cycling, the City referred mostly to a few 'bike-to-work' events, media performances where a succession of Cape Town mayors would ride a bicycle, and its infrastructure build programme ahead of the 2010 FIFA World Cup.

The 2008 executive mayor of Cape Town, Helen Zille, was an outspoken supporter of cycling, and even rode to work on a bike-to-work day: 'Bike-to-work days are helping to show people that it is possible to use this alternative in their day-to-day lives', she said. 'This change in mindset will take time to happen, but it is inevitable. We are rapidly approaching a global energy crunch, where fuel will become less affordable' (CCT, 2008d). Aligned with the City's narrative, the weekend print media began a series of articles on 'how South Africans can beat the rising cost of living', with an article on how bicycle commuting can 'save cash', or 'beat the budget blues' (Jooste, 2008).

Bicycles had by now started to become the visible – performative – symbol of 'sustainable transport' for the City; in one official City publication, Enviroworks, the head of the Environmental Resource Management Unit was photographed with a bicycle for his editorial photograph (CCT, 2008c), with a caption stating that 'smart living in a modern urban environment means leaving your car behind for short trips.'

Figure 26: Executive Mayor of Cape Town Patricia de Lille, 2011. Editorial page for the City's State of Energy and Energy Futures Report (CCT, 2011f). Cape Town's State of Energy Report 2015 opens with the same photograph as its 2011 iteration (CCT, 2015c, p. 1), and the very same photograph featured on the cover of the third edition of Cape Town's 'Green Map' (see Figure 33).

6.7.2 Planning for the World Cup: 'The best alternative to congestion'

South Africa had won the bid to host the 2010 FIFA World Cup in 2004, and soon had set about allaying critics' fears about how they would move between matches and venues (Jennings, 2011b). Cape Town thus began a build programme of walking and cycling infrastructure in 2008 between the Cape Town station and the new sports stadium.

In 2009 cyclists had already gained slightly more access to Cape Town public spaces, when mid-January, the NMT Forum presented plans to the City to allow bicycle commuters access to pedestrianized areas in the central city[57]; this would link the proposed on-street bicycle lanes in the CBD. The City supported these plans, noting that 'NMT has always been closely associated with environmental sustainability, because of its minimal impact on fossil fuel usage, noise and air pollution. In addition, everyone in Cape Town has the right to quality and reasonable access of places, goods and services – not only people who can afford to buy and use a motor vehicle' (CCT, 2009a).

[57] Government Avenue (through the Company's Gardens) and St George's Mall.

Two months after this victory for cyclists, the City felt the personal impact of poor road safety, when Environmental Resources Management staffer and cyclist Craig Haskins was killed by a driver in February 2009. The City convened a cycling safety workshop, and committed to an increased focus on infrastructure and cycling safety: 'The proposed bicycle safety measures hope to not only save lives, but to see an increase in the number of bicycle users, improved quality public spaces, and a decrease in environmental and health problems' (CCT, 2009b). In an explicitly activist media release titled 'Why more bicycles on roads are better for us all' (CCT, 2009c), the City summed up its cycling agenda:

- Less traffic congestion
- More parking spaces for cars
- Less noise
- Less pollution
- Better air quality
- Better quality of public spaces
- Less road-maintenance required
- Fewer cars on the roads
- Bicycle infrastructure is inexpensive to build and maintain
- Quieter neighbourhoods with potentially higher property values
- A knowledge that our country and city is acting on its promise to provide for the rights of its citizens, not only those who are able to afford to own and run motor vehicles.

Unconvinced, the Pedal Power Association had handed a list of concerns to the City, 'complaining that cycling was not an attractive mode of transport as an alternative to reducing congestion and fuel consumption, because of the lack of safety (Dentlinger, 2009). Elias Tukushe, the City's Head of Universal Access and NMT at the time, responded that the city was implementing a R400 million system 'that would make roads safer.' The project '*encourages* people to walk and cycle [*my italics],* instead of using cars,' and the infrastructure build was to be complete by 2020'…(Samodien, 2009).

The first World Cup bicycle infrastructure was launched in June 2010, as a 5 km route known as the Fan Walk, which connected the central city with Cape Town Stadium, Cape Town Station, and Green Point Urban Park. The signposted route included a much-vaunted traffic signal for bicycles. Bicycle parking was also installed. These facilities formed part of Cape Town's 'vision to provide a world-class sustainable transport system for all' (CCT, 2009a,

2010c)[58]. At the launch event, MMC for Transport at the time, Elizabeth Thompson, had said that among the purposes of providing NMT facilities related to the World Cup was that 'public spaces are a great equalizer in society. They are spaces that belong to all people in all walks of life… The best alternative to congestion and to improving environmental health is to improve public transport and to encourage cycling and walking' (Thompson, 2010).

The City promised a [another] 'NMT revolution' ahead of the World Cup, which would include bicycle rental 'to encourage commuters to use bicycle transport' (Lewis, 2010). As it turned out, however, most people used their own cars to get around during the World Cup (Jennings, 2011a), and the City's proposed bicycle-rental system did not materialize (Jennings, 2011b). The City pressed on nonetheless with its exhortations to drivers to cycle instead (to resolve the city's congestion challenge), with a Bike-to-Work day in October 2010 'recognizing the need to reduce the number of cars on the city's roads' (CCT, 2010a). Despite poor participation in such promotional activities, Cape Town's media machine was quick to share that Cape Town was deemed 'one of the world's 15 most bike-friendly cities' by a travel media company in 2011' (Barker, 2011; MatadorNetwork.com, 2011).

Cape Town's transport authorities and tourism strategists have been acutely aware of cycling's potential to attract both tourists and investment. In 2011, the City's deputy mayor Ian Nielsen called people to 'walk and ride their cycles instead of driving' … to 'help put Cape Town on the map as the cycling capital of Africa' (Prince, 2011). The executive mayor that year, Dan Plato, pronounced that 'Cape Town will be known [globally] as cycling City with its new bicycle lanes' (Ndenze, 2011a). Later, the City would ask for comment on the Cycling Strategy by inviting 'residents … to submit their suggestions on how we can turn Cape Town into a top cycling city' (Staff writer, 2017).

The thread of global recognition and 'world-class' is evident in much of the discourse during this time (Jennings, 2016), including in 2012 when the city was recognized at the Sustainable Transport Awards in the USA 'for its commitment to building an integrated public transport system' (CCT, 2012d). Rory Williams and Marcela Guerrero Casas, of Open Streets Cape Town, posited that this was because of a heightened sense of urgency to get the transportation formula right, with the City seeking to attract foreign investment in competition with cities like Hong Kong, Singapore and Rio' (Williams and Guerrero Casas, 2013).

6.7.3 MyCiTi cycle lanes: 'Abandon [your] cars'

Cape Town's 'bike-friendly' accolade coincided with the launch of the City's most ambitious, entirely traffic-segregated bicycle lane project in May 2011, as part of the City's revised Bicycle

[58] In July 2010, the then national Minister of Transport Sibusiso Ndebele was to praise the legacy of the World Cup: '… the tournament has brought South Africa's transport system into the 21st century.'

Master plan (CCT, 2017a, p. 76). The 3 m-wide bicycle lane followed a 16 km stretch of the city's new BRT route (MyCiTi) toward Milnerton. For the launch of the infrastructure, the City once more directed its narrative to car-owning cyclists, and invited people to 'abandon their cars' and join the celebratory ride (CCT, 2011a): 'If you're a fan of cycling, greener transport, safer streets, cleaner air, less traffic congestion, more liveable cities and better public transport, then please grab your bicycle and join the City of Cape Town as we celebrate our first-ever dedicated commuter cycle way… ' (CCT, 2011d).

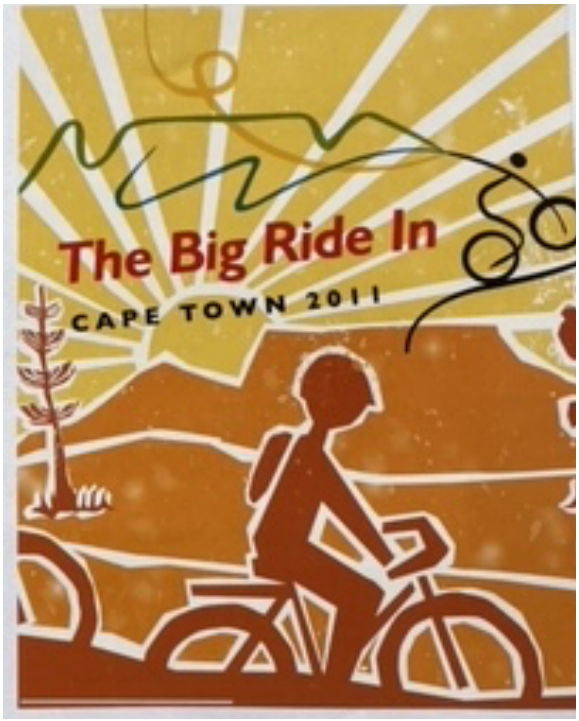

Figure 27: Poster for The Big Ride In, 14 May 2011 (the second Big Ride In). The text assumes a choice cyclist participant, reading 'Abandon your cars and get on your bikes to celebrate the new cycling paths recently created by the City. Capetonians are invited to abandon their cars, get on their bikes, rollerblades and skateboards, and using the best route from their homes, converge at the Plaza at the Civic Centre' (Big Ride-In, 2011).

The press reported on the launch as 'a healthier, safer, cleaner new chapter in the city's life': 'While motorists cursed their daily grind, buses belched fumes and motorcyclists played Russian roulette with the traffic, cyclists set off on the 15 km new route along the coastline' (Staff writer, 2011). The new infrastructure would make it 'significantly faster and safer to commute into town than travelling by car… plus it is creating awareness to motorists that cycling is a popular form of transport and exercise' (Curtis, 2011).

On World Car Free day in 2011, activist organizations in Cape Town noted that while 'it's good to get people out of their cars for a day, it will great if they can stay out of their cars.' The organizations were 'dedicated to find more environmentally friendly and practical solutions to their traffic problems. With more than 400 000 cars streaming into Cape Town, each day, the situation is becoming untenable. The City has recently created cycling paths …

which will hopefully go a long way to alleviating the problem provided that Capetonians can be persuaded to switch their cars for bicycles and public transport' (Stead, 2011).

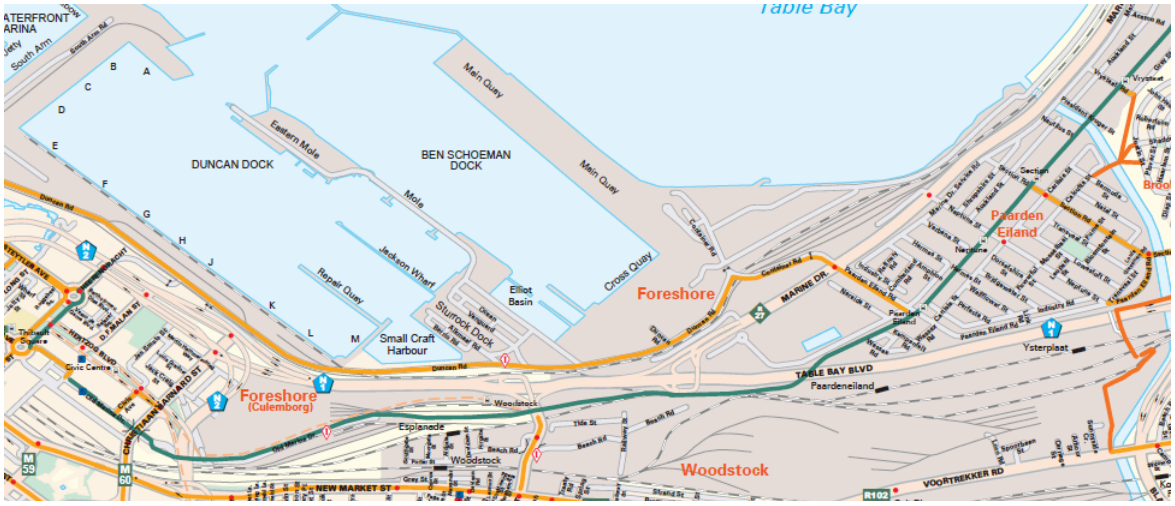

Figure 28: Green (dark) line indicating the beginning of the MyCiTi segregated bicycle lane, from the Civic Centre, central Cape Town (Gardner/ESRI, 2013).

6.7.4 The emergence of activism: 'riding the counter-culture wave'

'Wow indeed! …now time to ride the wave... feeling inspired and energised.. .I think we can pat ourselves on the back :)'[59]

In 2008, national government held stakeholder engagement sessions in Cape Town for the country's first national NMT Policy (see section titled National transport and environmental planning after 1994), which required the development of a stakeholder database, in line with public participation legislation (RSA, 2000). In 2006 an NMT Forum had been established to continue the work of the Velo Mondial organizers, and included representatives of the City, one or two individuals from civil society, and a larger number of professional transport practitioners[60] [61]. Formal stakeholder engagement required expanded outreach, and present at the Policy meeting was an emerging group of individuals, some of whom had met on newly established social media platforms, who would play a role in revitalizing bicycle activism in the next decade[62]. Also present were academics from the newly established African Centre for

[59] Email correspondence, 29 May 2012, bicycle advocacy planning session for CycleLinks.

[60] Source: my own records of attendance since 2006.

[61] The NMT Forum eventually lost momentum and was replaced by a rather more exclusionary, by invitation only, Mobility Forum in the wake of the Cycling Strategy in 2017. The NMT Forum aimed to coordinate and track NMT projects, identify key routes into the CBD, act as a watchdog to ensure that NMT was sufficiently addressed on the 2010 FIFA World Cup agenda, and concentrate on advocacy work, including car free days, bike to work and special events, to promote cycling (BEN, 2007).

[62] Source: my own records of attendance.

Excellence in Public Transport and NMT, at the University of Cape Town, which would contribute substantially to cycling research.

The increased visibility of local activism around walking and cycling in the early part of the 2010-decade was also likely a 'part of a global renaissance [that] responds to environmental, economic, and social pressures' (Williams and Guerrero Casas, 2013). The *Sunday Times* described the phenomenon as riding the counter-culture wave (Keeton, 2012). The pace of bicycle activism had picked up among choice users, with 'Critical Mass' rides, as one example, beginning monthly in 2008. 'I think a few of the Critical Mass group – numbering between 35-50 – have begun to commute by bicycle, at least sporadically,' said one of the founders: 'I do harbour the hope that more people will realize just how impractical a tool a car is for most trips made in densely trafficked areas, especially over short distances' (Jennings, 2012). Critical Mass 'definitely introduced the idea of bicycle commuting to people who would otherwise be too intimidated to go it alone' (Jennings, 2012).

In October 2011, Cape Town had been awarded the title of World Design Capital 2014; the title is given every second year to cities that enter for the award (a costly bidding process) by the International Council for Societies of Industrial Design to 'give prominence to cities that use design for their social, economic and cultural development'. The City premised its winning bid on the possibility that design could redress apartheid spatial injustice, and develop environmental sustainability (CCT, 2012c). The Bid Book noted that Cape Town has a strong emphasis on what the authors termed 'new mobility transport', with 'a network of bicycle paths rolled out across the city' (CTP, 2010, p. 16).

Activist groups with the support of the City met regularly to plan a number of 'active mobility' events and exhibitions of this year-long Design Capital programme; these included a launch and painting of the Albert Road and Bree Street cycleways, public safety campaigns, a competition for bicycle rack design, bicycle donation programmes, a pedicab project, and a design challenge to inspire a 'unique Cape Town designed bicycle' (CCT, 2013d). The success of bicycle activism in Cape Town, proposed the Cape Town Design Network, was because of its identity as an 'underground movement' and a sense of community that shared a 'secret language' (Cape Town Design Network, 2012).

Few of these events ultimately came to fruition, however, as the award itself carried no programmatic funding, but activism nevertheless flourished. The two years of 2011-2012 alone saw launch of CycleLinks, a regular networking event; the publication of Bicycle Portraits, a photographic study of South Africans who rely on their bicycles every day; Urban Cyclist accessories; the Cape Town Bicycle Map[63], a print map of recommended commuter

[63] Published by myself.

bicycle routes; Bicycle Cape Town, an online aggregator of bicycle news; and Camissa Bicycles and Ubuntu Bikes, two local commuter bicycle brands.

Figure 29: Logo of Cape Town activism network CycleLinks, 2012.

Moonlight Mass, which started on 27 January 2012 as an activist ride with 25 people, would by the fourth ride include more than 1 000 people[64], and by 2013 have drawn international coverage and 4 000 participants – until the City of Cape Town forbade the event unless it had public liability insurance, traffic marshals, and medical services (CCT, 2013a; City Manager, 2013). Open Streets Cape Town (OSCT), founded in 2012 and taking inspiration from Bogotá's Ciclovía, would also struggle initially to obtain permission and negotiate the red tape for road closure or car-free events. OSCT's ideal was to 'create shared spaces that embody respect, and help bridge the social and spatial divides of our city'. Intending to organize regular 'car-free' days and events, its message was firmly directed at decision-makers and drivers rather than 'captive' cyclists'. With campaigns to challenge car-users to 'leave your car at home' (OSCT, 2011), its rhetoric turned on the creation of a 'low-carbon future', with 'sustainable transport' and 'decreased congestion and emissions' (Jennings, 2021a).

Launching the first Open Streets event, in 2012, MMC Brett Herron spoke of how 'cycling, as a means of commuting, is cheaper, healthier, greener, can be quicker, and is certainly more fun. We would thus like you to consider how you can change your transport habits or patterns to include an active mobility component or to make your entire daily commute a socially and environmentally sustainable trip by walking, skating or cycling' (Herron, 2012).

Cape Town's first Naked Bike ride, in March 2011, which explicitly broke the law (public nudity being illegal), managed to avoid formal censure, possibly because formal permission was not sought. Bicycling advocates said the ride was 'to raise awareness about carbon emissions, as well as encouraging the City of Cape Town to create more safe cycle routes' (Thorpe, 2012) and protest against car culture (Martin, 2011). Riders wore slogans/banners exhorting onlookers to 'Burn fat, not oil', 'No to Oil', or to 'ride, don't drive'.

[64] Co-founders Dan Graham and Elad Kirshenbaum 'wanted to ride along the city streets at night, and feel safe' (de Bruyn, 2014), so tweeted an invitation to meet at 9pm on a full moon evening. 'About 25 people pitched up … and at the end of the night everyone said, see you next month…'

From 1 October 2012, for Transport Month, the City 'experimented' with lifting the prohibition on bicycles, skateboards and rollerblades on the Sea Point Promenade. Cycling was to be limited to travel for 'leisurely transportation purposes'(CCT, 2012a). At the end of October, the 'trial period' was extended (CCT, 2012b) – among other reasons, to 'portray the Sea Point Promenade as an example of the inclusive city of the future' (IOL Property, 2012).

6.7.5 Bicycle sharing: 'Support a liveable city'

In an early business plan for MyCiTi, consultants and planners had included a public bike system to take advantage of the proposed bicycle network, but this had later been withdrawn as project budgets were cut. But buoyed by the NMT momentum, the City had announced that it was to again investigate a bike share by public tender (CCT, 2013b):

> 'A … successful bicycle sharing service will reduce traffic congestion, the need for on-street parking, fuel consumption and carbon emissions. Obviously, cycling will also contribute to the health and well-being of our residents.'

That same year, the City had launched a staff-only bike share: According to the induction booklet, the aim was to provide staff with the 'option of cycling instead of driving, which can save time, money and is beneficial to the environment. Bicycle travel has a number of benefits when compared to car use, including improving personal health and well-being, reducing emissions, congestion and pollution, and limiting fuel and parking costs' (Jennings, 2014).

The bike share project was part of the City's broader Travel SMART programme of information provision, in which cycling was framed as cheaper, healthier, greener, better. Fuel costs were again a primary motivating trope: 'A city in which people walk and cycle is a safer, more vibrant, and more integrated one, with cleaner air and a healthier population. Plus, with today's ever-rising fuel and parking costs, becoming actively mobile instead of using our motor vehicles will put more money back into our pockets.' Other pitches for cycling were that it would 'improve your health and well-being', 'reduce your impact on the environment' (reduces your impact on local air pollution, energy consumption, global warming and the health of your family and your fellow Capetonians', 'support a liveable city', enable you to 'see so much more', and 'have fun ' (CCT, 2015f).

The staff bicycle share project was abandoned, however, as unsustainable and lacking local political support (Chalmers and Munroe, 2019). The findings of the bicycle-share feasibility study in 2013 were that it was unlikely to be feasible or viable in Cape Town (Jennings, 2014).

6.7.6 Summary

This period of analysis is characterized by initial high levels of optimism by both government and civil society, that change in travel behaviour was coming. Supported by increases in national transport funding, for public transport and complementary NMT infrastructure, the

City was able to develop a high-quality commuting route, which has continued to be well used. Social media both created and drew together bicycle activists, who had developed an interest in bicycle commuting through online engagement with an international community, and had subsequently met online and in person locally. The international interest in Cape Town (through the World Cup and the Design Capital) further catalyzed optimism and action, with activism events, activities, and networking. Activists were primarily relatively wealthy, privileged car-owners, who nonetheless wished to 'ride the divide' in the still segregated city, using cycling as a way of demonstrating a commitment to social justice and spatial redress. CycleLinks aimed to 'connect communities . . . enabling commuters to connect on levels beyond social barriers and social stereotypes'; Bicycle Cape Town advocate[s] to 'transform the city together'; the Bicycling Empowerment Network aimed to 'address poverty alleviation and facilitate the accessing of opportunities through delivery of bicycles, imparting of skills and creation of employment' (Jennings, 2016).

The key City narrative during this time, on the other hand, centred on hoping to persuade car-drivers to 'get out of their cars'.

The next and final timeframe of analysis begins with Cape Town's Design Capital status and ends with implementation of the Cape Town's first travel demand management media campaign. However, this time frame overlaps with earlier periods, as I include a phase of infrastructure development that has its roots in 2010. This phase sees 'the wheels come off' (Hassen, 2017b) both bicycle activism and infrastructure build, with the City's formalization of cycling advocacy in its Cycling Strategy inadvertently leading a loss of agency among the activists with a narrow focus on bicycle travel[65]. The framing of cycling as a congestion mitigation intervention continues to be the most prominent narrative, but with Open Streets' social advocacy voice becoming increasingly heard.

[65] Interviews undertaken as part of this thesis.

Figure 30: Photograph taken in 2006 by myself, of a City of Cape Town-branded car parked in Albert Road's bicycle lanes.

6.8 2014-2019: CYCLES OF FAILURE AND REVIEW

'Mense[66] coming to visit the Daily Voice in St George's Mall never show up on time. Why? Because of these expensive bicycle lanes that no one is using.' (Halim, 2018)

Like the previous section, this section is divided into three sub-sections, largely for readability purposes because of its length. Sub-section headings are drawn from quotations referenced in the text.

6.8.1 Bicycle infrastructure: 'The wheels come off'

In 2010, the print media was reporting that the city was again 'promising a better deal for its cyclists' – yet 'pedallers say conditions are putrid… The ever elusive network was coming, coming … promised Tukushe [City of Cape Town official]' (Prince, 2010). But cracks in Cape Town's attempts to develop a bicycling culture became increasingly evident.

Projects that did materialize as part of the World Design Capital planning were the design and installation of two painted bicycle lanes, on Bree Street (CCT, 2013c) and on Albert Road, in 2014. The press framed this focus as 'the Metro [wanting people to] ditch their cars for a healthier and greener option' (Chowles, 2013).

The *Cape Times* reported that the dedicated lanes for pedestrians and cyclists in Albert Road [said to be completed by June 2013] 'was expected to improve traffic flow' (Butana, 2012), but these soon ran into trouble. But work only begun on the 'long awaited' cycle lanes in in Albert road June 2014 (CCT, 2014b). The lanes were 'envisaged' to ensure that 'those residents whose

[66] An Afrikaans word commonly used in English in Cape Town, meaning 'people'.

preferred mode of transport [are] private vehicles will in due course be convinced to rather walk or cycle to work as the city's non-motorized transport-network expands' (CCT, 2014b). In March 2015, 'with the Cape Town Cycle Tour… only six days away, the City of Cape Town [was] pleased to announce that the new cycle lane from Observatory to Salt River and Woodstock [was] nearing completion' (CCT, 2015e). The project had cost the City around R20 million – and this time was said to be due for completion by June 2015 – and was to contribute to Cape Town being 'pleasant to work and live in'. By June, however, the media and bicycle users had declared 'Cape Town cycling lanes 'a failure'. 'Motorists and road users [were] showing contempt for the city's recently installed cycling lanes – painted green in colour – with some using it as kerbside parking and minibus-taxis making it a zone to off-load and pick up passengers' (Legg, 2015).

Figure 31: Blue (dark) line indicating Bree St, central Cape Town (Gardner/ESRI, 2013).

The City announced they would be installing bollards in an attempt to prevent use by anyone other than cyclists, who they hoped would be former drivers 'lured' from their cars by this particular infrastructure.

> 'Our city's roads are heavily congested, and the purpose of this strategy is to lure motorists away from private vehicles and to convince them to rather cycle or walk to where they need to be when it is practical to do so. The only sustainable way to reduce congestion is to reduce the number of vehicle trips on our roads… The more cyclists who make use of the cycling lanes that are being provided by the City, the better the chances are that cycling will become an accepted norm – and not the exception – of transport in Cape Town for visitors and residents alike' (CCT, 2015d).

But by June two years later, however, the 'wheels [came] off the cycle lane project' (Hassen, 2017b) and City workers were seen removing the lanes, partially because of conflict with business owners losing access to on-street parking. The revelation that the City had spent some 45 million ZAR on bicycle and pedestrian infrastructure was met with anger in the press: 'Those lanes were paved with the best intentions. But they might as well have been paved with gold. Kwaai[67] if the lanes were put to good use, but the fact of the matter is they're not' (Halim, 2018).

6.8.2 Developing a cycling strategy: 'A bold move'

'A bold move … to gradually transform Cape Town from a vehicle-centred city …a super city when it comes to cycling-friendly commuting.' (Brophy, 2017)

In 2014 the City of Cape Town advertised for 'the provision of professional services in respect of the formulation of a cycling strategy for the City of Cape Town' (CCT, 2014c). The Strategy was to create a 'unified vision, objectives, and strategies for cycling into the future,' and to highlight the congestion reduction, emissions reduction, and health benefits of cycling.

In the meantime, the Low Carbon Central City Strategy of 2014 had introduced the term 'own steam transport'[68], which referred to 'any mode of movement that is powered by humans alone…' (CTP and SEA, 2014, p. 50). The Strategy proposed ways in which to attract and facilitate 'own steam' transport, positioned primarily as a low-carbon mode, able to limit emissions, and, as a side-effect, a saving on fuel costs (CTP and SEA, 2014, p. 89)[69].

Cape Town's Climate Change policy of 2017 (CCT, 2017b) was again concerned with the city's high carbon footprint, wherein 53% of commuter trips were by private cars. Transforming the transport sector was still the goal, through higher vehicle occupancy, improved public transport, and the promotion of walking, cycling, and other low-carbon options. Among the plans for this transformation was the development of the Cycling Strategy, which would aim to 'increase the mode share of cycling and contribute towards a reduction in congestion and emissions in the City by 2030.' To this end, the City leveraged a 'Mobility Indaba[70] during Transport Month 2016 as its primary stakeholder engagement for the Cycling Strategy (at that

[67] An Afrikaans word meaning approximately 'all well and good', 'cool', 'OK'.

[68] A term not seen again in the narratives.

[69] With regards to environmental policy, the City's Environmental Strategy of 2017 (CCT, 2017d) replaced the Integrated Metropolitan Environmental Policy (IMEP) of 2001 (and revised 2008). In terms of this strategy, the City was to 'strive' for 'a safe, clean, efficient, affordable and integrated public transport system servicing all parts of Cape Town is in place, safe bicycle and pedestrian paths and crossings are provided, and transport fuel use and emissions are dramatically reduced'. Cycling is not explicitly referred to other than a reference to the City's overall vision, and commitment to the relevant cycling interventions in other transportation policies.

[70] 'Indaba' is an isiZulu and isiXhosa word for 'business', and is used in South Africa (across multiple languages) to refer to a relatively informal gathering or conference.

point still in development). The Indaba[71] had cycling as a mode of transport as a core theme. A 'mobility hack' was part of the activities, to develop ways in which 'cycling can increase health, reduce transportation costs, and give people easier access to other less familiar parts of our beautiful city' (CCT, 2016a).

One outcome was the City's intention to establish and regularly convene a cycling sub-committee under the Inter-modal Planning Committee (IPC), to monitor the implementation of the adopted Sustainable Mobility Charter.

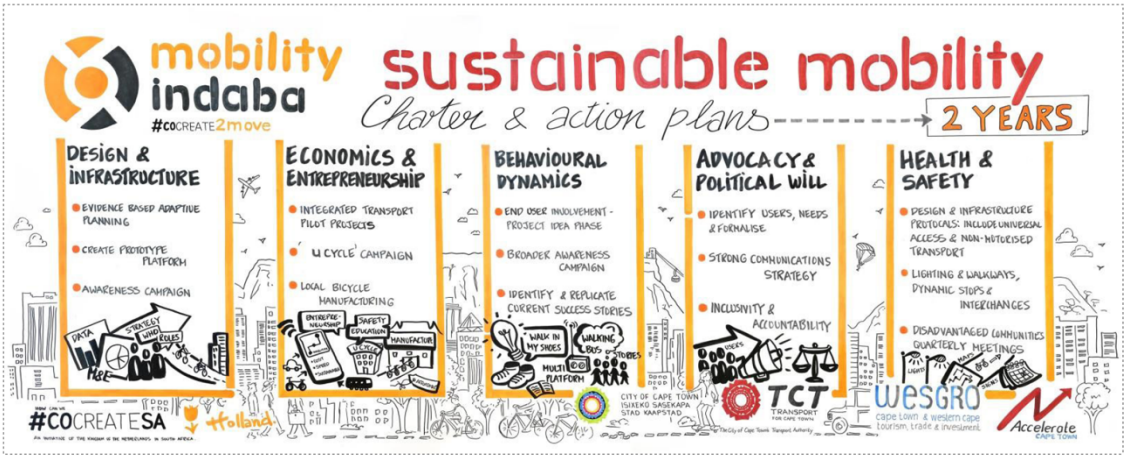

Figure 32: Sustainable Mobility Charter and Action Plans, October 2016. Source: (CCT, 2015).

The City intended the Indaba to 'focus on rethinking the way people move in the city and how we can contribute to Cape Town's long-term sustainability by opting for NMT as opposed to private vehicles ...' Citing traffic congestion as 'one of the biggest challenges' currently faced by transport planning, the City asked that individuals take responsibility, that 'residents do their part and start changing the way they travel.' Cycling was punted as having 'numerous advantages: cheap, environmentally friendly, is a healthy alternative to private vehicles for trips of 10 km or less … [and able to] assist our local economy' (CCT, 2016a).

The Cycling Strategy, once completed, had the extraordinarily ambitious intention of increasing share from a current 1% of trips to 8% by 2030 (CCT, 2017c). The Strategy identified the biggest potential for modal growth to be among people who take public transport (captive users), as access to public transport stops. Despite the evident impact of car users, and the City's earlier discourses around getting people out of cars, attracting choice users was not given high priority. Increasing access to affordable bicycles was proposed as a vital strategic intervention.

[71] Organized by the City of Cape Town, Dutch Consul General, WesGro, and Accelerate Cape Town, and facilitated by CoCreateSA.

Cycling also did not play an important role in the Travel Demand Strategy (CCT, 2017e), but is mentioned for its potential environmental and economic benefits; this Strategy is also primarily framed around congestion mitigation and management – 'to influence travel behaviour in order to reduce peak period car travel (particularly SOVs); shift modal share towards public transport and NMT; and reduce energy consumption and emissions.' Social inclusion and spatial desegregation were to be side-benefits (CCT, 2017b, p. 46).

Figure 33: Executive Mayor of Cape Town Patricia de Lille, on the cover of the Cape Town Green Map 2015 ('Cape Town Green Map: The Great Green Outdoors', 2015). Also see Figure 26.

Bicycle promotion has by and large taken the form of information provision and institutional support to other entities, in lending its logo, issuing media releases, waiving event permitting or road closure fees to Open Streets events or bike-to-work days, or publishing brochures and hosting website information (such as the Travel Smart campaign). Open Streets, for example, forms part of the City's strategy to 'transform transport behaviour in Cape Town and encourage people to become less dependent on private vehicles' (Hassen, 2017a).

The Cape Town Green Map series in 2015 was branded by Cape Town's Climate Smart campaign, which exhorted road users to 'Take the Bus Now, or take the Heat Later': the Climate Smart campaign proposed that cycling could help 'combat climate change', 'improve fitness and health', 'save money', reduce local congestion, help economic, growth, reduce pollution, and improve urban quality'. 'Cycling rather than driving could better enable users

to 'get out and about more and enjoy all that our city has to offer' (Cape Town Green Map: The Great Green Outdoors', 2015). A further iteration of the Map ('Cape Town Green Map: Cycle your City', 2017) noted that 'a city in which people walk and cycle is a more vibrant and integrated one, with cleaner air and a healthier population. Cycling is a great way to stay fit and healthy and a smart way to reduce your impact on the environment.'

WHY BIKE?

1. CHEAPER. Cycling is much more economical than using a car because bicycles don't require expensive fuel or costly maintenance and repairs. And parking is free.

2. GREENER. Using a bicycle is an effective way of reducing your impact on the environment. Unlike driving a motor vehicle, a bicycle doesn't produce harmful pollution and therefore has a substantially lower impact on local air quality and global warming.

3. HEALTHIER. Cycling is great exercise and supports a healthy lifestyle by boosting physical fitness, maintaining a healthy weight and supporting psychological well-being.

4. QUICKER. During peak hours bicycles can be significantly faster than motor vehicles. A bicycle can travel 5 km in approximately 20 minutes.

5. BETTER. Cycling around a city contributes to a better, more sustainable urban environment and supports a balanced transport system.

Figure 34: 'Why Bike': Cape Town Green Map: Cycle Map, 2017.

Taking a lighter tone, Cape Town's Pedal Power Association (Bike4All, 2017) advocated that 'more people should ride more bicycles' because, 'from your bicycle, you are able to interact with the community around you – wave at your neighbour, say 'hi' to someone you pass; smell what someone's cooking for dinner. In short: Bicycles = Happiness.'

In 2017, the City of Cape Town launched what it called its 'Drive less, Live More' campaign. The media reported that 'cycling and walking are other options [to driving' (Potter, 2017), and that 'cycling …will help to reduce the number of cars on the road and improve their health so [they] can live longer' (Property Wheel, 2017). The campaign noted that 'the average Capetonian spends up to 40 days a year in traffic, [so] it's time for all of us to think about what we can do to reduce congestion. What we need is real behaviour and attitude change'.

Of the view that more people would cycle if cycling was 'easy', in September 2018 two interns at the City's Environmental Management directorate started organizing 5 km Friday lunchtime City Centre Cycle rides (see Figure 35, below), leveraging Transport Month that year. The initiative continued until 2019. Rather than 'urging' or 'encouraging' people to ride, the organizers wanted to 'create opportunities for people to practice cycling in the safety of a group, in a supportive and fun environment. … and grow a community of city cyclists in the

long term[72]'. The initiative saw cycling as critical to Cape Town achieving the Sustainable Development Goals, as well as mitigating congestion and mobility poverty, and an opportunity to 'reclaim the streets as a space to be shared by all users' (CCID, 2019a).

Figure 35: Flyer for CCT's City Centre Cycle campaign, 2018.

6.8.3 Shifting focus 'Just the "jam". Not the traffic'

Reclaiming public space emerged as a new framing for cycling in this time period, catalyzed by Open Streets' manifesto and the media interest in the organization, and building on the early Klipfontein car-free day narratives in the mid-2000s. January 2019, for example, saw a central city newsletter announce that Open Streets day will 'transform Bree Street into a shared public space for all', offering an 'opportunity to connect with others who dream of a more sustainable and cohesive Cape Town' (CCID, 2019b). 'The event aims to enable the public to take back the streets and make use of the public spaces to bridge the social and spatial divides in Cape Town', reported Cape Town Etc (CTetc, 2018):

[72] In a statement released by the Pedal Power Association at the same time, the organization 'called upon [my own italics] private companies to encourage their employees to adopt cycling as a mode of transport by making it convenient and attractive through incentives' (CCID, 2019b).

> 'No cars, no emissions, just the people, the goods, the culture – we're so caught up with clutter in our tiny bubbles, that often we have no idea of what's happening in the communities just around the corner. Which is where Open Streets comes in.'

Open Streets was about 'a happy vibe, and an open heart' (van den Berg, 2017), breaking down barriers and connecting communities (Kearney, 2014), 'general happiness' (Crush, 2015), and 'connecting people in a safe and inclusive environment: moments to temporarily suspend reality and reimagine streets' (Thompson, 2018).

Even the then mayor, Patricia de Lille, took up the baton for Open Streets. Supporting the events would help reduce Cape Town's carbon footprint, she wrote in an opinion piece for the press (de Lille, 2016):

> 'It will be individuals who make the difference by choosing more sustainable transport options. The challenges of climate change cannot be addressed by governments alone and will require substantial community participation. Open Streets Days provide a unique platform for interaction and enjoyment, which can help build strong communities… Ultimately, climate change action requires everyone to take part.'

Media reporting continued to reflect the City's focus on congestion, quoting officials or drawing from media releases to primarily frame cycling as a way to reduce the numbers of cars on the road. Encouraging reader commentary on the Cycling Strategy, *News24* quoted MMC Herron, that 'although some of these lanes are popular for recreational cycling, we still have not seen the growth in commuter cycling which is required to have a noticeable impact on traffic congestion, greenhouse gas emissions and to improve mobility in the lower-income areas.' This shift was expected to be driven by individuals: 'We need our residents to take to the streets and to start a cycling revolution' (Staff writer, 2017).

And during the December 2019 festive season (the end-date for this research time-frame), Cape Town's 'New Year, New Wheels, New You' campaign emerged, the first real evidence of the City's 2017 commitment to bicycle marketing. The City's website recommended that drivers 'leave your car at home … take a walk, run, skate or cycle [to spend] less time looking for parking, [minimize] the frustration of traffic, [and] avoid traffic jams' (www.tct.gov.za, accessed January 2020).

Figure 36: City of Cape Town website campaign, 27 December 2019: 'Avoid traffic jams by leaving your car at home. Running, walking, cycling or public transport means you spend less time in traffic. Just the "jam". Not the traffic' (TCT, 2019).

Figure 37: City of Cape Town December 2019 website campaign – 'More time living. Less time looking for parking. Minimize the frustration of traffic by choosing to carpool, skate, walk, cycle or use public transport. Go on, try a new way to travel this year. New year. New Wheels. New you' (TCT, 2019).

6.9 CONCLUSION

This chapter has presented a narrative history of key events and interventions and associated advocacy framing – national, Western Cape, and Cape Town – that relate to bicycle travel. This conclusion now provides a summary of arguments engaged in the public advocacy discourse since 1976 regarding the value and purpose of utility cycling, and the reasons individuals 'should' adopt bicycle transport.

Bicycle policy and advocacy across the decades in Cape Town and in South Africa as a whole has been influenced and facilitated by both global and local imperatives.

In the mid- to late 1970s, the period with which this thesis begins, transport policy focused on regulating passenger public transport and mitigating increasing road traffic congestion and the 'fuel crisis'. Climate change was not yet on the agenda, but there was a broad nod to 'the environment', specifically energy conservation and air pollution with respect to transport. Cycling to work in Cape Town by middle- to high-income individuals was not unheard of, with bicycle lockers at train stations being well used, although household travel surveys had not yet been implemented in the country and mode-share data is not available. Cape Town's mayor at the time cycled to work as a routine rather than as a performative behaviour. Advocacy discourse centered on cycling to save money on fuel, and proposing that bicycle lanes be built to make cycling a safer activity; bicycle lanes were cheaper than building vehicle infrastructure, and would relieve road congestion, thus making this a cost-effective approach for government. Cycling was also 'healthy' and timesaving:

> 'In an age of soaring costs – of fuel, vehicle licences, car prices, insurance and so on – the pedal-cycle has become an increasingly attractive proposition. Office workers could have much needed exercise, and save on petrol!' (Staff writer, 1976b).

These framings of cycling as cheaper (saving fuel by combining cycling with rail, for example, with rail then a mode of choice among middle-income individuals), healthier, less polluting, and able to mitigate road traffic congestion, continued in the next period of analysis, 1980-1993. Cycling as transport in South Africa was now supported by the publication of infrastructure design guidelines, and in Cape Town, by a demonstration project (high-quality segregated infrastructure) and a master plan to develop similar infrastructure across the city.

> 'Bicycles don't pollute the air, need much road or parking space and don't make noise. The provide the exercise and enjoyment needed for healthy living' (Reynolds, 1983).

By 1994, with the advent of democracy in South Africa, transport policy shifted to focus on redressing inequity and mitigating transport-based exclusion rather than on mitigation congestion with bicycle lanes – what trade unionists would later refer to as 'gimmick for the wealthy' and 'over privileged' who already had multiple transport choices (Ndenze, 2011b). Supported by high-cycling countries such as Denmark and the Netherlands, NGOs now

emerged in South Africa with the message that cycling was an important tool in redressing inequity and exclusion; the availability and promotion of bicycle transport – as low-cost mobility – would alleviate poverty and provide the independent, flexibility mobility that only car-users otherwise experienced[73].

Cape Times 2 Feb 2011

'Bicycles lanes benefit wealthy DA voters'

Babalo Ndenze
Metro Writer

THE Congress of SA Trade Unions (Cosatu) has hit out at the city's dedicated bicycle lanes from Table View to the city, calling them "a great gimmick for the wealthy – while poor have to hang outside of trains".

Cosatu provincial secretary Tony Ehrenreich was responding to the City of Cape Town's launch of dedicated bicycle lanes that form part of the MyCiTi public transport system.

Launching the lanes, mayor Dan Plato said people can cycle, walk or even rollerblade in safety from Woodbridge Island to the centre of town.

"Cape Town will now be known as 'Cycle City'," said Plato. But Cosatu was not impressed.

ANGRY: Cosatu provincial secretary Tony Ehrenreich is outraged by bicycle lanes.

"Cosatu is outraged that the DA in the Western Cape and the City of Cape Town prioritises bicycle lanes for white wealthy citizens, while poorer communities on the Cape Flats are subjected to over-crowded and unsafe public transport every day of their lives. This gimmick may have an appeal to the wealthy DA voters of Milnerton, but it is done, by endangering the lives of poor working families, from the Cape Flats," said Ehrenreich.

He said people can be seen hanging out of trains in their desperate efforts to get to work on time on a daily basis.

"Instead of the DA hiring busses to run in parallel to these train lines, to minimise the overcrowding, they instead spend millions of the meagre transport resources to give the DA white constituency in Milnerton a special bicycle lane.

"These *larneys* of Milnerton all have cars anyway, so they should not be the most urgent consideration of public funds," said Ehrenreich.

Elizabeth Thompson, mayoral committee member responsible for transport, said if Ehrenreich is assuming that the cycle tracks were meant for the rich, he is "missing the point completely".

"That lane is part of a public transport route. It's part of the Integrated Rapid Transit system," said Thompson.

She said similar lanes have already been rolled out in poorer areas.

"He (Ehrenreich) should see where we have rolled out these lanes.

"They're in Gugulethu, Athlone and Symphony Way in Belhar.

"If you take a drive through Gugulethu you'll see dedicated cycle and pedestrian lanes to create space for cyclist and pedestrians so they don't compete with cars," said Thompson.

She said Cosatu's attack was a "low blow".

babalo.ndenze@inl.co.za

Figure 38: The Cape Times of 2 February 2011 reports trade union backlash against bicycle lanes.

Spatial justice rather than the environmental impacts of transport was now the driving force for change (Kane, 2001). Cape Town's first NMT Strategy (CCT, 2005) had been developed in the early phase of bicycle activism in South Africa. The NMT Strategy took a pro-poor approach, with walking and cycling to serve the poor and enable 'access to urban opportunities' for those who could not drive. Walking and cycling were not expected to reduce congestion.

The media, which did pick up on the pro-poor discourse, also continued to position cycling as a way in which government could relieve road traffic congestion, and as a way for individuals to mitigate carbon emissions; climate change rather than air quality was now the how environmentalism was framed. South Africa had acceded to the Kyoto Protocol on Climate Change in 2002, and had hosted the UN-supported World Summit on Sustainable Development that same year. In 2006, Cape Town hosted the ICLEI World Congress – an

[73] I have explored the contested nature of cycling-as-a social justice intervention in earlier work (Jennings, 2016; 2017; 2018).

international association of local governments to implement sustainable development – where site visits included visits to bicycling interventions in low-income neighbourhoods, showcasing the mode as both pro-poor and climate-resilient.

South Africa's first (draft) national NMT Policy (NDoT, 2008) was catalyzed by this early pro-poor advocacy work, for example the Bicycling Empowerment Network (BEN, 2007); new cycling policy intended to 'enlarge the average radius of action [through cycling]… so that jobs and markets may become within reach' (NDoT, 2008, p. 3). However, to some extent this policy came at the tail-end of the poverty-alleviation narrative. By 2017, South Africa's Green Transport Strategy (NDoT, 2017) makes no mention of poverty alleviation and spatial justice as a benefit of cycling, and returns to the 1970s advocacy, regarding cycling primarily as a 'low carbon climate resilient' and 'sustainable carbon neutral' mode.

Open Streets Cape Town, founded in 2012, represents a shift in the cycling narrative from one of rural access and low-cost mobility to an inclusive cycling-for-all approach. Social justice – promoting social inclusion, liveable cities, economic development, and mobility justice – became a central frame for the value and purpose of cycling visibility, in both the policy and civil society communication and the media emphasis. The notions of the joy, fun, happiness, of non-motorized mobility, are fundamental to Open Street's positioning of cycling. The City's 2029 campaign followed suit and took an almost entirely different approach to its more usual serious utility tone: cycling is described in terms of joy, happiness, and freedom, selling the 'jam' not the traffic.

Reducing Cape Town's emissions profile and road traffic congestion continue to feature in the discourse. By 2019, when this analysis ends, the subject of congestion mitigation has taken on an increasingly urgent, pleading tone, as congestion is framed as one of the city's – and the City's – greatest challenges. Advocacy took a two-pronged approach: informing individuals that cycling is quicker than driving in gridlock; and appealing to individuals to cycle rather than drive, as this reduces gridlock for others.

The narrative data presented in this chapter has been coded and consolidated into themes, as described in chapter 4, Method; in other words, the motivations posed or encouraged in the policy and media advocacy have been identified in terms of the 10 themes of Affordability; Ease of use; Bicycle advocacy; Environmentally friendly mode; Saves money; Facilitates wellbeing; Improves physical health; Social justice advocacy; Promotes physical fitness; and Aligns with personal identity. This will be used to compare to the interview and survey data (presented in the next chapter), in chapters 8 and 9, to answer research questions 4 and 5.

The following chapter now presents datasets 3 and 4, to consider the ways in which cyclists themselves frame cycling as transport and the reasons for their practice. This data has been coded in the same way as dataset 2 (ie, this chapter).

7 RESEARCH QUESTION 3: FRAMING THEIR CYCLING PRACTICE – WHY INTENTIONAL CYCLISTS RIDE

7.1 INTRODUCTION

This chapter presents datasets 3 and 4, and answers research question 3: *In their personal discourses, how do intentional utility cyclists frame the triggers and motivations for adopting, increasing, and maintaining their cycling practice? Do these motivations differ at different transitions or stages of behavioural intention in their cycling biographies*?

Chapters 1–4 have made the case for the necessity of this research, and presented the steps taken to ensure that the data has validity: these steps include drawing on the existing body of scholarly knowledge; establishing the theoretical basis on which claims to 'knowing' can be made; taking a systematic approach to sampling (to saturation); and following best practice approaches to coding and developing themes for analysis. Chapters 5–6 answer research questions 1 and 2, and present the policy and advocacy context within which interviewees have developed their cycling practice.

As noted earlier, this chapter (7) now presents the substance of the data. Findings are discussed as a broad narrative, across all interviews; the mobility biography of each individual is not subject to a detailed analysis comparing a number of possibly theoretical interpretations and overlays.

To answer research question 3, the chapter is lengthy, and thus its structure is set out here. Sections 7.2–7.7 present the survey and interview data structured by behavioural stage or transition (from Pre-contemplation to Termination), and the ways in which individuals describe their transitions and motivations within each stage. This includes how individuals consider (and possibly reject) cycling as transport, and what shifts them from thinking about cycling (contemplation), to taking up cycling, maintaining a practice, and getting to the point where cycling is a 'default' mode (termination). Sub-headings are taken from phrases or statements in interview transcripts that characterize the narratives presented in these sections; these align with the themes and in this way contribute to the analysis.

Section 7.8 sets out and summarizes the most common triggers to transition at each Stage from Preparation to Termination – in other words, only to the Stages in which individuals are cycling.

Section 7.9 answers the second part of research question 3, above, considering only motivations: *Do motivations differ at different transitions or stages of behavioural intention in their cycling biographies*?

Section 7.9.2 presents summaries of each individual's motivations across Stages, and Section 7.9.3 sets out the dominant themes per Stage. This data is also presented visually. Note that

some triggers will shift an individual from Contemplation to Preparation, while those same triggers might shift another from Preparation to Action, and so on; likewise, some motivations appear in all Stages of Change.

The data is drawn from survey respondents or one-on-one interviews, and analyzed thematically (refer to Method, page 74). 'SurveyInt' refers to survey respondents, while 'Interviewee' refers to in-depth interviewees. Quotations from interviewees or respondents are italicized. Survey interviews are numbered beyond 36, as a number of the respondents were disqualified (eg if they were only mountain bikers). All of the 36 valid survey respondents regularly rode a bicycle for sport or recreation at the time of survey (2019) sharing roads with mixed traffic in Cape Town (as opposed to mountain biking). None of the respondents rode a bicycle at the time of survey for commuting purposes (although a few had done so as children, or when travelling internationally). Each owned their own private car. All were comfortable with riding distances of up to 100 or more kilometres when riding for sports or recreation.

7.2 PRE-CONTEMPLATION

Individuals who are not yet aware that utility cycling is an option, or are aware that utility cycling is an option but do not consider or intend to consider doing so, are categorized as in the Stage of Pre-contemplation. This Stage is not my primary research interest, but is included for relative completeness of the theoretical model.

This section mostly comprises survey respondents, and the reasons they give for not cycling. For example, SurveyInt 1 would have to travel along a highway to get to work, so simply has never considered bicycle commuting. He travels similar routes in groups for sport, but feels it is too risky during peak hour. He has participated in road safety activation rides.

Personal safety and road traffic on her way to work means that SurveyInt 8 has also never considered riding to work, although she is a sports cyclist who cycles on busy roads. She lives 15 km from home, a distance she is comfortable with cycling. SurveyInt 20 has never considered cycling for transport, as his workplace has no shower facilities, and he needs a car during the day. He is also concerned about his personal safety. He has no experience of cycling as a child, nor has he used a bicycle to get around when travelling internationally.

SurveyInt 34 has also never considered using a bicycle as transport, even though she has retired from working and would like to save money on travel costs. She has participated in Critical Mass events in Cape Town, but does not feel safe cycling on her own. She makes multiple stops/trips in one journey, and a bicycle does not suit these travel patterns.

SurveyInt 38 had used a bicycle as a mode of transport as a child, and outside of South Africa. In Cape Town, he lives 5 km from his place of work, but has never considered riding his

bicycle to get there. There are no shower facilities at his work, and he needs a car to make trips from work and to perform other tasks on his way to and from work.

Unlike the above survey participants, who all are aware of bicycle's potential for transport, Interviewee 2 was not aware of utility cycling at all until she encountered students cycling in New York City. '*It had never occurred to me … that I was missing a basic life skill*,' she says. '*I was like jeepers, there's a huge gap in my learning, in my experiences as a person.*'[74]

Interviewee 10 '*definitely wasn't always a cyclist* ' until, as a student, she and her partner '*went to watch the "Argus"*[75] *from the side of the road to cheer on some friends, and I was just like, I want to do this, I want to ride this*…' The couple then bought a second-hand tandem and took up recreational cycling, but the idea of bicycle-commuting did not occur to her.

Interviewee 24, on the other hand, although having cycled as a child, didn't contemplate cycling as transport despite being surrounded by bicycle commuters in the UK as a student: '*I had a BMX as a kid, and we'd ride around the neighbourhood…… it gave us the freedom to not have to wait for our parents, and not have to catch a bus. All of this time I'm driving, living in London, public transport, bicycle racing, triathlons, no bicycle transport. Now when I look back, I can't believe that I didn't actually consider it*.'

7.3 CONTEMPLATION

Individuals I have categorized as in the Stage of Contemplation were all aware of the concept of bicycle commuting, but while they had considered doing so, they did not currently bicycle commute and were unlikely to do so (ie, they had considered it but decided against it). As with Pre-contemplation, this Stage is not my primary interest.

SurveyInt 3 lives within 3 km of his office in central Cape Town. It seems obvious to him to walk or cycle to work, but despite the short distance, the personal safety and traffic risks are too daunting. He is aware of the dissonant nature of his decision, and is a committed supporter of Open Streets, but feels he cannot place himself at risk.

SurveyInt 5 says cycling to work appeals to her as an opportunity to beat the traffic '*and maintain fitness as an added bonus*'. She has participated in bike-to-work days in Cape Town but won't risk cycling to work alone because of risks to personal safety. Every time she contemplates riding for non-sports purposes, she reminds herself that '*drivers here are crazy, very little road awareness, advanced observations, knowledge of rules of the road, respect for other road users, good manners … And the taxi drivers are a law unto themselves, dangerous beyond belief*!'

[74] Quotations from interviewees are in italics and single inverted commas; quotations from the literature or advocacy discourses are in single inverted commas only.

[75] In 2014 'The Cape Argus Pick n Pay Momentum Cycle Tour' was officially renamed the Cape Town Cycle Tour. Participants – current and past – frequently still refer to the event as 'The Argus'.

Interviewee 2, on discovering the concept of utility cycling in New York City (see above), felt immediately positive toward the idea, but rejected it as she did not know how to ride a bicycle. She was particularly impressed with a friend who '*was so cool*': '*there was something really badass about … the freedom and ability to just self-direct …not waiting for a bus or a taxi… when you want to move you move. That level of spontaneous decision-making … I found so free and beautiful*.'

Interviewee 9 had spent her childhood and school years cycling – mountain biking and recreational riding. As a child she used to ride the shops, or to the beach, but '*never thought of it as transport*.' She describes her contemplation stage: it was only when she moved to Cape Town, and worked as a sustainability consultant, that she made the '*shift in [my] head*. *This was around the time of the "inconvenient truth*[76]*", although I was interested more in the low hanging fruit, like recycling*.' She would have liked to cycle as transport, as part of her commitment to '*drive less'*, but gave up on the idea as '*the terrain was too challenging*.'

Interviewee 25 grew up in Germany and moved to South Africa with her parents as a young teenager, so she '*grew up riding to school'*. She describes her shock and frustration at her '*mother having to drive [her] to school'* in Cape Town. In Germany '*I was completely independent of my parents … we had busses, we had bicycles, we would go to the movie. There was no thought of your parents driving you anywhere… That was a bit of a culture shock for all of us*.' The first bicycle she bought in Cape Town was for sport, to participate in triathlons. '*I didn't ride anywhere else*', she says. In South Africa among a particular income group, she notes, people '*wouldn't be seen dead on a bicycle'* for transport… *There is a huge difference in the idea of commuting on a bicycle and sport cycling. They bear no relationship with one another whatsoever*.'

Interviewee 30 spent three months on an exchange programme in Canada, and '*there I saw how well supported and common cycling for commuting purposes is So I bought a secondhand bike and would cycle to get around campus … It was extremely refreshing to be in a city where one wasn't so reliant on a private car as compared to Cape Town*.' But on his return, he got straight back into his car: '*probably the fact that I had an idea in my head that cycling wasn't safe. … and then an idea in my head that Cape Town was just too big to get around on a bicycle and if there wasn't, if there weren't busses that I could put my bicycle on then it wasn't, it just wasn't doable*.'

[76] Of interest is that in 2007, a newspaper article specifically suggested that the documentary might have had an influence on decisions to cycle (Bucher, 2007).

7.4 PREPARATION

In the Preparation Stage, individuals are seriously thinking about starting to cycle as a transport mode. This Stage involves actions such as seeking information about routes, bicycles, or public transport integration, purchasing a bicycle, making a decision to ride, investigating whether other people also travel by bicycle, or other relevant actions. Responses in these Stages are taken only from the 36 interviewees who do cycle as transport.

7.4.1 'Cycling was something everyone did': social norms

Where cycling was a common or mainstream behaviour, it made sense for interviewees to contemplate and prepare to do the same. For example, as a student, Interviewee 1 lived in the Netherlands for six months '*and there cycling was something that everyone just did'*. On her return *'I was very like, "Oh, I must cycle when I get home".'* Student life in the US was similar for Interviewee 17 who was '*around people who cycled … it just made perfect sense in the circles I was in, everyone had a bicycle*.'

For Interviewee 2, who grew up in Soweto and used mini-bus taxis as transport, the first time she encountered utility cycling was while studying for a masters degree in the UK: '*It was actually the first time that I noticed a wealth context in which people were cycling around, and I was like okay, I'm going to learn.'*

Studying in the UK and spending time with others who cycled was also the catalyst for Interviewees 7 and 16, neither of whom had cycled in a city or as an adult before. At university Interviewee 7 realized that cycling was '*going to be the only way [she] could afford to get around … Many of the people that lived [with me] cycled.'*

Interviewee 17, in another example, was born in North America and moved to West Africa as a small child, where he '*learned to ride on a little white and blue bicycle on the athletics track of a secondary school nearby.* In the countryside, '*my uncles would take me around on it on the top tube everywhere*.' Returning to North America to study in the mid 1990s, he found that the '*waiting around'* for the bus to be 'brutal' in winter. It then struck him: '*If you've got a bicycle, when you're ready to go you go.'*

Interviewee 22 '*grew up with bicycles'*, riding to school and around the town in which he grew up outside Cape Town. '*We all did it,'* he says. After finishing school, he spent a year in the UK, and continued to ride a bicycle as transport – this time not for the independence but to save money. '*And then again, it was [also] just normal … it was like freezing cold outside but what did you do, you didn't have a car. You're there to save money so you use what you have*.'

Cycling was '*never part of [Interviewee 16's] life* – '*It was not even a thought that bicycles were fun things to do as a family or as a commuter* '– until her experience in the UK. A friend had invited her to join a Critical Mass ride, '*which was a really nice practice entry … that was the beginning of*

a long and beautiful relationship with bicycles.' For her, it was not only that she found herself living with people who cycled, but that '*cycling was just that extra bit quicker … and a cost thing*.' *It was definitely better on the environment … but it was also a great time*.' When she returned to Cape Town to continue studying, she brought her bicycle with her.

7.4.2 'It was a sport trigger thing': motivated by fitness

A number of interviewees describe preparing to cycle in terms of a sudden registering that – after a life of cycling as a child, or for sport – cycling was in fact also a mode of transport for adults, and could be combined with fitness training.

In one example, around the time of the World Cup, Interviewee 24 was training for triathlons, and decided to cycle '*a little bit more frequently. I made one or two friends that cycled…. And that's the first time I encountered the idea of a community of cyclists, in 2011. It was a sport trigger thing*.' He had moved to an area close to a green belt in Cape Town, and had also bought a relatively cheap mountain bike. '*Everyone was blogging and tweeting [about bicycle commuting*],' he said, and it *'occurred'* to him that could ride the green belt to work instead of drive.

For Interviewee 32, his brother had become a serious sports cyclist, which was to become the catalyst for him to return to commuter cycling as an adult. Repeatedly encouraged by his brother to start cycling again, he bought a mountain bike and took up sports cycling and stage racing very seriously too. He got himself a cycling coach and '*was in a six-day a week cycling program for a year-and-a-half*.' He '*accidentally got an entry into the Epi*[77]*'* and *'the problem is, you need to spend a lot of time on your bike. It didn't 'work for [him] to cycle in the mornings, go home, shower and come to work. Even though I got up at 4:00 every morning, just to cycle.'* So, like with other interviewees here, it '*just struck'* him: '*It became a thing, okay, let's do it on the way to work*.'

Interviewee 8 used to be a '*weekend cyclist'* until friends suggested they enter the Double Century[78]. To train, he would put his bicycle in his car, park at the office, then ride, or get up '*really early'* and ride before his drive-commute. He used his car during the day at work to visit clients. After a couple of years, he was promoted to a job that no longer required client visits, but continued to take his bicycle to work to ride with his team before or after work, as the corporate offices had a locker room and shower … '*Then one day I thought, oh, well I got everything here*,' and he began to consider riding to work as his training instead. He had used to commute by bicycle, as a student at the University of Cape Town (UCT) – he would ride '*up the hill* [79] *for the fitness side of things*,' so it was not an unfamiliar concept, just not one he had considered yet as a working adult.

[77] https://www.epic-series.com/capeepic - a 'gruelling' 8-stage mountain biking stage race in the Western Cape.

[78] A 202 km team race in the Overberg.

[79] This will not be the only mention of 'the hill' from lower to upper campus as the University of Cape Town: 1.5 km, ascent of 120 m – an average gradient of 10-12%.

Interviewee 14 had cycled throughout her school years whenever she could borrow her grandmother's bike. Once she started working, she didn't cycle for a few years, until she started a new job in central Johannesburg and one of her colleagues had a bicycle. She asked him if she could borrow it. She rode around the block and, '*I don't know if it was the endorphins maybe, but something triggered in me. I need[ed] my own bicycle.*'

Interviewee 19 has a similar story: his first bicycle was '*a gift from my grandmother, a BMX…*' Together with his older sister they would ride everywhere, '*we'd form a little caravan to school, picking up friends along the way.*' He upgraded his bicycle with savings from a high school sales job, but '*once my grown-up life started, I never cycled.*' He studied further in Gauteng, and continued to '*never cycle – never even thought about it.*' But then he moved to Cape Town, and there was a sports shop across the way from his office. '*One lunch hour I walked in there looking for something else and I saw a bicycle. Then and there I decided to get a bicycle, and I then did*.'

Interviewee 36's 'trigger' was also a sudden recollection and decision. He had grown up on a farm in what is now Gauteng, and was given a lift to school by his father each day, although he rode a bicycle on the farm itself. He has '*always admired the beauty of a bicycle,' but once he got a motorbike he stopped cycling*. For some reason, in the late 1970s, he '*had a lot of stress'* and recalled that a fellow university student had cycled from Johannesburg to Cape Town. He thought, '*shit that sounds like a cool thing to do. … and then I went and bought a bicycle and did it*. *Because I believe that when you're exercising you burning up all the cortisol.*' On his return, he kept the bicycle, and it '*changed [his travel] behaviour on a permanent basis.*'

7.4.3 'The right sort of bicycle': developing capability

For some individuals, getting an appropriate bicycle is the trigger to get them to commute; their current, relatively fragile road bikes or full suspension carbon mountain bikes are not always the 'right' sort of bicycle for commuting.

After almost a decade of driving 25 km to her office, Interviewee 27 decided to split her residential life. But although she had moved to within cycling distance of her work, this was not the immediate trigger to her changing travel mode: her intention was to reduce her drive by walking. She had not contemplated bicycle commuting as she had only a road and a mountain bike: '*that would be an anxiety for me is just in a town situation, when you need to be in total control of your bicycle*.' But her intention changed when *'a very dear friend gave [me] the right sort of bicycle and it changed my life*.'

Interviewee 9 (see Contemplation) had been contemplating bicycle transport, but Cape Town's hills made cycling impossible for her. In the late 2000s she met a sustainability consultant who was a pioneer of e-bikes as mobility options in South Africa. '*That's when I decided that that's what I needed*. Likewise, Interviewee 36: after a trip to the Netherlands

Interviewee 36 '*could [also] see immediately the beauty of an e-bike and I just knew I had to have one.*'

A new bicycle was the catalyst to Interviewee 28's his return to cycling: with 'cash left over' from his honeymoon (!) he took advantage of an '*amazing deal*' on a new mountain bike, and after '*using it for mountain biking [he] then reckoned, hang on, let me start cycling to work instead – as you're safer on an MTB.*'

7.4.4 'It's six hours we lose every day': productive time

Moving to a cyclable distance from home to work was the trigger for Interviewee 22 to prepare to bicycle-commute; like other interviewees, he was to be motivated by a hatred of the idea of being a driver in traffic. He was waiting for the right travel distance – he already had the right bike.

After a number of years commuting into Cape Town from Stellenbosch by train for work – '*it's six hours we lose every day*' – Interviewee 22 (see 'Contemplation') and his wife decided to move to Cape Town to mitigate the long commute. His wife walked to work, and he decided to return to the cycling of his childhood and student life: '*I get … anxious when I'm in traffic. It's a mental state. It is completely not worthwhile. Once I knew we're going to move to Claremont*[80]*, and obviously it's renowned for traffic back and forth. Like there's no two ways about it. You can take the car but I can't. Like, I'm going to cycle in.*'

On deciding to cycle rather than drive, he first sought information about safe cycling routes, '*driving to get to know the route and pumping myself up'*, until he *'heard about this thing called the bike bus … during transport month in October*.' Despite a serious fall that required significant reconstructive surgery, '*My mind was still set. That's how much I hated traffic, I won't do it. I fall my face off and still say I'm going to get a bike and go.*'

An opportunity to test the theory of bicycle commuting, combined with the right distance, worked together to get Interviewee 21, a new urban planning graduate, to prepare to cycle. He had cycled to school as a child, and at UCT he attempted the '*nasty gradient'* by bicycle to upper campus a few times, but decided that a combination of moped or the university shuttle were more pleasant, less '*sweaty*', and more efficient. Nevertheless, he maintained a '*academic interest in how it worked and how feasible it was,*' and was alert to an opportunity to put this interest into practice – which arrived with a new job closer to home.

[80] Approximately 8 km from central Cape Town.

7.4.5 'Made me realize this thing is possible': personal support

A combination of the right bicycle, the right distance, a motivation to stay fit, and seeing someone else cycling her commute route, led Interviewee 10 to prepare to ride. She had been a spectator at the Cycle Tour (see Pre-contemplation, above), and changed jobs a year or so after she had started recreational cycling. There she met '*a colleague who rode his bike to work. He was the only person to do so – it was quite a novelty.*' Through talking to her colleague, she '*got the thought that it would be a good idea [to do the same].*' She set about purchasing a second-hand commuter bicycle, and asked her colleague if we could meet her en-route so she didn't have to begin on her own.

A similar combination of trigger and motivations worked for Interviewee 29. For most of her working life, she had cycled as sport and recreation. '*I used to go spinning to stay fit. Ride my bike on the weekends.*' She had always walked to school, although her and friends rode their bicycles after school and at weekends. Once she started university, in Stellenbosch[81], she started cycling instead of walking – although walking was still the best option at night, as bicycle lights and bicycle racks were rare.

But three years into her current job, '*this young engineer started… He was riding to work on his bike. I was like, "that's so cool and it's such a good idea".*' She found out that he lived nearby, and started to consider doing this herself.

Interviewee 30 had deemed cycling in Cape Town as 'undoable' (see Contemplation) until he got '*fed up*' with driving to a new job. When he first started working, to miss the traffic, *that would mean driving in an hour before work started and then hanging around town until about six and then driving back*.' He '*got very tired of it quite quickly and realized that waking up super early and only getting back quite late in the day just wasn't enjoyable and I think I've also always been someone who gets very, very fidgety and annoyed in traffic*.' Although the drive was only 8 km, it would take at least half an hour, and the time was unpredictable, depending on road crashes or incidents, and school holidays: '*if there was one accident then everything bottlenecked and it would take like 45 minutes*.' He tried taking a train on occasion, but '*it was just horribly delayed*', and he '*really didn't like the idea of not being able to move because of factors beyond my control.*'

He decided to give cycling a try. Somehow it now seemed possible because a friend and colleague, who had started working at the same organization and who lived nearby, had started bicycle-commuting. At the same time, he '*found all these pamphlets around cycling routes in Cape Town*' in the office, as part of a City Cycling campaign. He didn't have a bicycle but asked his father if he could borrow his mountain bike until he could purchase his own.

[81] A small campus-based university town 50 km from central Cape Town. It is perhaps the most 'cycle-friendly' town in South Africa, and this will not be the only mention of the town among interviewees.

7.4.6 'The most economical solution': saving money

Commuting to high school involved Interviewee 31's 'dik wiel'[82], single-speed back-pedal bicycle, and at university, a 10-speed 'racing' bike, which enabled longer trips. During university years and later, early years at work, he did also have access to a scooter and an older car, and decisions were made based on '*whatever was practical and convenient. It was more financial considerations. "Do I have money for petrol for the Beetle?" 'The bicycle was just always there*,' but the car was used if he needed to give someone a lift, for example.

Interviewee 28 also prepared to cycle as an adult for cost reasons. Public transport or driving *'gets expensive and it's time-consuming, whereas with the bicycle, you control your own time and your own framework around that. It is ridiculously cheap. I had the bike, so I planned to use it*.' After a year or so, he started studying, which involved a 42 km round trip – which he still took by bicycle. '*I was still riding the same bike, still carrying on. It worked out to be the most economical solution again and time. Other transport …just didn't make sense*.'

7.5 ACTION

In this section, I present interview data as a narrative to show what triggered individuals to shift from preparation to action, and what their primary motivations to cycle were. In the Action Stage, individuals make a start as cycling as a mode of transport; this does not necessarily mean that they cycle regularly, or routinely, but that they have started, or have got back on a bike, or put their preparation intention into practice.

I have not included interviewees who describe themselves as having always cycled – instead, I have included them in the section titled Maintenance and momentum', exploring what keeps them cycling.

7.5.1 'More or less obliged to ride': personal identity and wellbeing

Interviewee 1's first time cycling as an adult in Cape Town was when *'[her] manager just sort of shoved me onto a bike, and so we started riding*.' She had recently started an internship, and riding to and from meetings, to promote sustainable transport, fell to interns and other willing staffers. There was no deliberation or intention involved so much as simply doing her job.

Interviewee 3 was already familiar with cycling as he had ridden everywhere as a child, but he too found himself propelled into 'action' through a new job in an urbanist organization: '*not that … anyone was holding me to ransom to actually do this [cycle], but I was like ... if I'm going to be in this role definitely I need to go back [to cycling] again. I need to actually do this. … this is a very good way of showing other people the possibilities of doing this*.'

[82] An Afrikaans phrase meaning 'fat tyres'.

He describes how this same *'pressure'* worked on new colleagues*: 'Because they felt like everybody here rides, so we also have to start riding…. they felt like they were under pressure, they started feeling excluded.'*

It had never occurred to Interviewee 11 that she would '*ever end up actually cycling the way I do now – I hadn't even thought about it.*' She had studied environmental management, but there was no transport component in her curriculum; '*everything was conservation, or sustainable development*.' What changed for her was her first day of internship, when her 'boss' said: '*you need to go and take the bus or train into Woodstock – I'd never taken the train before – go and fetch the [office] bike …* [from repairs] *and cycle back*.' She was wearing a long skirt, '*looking a bit more snazzy than I usually would'* as it was her first day. But she thought '*well I can't exactly say no.*'

Colleagues and her work environment also got Interviewee 4 to start bicycle commuting. She had returned from an unhappy spell working internationally, and came back '*wanting to start afresh, and part of that was rediscovering Cape Town, wanting to use public transport, because I come from a segregated background. It's not easy to come out of your bubble when you're in a car*.' She had not planned that starting afresh would involve cycling, however. After joining a social development organization, she discovered that she was '*more or less obliged'* to ride a bicycle to and from meetings. Within days '*[Name] obviously got on my case about riding a bicycle …*' She already had great memories of cycling as a child, but hadn't cycled as an adult until this new job, when colleagues then clubbed together to purchase a bicycle for her to use.

7.5.2 'And I'll ride with you': personal support

On Interviewee 18's return to Cape Town after working in the UK, he had been able to walk to his office, until he started working some 10 km from home. When considering purchasing a second car, it became obvious that it would be better to cycle instead. He found that meeting others who also commuted was a great way to get going, as they could help him develop confidence in the logistics of it all: '*when I first started doing this commute, [I was] wondering … how much time did I have to give myself, was I going to be exhausted at work, that kind of thing… But once you get over that hump, like anything, like going to gym or going camping, once you know what needs to be done and you, it's part of your routine, it becomes really easy*.'

For Interviewee 10 (see Preparation), too, it made '*a huge difference'* having her colleague ride with her, and they continued to ride together until she changed jobs again, closer to home. Interviewee 29 (see Preparation) had a similar experience: '*Turned out [my cycling colleague] lived very close to me, and I said "I'd love to do that but I'm too scared". He said, "No, meet with me and I'll ride with you. I'll never forget*.' She also discovered, unexpectedly, that cycling was quicker than driving: *'it takes me half-an-hour in the mornings, if I go straight*.'

After Interviewee 30 (see Preparation) had asked his father if he could use his bike, he '*was pretty nervous about cycling so made sure that this friend of mine agreed to show me and ride with me*

into town the first time I did it.' He then '*started cycling in – the big motivation then was a very sort of self-centred one, I didn't want to be caught in traffic*.'

Interviewee 19 concedes that '*he didn't really know where to use [the bicycle*]' he had bought in preparation for commuting, and it was still '*easier just to go to gym to get fit.'* Strangers on a neighbourhood social media group were the support he needed to decide where to use the bicycle. The group was interested in commuter cycling, public transport, and public space. A perfect storm, essentially, as at the launch of the MyCiTi bike lanes in 2011 (see section titled MyCiTi cycle lanes: 'Abandon [your] cars') he met up with the social media group in person (which whom he still has regular contact], and they rode together during the event. Drawing on this experience and support, after starting a new, formal job, he then cycled there '*practically every day*'.

Figure 39: Street poster from the Cape Argus, February 2011, drawing attention to the launch of the MyCiTi bicycle lanes.

7.5.3 'Horrific' traffic, 'onerous' parking permits

'Interviewee 6 can't really recall a time that bicycle commuting was not either part of his life or something he intended to return to. As a child, cycling '*was my absolute freedom. My mom didn't take me anywhere, I'd rather be on my bike. It was freedom.'* As an adult, with a night shift, '*the bicycle was on the back burner'* and he rode a motorbike instead – but took up cycling as a sport. A new, daytime job meant bicycle commuting again: '*the traffic [was] horrific, so I took my [mountain] bicycle and I converted it into a commuter, and I commuted… it was wonderful, I loved it and, again, it was just that freedom all over again*.'

Although avoiding the traffic was the trigger to Interviewee 22 preparing to cycle, he '*wouldn't have cycled'* had he not taken the decision to 'sign up at the Virgin in the Foreshore'[83]. The 15 km he rides '*is just far enough for me to work up a sweat*,' he says, but the lack of public showers or end-of-trip facilities was a challenge.

The waiting around was what got Interviewee 18 to start cycle commuting as an adult: he had grown up in a small town in Zimbabwe in the 1970s, '*where most of the kids cycled to school*'. When he moved to Cape Town to study in the late 1980s, at UCT, he got a bicycle and cycled to and from campus… Although there was a shuttle, '*it was incredibly inefficient … you had to wait for it longer than you are on it.*' So cycling, despite '*the hill'*, was quicker. After his first year, he moved off campus and purchased a car, but he still preferred to cycle. '*Getting a permit to park on campus and driving to campus [was onerous], it was quicker to cycle*.'

Likewise, looking for parking was what drove Interviewee 5 to cycle as an adult in Cape Town, some 40 years ago. He had a 7-speed road bike, and rode in his '*norma*l' clothes. Although he had a car, finding parking was a '*mission*' as he did not have an allocated bay. There were regular buses on his route, but he preferred the flexibility of riding: his earliest memories of cycling as a teenager were the independence and freedom of choice it gave him, and it was recalling this, together with seeing a colleague ride to work, that reminded him that cycling was an option.

Interviewee 13 had a similar approach. He had cycled for the duration of primary and high school. At university, he took up mountain biking as a sport – but soon decided to ride to campus too, despite the notorious hill. '*I'd arrive in class all sweaty, but I did it. Why? Because parking at UCT is just so bad.'*

For Interviewee 14, it was the stress of a bus strike in the late 1980s that got her back on a bicycle as an adult: '*Again something triggered in me'* 'she said: *'I could ride my bicycle!'* Using

[83] A private gym franchise near his cycling destination.

map books and talking to others, she *'figured out a way to get to and from work, even though … it was risky*' – and she never went back to motorized commuting.

After graduation, Interviewee 21 (see Preparation) started a position that gave him an '*interesting opportunity*' to put his academic interest into practice, as the route was only 6 km from home. His venture into bicycle commuting was '*helped by the fact that [his employer] doesn't give you any form of parking. … you have to apply, and you will be on the list for a few years before you get a parking bay. So, there was no other option, so that was it. The final, nice incentive. I think I would have tried it out anyway, though, and I have really enjoyed it.*'

Interviewee 8 had begun to consider riding to work as his training rather than driving (see Preparation); he had used to train in the early hours of the morning, before his car-commute to work. Eventually, after the birth of his first child, and his increasing frustration with the unpredictability of traffic, he did start riding instead. For him, while fitness was his initial motivation, driving finally got to him: '*It wasn't so much the length of the time, it was the unpredictableness of it. I'd tell my wife, I'm leaving now, I might be home in, I don't know, 45 min to an hour. Whereas on a bike I can say I'm leaving my desk now, I'll be home in 30 minutes regardless, with the wind, 35 minutes.*'

7.5.4 'I just whip around': ease of use

A number of interviewees had purchased or received bicycles along their cycling biographies. One of them was Interviewee 27, who had changed her residential location (see Preparation) with the intention of walking. However, she found that '*a 20-minute walk … is actually quite long*'. Using the bicycle her friend had given her, she discovered that her route was '*a three-minute cycle, the way I ride. People are horrified by the way I cycle. I just whip around.*' When she first received it, she was convinced she was '*never going to learn this.*' But now she '*just loves it, I'm so good at it… I really learnt to manage it. So, I'm very pleased with myself.*'

Interviewee 9, the sustainability consultant described under Contemplation, had always wanted to bicycle-commute for environmental reasons, but it took her another two years after hearing about e-bikes to find one that was within her price range. With her new bicycle she was able to take action: '*It opened up the distances and the kinds of terrain I could ride because from [home] I could go anywhere.'* Cycling was *'no longer a big mission.*'

7.5.5 'What the rhythm of the city is really about': emotional health and wellbeing

Two interviewees explicitly started bicycle commuting as a way of engaging with privilege while living or working in an inequitable city.

Interviewee 7 returned to South Africa from the UK, where she had discovered commuter cycling, and found herself '*getting around by bike'* in the rural Eastern Cape while completing an internship programme. On her relocation to Cape Town, she decided to keep cycling, and

deliberately moved to an area within cycling distance of the hospitals she was to be stationed at. She works in public health, and her *'line of work is connected to understanding how the city moves and what the rhythm of the city is really about, …. You can know these things but I think you get a different understanding when you live that every day.'*

A decade or so ago Interviewee 25 spent six months working in Europe, where she cycled everywhere, using her road bike 'as a city bike', a 'commuter' bike. On her return, she had to find a way to come to terms with the different social context of South Africa:

> *'When I came back to South Africa, I was fucking miserable … at being back in Cape Town where I have to drive, where they have this fucking inequality, where social structures don't work … It was kind of like a New Year's resolution, it was like for fuck's sakes what can I do to make myself happier here; and so it was a bicycle, that was it.'*

7.6 MAINTENANCE AND MOMENTUM

This section presents responses where interviewees describe what led them to increase their amount of utility cycling, or sustain a cycling practice; in this Stage of Change they might cycle more often, for longer distances, in less favourable circumstances, and for more varied purposes. They might continue to seek more and different information about cycling. This Stage could also involve removing of 'high-risk' stimulus, such as giving up car-ownership, or more simply, finding or describing ways in which the action is maintained. This stage is cyclical, and also might include similar 'triggers' or catalysts to those that started them cycling in the first place.

The difference between Maintenance and Termination is not aways clear-cut, and interviewees are not always easily able to pinpoint a trigger or catalyst that shifts them to a 'default' practice. I have therefore categorized the Stage of Maintenance or Momentum as one where interviewees focus on discovering new motivations, and Termination as one where interviewees see their cycling practice as self-evident, a default mode.

7.6.1 'People are like pivots': social support and social norms

The first '*major turning point*' in Interviewee 1's cycling practice was when she attended an Open Streets event soon after she had started to ride to meetings during her working hours. Although she was '*quite interested in* [attending the event]', she '*might not have gone*' were it not for mentioning it to a friend, who suggested they cycle together, or for her sister, from whom she borrowed a bicycle. After this event, and with her new borrowed bicycle, she not only started riding every Friday to work, but also facilitating group bicycle commuting activities, to encourage other people to do the same.

She says that '*people are like pivots to the next stage of feeling more confident*'. From offering in-depth information as to what type of bicycle to purchase (rather than use the office bicycle),

to riding home with her, or showing her safe routes and how to do basic roadside repairs, *'someone is always looking after you.'*

Although initially Interviewee 4 had been skeptical, and nervous, about the expectation from colleagues that she should bicycle commute, it soon became '*something that was empowering, and also freedom*.' And it was '*other cyclists'* who enabled her to increase her practice. Once she had received her donated bicycle (*'with only a few gears'*) at work, she had started riding from home, only 2-3 km, but the return trip was a steep hill. She didn't know what the best route to ride would be, so she took the same route she would have had she driven. Eventually she met other cyclists on the way, and learned better routes to take.

For Interviewee 13, whenever he '*stepped up cycling to another level, it was when [he] met other people'* – and the fitter he got, through sport, the longer distances he was able to commute.

For Interviewee 23, studying sustainability late career brought him into contact with bicycle advocates, which has meant he is now '*even more passionate about cycling'* than he used to be.

Having access to office bikes had made it easy for Interviewee 11 to simply take one to meetings, which already meant that she '*started cycling a lot more'*. It would have otherwise taken her 20 minutes to walk, but she found herself preferring to ride in the traffic than use the '*horrific, horrific'* cycling lanes. But it was getting her own bike that enabled her to increase her new practice. '*I had told my boyfriend that I loved cycling and that I would love to cycle to work, and he actually bought me a secondhand bike for Christmas that year*.' This led to her starting to cycle to work and back rather than only between work meetings. She also moved residence to even closer to work (2 km), '*so I started cycling more and more to work.'* When a colleague joined the department who was also *'excited about bikes'*, the two created a WhatsApp group for sharing the bikes and got more and more colleagues involved.

Interviewee 7 '*has a number of friends who also cycle commute and I think that by its very nature keeps us all cycling in a way, about being connected to other... the influence of networks of cyclist. The influence we have on each other – it feels to me like a bit of a bicycle sub-culture'*.

7.6.2 'To force myself into this': commitment and identity

Removing a 'high-risk stimulus' is one of the hallmarks of the Maintenance Stage, and a number of interviewees talk of doing precisely this. Interviewee 8, for example, entrenched his bicycle commute habit when he and his wife decided to sell one of the household cars, and replace it with an electric bicycle. They also purchased a second set of car-seats for their children, to keep in their grandparents' car as a back-up. Likewise Interviewee 22, where he describes the family decision to '*go with a one-car policy*' as pushing his bicycle travel to '*next level*'. '*It doesn't make sense having another car*,' he says.

Interviewee 4, on her return to South Africa from international travel, deliberately didn't purchase a car: '*I didn't want a car. I knew [if I didn't have one] I would then be forced to use public transport [or cycle]. And I know that if I had access to a car, then I would use it. So it was kind of to force myself into this.*[84]'

Interviewee 5 echoes this compelling power of car ownership. He and his partner now share a car – having each sold their own to purchase a shared, multi-purpose car. This was a deliberate decision, to increase his cycling practice: '*When there was always a car available, [driving] is what I did.*'

Interviewee 25 cancelled her parking bay at her place of work. For her, the inconvenience of finding parking was less a catalyst to her action but way to cement her behaviour. She calculated that '*even if I use Uber the entire winter, six months out of the year, that would still cost me the same as when I'm paying for my bay.*' When she had access to her parking, she '*found that [she] used the car more often than before. Before the bike was the absolutely pole position, it became a daily weighing up exercise [between car or bike].*'

Interviewee 28 sold his car, as '*it wasn't being used*', and since then '*with my cycling we don't need a second car. It was scary, at the time, but then you get back into the motion of things.*' It is made easier, he says, by the fact that his wife cares for their two children, and their schools are within walking or skateboarding distance. He uses MyCiTi if he is feeling less energetic, or is something is wrong with his bike, mechanically. To visit clients he might take an Uber.

Interviewee 7 turns to WhatsApp and draws on her sense of self when she is tempted to borrow a car rather than ride:

> *'We've got a bunch of WhatsApp groups that are all just people on bikes. So it will be pouring with rain now and I'll be cycling to work and I'll be feeling pretty fucking miserable, and I'll be saying to myself "why do I do this to myself". And then I'll get to work and there will be a photograph of me cycling in the rain and they are like "you a legend".'*

[84] She had a momentary relapse where she gained access to a car, and her premonition proved correct: '*as soon as the car was available, it was more convenient, it is easier and there was always parking [at work].*' As soon as she started to feel 'guilty' about not cycling, '*it just a kind of something I pushed away' … I didn't think about it for long enough.' There was always something happening after work, and riding home in dark was a worry, there was traffic to think of… 'I would just use this as an excuse.*'

7.6.3 'Full of oxygen and very happy': wellbeing

For the interviewees above, cycling as transport gave them the opportunity to exercise or to train while commuting; these interviewees, below, refer to cycling time in terms of the opportunity it offers to reflect or make the transition between home and work. Many interviewees describe their cycling in terms of happiness, fun, feeling good, or mental health. This personal or emotional wellbeing is a high motivation to cycle.

For Interviewee 27, cycling '*is such a nice prelude to a meeting.* For Interviewee 23, '*my alternative if I didn't cycle to work would be to walk … I enjoy the reflective time*.' His commute distances have always been short – some 3 km or so – and certainly '*beat*' what little traffic there is on his daily route. He will ride 15-20 km though, if that's what it takes to get to a destination.

Interviewee 3 describes cycling *'as not just fitness, it's therapy, you know. That fact that I can get on my bike early in the morning and ride my bike, you know. There's something that happens to me … before I even get here. … Something happens and that something determines how my whole day is going to be, how my week is going to be'*. But he explains that he has not yet reached the stage where cycling is his only or first option*: 'Every morning I have to like think if I'm going to take a car or I'm going to take a taxi here. I haven't reached that point where I'm like, it's okay [to cycle only].*'

Cycling always makes Interviewee 1 *'feel good'*:

> *'If I cycle to work, I will arrive here guaranteed feeling better than if I drive. I get grumpy when I drive. You get grumpy because of people hooting around you, parking is a nightmare in the city... Whereas when I cycle, the freshness of the morning is so nice.'*

When Interviewee 29 returns home '*and I've ridden my bicycle home, I'm automatically more relaxed.*' Riding her Dutch-style bicycle in town makes Interviewee 27 '*feel kind of invincible. It's very fun… If I go on my bicycle, I arrive at the meeting feeling full of oxygen and very happy…. Whereas in driving in town, is not. It's stressful*.' Interviewee 32 says: 'I *just enjoy that I don't sit in traffic and I enjoy being out in the open. It's, I guess, more mental health*.'

Interviewee 27 cycles as '*it's the quickest and it's exhilarating. I do love cycling and I love commuter cycling.* Also, she adds, being on a '*sit-up and beg [bicycle] … I often get people saying, hello, or whatever, which they wouldn't do with a normal bike with a helmet on*.'

This engagement with the world is what has kept Interviewee 7 cycling. She describes how bicycle commuting '*opened me up to a whole new way of seeing the world, and so I love being able to explore the city on a bike because it just completely changes your vantage point. It changes how people interact with you. It changes what you see. It changes how you engage with the world around you and I just really love that part of it*.'

7.6.4 'I can really bank on it' : travel time certainty

Like the predictable time that catalyzed Interviewee 8's practice, the consistency is what keeps Interviewee 32 bicycle commuting, even though he no longer enters cycling events:

> *'For me the beauty of commuting now is, it is a constant. It's going to take me an hour. If the wind is hectic it's going to take me 5 minutes longer, maybe 7, maybe 10. … The variance is, plus, minus, 5 minutes on my commute, every day, so I can really bank on it. It's not like in a car, I'm stuck on the N7*[85]*, there's protests, or whatever, or there's a breakdown then you sit for an hour-and-a-half, so with a car it takes me, on a good day, 35 minutes. With the bike, on a bad day, an hour and five minutes.'*

Interviewee 18 bicycle commutes as training: '*I still cycle quite seriously, I do ride fast. If you see me cycling, most people would think I'm racing*.' But the side effect of predicable travel time is important:

> *'So a car on a good day is probably the same as the bicycle. On a bad day is twice as long as the bicycle. It takes me about 25 minutes from Rondebosch to here on a bicycle, and the motorbike is sort of between 15 and 20.'*

7.6.5 'Killing two birds with one stone': productive time and embedded exercise

Interviewee 11 would rather be cycling than waiting for a bus, even though the combination of wait time and bus time would likely be quicker than cycling:

> *'It's the toss-up between that I know that when I walk out of here I'll have to go to the bus stop and I'll wait an extra 20 minutes or so, whereas I know it will take me 12 minutes to get home [on my bicycle]. There's no point in me going and actually sitting there.'*

For Interviewee 36, '*the motivating thing is … killing two birds with one stone. I'm getting [somewhere] and I'm getting exercise.'*

Interviewee 13 started bicycle commuting because of his struggles to find parking, but came to find that the real '*selling point'* for him was productive time:

> *'Everyone complains they have to work too long, there's not enough hours in the day and everyone wants to go to the gym, everyone also spends an hour in traffic each way. So, if you want to combine your gym time with your commute time, why not, and this would be a way of doing this.'*

Interviewee 27 probably wouldn't exercise if she didn't bicycle commute: *'I'm over this thing of just doing exercise for exercise sake. I'm bored with that*,' says Interviewee 27.' *'I've always loved*

[85] Protest actions around service delivery, for example.

destination cycling.' What motivated Interviewee 24 to both start and continue bicycle commuting was essentially '*the realization that I could merge training, commuting and fitness.*'

Interviewee 30 had started cycling to avoid traffic, but his commute then *'also made me realize that cycling was fun and I normally find that after a day of work, I get home and be too lazy to do any kind of exercise. So, if there's a way of incorporating exercise into my day, then that was fantastic*.'

For Interviewee 29, '*it takes me slightly longer but to me, I get home, and I don't have to go to the gym. I don't have to go spinning. So, that's what makes me feel better about it. I decided a better work/life balance. So, I want to try and do it more'*. Cycling to work as her exercise really works for her, as '*I'm quite a home-body, so when I get home, I want to be home*.'

7.6.6 'Bonkers expensive': saving money on parking

Saving on parking costs is a big motivator for cycling. Interviewee 13 had started bicycle commuting because of the difficulties of finding parking at university, but continued to ride for the same reason, to his job in asset management: although the corporate subsidizes parking, '*it is still bonkers expensive':*

His company has an incentive in place whereby if you don't use the parking bay you are entitled to, you receive a daily cash rebate, *'so it's an additional incentive.*'

Interviewee 23 is of the view '*it's just insane the amount of money that people will spend on cars that spend most of their lives standing still. You know, you're paying huge premium for parking it, maintaining it.'* Parking is a cost Interviewee 30 '*avoids by cycling'* – and gains '*the element of that satisfaction and that feeling of small victories every time I see people looking for parking*.'

7.6.7 'Cycling has [now] become a thing in Cape Town': social norms

For 'a large chunk' of her life, having children and the routines this brought meant that driving became Interviewee 20's main mode, until her son and daughter left South Africa and moved to the Netherlands to study. And it was there, while visiting her children, that she was reminded about cycling. '*Everybody cycled! It was a bit like Stellenbosch again*.' On her return after her first visit to her children, she realized that the cycling landscape had changed: '*Cycling had [now] become a thing in Cape Town.'* Her husband was an early adopter of electric bicycles (he converted an old mountain bike) and it wasn't long before Interviewee 20 bought one for herself and picked up from where she had left off cycling earlier in her cycling biography.

It makes a difference that she is retired from a routine 9-5 job: '*It's just much easier*.' She has got more '*dedicated*' since she first started riding. She now travels by bicycle '*daily*' – '*mostly I plan my shopping around my bicycle capacity, and I'd buy two litres of milk instead of more*.'

This increased acceptability helps Interviewee 28, who used to have to walk or get a taxi to meetings. '*Now, I jump on the bicycle and if I haven't been there [to meet these clients] before, I*

normally phone ahead and say I'm coming with my bicycle, can I bring it in, and people don't say no. They never do. So if you plan ahead, it's not an issue. People are a bit more open to people on bicycles commuting and arriving.'

Interviewee 16 was able to increase her cycling practice because of the '*different cycling retail environment*' that emerged in Cape Town after 2010. Before that, '*it was impossible to find [a commuter bike]. They were so expensive, and I was like "that's crazy"*.'

Cape Town's bike lane contributed to Interviewee 5 increasing his amount of cycling: '*Not that the bike lanes were in the right place or useful for where I wanted to go, but there is a general awareness that cyclists have legitimate space on the road, and making cycling more acceptable. MyCiTi permitting bicycles on the buses also made a significant difference to this legitimacy*.' Like Interviewee 28, he also now feels more confident arriving at a meeting by bicycle, and taking his bicycle into a building with him.

The fact that MyCiTi permits bicycles on boards also enabled Interviewee 9 to maintain her cycling: she sold her heavy e-bike (27 kg) and purchased a light alternative that she was more able to lift into the bus.

Interviewee 16 lives at the top of a hill, on the MyCiTi route, which means cycling to a destination doesn't commit her to having to cycling back up the hill home: *'So, if I am super exhausted then I just can't manage to cycle up the hill, I will pop the bike on the MyCiti, which is what I really like about the MyCiti.'*

7.6.8 'Started to put distance into it': increased capability

Since moving to a fairly remote residential location, Interviewee 5, who used to cycle to work, met his partner, who cycled as a sport. He shifted to riding a bicycle for sport too, as this was something the two could do together, always looking for places to go on holiday that involved riding. Then the fitter he got, '*the more enjoyable cycling reasonably long distances became*.' Riding stage races introduced him to the idea of travelling from one overnight place to the next, and this reminded him that a bicycle could be used for transport even though the distances he would need to travel were significantly longer than his earlier commutes.

Through self-supported bicycle touring he next realized that shopping by bicycle would be relatively easy: '*if you could carry camping equipment in a pannier bag, you could carry groceries*.' Further, '*what expanded my ideas on riding bicycles was getting lights for night mountain biking, and that led to cycling as transport no longer being limited to daytime trips*.'

Commuting for Interviewee 31 was a combination of the '*saamry klub'*[86], his motorbike, or his bicycle. But with his first 'decent salary', he bought his '*first good bike' – a steel, South African*

[86] Afrikaans word meaning 'lift club'.

made road bike.' Not long thereafter, he started cycling more seriously as a sport, joining a cycling club and '*doing longer distances'*:

> *'I learnt that one can cycle a 12 km uphill and just pace yourself and so that was an eye opener … This changed my view of what I had once regarded as too far to be practical [to commute].'*

Interviewee 29 had started bicycle commuting partially to replace fitness cycling classes, but she still trained over weekends. Eventually, she decided to simply ride longer commuter routes: '*I was like, okay, cool, … this this can be my [bicycle event] training'*.

Interviewee 14 entered the 'Argus' cycle tour: '*I thought to myself I'd like to do it, just once, you know… to get it out of my system*.' She decided to start riding to work more often, '*just for training, you know'*, instead of getting her usual lift-club. '*The day broke after my first Argus, and I thought … I still feel fine. The Monday I'm going to ride my bicycle to work again. I'm going to keep on riding because I've got some measure of independence. And that was it.'* Once living in a safer area, she found that she '*got to do other things via bicycle and at times I'd even go out at night and I'd use my bicycle, if it was within the general area. I got lights, and I would just ride everywhere*.'

7.7 TERMINATION

In this section, I present interview data where individuals describe their Terminal Stage: here, individuals describe the stage of their mobility biography wherein cycling is habitual or normative, and the individual feels no desire or inclination to return to a previous behaviour. Termination does not mean the interviewee always cycles, but that cycling is a first choice, the point from which other options are explored. Termination is not to be misread as a stage where the individual no longer engages in the new behaviour.

As with Maintenance and Momentum, above, this stage includes similar motivations to those described during earlier stages of cycling. In this stage, however, individuals tend to describe less what sustains them or catalyzes a shift, but more why they don't consider driving, or what they miss about cycling when they 'have' to drive.

7.7.1 'I can't imagine why anyone wouldn't cycle': avoiding traffic

For Interviewee 6 '*it's just silly to take the car into town [Cape Town CBD] – I mean, why would you do that, it just doesn't make any sense … there's no hassle, and you don't have to deal with traffic'*. Interviewee 5 keeps riding a bicycle *'because it is cheaper than driving and fun, and quicker to get around in town – I get a sense of satisfaction from not using a car. I just think that it's the way one should be*.' Likewise, Interviewee 6:

> *'So, [my ultimate motivator] is traffic. I commute to get around traffic, so that, so I don't have to deal with any road rage or anything like that and get irritated by the t**% in front of me and I get to places, generally, faster. Really and truly, I know how to ride and I enjoy it.'*

For Interviewee 34, '*the traffic coming into town … is a disaster. …I can't imagine why anyone wouldn't cycle. And it is addictive as well. … once you've experienced it and you see the sense of it, it becomes insensible to do anything else*.'

7.7.2 'My mind is free, I'm feeling good': wellbeing

A number of interviewees started cycling because of value of embedded exercise; here they describe embedded exercise as the reason cycling is an unequivocal part of their lives. Says Interviewee 30, '*because it really does give me a feeling of being more energized and healthy, I look forward to cycling in the mornings*.' Interviewee 6 '*get'[s] to the other side and I've had a little bit of a workout, my mind is free, I'm feeling good…'*

'*It's exercise that just happens'*, says Interviewee 17. '*Of course it's cheap, I don't pay for parking, I don't pay for petrol or for insurance for any of that stuff. So it makes lots of sense. But I feel like my brain works better*. '

These interviewees do not only value the '*exercise very much embedded in everyday life* [Interviewee 7],' but are also motivated by mental health or emotional wellbeing that this approach to exercise brings – the embedded nature of the exercise, and its multi-layered benefits.

7.7.3 'Daily decisions': choosing when not to ride

Interviewee 4 describes her cycling practice as one where she still makes daily decisions, but her decision-making hinges on when <u>not</u> to ride rather than when <u>to</u> ride. '*Often, I won't do it. I will take an Uber instead or whatever. A lot of has to do with making logistical choices.* She always has other options, and weighs them up each time:

> *'I say to myself, well you could put on your warm pants and your jacket and go out in the rain, and I might decide to do that, or I might not. But if I am going to some presentation and I want to look nice … then I will choose not to ride the bike. I am coming from a place of privilege where I always have options. I am always … choosing between the different options.'*

'If the weather is bad or if I have to go through possibly a dangerous area,' then Interviewee 5 drives. But his *'first choice nowadays is very definitely by bicycle and I get quite annoyed if I can't go where I want to go on a bicycle. I'm completely convinced that cycling is the way to get around.'*

The circumstances in which Interviewee 20 will drive rather than cycle relate to load-carrying capacity: '*If I have to buy big things I take the car … my decision-making is whether it can fit into my panniers or not. If there's bad weather or I know I have to buy a case of beer, then I'll take the car*.'

For Interviewee 12, cycling is '*the smartest option'*, and it is his '*go-to'* mode; he also chooses to walk, take MyCiTi, or get a lift with friends, depending on the weather, distance, what he is carrying, and what he is doing after work hours.

If Interviewee 30 '*knows there's a chance that I'll have to come home when it's dark, I won't cycle, I'll take the Jammie Shuttle*[87] *or I'll plan to catch an Uber*.' Similarly, if Interviewee 11 is staying late at work, or has to be somewhere else afterwards, she drives, '*but I always try and park in the places where I can park for free… I'd rather take the bus than pay to park my car.'*

Parking is a common motivator: if Interviewee 15 starts trying to persuade himself to drive, he reminds himself of *the parking thing. It's an actual decision that I take. When I think, it'll quicker [*by car*] and I'll arrive there more with no sweat, then I think, parking is so crap there and what time is traffic now, maybe I should just cycle. It's a proper thought process that I take*.'

Although cycling is the preferred option for Interviewee 9, it will never be her only option:

> *'Cycling, unfortunately for me, is becoming more unsafe … I think that is one of the biggest hurdles, … and it doesn't help, when you're constantly being bombarded with media,… literally every week, there's some cyclist that's been injured or killed by vehicles [or attacked] and there's no political move to do anything about it. … I find that there's certain routes that I won't cycle.'*

Her e-bike means that she is able to act on her preferred choice more frequently: *'When I'm riding an e-bike… I often take routes that I wouldn't take otherwise, because I can get away. Because you've got speed and power … the terrain doesn't impact you. A lot of the muggings happen on the ascent.'*

Interviewee 27 concedes that cycling is only her 'default' mode when she is in her work routine. When she is at home over the weekends, '*I quite often completely forget that I could cycle and I just take my car because it's like a knee jerk kind of thing and also, because I'll have my daughter with me*.'

'*Sustainability doesn't offer an immediate return*,' she says. '*Saving money or making you fit and healthy are more immediate returns, which is what I do in the week*.'

7.7.4 'More time doing something real': meaningful time

When Interviewee 35 has to drive rather than cycle, he explains that for him, '*driving is a placeholder. You know, you've interrupted your life to go and do something in a specific place like every time. [Driving], you can listen to music or you can listen to a book or whatever, but still, I don't consider that to be valuable time I'm investing in anything – on my bicycle, it's more time doing something real. I am riding a bike, for me.'*

Interviewee 31 describes the value he places on time similarly: '*It's my time, and I'm deciding how I want to use it*.'

[87] The Jammie Shuttle is a shuttle bus for University of Cape Town students.

'*It's a bit of downtime when you're riding,*' says Interviewee 28. *'[Driving] is no longer an issue or a consideration. I also don't care about what people think, [so if anyone] deems it to be sort of a lesser mode of a transport than driving, I don't care, so that's fine. Cycling is always a positive thing*.'

7.7.5 'Break some barriers': wellbeing

Cycling is a way to experience the city, people, other realities, in a way that driving does not offer. Even though *'you smell things, but you're not smelling the roses, for heaven's sake, you know*' [Interviewee 25], cycling offers a way for interviewees to feel that they are consciously living in Cape Town, whatever that brings.

'*I like to get out and about first thing in the day. … you interact with your neighbourhood and all the neighbourhoods between where you are and where you're going in a different way,*' says Interviewee 17, for whom cycling is an anchor to each morning.

What appeals to Interviewee 21 is '*seeing what is happening'* in the area he travels through: '*I do know now that there is always a shopkeeper and we smile at each other on Lower Main Road corner …, which you never do in a car*.'

Interview 34 also values this '*social aspect'* to riding. '*I buy food on my way to work. I've got fruit sellers that I patronize and bakeries that I go past. I always stop and have a cup of coffee and lots of friendships have sprung up from that*.'

'*If you ride in the city, it changes the way you see the city, the way you speak to people, communicate to people*,' says Interviewee 28. '*It's quite cool – we break some barriers. Like with a guy standing with a board saying whatever, want food, money, that person targets cars in a different way. … Very often you pull in and you start chatting to the person and the other person starts chatting to you in a completely different way*.'

This importance of '*experience[ing] the city in a very different way'* resonates with many of the interviewees. Interviewee 10 likes that '*you notice people, and you feel much more integrated into your environment. You know, that does also make you more available to insults and chirps from the dodgy men and stuff. But it's also nice to feel a bit more part of your environment than just insulated in your car*.'

Interviewee 35 observes that '*most people in cars are always extremely tense and extremely unhappy. Whereas, I'm riding a bike, even if cars are going past me, I'm still more relaxed. In fairness, anytime I get a bit grumpy, sometimes on my way home, it is because the southeaster*[88] *is slamming*.'

Being '*automatically more relaxed'* is important for Interviewee 29, who loves the fragrance of the ocean mist in the morning. Says Interviewee 10: '*You can't be stressed while riding a bike. …*

[88] Many interviewees make reference to the wind, or the South Easter. This is the persistent and dry wind that blows from August to April. Wind speeds of 160 km per hour have been noted in Table Bay and routinely reach 70-90 km per hour. In 2017 the Cape Town Cycle Tour was stopped due to 100 km/hour winds on part of the route.. https://www.capetownmagazine.com/cape-doctor.

In a car you can be switched off and just continue in your crap work mood, but on a bike, you can't really do that.'

Interviewee 17 '*cycles pretty much every day unless I'm sick and it throws my life completely out of order*.' What Interviewee 32 misses when he 'has' to drive is the wellbeing impact:

> *'I enjoy being on the bike and if I don't cycle for 2 or 3 weeks, I feel it in my mind, more than in my body, and that's why, for me, it's like oxygen.'*

7.7.6 'The social power to make decisions': behavioural control

For some interviewees, bicycle commuting is a way of with privilege; for others, it is their relative privilege, or seniority within a workspace, that triggers a shift to cycling more often or over longer distances, and enables cycling to become a default.

Over time, Interviewee 24, the managing director of his organization, describes how his '*commitment [to cycling] has evolved into making sure I have a shower room in my office space, I have a walk-in wardrobe at work – I don't commute to not break a sweat, I commute to get fit*.'

Interviewee 25 echoes Interviewee 24, above. She believes that because of the attitude among many privileged South Africans to bicycle transport, it is easier to ride if you have a senior position and work independently. '*I'm kind of top of the food chain as far as I have my own rooms, my little sphere, I don't have a boss, I have [my] own space in which to close the door, hang up [my] clothes, have a dry down*.'

She rides to work between two to four days a week, with one day either driving, or working from home. '*If the weather is going to change in an hour I know I can ride home and then carry on working from home, nobody is going to stop me from doing that. … I don't think you need to have money but you do need to have social power [to make such decisions]*.'

Interviewee 28 is able to maintain his long commute (some 45 km both ways) as he persuaded the company owner to build '*a little shower space, which is now used by an increasing number of runners and bicycle commuters. The little space eventually became a large bathroom*!'

Interviewee 31 has worked for the same organization since his relocation to Cape Town, and eventually attained sufficient seniority and influence to advocate for showers and bicycle parking at the organization's new offices. Since then, even though the distance to the new office is considerable (a 50 km round trip), he is able to do this at least once a week, using a small car otherwise. Because he is now '*more in control of [his] diary'* than he used to be, he can '*plan a day when there is no need for a car and therefore cycle.* '

The privilege to bicycle commute '*costs money'*, says Interviewee 24.

> *'My situation, I'm going to say it straight out, I feel extremely privileged that I can have pretty much my own shower, my own wardrobe, washing machine, tumble dryer scenario, where my*

clothes are always washed and ironed…So I can look like a grown-up. That's by design, but it's also privileged design.'

7.7.7 'Life choices that enable bicycle life': resisting a car-dependent life

Interviewees at Termination Stage have high levels of personal agency and locus of control. For example, Interviewee 15 chose to live within cycling distance of his place of work:

'I think for the rest of my life I will choose a place for this reason… I'm lucky to be able to kind of choose where I want to stay, but I want to stay in a place where I can use my bicycle.'

Interviewee 7 '*actively resists'* buying a car, even though her colleagues believe she would be safer. She has '*made life choices that enable bicycle life – I think if I had a car I wouldn't cycle*,' she says. Cycling does constrain her life at times, but living this way is an activist commitment:

'I've had a couple of run-ins because I've been cycling at night, which is maybe a bit too risky. I kind of wish that I lived in a city where I could cycle at any time of night on my own. I also don't think we will live in a city like that unless more of us are on bicycles.'

Interviewee 23 also talks in terms of '*resisting*' a car-dependent life. The shifts in his practice related less to the amount of cycling, but an increasing conviction that has accompanied his cycling. He has '*resisted [the] transitions'* that many others cite as triggers to change. '*We've been in a privileged position because we've always lived in an area that is readily accessible to school, work, shopping, you can make a plan*.'

7.7.8 'I ride. I like it': joy, wellbeing and personal identity

Interviewee 35 can scarcely recollect when he did not commute by bicycle – '*I ride because I ride. It's just what I do. But there's also a sense of freedom that comes with it. In a car, the rules are far more confining, the shape of the car is confining, the route that you can take is far more confining*.'

For Interviewee 14, whether it is church, theater, music performances, she rides '*everywhere*'. Her reasons are pragmatic: it's cheaper, it serves her needs perfectly well, and she simply loves cycling. '*It's me,'* she says.

'*There's a sense of relaxation, not being part of the standard rat race rate that you get with cycling … It's counter-culture*,' suggests Interviewee 35. Interview 18 would echo this: '*People who commute as cyclists typically are quite committed to it and proud of it, and see all the benefits. And you think, it's stupid not to. I do think it's a very small subculture here*.'

'*In South Africa the only people who are going to commute to work are people like me … a personal reason for being a bit different*,' says Interviewee 25. To Interviewee 34, '*it's about doing things against the grain… That's part of my nature.*

'*It's like a little cult society*,' says Interviewee 2. '*You [certainly do have a certain caliber of person who would consider commuting. You know, you either need to be, or get a little bit crazy. …. Or you*

need to have a real passion for it or grew up with it,' notes Interviewee 22. Interviewee 5 simply says, '*I'm not interested in what other people do. I'm not 'people.'*"

Interviewee 4 recognizes that cycling is also performative, with an element of self-righteousness – having to be seen to be a cyclist, to play an advocacy role:

> *'I think that status also comes into it. So knowing that you are going to arrive in a meeting with a whole bunch of people and walking in with a cycling helmet, it is kind of like, cool, I feel good about that. To me that is also part of it, it is kind of a choice that is about the perception it gives to other people. Either because it is a sustainability meeting or just because you know that it sets you apart, especially in government circle. People take notice when you arrive with a helmet. How do you prove to them that you rode a bike, Gail?'*

7.7.9 'It breaks down to diligence': personal identity and wellbeing

Interviewee 1 doesn't enjoy the cycle home: it requires consistent '*determination*'. She cycles in to work with a 'bike bus', but '*doesn't always feel like cycling back home.'* On the return trip she would be alone, but also, she would meet head-on Cape Town's prevailing winds, which she '*needs to talk herself out of.*'

> *'Cycling to work in the mornings is great, it feels like there's momentum. The sun isn't that bright on your eyes, you can see well … and it's not so windy in the morning … But then I don't really like cycling back because it's often really windy. It's hot, you're tired. And all that really slows you down. And the sun is on your face, it's fucking hard to see as well.'*

She describes cycle commuting in Cape Town as requiring '*emotional strength:'*

> '*You're constantly navigating crazy drivers on what they're going to do. Or if you're going through a quiet subway or something, just like looking around. And if you at the end of the day have used a lot of RAM*[89]*, you're just kind of a bit pap*[90]*.'*

Interviewee 30 talks himself into braving the south-easter:

> *'The laziness factor kicks in in the afternoon if I know it's going to be really windy day, and I know I'm just going to be fighting a south-easter on my way back, but that kind of means I've already got myself into town so, and I know I'm going to need my bike the next day and I've kind of resigned myself to the fact that we just live in a very windy city*[91]*.'*

[89] Random Access Memory.

[90] 'Pap' is an Afrikaans word, used relatively routinely by English speakers. Literally meaning soft, it is used to describe feeling physically exhausted or feeble https://dsae.co.za/entry/pap/e05514

[91] Not every interviewee is able to talk themselves into cycling in the wind. Interviewee 16 says she finds it dispiriting: 'the wind will knock you off your bike and then you're in like a head wind and like…it's labour and as you're pumping your legs. Yes, it's no fun. It takes you forever and by the time you get there you're hot, sweaty, tired. Dishevelled.'

Interviewee 21 cycles '*every day, in and back, raining or windy.*' He has become '*completely comfortable*' with his 6 km commute, and notes that it would be '*pointless to drive*'. '*I have just decided I am going to ride every day. I don't even think about it. I look out the window and dress based on what I see.*' What keeps him going is how '*incredibly pretty*' the ride is, with the rising sun and the mist. He adds as an afterthought: '*I suppose it is also very efficient. I get to work within 20 minutes. … It is drastically faster than public transport and finding parking. So, it is the quickest way.*'

'*It breaks down to diligence*', says Interviewee 24. '*I see this as like a little personal exercise and victory in discipline to actually go: "I'm cycling in, so I will cycle home".*' Because he could get a lift with any number of his employees who live on his route home, '*it actually takes discipline, both cycling to and from work takes discipline, more so, at the end of the day, when you're feeling a little bit tired, you just want to get in the car.*'

Interviewee 31 is absolutely committed to his pattern of cycling: not even the weather will put him off once he has determined on which days he'll ride: '*If it's pouring out there and this is my day that I said I was commuting and I do get on my bike to ride, I have to get myself out the door and start cycling. I'm riding because I'm a commuter and I cycle, I'm not going to budge for the weather.*' He does also feel a sense of '*duty*', to advocate for bicycle commuting – '*because I feel I should be doing it*' – but mostly he rides because he likes doing it. *'It's not an easy ride always, but the sum total is always positive.'*

7.8 SUMMARY OF TRIGGERS TO TRANSITIONS

This sub-section sets out and summarizes the most common triggers given at Stages of Preparation, Action, Maintenance and Momentum, and Termination.

Overall, life change events play a role in triggering transitions in cycling practice, but the events themselves are less important than what Chatterjee *et al* (Chatterjee, Sherwin and Jain, 2013) found in their work. Changes to the external environment were seldom described as triggers to change, although the increased visibility of policy commitment and infrastructure (not necessarily used by interviewees) made it normatively easier for individuals to ride. Like with the work of Chatterjee *et al* and Bonham and Wilson (Bonham and Wilson, 2012), though, it is the placing of individuals into different contexts and exposure to different norms, rather than linear shifts, that triggers change – the 'non-conspicuous events' Rau and Scheiner describe (Rau and Scheiner, 2020, p. 7). The changes in work or home location bring about shorter travel distances, more traffic, improved access to bicycles, or new role models among colleagues; this enabled individuals who already cycled as sport, or already had favourable attitudes toward cycling, to transition from sport or leisure cycling to bicycle transport.

The gradual micro-processes of change – the being 'loaned or given a bike, watching others and thinking 'I can do that,' or having a friend or partner provide the right kind of

encouragement' cited in (Bonham and Wilson, 2012, p. 200) – align with the experiences of interviewees.

Preparation

Trying out bicycle commuting in an environment where 'everyone does it' is one trigger to prepare for utility cycling; this opportunity usually took place outside of South Africa, while studying or travelling in Europe, the US, or Latin America. Here, individuals were exposed to or observed new behaviours, practices, or habits, and encountered environments where cycling as middle-class or higher income adults for transport purposes was 'normal' and 'doable'. In each instance, these new experiences were overwhelmingly positive, and led to interviewees deciding to continue utility cycling once back in South Africa.

Seeing or meeting others who bicycle commuted on their routes in Cape Town was a catalyst for other interviewees to prepare to cycle. In many instances, interviewees were already looking for alternative ways to travel to avoid traffic congestion, and were already sports cyclists. However, they had either dismissed cycle commuting as not an option in Cape Town, or felt too afraid to do so, until they saw someone else of their own cohort doing so.

Getting hold of a more appropriate bicycle (either by purchasing one, borrowing one, or being given one) also led individuals to prepare to cycle. Learning to ride was the trigger for one individual (the only person among interviewees who was not a cyclist from childhood).

Action

Like with Preparation, meeting others who cycled, and/or being confronted by traffic and parking challenges in new jobs or residential locations, shifted interviewees to take action and cycle. Entering events and needing to get very much fitter also triggered action, while for others, it was a sense of obligation (social pressure at work). Individuals also cited receiving a new or different bicycle, starting a job that presented an opportunity to put theory (urban planning) into practice, a decision to reduce access to a private car, the arrival of new buses that permitted bicycles on board, and new bicycle infrastructure, as enabling the shift from preparation to action.

Maintenance and momentum

The increasing public acceptance of cycling in Cape Town became a trigger for individuals to cycle more often, and for a variety of trip purposes; everyone already had taken action to cycle, for a variety of motivations, but there were some trips they continued to make by car, motorbike, or taxi because cycling was inconvenient or too arduous. Now, it was easier, for example, to arrive at a meeting by bicycle, to persuade employers to install showers, or to be permitted to park a bicycle safely inside a building.

Once again, meeting individuals who cycle (in an advocacy context or as cycling buddies) was a trigger to keep cycling and to step up cycling; getting fitter pushed individuals to cycle commute more often and for more reasons too.

Termination

Triggers to Termination are similar to those of Momentum, although increased social power and agency become important; here, interviewees are able to make decisions about where they live, where they work, and how their workplaces are set up, so that they are more able to cycle. Getting fitter, changing work location, and increased public acceptance of cycling again play a role in enabling a cycling transition – this time, to cycling becoming the 'default'. Interviewees continue to make decisions that enable and entrench their practice, such as giving up access to parking, purchasing lights or a different type of bicycle, and deciding against a second household car.

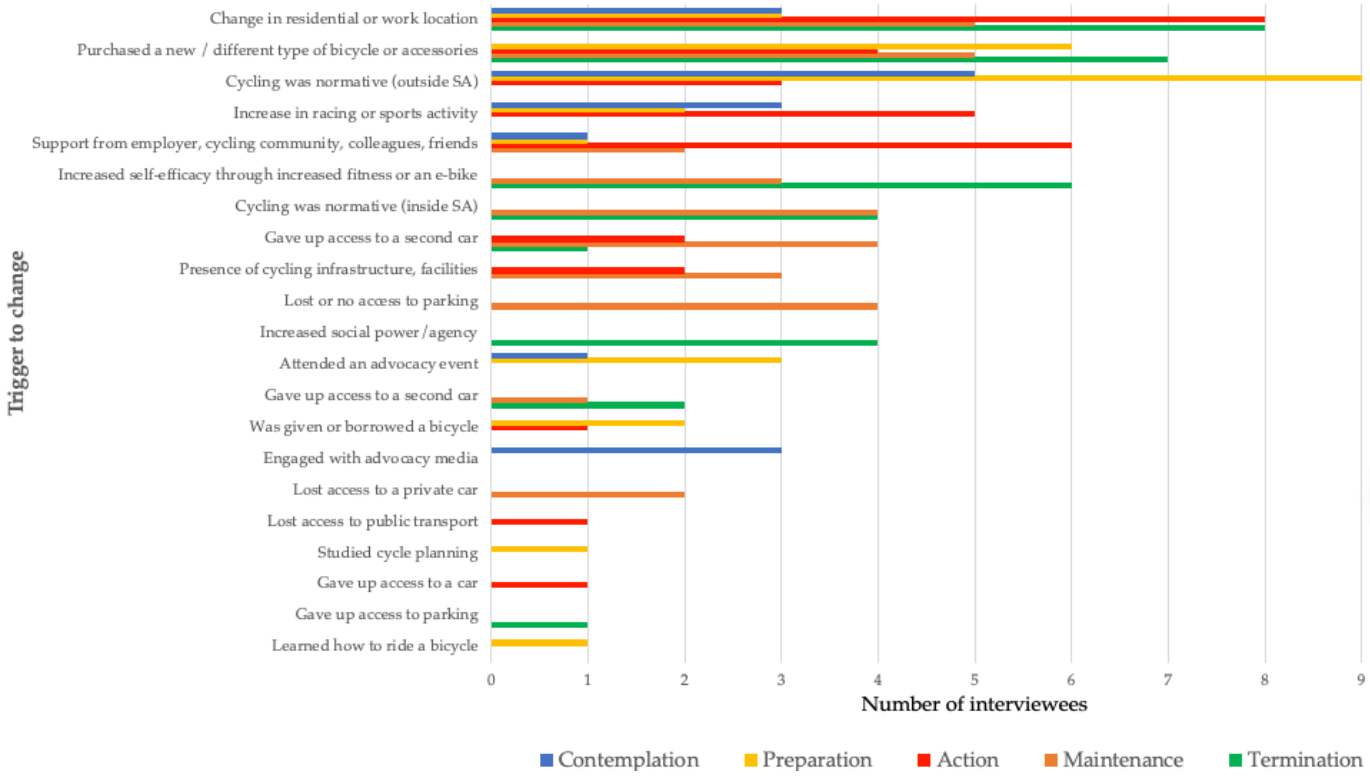

Figure 40: Triggers to change or transitions, as identified by interviewees at five Stages of Change and grouped into themes as described in chapter 5 (Method). This visualizes elements of the above narrative, and shows the triggers identified by interviewees that shifted them from Contemplation (blue) to Preparation (yellow) to Action (bright red), Maintenance (orange), and Termination (green).

7.9 HOW MOTIVATIONS DIFFER DEPENDING ON STAGE OF CHANGE

7.9.1 Introduction

This section presents selections from dataset 3 in a different format to that in the previous sub-section, considering only motivations, to answer the second part of research question 3: *Do motivations differ at different transitions or stages of behavioural intention in their cycling biographies*? Here, I present short narratives per individual (how motivations changed across the continuum from Preparation to Action to Maintenance and Momentum, to Termination). I focus on Stages of Change where individuals are cycling rather than contemplating cycling.

7.9.2 Individual cycling biographies (disaggregated)

Interviewee 1

Interviewee 1 started cycling as an adult while studying in Europe to save costs. What motivated her to take action, and to increase her cycling, was bicycle advocacy: she was more or less '*shoved*' into cycling at work by a manager wanting to encourage his directorate to cycle, and eventually she started cycling fairly routinely to work and encouraged others to do the same. Now, she continues cycling as '*cycling always makes me feel good.*'

> *'On the one hand it feels nice physically, and it's exciting, and it's nice to use your body. But on the other hand … you're living a little bit more on line with your values, and that's really nice and unusual to be able to say.'*

Interviewee 2

Interviewee 2 considered cycling before she knew how to ride, as it was '*cheaper*' than other ways of travelling while a student. What motivated her to take action was not only because it was cheaper, but it was also 'fun' and became central to her sense of identity, her '*experience as a person*' belonging to '*a little cult society.*'

Her motivations for maintaining a cycling practice are multi-fold, but wellbeing is key:

> *'Cape Town traffic is horrible. The bicycle is just much more efficient, much faster, I feel much more pleasant to get around the city on. I also ride because it's healthier in sort of physically, mentally, psychologically. It means I don't have to try and create time for exercise… It is still cheap. I don't worry about fuel. Once a year it costs me 300 bucks to do like a full service and that's about it and then I don't have to spend money on purpose. But very few things give me as much joy as cycling. It could be even for a kilometre; I mean I just feel happy when I've done that.'*

What makes cycling a first choice for her now is the environment:

> *'For me, it goes without saying that the bicycle is much more environmentally friendly, it just makes more sense. 'I'm constantly thinking about what the world … will look like and a lot of the decisions that I make now, I make to how I wish more of us lived, so that we can leave a much better place, or a more decent place than what we're currently doing. So increasingly the environmental aspects of the bicycle, are really at the sort of forefront.'*

Interviewee 3

Interviewee 3 returned to bicycle transport as an adult to save money rather than purchase a second household car; he and his girlfriend shared a car, and he cycled instead. After taking on a work position in urban design and social justice, he felt compelled to keep up riding '*as a very good way of showing others the possibilities of doing this*.' Now, he rides because he feels '*cheated*' if he has to drive, as cycling is ultimately '*therapy*,' a determiner of his headspace for the rest of the day.

Interviewee 4

Interviewee 4 had been considering ways of travel other than driving, as part of recovering from burnout on her return to Cape Town after an international work spell. But what got her to take action to ride was her role in an advocacy organization during her first job back home: '*Somebody pointed out that riding was my professional role. People have given me a bicycle, there is the expectation to use it*.'

Cycling, however, '*became something that was empowering and freedom,'* which motivated her to cycle regardless of the original catalyst. Sport, and fitness, became more important the more she cycled; she purchased a '*more sporty*' bicycle rather than a commuter bike, and took up bicycle racing. The combination of wellbeing and fitness became aa powerful motivator for her to put cycling above other modes whenever possible.

Interviewee 5

Interviewee 5 started cycling to work to avoid having to drive in traffic and look for parking, and kept cycling for these reasons for many years, since the 1970s. As time went by and it became more known that *'cars are bad for the environment,'* he became more committed to cycling even when trips would not involve traffic or parking. Although he also '*rides a bicycle because it's cheaper than driving a car and it is more fun*, ultimately it is personal conviction that motivates him: '*I'm completely convinced that cycling is the way to get around.'*

Interviewee 6

Traffic is why Interviewee 6 started and kept riding: *'[it is] so much quicker and easier and I enjoy commuting on a bike. I hate dealing with traffic*.' Climate concerns are '*very, very much on my radar… but I commute to get around traffic*!' he says – but notes that on further contemplation, '*the main reason I commute is the positive effect on my wellbeing*.'

Interviewee 7

Saving money as a student motivated Interviewee 7 to ride, but what keeps her going day by day, and has done for more than a decade, is the importance cycling is for her personal identity: '*I very much have made life choices that enable a bicycle life. It's connected to a number of things that I think are important in this world, as a global kind of community, to engage with people around me on a bike in a different kind of way*.'

Interviewee 8

Training for the Double Century, a 202 km road race, motivated Interviewee 8 to start bicycle commuting, but it soon became apparent that there were other benefits to cycling to work: the travel time predictability, the saving on wear and tear on his car, and the ease of parking. It then became possible to save on purchasing a second car for his growing household, as cycling was a relatively easy alternative to driving. Fitness is still his primary reason for bicycle commuting though – he rarely considers driving as a routine option.

Interviewee 9

Interviewee 9 has always been committed to cycling for environmental reasons – her motivations have not changed throughout her bicycle life – but she does believe that convenience is a more likely motivation for other people.

Interviewee 10

Interviewee 10 started bicycle commuting to supplement her Cycle Tour training, but like with many interviewees, soon found other reasons to keep riding even once a new job meant that her commute distance was '*too short to get cycling exercise.'*

Convenience, or ease of use, has long sustained her practice, but the sense of wellbeing that cycling brings makes it her first love:

> *'It takes the same time as driving, and it takes the same time any time of day. It's a fixed amount of time. I don't have to worry about parking, and I just like being outside. I don't like driving. I like the smooth flow and being outside in the air. I genuinely just like that.'*

She '*would never have done it* [taken up cycling if she] *hadn't been doing the sport cycling already*', she says. But '*why I do it right now?:*

'It's because of one thing: I like doing it. I love cycle commuting, it's really important to me. It has to be convenient. It has to be faster than driving. Despite all the risks, it is just worth it.'

Interviewee 11

Interviewee 11 was already a sports cyclist fortunately, as environmental advocacy was foisted upon her on her first day of work, when she was required to take public transport to collect a repaired bicycle, and then ride the bicycle back to the office (not all public transport permits bicycles on board). She '*cycled back and it felt sort of inspiring to cycle and it was very interesting to see all the different things that I hadn't seen.'* It wasn't too long before she became a regular bicycle commuter, and spent much effort ensuring that her cycling visibility played a role in others taking up cycling too. She concedes, though, that now her routine cycling practice is not '*climate related'*, but related to enjoyment and wellbeing:

'We spend so much time saying it's linked to climate change and SDG this and that, but it's not, it's not exactly the root cause of why we do what we do, we just have to prove to people that we're doing it because of all these things. I continue [cycling] because I really enjoy it and I feel empowered doing it.'

Interviewee 12

It makes 'more sense' for Interviewee 12 to cycle – in terms of time, convenience, parking, and cost. In the beginning, together with colleagues and friends, they cycled as active social advocacy, to make a point about public spaces, urban environments, and bicycle justice. '*But it's really convenience, isn't it*?' he says.

Interviewee 13

Lack of parking – and the fact that he loved cycling – motivated Interviewee 13 to start cycle commuting. '*It just so happens that without a shadow of a doubt, that if I want to get to work quickly, it is the fastest way I can*.' Now, he cycles as it is not only faster but cheaper – but overarchingly, because he likes cycling:

'Why do I cycle now? I still enjoy it, and I guess the secondary reason is that [parking] is bonkers expensive.'

Interviewee 14

Interviewee 14 started cycling to save money, early in her working life, but soon took up cycling as a sport and used longer commutes as training. She got to the point where she didn't even '*feel the need for a car at this stage in my life.'* Cycling is so much easier as a way of getting around, and has become inextricable from her sense of who she is.

Interviewee 15

Meeting bicycle activists changed Interviewee 15's cycling motivations. He grew up an overweight child, and emerged as a teenager always in search of '*ways to make [*his] *life active in non-forceful ways … like not going to a gym*.' He read, in a health journal, that cycling every day was one such approach, and took this on board. At university he encountered bicycle commuters who were '*doing the cycling thing for environmental reasons,*' and so kept up his cycling. His original motivation had now changed, to saving on fuel and parking costs.

> *'For me it was in the beginning a health thing. Now a part of why I really cycle is to cut my dependency on fuel, not for environmental purposes but not to be dependent on fuel price.*
>
> *'So yes I cycle to my office every day. And yes, cycling does allow you to skip the traffic and all that, but I do it for like parking, for the not paying for the parking!'*

The sense of community, independence, and personal identity, is also why he is '*a cyclist*':

> *'I've reached that point where cycling is so a part of me… I think why it has remained with me is that … I feel like I am independent in terms of not having to schlep this big machine around to get to places.'*

Interviewee 16

Saving money as a student initially motivated Interviewee 16, but since then, her environmental impact has been her primary motivator to ride. She does love that cycling is '*against the grain,*' cheaper than driving, sometimes quicker, and enjoyable, but in terms of a hierarchy of benefits, the environment wins:

> *'In some instances it's quicker to be on a bicycle than in a car and yes, I just like that it's really simple. No need for parking, you haven't harmed the environment, you've also gotten fitter along the way. Yes, there's also something really freeing about being on the bicycle. I love that feeling of like zipping with the wind. I just really do like that feeling. [But] I cycle … primarily because of the earth.'*

Interviewee 17

At first, Interviewee 17 cycled because it was easier than using any other mode. Gradually, however, like other interviewees, he started to be motivated by the mental health benefits, the embedded exercise, cost savings (fuel, parking, insurance), and the gradual transition between home and work: *'In a car you pass through [the neighbourhoods]. I like the connection between where I am and where I'm going*.' It is this latter wellbeing that he cites as his reasons for using bicycle transport as his primary mode.

Interviewee 18

The parking at UCT defeated Interviewee 18, like it would Interviewee 10 years later; although he had a car at university, it was quicker to cycle than to go through the chore of getting a permit to park on campus, or to drive there. He could have taken the student shuttle, but '*organized transport is, over a short distance, incredible inefficient*.' He walked, cycled, or drove to work over the next decade, but after purchasing a house, decided that '*making do with one car*' would be a good approach to paying off the mortgage:

> *'My wife has the car. I mostly cycle to work. I even used to at one stage divert and drop, have my daughter on the back pack, and drop her at play school and then cycle to work. It wasn't much out of my way. It just worked well. It was easy. And a lot of Cape Town's quite flat.'*

Racing is why he keeps riding though: '*probably still 80% of the reason I ride as regularly as I do, is fitness.'*

Interviewee 19

Interviewee 19 set out to purchase a bicycle to use to get fit, but after a stressful time starting a new career, he found himself '*thinking of all types of ways to save money and … thought of ways to be kinder to myself*.' Riding to his office along the newly built MyCiTi bicycle lanes seemed an evident solution to all these concerns. Not long after, he increased his cycling distance and trip purposes thanks to meeting a group of bicycle activists, but saving money and the value of transition time continued to be his main motivations:

> *'I start getting excited about that fact that I'm saving petrol, and I get excited about the fact that I'm going to have time on the bike to think about what am I going to do today.'*

Interviewee 20

Like many of the interviewees, as a student Interviewee 20 rode to save on transport costs, and then didn't cycle again for many decades, as driving seemed more appropriate. A desire for adventure motivated her to start cycling again with the advent of electric bicycles, and now she rides almost every day. '*It's logical*,' she says, and she has got '*more dedicated*' over time, making shopping or other travel-related decisions based on whether or not she can use her bicycle. Obvious convenience, wellbeing, and personal identity, motivate her now.

Interviewee 21

Interviewee 21 read 'Happy Cities' while studying, and set out to '*try cycling… to see if it was possible, and how well it worked. But cycling [to UCT] is not very pleasant… you cannot get up UCT hill particularly easy, without getting very sweaty.... You have to be training, for something serious*.'

Starting his first job, which meant '*flat commuter cycling infrastructure'* between home and office, gave him another chance to put his urban planning training into action. He now cycles for happiness:

> *'I enjoy, in the mornings, I enjoy the cycle and getting to work, you have sort of been out, and you smell the sea.'*

Interviewee 22

Interviewee 22 owned a car as a student, but why '*waste time'* driving when you could '*just fly down with the bike*?' Time saved, and increasingly, money better spent, continued to motivate him as an adult: '*economically, we can rather use that money much better*.'

The more he cycled, the more he was motivated by the emotional health benefits of cycling: he has more energy, he is more productive, he sleeps better, his relationships are improved. Before, '*we're spending time together but you're so tired'* – now '*everything is better at home*.'

Interviewee 23

For Interviewee 23 the shifts in his practice related less to the amount of cycling but to the level of conviction and motivation that accompanied his cycling. He has '*been cycling most of* [his] *life*.' At university he continued '*cycling up the hill,*' as it was '*the easiest way to get around and [he enjoyed] 'keeping activ*e.' The public health benefits of cycling have been obvious to him, as that is his line of work, but it was while studying climate change that he '*become more aware of the bigger contribution that cycling and non-motorized transport makes towards environmental sustainability… So that's given me more reason to cycle. To just appreciate not only the public health benefit, the economic benefit, but also the environmental benefit*.'

Interviewee 24

'*The time efficiency of getting somewhere and then being fit and being healthy*' motivated Interviewee 24 to start bicycle commuting, but then his motivations changed:

> *'Over time, the moral triggers of sustainability, not using a car, trying to minimize the amount of mileage that I did in my car, become one of the very serious primary drivers for me. So, there's just this merger of so many different facets, one of which [is increasingly the thing] is just my own personal sanity.'*

Interviewee 25

Interviewee 25 started and continues to cycle commute as '*a way to make me happy*, to mitigate being '*absolutely beyond miserable at being back in Cape Town':*

> *'And it really, really, really does make me happy. It is the single most effective thing I have done to reconcile me to living in this crazy country, in this fucked up country.'*

Interviewee 26

Like many other interviewees, Interviewee 26 started bicycle commuting to complement his sports training, but it soon became evident that cycling is more convenient than driving for almost all trip purposes. It is this convenience that has made cycling his go-to mode.

Interviewee 27

Interviewee 27 used to cycle a 30 km round trip to her office as part of sports training, but the fitter she got, the less cycling served her training purpose, as '*it was not strenuous enough.*' At that point, her motivation changed to carbon mitigation.

> *'The only reason I would say I should ride is because I shouldn't take my car. That kind of riding is not such good exercise. So, I kind of don't really think of it as being, oh, I should ride because I'll then get fit. I think of it more like, I should ride because I shouldn't use my car.'*

Many decades later, after continuing to cycle as sport but driving to work, she moved to within very easy cycling distance of her office. Obvious convenience combined with the joy and fun of riding became her primary motivation as she renewed and maintained her practice:

> *'It's by far the best way to get [around] in central Cape Town. I skedaddle all over the place … It's a very nice feeling … It's exhilarating.'*

Interviewee 28

Controlling his own time as well as saving money are the reasons Interviewee 28 started and continues to ride to work. The emotional wellbeing of '*downtime'*, the social aspect (riding '*at a social pace, chatting away*'), the '*good mental place.'* and the way in which cycling can '*break barriers*' are so motivating that he can see no reason to drive if cycling is an option.

Interviewee 29

Interviewee 29 used to live during the week in an apartment in Cape Town and return to her home further away at weekends; she went to gym to stay fit for weekend racing. Once she and her husband moved to live permanently in Cape Town, bicycle commuting became an obvious way to keep fit, particularly as she met a colleague who took a similar route. As she developed her bicycle commute practice, she realized that the wellbeing elements were more important than fitness: pride in self-discipline, her work/life balance, the memories of the freedom of childhood, the shedding of her day in the office as she rides home.

Interviewee 30

In the early period of his bicycle commute practice, which he began to avoid driving in traffic, Interviewee 30 still drove on occasion. Then came a fateful day where he returned from work to find his car had been stolen. At this point, cycling became his full-time mode. It also tied in

with his personal identity, sense of wellbeing, and the environmental focus of his work. *'I was working in a unit which was trying to promote low carbon and city development. So that saw me through winter and then as spring approached, I found myself wanting to cycle on a daily basis*.'

No other mode is as '*enjoyable*', '*fun*', '*energizing*', and '*something to look forward to.'* He is '*very annoyed and frustrated and impatient with [the concept of] private car use and ownership.'*

Interviewee 31

Cycling has always been *'freedom and independence'* for Interviewee 31 – '*always tied to enjoyment for me. Not hard work*.' Still, it was cost-saving and convenience that got him to start riding to work, early in his working life. It is no longer more convenient for him to ride, nor is the trip faster; he does not have to worry about finding parking, and he is able to work flexible hours. He rides nevertheless:

> *'It's definitely, strongly, more along the lines of it's what we all should do or [or otherwise] the city's going to grind to a halt or we going to not be able to breathe.'*

Stubbornness and strong commitment to his values is what keeps him cycling: he '*didn't start cycling [50 years ago] for environmental reasons… but I have always been a nature-loving person… and this becomes part of all your decisions*.' Although when the weather is difficult [windy or driving rain], *'the questions you may want to ask is why do it on a difficult day like that?* It's not the '*noble tick'* of the environment that then gets him on the bike. '*By then it's hardegatheid*[92] *– 'I'm riding because I'm a commuter and I cycle, I'm not going to budge for the weather*.'

Interviewee 32

Interviewee 32 describes the process whereby his cycling became motivated by physical health and mental wellbeing rather than training for extreme events. Faced with a training programme of getting up at 4 am six days a week to train, the idea of riding to work was strong motivation for Interviewee 32. But after competing in races for a few years, his motivation changed. He had started studying for a second masters degree, which meant working over weekends. Cycling events were no longer his focus: '*I started more cycling [to work] for [emotional] health purposes, I think that became a bigger drive*.'

Interviewee 33

Interviewee 33 started cycling as a student and could not afford to use a car; in his early working life he walked or used a motorbike, but once he returned to Cape Town to work, he deliberately chose to live within cycling distance of his work – for convenience, cost saving, and '*general happiness'* and *'to align his professional and personal values*.'

[92] Stubborn or 'hard-arsed'

Interviewee 34

Interviewee 34 has always walked or cycled whenever possible, as way to manage a metabolic illness, but then he '*got into mountain bikes'* and started to commute faster and with longer detours, to get fit and to mitigate environmental impact rather than simply to maintain his own health: '*It's [now no longer] just my personal health but also the broader health of the planet.'*

Interviewee 35

When Interviewee 35 moved to Cape Town to attend university, he had no car, and no access to one either. '*I had two feet and a set of rollerblades so I could get wherever I needed to get to in town. And then that slowly evolved into cycling*.'

He bought *'something cheap to get around on…then it slowly moved on from there, and then I started riding more and more. I ended up progressing into riding bikes or sport. It was a sport that was easily accessible at that point because I was already riding already.'* He notes that he didn't ever really bicycle commute for exercise, but more and more to use time meaningfully or purposefully – ultimately, for '*a sense of relaxation and not being part of the standard rat race.'*

Interviewee 36

Interviewee 36 started bicycle commuting to '*deal with stress,*' and continued doing so – increasing his distance, trip purposes and number of bicycles – to maintain both physical and emotional health. Once he started using an electric bicycle, cost became a primary motivation, as for him, an e-bike has pretty much replaced his car:

> *'The motivating thing is health. And cost. Definitely cost is the bigger motivator. It's a huge thing because I know to ride 1 km costs you what, like two bucks, three bucks. So if you going 30 km it's a hundred bucks. A lot of money.'*

7.9.3 Narrative summary of motivations by Stage of Change

This section discusses the primary (dominant) motivations (per individual) given at Stages of Preparation, Action, Momentum/Maintenance, and Termination. By primary or given I do not mean that I asked interviewees to identify from among the list of themes, but rather to provide a statement that summed up their primary motivation at each Stage. If they were unable to provide a single such motivation, I drew from the interview data to identify such a motivation. These statements were then coded as per described, to allocate to a theme.

Preparation

Saving money, fitness, and avoiding driving in traffic (ease of use) are themes (motivations) that represent the bulk of individuals at preparation stage. The primary motivations given by most interviewees are saving money (9), beating traffic (ease of use) (9), and increasing fitness (8). None of the interviewees were motivated by affordability. So, individuals are highly

motivated by the flexibility and ease of use that bicycle travel offers: no '*waiting around*'; significantly cheaper than public transport (many individuals were students at the time of Preparation); less time spent as a driver in traffic; no having to get up early (and stay at work late) in order to miss peak hour; nor facing uncertain travel time due to road crashes.

Action

In this stage, individuals make a start as cycling as a mode of transport; this does not necessarily mean that they cycle regularly, or routinely, but that they have started, or have got back on a bike, or put their preparation intention into practice. Here, ease of use is the theme that dominates (11 interviewees), with fitness (6) and bicycle advocacy (5) and saving money (5) also common. No interviewees were motivated by affordability.

As individuals begin to experience the benefits of bicycle commuting, they describe these benefits in a more granular fashion. They talk of predictable travel time, avoiding traffic congestion, avoiding having to look for parking, and travel times faster than walking or equal to driving. Money is saved on fuel, paying car-guards, or paying for parking. Where individuals no longer own a second household car, they talk of the savings in car licensing and insurance – in addition to cost of purchase.

Bicycle and social advocacy are principal motivators at action stage for six interviewees, although this is most often an extrinsic motivator in that they wished to support efforts to promote cycling, or support cycling as a way of removing social barriers and facilitating spatial and mobility justice. The intrinsic motivators for cycling, such as wellbeing or personal identity, sustained their practice beyond the early phases. Gatersleben and Appleton found similarly in Exeter, that as people progress from pre-contemplation to action, their attitudes towards cycling become more positive and their perceptions of various personal and external barriers change. There is a strong link between identifying as a cyclist (self-identity) and perceived self-efficacy with respect to cycling, found Lois *et al*, in Vitoria-Gasteiz, Spain (Lois, Moriano and Rondinella, 2015).

Maintenance and momentum

During this stage, interviewees describe what led them to increase their amount of cycling, and what motivated them to sustain their cycling practice; they might cycle more often, for longer distances, in less favourable circumstances, and for more varied purposes.

When talking about their ongoing practice, interviewees became increasingly likely to talk about their feelings, identities, values, and lived experiences: cycling brings 'happiness', freedom, feeling 'pleased' with oneself, fun, evoking memories of childhood, and not having to do something they 'hated' (ie, drive). 'Being' a cyclist is who they are, it's cool, it's counter-culture in some way, and it enables an authentic mobility and engagement that aligns with their sense of self. One individuals notes that he wishes to be an example to his children, by

cycling rather than driving. They also often talk about how they started cycling for one reason, but then discovered further motivations that either increased their activity or gave them additional reasons to ride. This aligns with the work of Piatkowski and Marshall, in Denver, who found that there were distinctions between the decision to start commuting by bicycle and the decision to increase the frequency of bicycling to work.

Ease of use (8) and saving money (7) continue to be dominant motivators, with wellbeing (7) becoming very much more important to more riders. The environment is the primary motivator for four interviewees, bicycle advocacy and fitness, three, and personal identity, two. None of the interviewees give physical health or affordability as dominant motivators.

Travel time by bicycle is not necessarily quicker than driving, but they are motivated by the predictable time. Interviewees also talk about travel time in terms of productivity rather than absolute time. Sometimes cycling is quicker than driving, but in many instances, it might take as long, or longer, but it is time better spent.

Termination

Termination' is not to be misread as a stage where the individual no longer engages in the new behaviour, but one where they are no longer tempted to return to the 'old' behaviour as a routine or first choice. Termination does not mean the individual always cycles, but that cycling is the point from which other options are explored. Like with the findings of Bonham and Wilson, cycling becomes part of a 'repertoire of mobility practices' (Bonham and Wilson, 2012, p. 201) – not necessarily a daily choice, as it depends on weather, energy levels, or after-work commitments, but a first, and preferred choice.

Wellbeing (13) is now the overwhelmingly most common motivator among interviewees, and personal identity (9) the second. Environment (5) is the dominant motivator at this stage for more interviewees than it has been before. Ease of use (4) and fitness (4) are less dominant across the interviewees. None of the interviewees give physical health, social advocacy, bicycle advocacy, or affordability as dominant motivators at this stage. This aligns with the findings of Rodriguez-Valencia *et al* (Rodriguez-Valencia *et al*., 2021), who show that in the relatively high-cycling Bogota, recent and experienced cyclists differ in how they view the bicycle as a transport vehicle: recent cyclists were more motivated to switch to bicycling for what they refer to as rational reasons such as saving money and shifting from a poor-quality transit system, while the longer-term cyclists were more motivated by a passion for cycling.

Overall, people describe termination stage in terms of commitment and identity, the joy of feeling empowered, of keeping to a commitment, a happiness that derives from authentic engagement. It's mitigating privilege, a way of living in South Africa, accountability, and conscious time. These are not the motivations that get them to ride, but are discoveries made

on the journey to termination. Even where people are beating the traffic, it's seldom only about 'saving time' or saving money – it's freedom, it's agency, it's ownership.

7.9.4 Visual summary of motivations by Stage of Change

The Sankey diagram below visualizes the data described in the narrative above, showing the changing motivations by individual across the four stages: Saving money, ease of use, and fitness, were the most common dominant motivations at Preparation, and saving money at Action stage. By Termination, wellbeing and personal identity are the most common dominant motivations.

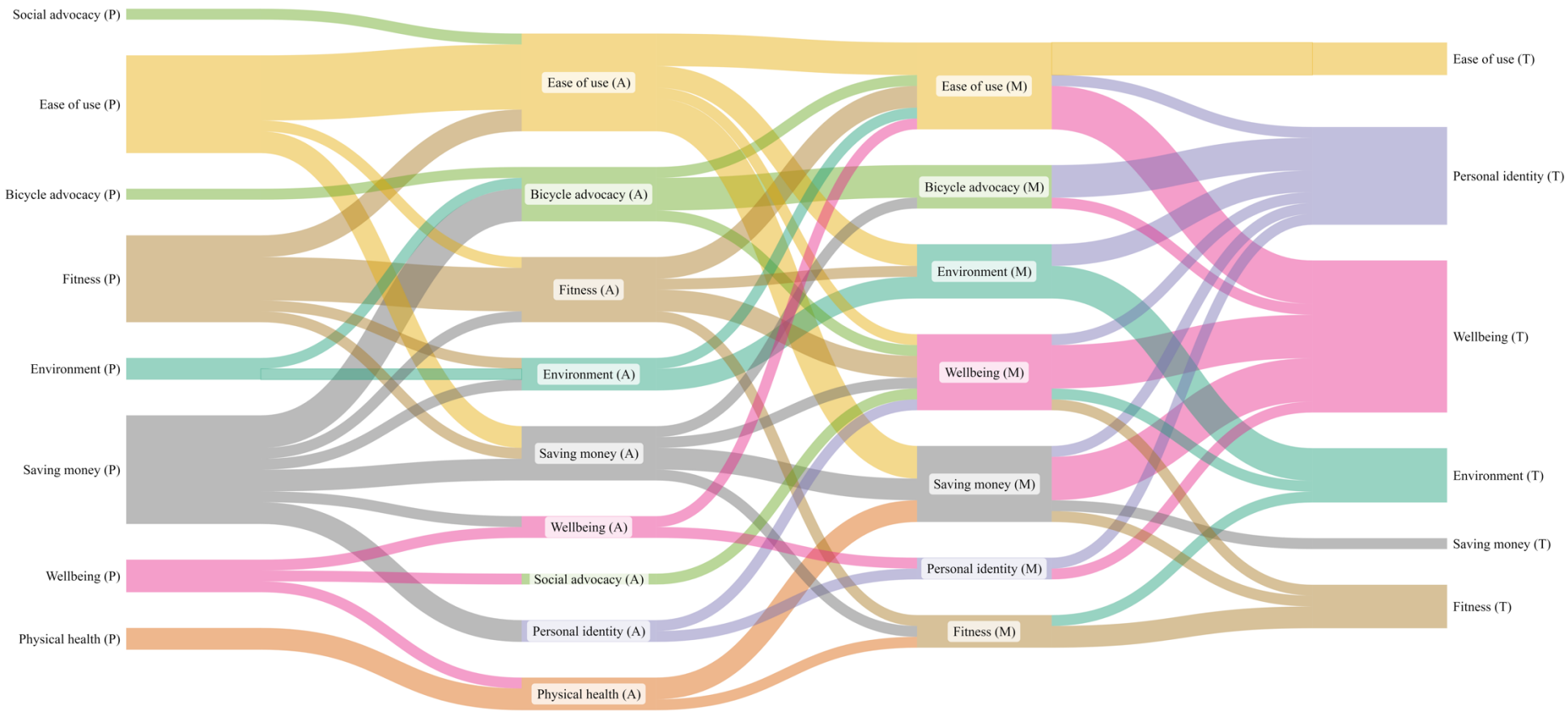

Figure 41: Sankey diagram showing dominant motivations for cycling, by individual (n=36), by Stage of Change. In the labels, P means Preparation, A, Action, M, Maintenance and Momentum, and T, Termination. Only four Stages of Change are shown – those in which interviewees are engaged in cycling practice. Only nine themes are shown, as no interviewees are motivated by affordability.

The visualizations on the following page (Figure 43) depict the motivations of individuals, by theme and by time-period of analysis. It is only in the time-period from 2014-2019 that individuals describe Termination stage. In the chapter that follows, 'Research question 4: Why intentional cyclists 'ditch their cars' – and why bicycle advocacy says they should', these same visualizations will be presented but with the addition of the advocacy discourses.

Four (4) interviewees started cycling during the period 1976-1979. They started cycling primarily to save money, for wellbeing, and for ease of use.

During the period 1980–1993, eight (8) interviewees started cycling (preparation and action). Most started cycling to save money, or for ease of use; fewer were motivated by fitness and physical health. The maintenance stage includes a further four (4) individuals, from the previous time-period. Fitness became a more important reason to keep cycling, and saving money and ease of use less so; the environment, bicycle advocacy, and wellbeing also became part of the motivating narratives at maintenance stage. Affordability does not feature as a motivation.

Fourteen (14) interviewees started cycling during the period 1994–2007. Most started thinking about cycling primarily to save money, for fitness, with others being motivated by ease of use, physical health, and the environment. Individuals took action to cycle, on the other hand, for reasons of the environment, ease of use, fitness, and bicycle advocacy, personal identity, physical health, and wellbeing. The maintenance stage includes the 12 (12) individuals from the previous time-period. Fitness and wellbeing became more important reasons to keep cycling, with ease of use and personal identity remaining constant and the environment become less important. Saving money did not feature in taking action, but played a role in the maintenance of cycling. Affordability does not feature as a motivation.

Six (6) interviewees started cycling during the period 2008–2013. Two started thinking about cycling for fitness, while ease of use, social advocacy, ease of use, and the environment were evenly distributed among the other four. They took action to cycle primary for social and bicycle advocacy, with ease of use another motivator. The maintenance stage includes twenty-six (26) individuals from the previous time-periods. Social advocacy is no longer a motivation, and bicycle advocacy also very much less so. Wellbeing, the environment, ease of use, and fitness, are important. Personal identity remaining constant between action and maintenance. Affordability does not feature as a motivation.

Four (4) interviewees started cycling during the period 2014–2019. Motivations are equally distributed between fitness, ease of use, bicycle advocacy, and the environment. Ease of use replaced the environment as the primary motivator during action stage. The maintenance stage includes thirty-two (32) individuals from the previous time-periods. Wellbeing is the

primary motivation for most interviewees, followed by ease of use, the environment, fitness, and personal identity. Saving money, bicycle advocacy, and social advocacy, are primary motivators for very few individuals. Social advocacy, physical health is no longer a motivation, and bicycle advocacy very much less so.

The final time-period includes Termination, where wellbeing is the primary motivator for the majority of interviewees, followed by personal identity, then fitness and ease of use, then the environment, and finally saving money. Affordability does not feature as a motivation.

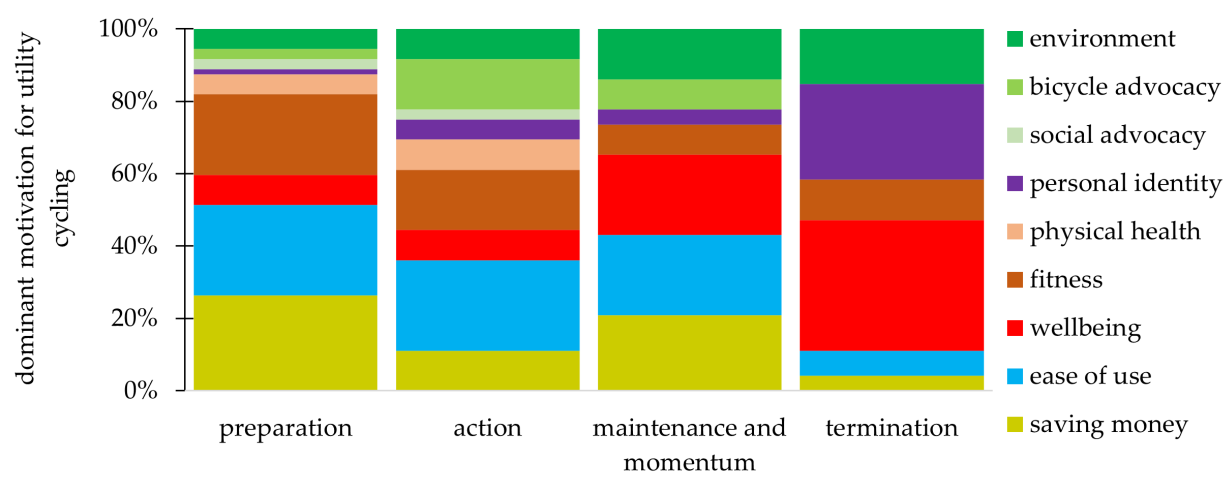

Figure 42: Chart showing respondents' motivations for utility cycling, across the four Stages of Change.

[Figure 43 is on the following page]

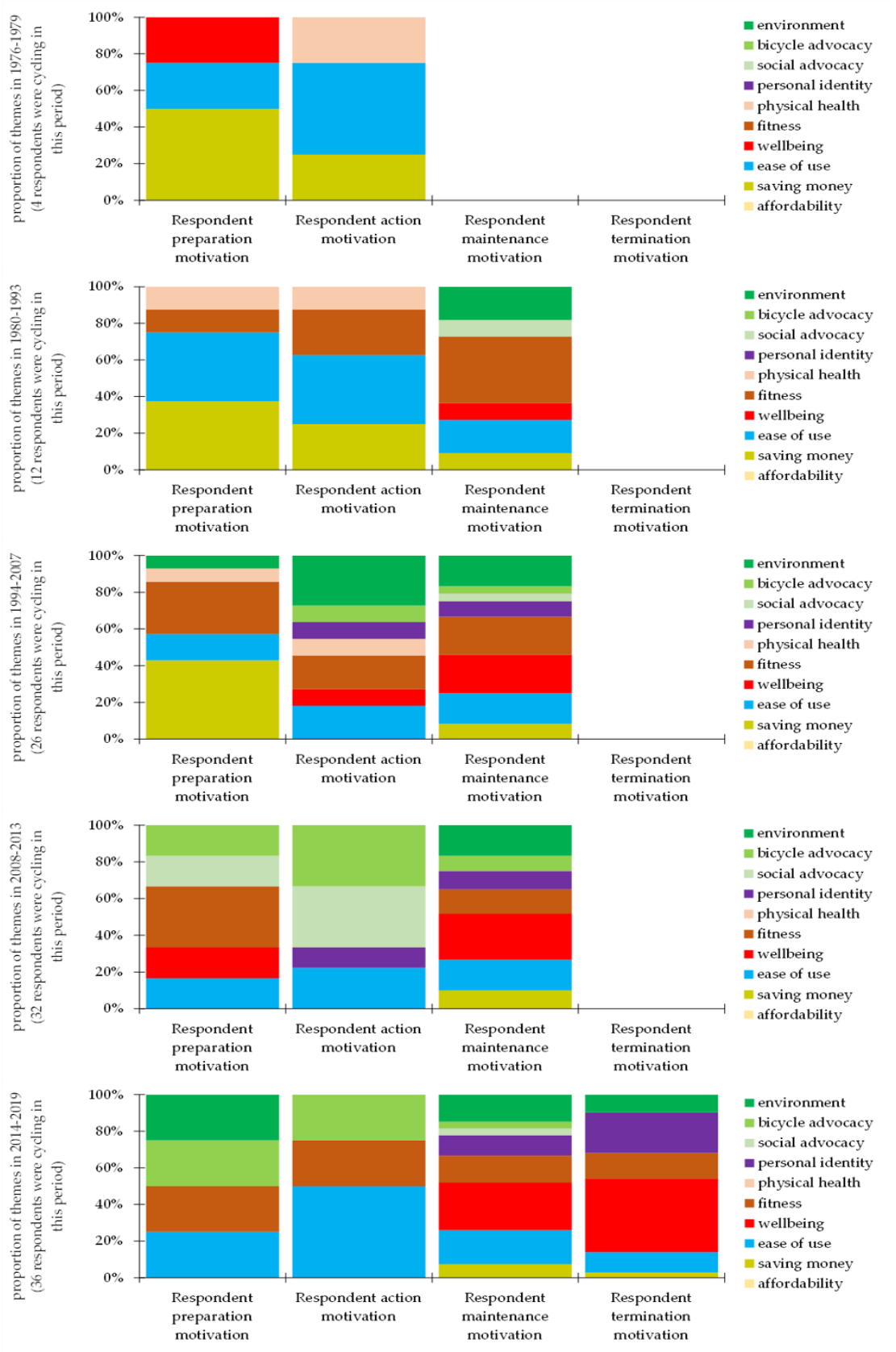

Figure 43: Charts showing the motivations of individuals, by proportion of theme (four Stages of Change) and by time-period of analysis. This reflects the narrative above.

7.10 CONCLUSION

This chapter has presented datasets 3 and 4 – as extracts from surveys and interview transcripts and in data visualizations – to show what shifted individuals to think about, to start, increase, and sustain a cycling practice. Across all Stages, changing residential or work location and then receiving support from peers or colleagues, encountering traffic and challenges finding parking, or being within cycling distance, are common triggers beyond contemplation or action stages. Increasing sports activity and/or obtaining a more appropriate commuting bicycle are also key. Seeing bicycle travel as normative outside South Africa, and /or obtaining a more appropriate commuting bicycle, are the most common triggers among interviewees to contemplate or prepare to cycle.

The chapter also shows how motivations shift across interviewees' cycling biographies, from the time they begin to cycle until the time at which cycling becomes their first choice of transport mode. Saving money, ease of use, and fitness, were the most common dominant motivations at Preparation, and saving money at Action stage.

The longer an individual has been cycling, the more likely they are to talk about their feelings, identities, values, and lived experiences. By Termination, wellbeing and personal identity are the most common dominant motivations. These are not the motivations that get them to ride, but are discoveries made on the journey to termination. These findings align with the international literature in both low and higher cycling cities. None of the interviewees give physical health, social advocacy, bicycle advocacy, or affordability as motivators at this stage.

These changes in triggers and motivations were also presented as data visualizations in the chapter, showing how individuals changed across Stages of Change, but also how motivations changed depending on the time period during which an individual started cycling. Of individuals who started cycling since 2008, none started riding to save money, and the environment and bicycle advocacy were more important initial motivators for those who started during this time. Bicycle advocacy and social advocacy are dominant motivations during Action stage between 2008 and 2013, the heyday of advocacy in Cape Town. Ease of use was a primary motivator to individuals who took action since 2014, as road traffic congestion increased.

The next chapter, chapter 8, considers the encoded data presented here, together with encoded dataset 2 (ie, the data presented in chapter 6) to develop an understanding of overlaps, intersections, or divergences in these narratives of motivation. Using this thematic approach, the chapter will also surface the motivations that the policy and advocacy discourses assume individuals have, or should have. These implicit assumptions or explicit approaches offer insight into how advocacy believes individuals make decisions about changing transport behaviour, which is the subject of chapter 9 and research question 5.

8 RESEARCH QUESTION 4: WHY INTENTIONAL CYCLISTS 'DITCH THEIR CARS' – AND WHY BICYCLE ADVOCACY SAYS THEY SHOULD

8.1 INTRODUCTION

This chapter considers datasets 2, 3 and 4 to answer research question 4: *What are the shared or divergent motivations for and framings of bicycle transport between the[se] personal discourses and the public advocacy discourse?* To do this, the chapter draws on the data presented in chapter 6 (the advocacy discourse), which sets out how advocacy 'shows the positive aspects of cycling', and compares it with the data presented in chapter 7 (the personal discourses), which sets out how individuals themselves describe the shows the 'positive aspects of cycling'.

This data as presented is not segmented by Stage of Change, as my interest is the shared or divergent motivations between public and personal advocacy discourses, not between individuals at different stages of change. Of interest is whether the public advocacy discourse frames motivations for cycling in the same way as cycling individuals do – in the end, exploring whether advocacy, which aims to bring about change, is working with a set of behavioural change assumptions that aligns with revealed behaviour.

Cape Town's Cycling Strategy notes that among the actions 'required to grow utility cycling' is the communication and promotion of cycling 'through media campaigns, forums, and public engagements' (CCT, 2017c, p. 18). The purpose of this communication is 'to educate people about cycling and promote it as a viable and attractive means of transport':

> 'In order to increase cycling, it is vital to position the cyclist in a broader perspective, show the positive aspects of cycling and improve the image of cycling as a sustainable, healthy and desirable mode of transport.'

As chapter 6 set out, the advocacy discourse in South Africa frames bicycle transport as both a low-carbon and a low-cost mode of travel – a low-cost mode for the poor, but also the low-carbon mode of 'world-class' cities. Cycling is framed as able to extend basic, affordable mobility, increase access, and alleviate poverty and inequity, and is also framed as 'green', 'healthy' and 'car-competitive', thus able to serve the needs of 'captive' users and also attract 'choice' users.

The chapter considers six competing framings of the positive aspects of cycling and why individuals choose to ride, or why individuals are encouraged to ride. These competing framings are affordability compared to saving money; ease of use (convenience for individuals) compared to bicycle advocacy (particularly ease of use or convenience for drivers); the importance given to the environment by advocacy compared to by individuals; the importance given to wellbeing or mental health by individuals compared to by advocacy;

and importance given to personal fitness by individuals compared to the importance given to public health by advocacy; and the way social justice is deployed to contribute to wellbeing and identity.

8.2 AFFORDABILITY AND SAVING MONEY

The affordable nature of bicycle transport, and its offer of low-cost mobility, is not a concern to interviewees; nor is it a key motivator to the cyclists in the literature (see Chapter 2.5, What motivates and sustains a bicycle practice?). This attribute is, however, a primary concern in the cycling policy and for bicycle advocacy organizations (CCT, 2005, 2008a, 2013b; BEN, 2007; NDoT, 2007b; PGWC, 2009a, p. 1). Intentional cyclists are not motivated to ride because this action supports 'our country and city … acting on its promise to provide for the rights of its citizens, not only those who are able to afford to own and run motor vehicles' (CCT, 2009c). That cycling lanes are cheaper to build (Staff writer, 1981) and inexpensive (CCT, 2009c), a better use of rates and taxes (Scott, 1988), or save maintenance costs for the transport authority (CCT, 2009c), are nice-to-haves but do not get intentional cyclists '*excited*'. Saving their own selected costs, not saving the transport authority's costs, are motivations to ride[93].

In the literature, saving money and affordability are motivators to cycle, but this is not strictly comparable with respect to this study, as study participants in the literature are rarely disaggregated by income or car-ownership / mode alternatives[94]. During early Stages of Change, in this study interviewees report starting cycling to save money, particularly when they are at university or in their early years of earning. Here they refer to saving on fuel, and on occasion, public transport costs (which does align with the literature). During later Stages of Change, however, their cost savings reflect a different order of saving: interviewees either (i) do own cars, and note that riding a bicycle saves on wear and tear, insurance, and particularly on parking; or (ii) they have decided to use a bicycle rather than purchase a second car for the household.

Interviewee 24 says that '*There's no financial gain to [bicycle commuting], really, I don't believe. If I look at maintenance cost on my bicycle.*'

Interviewee 32 has the specific calculations to hand:

> *'Despite [cycling] 5 000 km in a year, there's no saving. Looking at 5 000 km on my car, it might be a rand a kilometre in fuel and all that stuff, so it's R5 000. It sounds like a lot of money. But change my chain and my rear groupset, it's R5 000. And that happens every*

[93] For a reminder of which codes are allocated to the themes Affordability and Saves Money, refer to Figure 14: Code tree showing all codes now clustered into 10 final themes, based on a review of the interview and advocacy discourse.

[94] Studies specifically considering cycling and cost saving among high-income car-users are not common.

10 000 km, so I think there's no saving in commuting. The wear and components and repair and stuff on a bicycle is much more expensive than a car.'

For intentional utility cyclists, it is by and large grudge costs they are saving; there are a good many interviewees whose bicycles cost as much as a small car[95]. Advocacy's encouragement that cycling is 'cheap' (CCT, 2006a, 2012b, 2015c, 2016b; NDoT, 2007b) does not resonate; cycling does indeed save costs, but not necessarily the costs of car ownership. While a few individuals have chosen to no longer own a car, or have decided to share a car, the majority continue to own cars and incur the associated costs. Saving on toll fees, car guards[96], and '*bonkers expensive*' parking, on the other hand, are *'major drawcards'*.

8.3 EASE OF USE AND BICYCLE ADVOCACY

In the policy and other advocacy discourse across all time periods, road traffic congestion is framed as a challenge of there being too many vehicles on the road, which individuals – by removing themselves – could mitigate; for individuals, cycling might be faster and therefore 'beat' the traffic, but for the City, 'walking, cycling and public transport use existing road infrastructure more efficiently than single occupancy vehicles and therefore requires less road infrastructure to be built and maintained' (CCT, 2017a, p. 45)[97].

Road traffic congestion has been a problem transport authorities have been trying to solve since the beginning of this period of analysis. In the 1970s, cycling to work was seen as an opportunity to 'ease traffic congestion and pollution' (Staff writer, 1976c). Cycling lanes were a low-cost way in which the authorities could deal with congestion: it was cheaper to build cycle lanes than traffic lanes (Staff writer, 1981). In the 1980s, the benefits of cycling were framed as 'reduced road congestion, lower-traffic pollution, and health factors' (Editor, 1988).

The car-free days of the early 2000s in Cape Town were to encourage walking and cycling, to ease congestion on the province's roads (Staff writer, 2004). Cycling among car-owners was explicitly encouraged by, for example, Jeff Radebe, the then national Minister of Transport: these car-free days were a way of 'encouraging drivers not to drive alone [ie, single-occupant vehicles]' (Mopp, 2005). Bicycles 'hold the potential to ease the city's growing traffic burden,' the press reported in the mid 2000s (Bucher, 2007).

The City of Cape Town's five-year plan for transport, beginning 2008, had 'a long-term plan … to get you out of your car' (CCT, 2008d). The City attempted to 'actively promote the use of … alternative means of travel to counter the traffic gridlock ... that is causing increasing

[95] Upwards of 150 000 ZAR.

[96] An informal self-appointed guard to prevent car-theft from public parking spaces.

[97] For a reminder of which codes are allocated to the themes Ease of Use and Bicycle Advocacy, refer to Figure 14: Code tree showing all codes now clustered into 10 final themes, based on a review of the interview and advocacy discourse.

frustration for local motorists. These measures include cycle lanes … and the benefit of less congested roads' (CCT, 2008b). In 2009, an opinion piece about cycling posed that bicycle commuting 'would certainly do the national girth a power of good… It'd also decongest the roads' (Joubert, 2009).

'Less traffic congestion' is one reason why 'more bicycles on roads are better for us all,' posited the City in a 2009 media release (CCT, 2009c). 'Less traffic congestion' was the motivation the City suggested would 'lure' drivers to 'abandon their cars' and take up cycling on the new MyCiTi bicycle lanes (CCT, 2011d). The *Cape Times* reported that the dedicated lanes for pedestrians and cyclists in Albert road would 'improve traffic flow' (Butana, 2012). In 2013, a bicycle-share system was proposed, to 'reduce traffic congestion' (CCT, 2013b).

The 2014 request for proposals for a consultant to develop a cycling strategy asked that the strategy 'highlight the congestion reduction… benefits of cycling' (CCT, 2014c).

> 'Our city's roads are heavily congested, and the purpose of this strategy is to lure motorists away from private vehicles … The only sustainable way to reduce congestion is to reduce the number of vehicle trips on our roads' (CCT, 2015d).

Cape Town's Climate Change policy of 2017 (CCT, 2017b) placed its hopes on this strategy, which would 'contribute towards a reduction in congestion and emissions in the City by 2030.' Thus the City's congestion narrative was that bicycles would mean fewer cars; by cycling, car-owners could essentially make things easier for the City's budget and for those who continued to drive.

Cycling by some would improve traffic flow and reduce congestion for others: 'Cycling is beneficial for both residents and our city – it reduces congestion on the roads' (CCT, 2011c). However, these are two different framings and motivations: the former, an individual approach to relieve the suffering of being in traffic, a selfish motive; the latter, an altruistic motive, to solve one of the city's problems. By withdrawing themselves from the congestion, at their own risk, to ride, individuals would be reducing the number of cars on the road. In the thematic analysis, I have coded these two differently: the former, as 'ease of use', the latter, as bicycle advocacy (an explicit promotion of cycling to reduce congestion, for example).

Cycling to reduce congestion, however, is rarely a motivation shared by interviewees:

> *'I also know I'm doing my part not clogging up the streets… but that's not the main thing, no… my reasons are selfish.'* [Interviewee 13]

Interviewees 'hate' traffic, yes, but cycle to serve their own needs, not those of the city. Said Interviewee 22: '*I hate[d] traffic, I won't do it.'* Interviewee 30 *'gets annoyed in traffic'*, Interviewee 6 rides to avoid the *'horrific traffic'*, and Interviewee 32 so that he does not *'sit in traffic'*. Every minute Interviewee 35 *'sit[s] in a car is considered a wasted minute, a minute I will not get back.'*

> *The big motivation [is a] self-centred one, I didn't want to be caught in traffic.'* [Interviewee 30]

This is a notable divergence between the way in which individuals frame their cycling response to congestion, and the way in which advocacy does so. At times the narratives draw closer, such as when advocacy describes cycling as quicker than driving in the draft national NMT policy: bicycles are 'quicker than a car over short distances' (NDoT, 2008, p. 33). A closer approximation to interviewee's motivations is Pedal Power's encouragement in 2007, which gets that individuals cycle to mitigate their own suffering, not the suffering of other road users:

> 'If you are tired of rush hour… you could leave your car in the garage tomorrow and pedal your way to work for Bike To Work Day' (Bucher, 2007).

Likewise the City's December 2019 festive season campaign: '*leave your car at home … take a walk, run, skate or cycle [to spend] less time looking for parking,* [minimize] *the frustration of traffic,* [and*] avoid traffic jams*[98].'

The large body of literature about the benefits of cycling, or what makes cycling irresistible, in high-cycling countries references cycling being quicker and faster than driving (or public transport). In many instances, there are benefits peculiar to compact cities, not the dormitory, sprawling urban form of Cape Town (Jennings, Petzer and Goldman, 2017). Where there are times that interviewees say cycling is quicker than driving (eg interviewees 5, 6, 10, 11, and 18), there are also many times for these same interviewees that cycling is slower than driving. Cycling – whether slower or faster – is time better spent, and this particular motivation is explored further under Wellbeing, below. Where interviewees engage in Bicycle Advocacy (to encourage others to ride and build a bicycle culture), the narratives they engage in to motivate others to ride (quicker, less congestion) do not align with their own given motivations for riding (joy, wellbeing).

8.4 THE ENVIRONMENT

Throughout the advocacy discourse, in the transport and environmental sectors, cycling is promoted initially as 'non-polluting', and as the decades go by, as green, environmentally friendly, and environmentally sustainable, then as a low-carbon or low-emission mode[99].

> 'NMT has always been closely associated with environmental sustainability, because of its minimal impact on fossil fuel usage, noise and air pollution' (CCT, 2009a).

[98] (www.tct.gov.za, accessed January 2020).

99 For a reminder of which codes are allocated to the theme Environment, refer to Figure 14: Code tree showing all codes now clustered into 10 final themes, based on a review of the interview and advocacy discourse.

In 2012, in a bid to encourage car-drivers to cycle, MMC Brett Herron spoke of how:

> 'We would thus like you to consider how you can change your transport habits or patterns to include an active mobility component … to make your entire daily commute a socially and environmentally sustainable trip' (Herron, 2012).

In the literature, in Lisbon, Félix *et al* found environmental concerns among cyclists to be highly relevant (Félix, Moura and Clifton, 2019), and in Larsen's study, the environment was a motivator for longer-distance commuting only (Larsen, 2018). Environmental concerns were not always a principal motivator in the UK among cyclists, on the other hand (Aldred, 2012a, p. 33). Climate change is not a 'front burner' issue, noted Anable *et al* (Anable *et al*, 2006:11) – among people who had made changes in their behaviour, they do not believe that their behaviour makes much difference. In Rérat's study in Switzerland, 'respect for the environment' was an important motivation, but only after flexibility, freedom, and pleasure (Rérat, 2019). In Poland, Biernat *et al* (Biernat, Buchholtz and Bartkiewicz, 2018) found pro-environment motivations to be important, but these coded as one theme together with health, fitness, and pleasure motivations.

The interviewees in this thesis are aware of climate change and the impact of transport emissions, but environmental sustainability is not the dominant motivation for the majority. Interviewee 14 '*is aware of the bigger contribution that cycling makes towards environmental sustainability*,' and for Interviewee 13, '*one of the serious primary drivers for me [is] the moral and ethical obligation to try and use my car less*.' But Interviewee 24's position is more common: he does think '*actively about reducing carbon emissions …'* but *'[his] central identity is not that of a climate change activist*.'

Interviewee 15 is not at all convinced that his cycling contributes to congestion or climate mitigation: '*It's just taking me off the road …it's so little that it actually does nothing… It's a bit like "my one vote", what does it matter in the big pool of the thing. Even if I did drive, I don't think I would add so much to the CO2 part of it. So this isn't something I actually majorly take into account*.'

Interviewees 11 and 31 share similar doubts about the sustainability impact of switching from driving to cycling. As for the '*environmental factor, it's an infinitesimal contribution to the wellbeing of the planet and totally insignificant*,' says Interviewee 31. '*Miniscule*' is how Interviewee 19 describes his cycling contribution: '*The fact that I am not [driving] doesn't feel like I'm a champion. I don't feel like, "yay look at me, I've done a great service to humankind"*.'

Interviewee 7 notes that there is a difference between '*making the links between environment and sustainable development*' and actually cycling for those reasons:

> *'It's more likely that you're [doing it] because you just wanted to do it or because you want the [saved] money.'*

Interviewee 16's introduction to cycling was that '*it was definitely better on the environment'* but what mattered for her is that *'it was also a great time*.' For Interviewee 26, it is '*irrelevant*' what the carbon mitigation impact of cycling is: it is merely a '*by-product'* for him, he would ride anyway.

8.5 WELLBEING AND PERSONAL IDENTITY

Every so often, wellbeing is mentioned in the policy (CCT, 2017a), as a 'happy vibe' (van den Berg, 2017) or fun (CCT, 2015f) when discussing car-free days or public spaces. 'The day the city came out to play' was a newspaper headline about car-free day in 2003 (Williams, 2003)[100].

On the re-opening of the Sea Point Promenade to cyclists, in an opinion piece Rory Williams [not the same Williams as above] wrote:

> 'We need a city that lets kids mess around in public places – and when I say kids, I include you and me. I can still recall the thrill I felt as a child on a bicycle … the independence was intoxicating…
>
> 'Do we really expect people to bring bikes back into their daily lives if we surround them with a protective bubble of regulation and control? We do things that are fun – or at least, aren't a drag, so let's make the city fun again' (Williams, 2013).

'Bike it, you'll like it' was a slogan developed by Pedal Power Association in the early 1980s (PPA, 1982), and coming almost full circle is the City's 'just the jam' campaign of 2019. But on the whole, wellbeing, joy, happiness, and values are rarely a point of advocacy, and liking or loving cycling are rarely deployed as a way to encourage others to bicycle commute.

Perhaps transport is too serious a matter in the context of Africa's transport inequity. In 2016, after my moderating a peer-reviewed conference session on transport, a delegate mailed their concern to me about the 'frivolous' nature of the research presented: 'One presenter was very subjective and saying people should cycle because it is enjoyable… There needs to be scientific data.[101]' In Cape Town, joy and wellbeing may seem out of touch with the realities of travel for the majority, the 'captive' users, where bicycles have been framed in political discourse as a 'gimmick for the wealthy while the poor have to live with unsafe, overcrowded public transport' (Staff writer, 2011). In the study referenced earlier in Kumasi, for example, Acheampong's survey questionnaire did not include wellbeing or an approximate in the proposed four broad themes or 'concept groupings' as to why respondents do cycle: personal health benefits; affordability, flexibility, convenience, comfort; perceived environmental

[100] For a reminder of which codes are allocated to the themes Wellbeing and Personal Identity, refer to Figure 14: Code tree showing all codes now clustered into 10 final themes, based on a review of the interview and advocacy discourse.

[101] Cited by myself in (Jennings, 2021a). The Conference was the Southern African Transport Conference, 2017, Pretoria.

benefits; and prestige (Acheampong, 2016). Félix *et al's* study of motivations in Lisbon also did not give Wellbeing or an approximate as a survey option (Félix, Moura and Clifton, 2019).

In South Africa, it has taken some while for cycling to be seen as a legitimate transport mode – possibly not even so yet (NDoT, 2008; CCT, 2016a; Jennings, 2016). Thus focusing on its serious, utility nature, might be appropriate. Aldred proposes the opposite – that in low-cycling countries, the focus on cycling as faster, more efficient, and distant from leisure and pleasure, might have marginalized cycling in policy (Aldred, 2015).

Yet wellbeing and personal identity are central motivators for the intentional cyclists in this study – not often as a motivator to start cycling, but increasingly as a motivation to sustain cycling in difficult or hostile conditions. I have coded statements about joy, happiness, fun, productive time, authentic engagement with both the urban environment and the people who live in it, and a sense of community, as wellbeing, and statements about aligning with personal identity and sub-culture, values such as discipline and commitment, and intentional living, as personal identity[102].

Among interviewees, cycling is something to look forward to (interviewee 30); Interviewee 6's 'mind is free'. Interviewee 17's '*brain works better*', Interviewee 35 spends '*more time doing something real'*.

For a while Interviewee 35 had been seconded to an office very much further from his home, but he still rode there – meaningful time being more important than 'efficiency':

> *'It took me like 45, 50 minutes. Driving would have taken me about 45, 50 minutes in traffic. So the real difference between those two is that one of them I enjoyed, the other one I didn't …'*

Interviewee 25 '*loves it for the engagement that it gives me. Bicycle commuting has made me feel more comfortable, it's made me take ownership of the space here.'*

'*Very few things give me as much joy as cycling*, 'says Interviewee 27. '*It could even be just a kilometre*.' If Interviewee 6 could not ride [for long periods], *'that would just kill me*.'

'*When you ride, your whole day is different*,' says Interviewee 31. '*You arrive in a better frame of mind. You return home in a better frame of mind, because there is proper isolation between work and play. You are more aware of what's going on. Everything beautiful is more beautiful…*'

Compared to the literature, I differ in how I have coded a number of findings: physical exercise might contribute to wellbeing (see Rérat, 2019), for example, and overtaking slow-moving traffic and a sense of achievement contribute to 'enjoyment' (see Gatersleben and Appleton, 2007) rather than ease of use and personal identity. I have coded fitness and exercise

[102] There is some overlap: if an interviewee had strongly identified as an environmental activist, I would have included their primary motivation under personal identity not environment. Urban environment and community engagement are coded as individual wellbeing rather than social advocacy.

as a motivation on its own rather than contributors to wellbeing – and a 'sense of achievement' as personal identity especially when cycling in bad weather!

Further, wellbeing for interviewees is not always a consequence of the same modal attributes as in other low-cycling high-income cities: for example, 'automobility' motivators that Anable *et al* note – of independence, speed, efficiency, and health (Anable, Lane and Kelay, 2006; Aldred, 2010), or the door-to-door, flexible benefits (Rérat, 2019) – are not important motivations for individuals to start cycling, as they already have the independence of a private car. Speed and efficiency are not valued as highly as productive and meaningful time; health is not valued as much as fitness. Mitigating privilege as a motivation seems a particular Cape Town (or South African) experience, most likely the consequence of the country's segregated history and inequity.

The literature is consistent in that in both low and high-cycling contexts, bicycle transport is a source of joy. The motivations that make up wellbeing do correlate entirely with those emerging in Barr and Caimotto's studies in the UK: engaging with the local urban and natural environment, the embodied experience of cycling, and meaningfully spent time (Barr *et al.*, 2022, Caimotto, 2020). The mental health benefits of cycle commuting (pleasure, and a means of escape) influenced cycling in Rérat's study. The happiness of 'arrival-time reliability' and commuting control, noted as motivators in Auckland, resonate strongly with interviewees in this study (Wild and Woodward, 2019). Cyclists in Davis, California[103], and the interviewees in this study, share absolutely the same approach to cycling's co-benefits: they enjoy the freedom of cycling, the relaxation it brings, and how they are able to avoid the stress of driving. Unless they have 'internal satisfaction' from cycling, they are unlikely to ride even if the mode has multiple other benefits (Heinen and Handy, 2012, p. 272).

Because this chapter is primarily about the shared or divergent motivations for and framings of bicycle transport between personal discourses and the public advocacy, I have left the full discussion about personal identity to the following chapter – Research question 5: How drivers might 'be persuaded to switch their cars for bicycles' – which considers theories of behaviour change. The advocacy discourse is silent on personal identity explicitly as a motivation to ride, although there is an implicit notion that an identity as someone committed to the environment might be a motivator.

8.6 FITNESS, EXERCISE, AND HEALTH

Improved public health is one of the objectives of Cape Town's Cycling Strategy, and the 'obvious health benefits' of cycling for individuals and the family – as exercise or generic

[103] A very high rate of cycle trips compared to other US cities, at 17%: https://nacto.org/wp-content/uploads/2011/03/City-of-Davis-Comprehensive-Bike-Plan-2006.pdf

'health' – are a thread throughout the advocacy (Editor, 1988; CCT, 2005, 2006d, 2015f, 2017c; Johannes, 2005; Mopp, 2005; Staff writer, 2011; Herron, 2012)[104].

'Health' is not a critical motivator to interviewees in this study, and unlike in the literature, none were set on a cycling journey by a life-change event relating to health or a health-scare (Anable, Lane and Kelay, 2006; Aldred, 2012a; Bonham and Wilson, 2012; Chatterjee, Sherwin and Jain, 2013; Acheampong, 2016).

In the literature, 'health' and 'fitness' are often combined as one motivation; I have separated them, as they are evidently different in the way in which interviewees frame the two. With the exception of two interviewees (one who started to cycle to lose weight and the other to mitigate a metabolic illness), interviewees are already in good health. They do like the exercise, and that it is embedded in their lives, but often describe the gentler exercise of cycling in terms of mental health or emotional wellbeing, a prelude or transition to work, or time better spent than driving (aligned with the 'disconnection' from work that Rérat's cyclists in Switzerland valued about cycling).

Like the findings in Rérat's study among relatively high-income commuter cyclists in Switzerland, cycling to work is beneficial to wellbeing, an opportunity to 'incidentally' exercise; in his study, the opportunity to exercise was the main motivation to bike to work. '*It's exercise that just happens'*, says Interviewee 17, and '*It means I don't have to try and create time for exercise*,' says Interviewee 2. '*The exercise component is big because even though I'm not like a sports cyclist, I find it really appealing in that it gives me a chance to work in exercise into my day*' [Interviewee 30].

Yet, while cyclists in Switzerland liked that bicycle commuting mitigated against exercise being a 'chore' (Rérat, 2019), intentional cyclists in Cape Town mostly already exercised.

Cycling is very much associated with sport in Cape Town: Before Interviewee 30 started his bicycle commutes, he was intimidated by the pace at which he thought he'd be expected to ride:

> *'I think beforehand I thought of the cycling subculture as nothing much more than a fitness junkie, like a strain of being a fitness junkie.*

When a number of interviewees refer to 'exercise' they do not mean the gentle, embedded, moderate intensity that delivers the 'feel better' effects described by Wild and Woodward (Wild and Woodward, 2019, p. 6), but '*flat-out'* training for elite sports events and a partial replacement for gym. Says Interviewee 18: '*I go flat-out. I ride hard wherever I go.'*

104 For a reminder of which codes are allocated to the themes Health and Fitness, refer to Figure 14: Code tree showing all codes now clustered into 10 final themes, based on a review of the interview and advocacy discourse.

For 'real' exercise, a few interviewees also run, and most also ride for sport or recreation: '*As a runner, cycling is not my primary exercise, but it is something I feel passionate about*.' [Interviewee 31]. Interviewee 10 stopped cycle-commuting as it did not give her enough exercise!

Fitness is an important motivation to Félix *et al's* participants (Félix, Moura and Clifton, 2019). In Gatersleben's study, among affluent university staffers in the UK, the most commonly cited reason for cycling was fitness (Gatersleben and Appleton, 2007). Such cycling, across longer commute distances, is an under-rated and under-explored motivation, but has potentially significant impact in terms of 'getting people out of cars' (Boyer, 2018; Larsen, 2018).

8.7 SOCIAL JUSTICE ADVOCACY, SOCIAL COHESION, AND WELLBEING

Social justice advocacy – promoting or performing social inclusion, liveable cities, mobility justice, economic inclusion – is closely aligned with the narratives of affordability and poverty alleviation in the advocacy discourse, but is more likely to contribute to a sense of wellbeing among interviewees (if it has their attention at all)[105].

Advocacy pays substantial attention to the way in which cycling can improve access to basic needs as well as improve social and economic opportunities for people who do not have access to cars (CCT, 2005, 2017a; NDoT, 2008, 2014). Cycling infrastructure is a way to redress apartheid spatial injustice and overcome social divisions – a narrative that gained ground particularly since 1994, and mindful of the pushback against cycling as an elite practice (CTP, 2010; Ndenze, 2011a, 2011b; OSCT, 2011; Jennings, 2016; CCID, 2019b). (See also Figure 35). Car-free days and open streets events are framed as opportunities to build 'cohesion among communities', 'show that people can live in peace next to each other', 'connect with others who dream of a more sustainable and cohesive Cape Town', 'bridge social and spatial divides', develop socially sustainable travel patterns, 'build strong communities and make them realize the power of collective action' (Staff writer, 2004; Thiel, 2004; Herron, 2012; de Lille, 2016; CTetc, 2018; CCID, 2019b).

> 'We're so caught up with clutter in our tiny bubbles, that often we have no idea of what's happening in the communities just around the corner. Which is where Open Streets comes in… (Staff writer, 2019).

Connecting with others, bridging social divides, and coming to terms with privilege, are certainly important for interviewees, as motivations in both starting and continuing cycling. Interviewees 4 and 25 even use the same framing of exclusive '*bubbles*'.

[105] For a reminder of which codes are allocated to the theme Social Advocacy, refer to Figure 14: Code tree showing all codes now clustered into 10 final themes, based on a review of the interview and advocacy discourse.

> *'I can't stand this fucking elitist bubble space that I'm forced to live in as a relatively wealthy white person in South Africa … with cycling you can actually stretch those boundaries a little bit and that's basically what I'm doing.'* [Interviewee 25]

Interviewee 22 notes that:

> *'That's also one of the awesome things commuting by bike, you stop at a robot*[106]*, the guy stops next to you. You like chat a little bit on the road and then off you go. And then you see the same guy again at some times.'*

For Interviewee 7, her cycling reminds her '*on a daily basis'* of the professional context in which she works, of public health: *'I guess that feels important to me to understand … what it means to move about the city without having regular access to a private vehicle.'*

In the literature, 'civic engagement' – social activism, respect for the environment, as well as 'the image of the bike within the company and among friends and family members' [107]– is a motivation identified by Rérat (Rérat, 2019), but is one that resonates with less than half of study participants. Environmental activism or pro-bicycle ('anti-car') activism, feminism, and socialism are more common justice arenas in which to find explicit advocacy among a similar cohort of cyclists internationally (Horton, 2006; Aldred, 2010; Furness, 2010; Stehlin, 2013). While authentic mobility and engagement is highly valued by interviewees, it is less to posit an 'alternative to consumer capitalism' (Horton, 2006) but more about personal wellbeing and '*sanity*'.

However, as Interviewee 9 puts it, *'you're not going to find somebody who just decides to ride a bicycle as a … sort of a social justice warrior.* Like with environmental motivations, interviewees are driven primarily by the personal not the public good: coping mechanisms, their own emotional wellbeing, or being able to focus on their work in a more authentic manner.

8.8 VISUAL SUMMARY OF COMPARISON BETWEEN ADVOCACY AND PERSONAL DISCOURSES

The charts below visualize the data described in the narrative above, showing the importance given by the advocacy discourses to each of the ten themes, compared to the importance given by the interviewees. Here, I have divided the discourse into Civil Society / Media advocacy, and Policy advocacy. Policy refers to a deliberate set of guidelines to guide decisions and achieve an outcome, a principle or course of action 'adopted or proposed by an organization or an individual'. This therefore can include a strategic document, a framework, a guideline, toolkit, or other such document but not only a formal policy, and here includes government-led communication such as media releases, speeches, newsletters. Civil Society includes

[106] A traffic light.

[107] What I would have coded as Bicycle Advocacy.

communication by NGOs and other organizations, and the Media includes letters to the press, editorials, newspaper articles and magazines.

For an explanation of the formula and weightings used for both policy and civil society/media, see the Appendices, Dataset 2: Public advocacy discourse.

[Figure 44 is on the following page:]

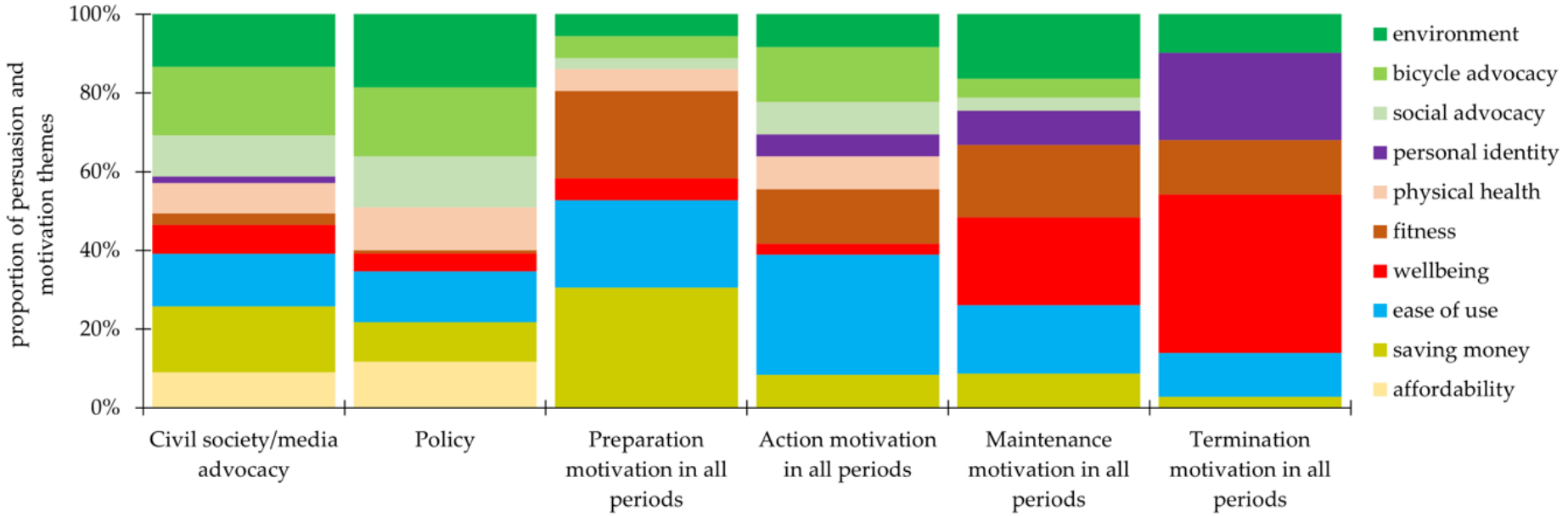

Figure 44: Chart showing the importance given by civil society/media advocacy, and policy, to each of the ten themes (motivations), compared to the dominant motivations given by all interviewees, across all time-periods, at the stages of Preparation, Action, Maintenance, and Termination.

The visualization on the following page (Figure 45) expands on Figure 43 and adds the further two columns of civil society/media advocacy and policy, by time-period, by theme, and at the stages of Preparation, Action, Maintenance, and Termination.

Across all time periods, policy is fairly consistent in the relative importance it gives to each theme Wellbeing appears only after 1994, and does not attain much importance. Personal identify is given no importance. Fitness is given little importance in either the policy or the civil society/media advocacy as a motivation for cycling, and saving money and affordability are consistently given greater attention than they are by individuals. In the last period of analysis, wellbeing becomes more important in the civil society/media advocacy, although the importance of personal identity continues to be overlooked. Bicycle advocacy, and the environment are consistently important in the civil society/media advocacy; social advocacy only emerges after 1994. Affordability is given less attention in the civil society/media advocacy after 2008, when the focus shifts to social rather than economic sustainability.

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In the last period of analysis, wellbeing becomes more important in the civil society/media advocacy, although the importance of personal identity continues to be overlooked. Bicycle advocacy and the environment are consistently important in the civil society/media advocacy; social advocacy only emerges after 1994. Affordability is given less attention in the civil society/media advocacy after 2008, when the focus shifts to social rather than economic sustainability.

Figure 45 (on the next page) is a chart showing the importance given by civil society /media advocacy, and policy, to each of the ten themes (motivations), compared to the dominant motivations given by all interviewees, by time-period, at the stages of Preparation, Action, Maintenance, and Termination. As with Figure 44, the advocacy discourses do not align in terms of importance or dominance with those of the individuals interviewed.

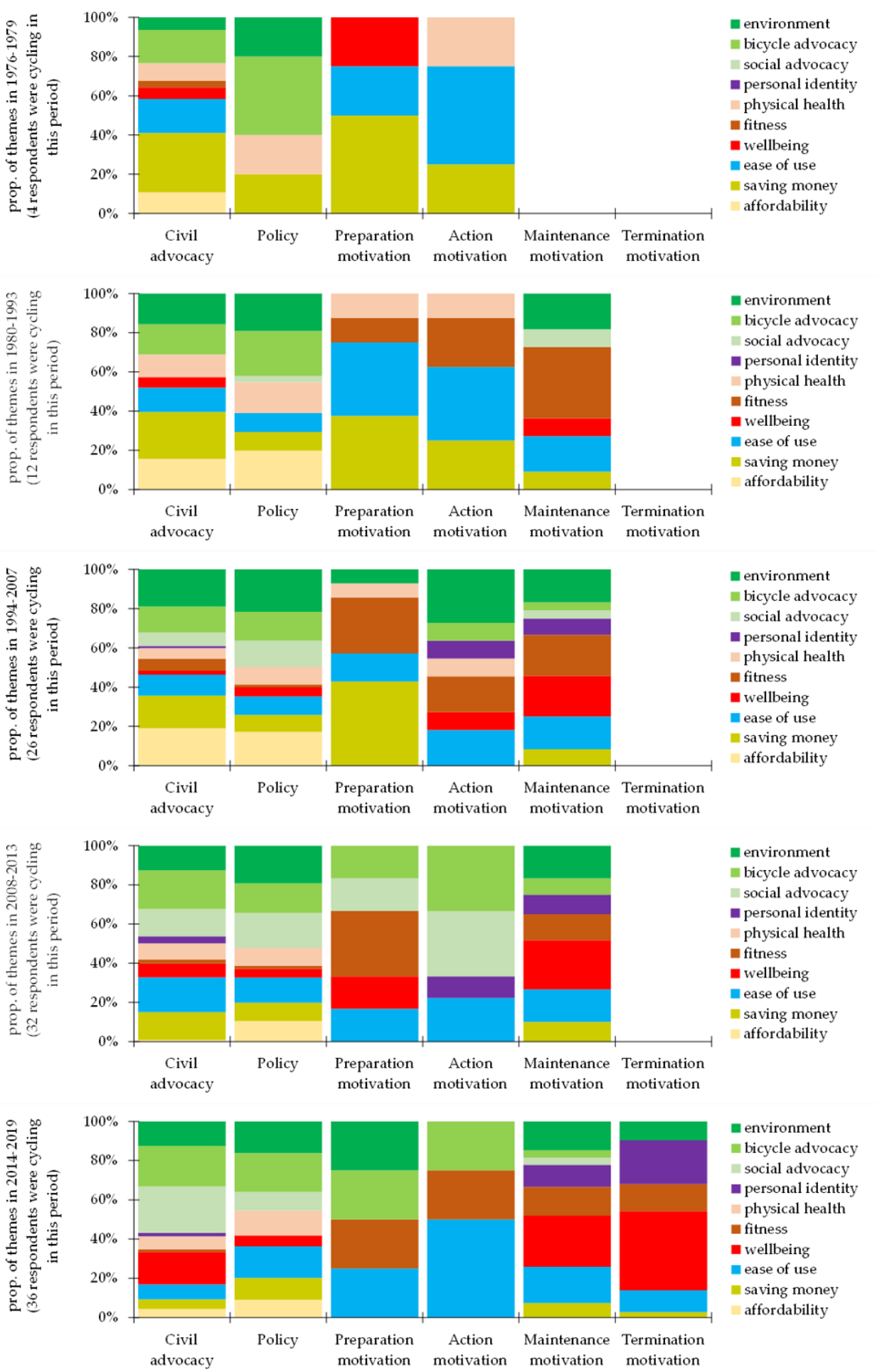
prop. of themes in 1976-1979 (4 respondents were cycling in this period)
prop. of themes in 1980-1993 (12 respondents were cycling in this period)
prop. of themes in 1994-2007 (26 respondents were cycling in this period)
prop. of themes in 2008-2013 (32 respondents were cycling in this period)
prop. of themes in 2014-2019 (36 respondents were cycling in this period)
100%
80%
60%
40%
20%
0%
Civil advocacy
Policy
Preparation motivation
Action motivation
Maintenance motivation
Termination motivation
environment
bicycle advocacy
social advocacy
personal identity
physical health
fitness
wellbeing
ease of use
saving money
affordability

Figure 45: Chart showing the importance given by civil society /media advocacy, and policy, to each of the ten themes (motivations), compared to the dominant motivations given by all interviewees, by time-period, at the stages of Preparation, Action, Maintenance, and Termination. As with Figure 44, the advocacy discourses do not align in terms of importance or dominance with those of the individuals interviewed.

8.9 CONCLUSION

This chapter has considered the way in which the advocacy discourses (civil society/media, and policy) and individual discourses (36 interviewees) align or diverge about the benefits of cycling and the reasons to use a bicycle as transport.

In much of the policy and other advocacy discourse, bicycle transport is said to be cheap or affordable, saving on fuel costs or public transport fares. Interviewees view affordability in a different light: the money saved would not have been spent on basic access or public transport but on grudge costs such as parking, or car licensing and car insurance on a second household vehicle. The affordable nature of cycling means something different to interviewees who have mostly already chosen to spend what it costs to own and run a private car.

Further, while both advocacy and individuals view road traffic congestion as a 'problem', they differ in respect of who is to take responsibility for its mitigation: individuals ride to avoid the traffic, while advocacy frames congestion as problem that increasing the number of cyclists will relieve, in other words, individual cyclists would relieve road traffic congestion for drivers or other vehicle users.

The environmentally friendly nature of cycling has been a consistent and headline framing of the mode in advocacy narratives since the beginning of advocacy in Cape Town. Advocacy sets great store by the environment as a motivation for drivers to switch to cycling, and interviewees and survey respondents alike recognize this positive attribute of the mode. However, individuals note that there is a difference between 'making the links between environment and sustainable development' and actually cycling for those reasons. 'The environment' does get some interviewees (but no survey respondents) out of their cars, but rarely keeps them out of their cars. More often than not, the environment is not the lure that motivates the shift to cycle transport.

Wellbeing and personal identity are rarely given importance in the advocacy discourses, but are central motivators for the intentional cyclists in this study – not often as a motivator to start cycling, but increasingly as a motivation to sustain cycling in difficult or hostile conditions. Interviewees rarely link happiness or wellbeing to knowing they are behaving environmentally consciously. Cycling does not bring joy because it also brings another more worthy outcome – it is most often simply described as fun, joy, happiness, at times linked to avoiding traffic, or feeling part of the urban environment outside of their more usual socio-economic bubble, but more commonly linked to other mental health benefits such as transition time, headspace, or certainty. Personal identity is less about identity as a climate activist, for

example, but as an individual able keep to commitments, or one who has personal courage and integrity.

Fitness is an important catalyst for cyclists but overlooked with respect to public health benefits in the advocacy discourses. With one exception, interviewees were not drawn to cycling or motivated to keep riding because of generic good health benefits, but more specifically exercise that contributes to race or event fitness. Interviewees are already healthy, fit, active, and do not need to be persuaded to exercise.

The next chapter answers Research question 5: How drivers might 'be persuaded to switch their cars for bicycles'. It draws on the findings of the last chapters to offer insights – in terms of behavioural theory and segmentation – to advocacy and transport policymakers as a result of this investigation into the influencing factors at various transitions in bicycle use. Particularly, this chapter will consider the implicit assumptions in the advocacy texts about how individuals approach transport decision-making.

9 RESEARCH QUESTION 5: HOW DRIVERS MIGHT 'BE PERSUADED TO SWITCH THEIR CARS FOR BICYCLES'

'If the City of Cape Town had its way, we would all be on our bicycles in an attempt to become lean, mean pedalling machines … and clean up the city smog at the same time…' (Dreyer, 2003)

9.1 INTRODUCTION

This chapter answers research question 5: *What insights – in terms of behavioural theory, segmentation, and advocacy – may be offered to bicycle advocacy and policymakers as a result of this investigation into the influencing factors at various transitions in bicycle use?*

To answer the question, this chapter draws on the findings of research questions 1-4, and considers the motivations given by interviewees in the light of the implicit or explicit assumptions policy and advocacy makes when attempting to influence change. The chapter draws on the theoretical framework set out in chapter 3, Theoretical framework: How does travel behaviour change.

The chapter first considers the deficit model, then rational choice models and theories of personal change. In particular, the chapter considers the role of affective attitudes, salient beliefs, and subjective and personal norms, in addition to perceived behavioural control self-concept, intention, and the frequency of past behaviour. The theories of Planned Behaviour and Interpersonal Behaviour, as well as norm theories and Self-Perception Behaviour, are considered individually.

By situating this study within theories of individual change, the research is also able to offer findings about theories of change that best 'fit' behavioural change processes of the study cohort.

9.2 THE DEFICIT MODEL

The 'deficit model' of behaviour change assumes an ignorant target audience, and suggests that if only individuals had more knowledge, or better, more accessible information from experts about why they should change their behaviour, they would make the change.

This is not a model of change evident among interviewees. All interviewees (who do ride) and survey participants (who do not ride as a mode of transport) know of the environmental, health, fitness, and cost reasons to ride. When considering and starting to ride, they do not yet always know of the mental health or wellbeing impacts of cycling, nor necessarily of the role personal identity does or will play in their cycling practice – these tend to emerge as individuals experience cycling, and become more dominant sustaining motivations.

What interviewees do not always know, however, is whether bicycle commuting is actually 'doable', given Cape Town's particular urban and spatial context.

There are instances where interviewees say that they did not know or 'register' that cycling commuting was possible – until they saw someone else doing it. Among interviewees, none explicitly contemplate and take action to start cycling as a consequence of reading information about cycling as a mode of transport. One interviewee noted that he had seen 'pamphlets' about cycling as a low-carbon mode of transport, but he had already made the decision to start cycling to avoid the traffic.

All but three of the interviewees who attended activist events such as Open Streets, Moonlight Mass, or Critical Mass, were already intentional cyclists. Interviewee 1 was 'inspired' by attending an Open Streets Event, but this set her intention to work in bicycle advocacy herself rather than to start cycling. Somewhat like the cyclists in Lisbon, these interviewees were also not influenced by the 'commercial, municipal, and work [cycling] campaigns' (Félix, Moura and Clifton, 2019).

Further, none of the interviewees mentioned starting to bicycle commute because they had learned that cycling was environmentally friendly, low-carbon, cheap, or even enjoyable – although interviewees 1, 3, 4 and 11 were catapulted into bicycle commuting as adults because their manager had an environmental or social justice activist agenda.

Only a minority of interviewees sought any information (five in all). Most do not mention seeking any additional information before starting or continuing a bicycle practice, possibly because most interviewees were already competent and confident riders. For those who did seek information, most often they were after practical rather than ideological information: how to physically take action. They needed to know whether cycling was 'doable' in the Cape Town commute context, and if so, where to park, where to ride, what to wear, where to shower, what type of bicycle would be best, and was there anyone else to ride with.

9.3 RATIONAL CHOICE MODELS

Understanding interviewees' decision-making processes in terms of rational choice model is not without merit, as interviewees evidently do weigh up comparative travel times, costs, and other modal attributes – and determine that cycling makes more sense, or is more satisfying, in their circumstances. These modal attributes include travel time, unproductive or unpleasant time, the cost of paying for parking, the time-cost of looking for parking, the cost of fuel, and the costs of owning a second household car.

Interviewees also weigh up the downside of cycling – perspiring, personal risk and road safety, the wind, the hills, the grit and the sun in their eyes, the emotional exhaustion, and the end-of-day fatigue – and determine that cycling is their preferred mode, nonetheless.

I have referenced Scheiner, earlier, who notes that within rational choice models, travel is viewed as being an 'effort', a form of 'individual suffering to be relieved (Scheiner, 2018).

Among interviewees, it is travel by car that is viewed as an effort – the wasted time, the anger, the stress, the frustration, the cost – and this suffering can be relieved by bicycle travel instead. For example, it's the '*looking*' for parking, the '*hassle*', the '*worry*', that is relieved by cycling, particularly where office environments offer safe bicycle parking: Interviewee 4 '*can just cycle straight inside … I lock my bike and I walk inside*.'

Some interviewees describe cycling as quicker and cheaper than driving, but also mention the quality of the travel time (what they could be doing instead, or at the same time), the negatives of being stuck in traffic, the mental and physical health benefits, and the joy, freedom, and sense of authenticity and happiness, of travelling by bicycle.

'*Cycling is simply the easiest way to get around*,' says Interviewee 23: '*It beats the traffic, it keeps me fit, it simplifies my life*.' Cycling, for every interviewee, is evidently in their best interest, whatever that 'best interest' might be. For some it is saving on parking, for others it is coping with South Africa's apartheid legacy, or paying attention to their carbon impact, but each individual has determined that it is a course of action that works for them.

9.4 THEORIES OF PERSONAL CHANGE

This section considers individuals cycling biographies through the lens of the theories of personal change. I consider different elements that make up the various theories, before assessing which theories might be more or less applicable.

'Attitudes', a key element among theories of personal change, would in this case be favourable or unfavourable evaluations of bicycle transport (evaluations could include how possible it is to take up and maintain a cycling practice). These attitudes (which lead to an intention) toward a behaviour are also related to a set of *salient* behavioural beliefs (a belief about the consequence of enacting a behaviour), normative beliefs or subjective norms (beliefs about the views of respected others), and control beliefs (beliefs about what could support or hinder enactment) about the behaviour. Important in the Theory of Planned Behaviour (TPB) model is what individuals perceive to be factual, perceive to be within their control, or perceive to be the views of others, that lead to an intention. 'Facts' are filtered through an individual's set of salient beliefs.

The Theory of Interpersonal Behaviour (TIB) regards intentions to be the immediate antecedents to actual behaviour, and sees the frequency of past behaviour, which then becomes a habit, as having as much influence on ultimate behaviour as do intentions. In this model, in addition to attitudes (formed by beliefs, and evaluation of outcomes), social factors (norms, roles, and self-concept/self-efficacy or social identity) and affect (emotions) lead to intention. Intention together with habits, depending on facilitating conditions, lead to behaviour.

Habit, as well as emotions, social identity, and self-concept, are seen as playing a greater role in developing intention in TIB than in TPB. Physical interventions themselves influence attitudes, subjective norms, and perceptions of behavioural control, and thus intention, in Self-Perception Theory.

9.4.1 Affective attitudes

All interviewees have favourable evaluations of bicycle transport. They like cycling, know how to cycle, have cycled before, and experienced the outcomes (some good, some less so), but are certain that, give or take a few hurdles (which they feel capable of jumping), this time round, bicycle commuting will meet their travel needs.

Except for one, every interviewee had overwhelmingly positive memories of cycling as a child or as a student or outside South Africa. Only Interviewee 32, whose mother is Dutch and who went on to commute more than 45 km a day as an adult, did not enjoy cycling to school:

> *'We rode to school, a 5 km cycle. It was horrible those days. I mean, I really, really struggled in the wind, if the wind was blowing in the wrong direction, I'd phone my mother, please, come pick us up, it's horrible. And in the afternoons, we were always back against the wind, so it was tough. I didn't enjoy it, but we did it.'*

Interviewee 6 '*really and truly just love[s] to ride. That freedom ... it brings back that memory of the fun, mischievousness of riding as a child…. It feels slightly illegal*.'

Interviewee 19 refers to the '*thrill… you kind of feel like a naughty child that is sneaking out of house; out of home, you know, while you should be doing your homework*.'

Although few interviewees started cycle commuting only because they love cycling, almost all mentioned loving, enjoying, or liking cycling, which is why they considered it as an option when looking for a way to avoid traffic, save costs, or get fit. The stated virtuous reasons, suggest Interviewee 11, are '*smoke and mirrors'* – it is all about the enjoyment.

Interviewee 25 is of the view that enjoying cycling is a prerequisite to bicycle commuting: '*Whatever …If you don't love it you're not going to love it*.'

9.4.2 Salient beliefs

All interviewees had positive beliefs about the potential outcome of cycling, and positive evaluations of the outcomes.

But when it comes to beliefs about the consequence of enacting a behaviour, interviewees do believe that their actions will meet their needs (see Rational choice models, above). Interviewees do not necessarily believe that their individual behaviour has an impact on climate change or carbon mitigation (the 'front-burner' concept of Anable *et al*). They do believe that cycling can mitigate carbon impacts but only when in far greater numbers and in

the context of substantive other changes. Likewise, they do not believe that their individual cycling actions can lead to social cohesion or community development, but that these actions can facilitate their own sense of authentic engagement.

9.4.3 Through the lens of norm theories

Subjective norms and identities

Cycling as transport is not yet the 'accepted norm' in Cape Town (CCT, 2015d), but this is of little concern to interviewees, who operate within the subjective norms of their own given group or community and for whom cycling marks them as belonging. Subjective or social norms 'consist of what we do, what we believe others do, and what we believe others approve of and expect us to do' (UNICEF, 2022): what makes us a good group member.

Subjective norms support bicycle commuting among this cohort of commuters in a number of ways. For example, cycling as a child was entirely normative, and although cycling at university was not the way in which most students travelled, it was relatively normative. Interviewees thus started their very early cycling trajectories where bicycle transport was acceptable and appropriate. Many interviewees went on to become employed in circumstances where again, even though cycling was not normative outside of that environment, it was acceptable and even encouraged within that environment.

A number of interviewees explicitly discussed the approval or respect of their peers playing a role. The majority of interviewees belonged to sports cycling clubs, participated in bicycle activism events, or associated with other cyclists, and there was never any question of the behaviour being disapproved of; these peers might not necessarily copy the behaviour, or think it the safest behaviour, but they did not disapprove of it.

At the same time, the non-normativeness of cycling beyond their own groups or communities drew others to this behaviour. As the literature in the UK and the US has described (Stehlin, 2013; Steinbach *et al*, 2011; Furness 2010), these identities are inherently alternative, although the 'causes' in Cape Town are not those of the UK or the US (see Through the lens of norm theories, above). Individuals specifically enjoyed cycling because it was '*against the grain*', but it was nonetheless behaviour aligned with their immediate peers. Interviewees saw themselves as outside the norm but part of a sub-culture, '*a little cult society* – the latter identity is what motivated them: '*cool*', '*bad-ass*', *'counter-culture*'. Says Interviewee 7:

> *I have a number of friends who also cycle commute and I think that by its very nature it keeps us all cycling … about being connected to other... the influence of networks of cyclist. The influence we have on each other.'*

Not caring about what is acceptable to one given group makes one more acceptable to another group:

'I also don't care about what people think, [so if anyone] *deems it to be sort of a lesser mode of a transport than driving, I don't care, so that's fine.'* [Interviewee 28]

Personal and moral norms

Norm theories are intended to explain pro-social, or altruistic behaviour, and pro-environmental values, attitudes, and behaviour. Norm Activation Theory (NAT) differs from that of TPB, whereby moral and personal norms play a greater role than do social norms. Moral and personal norms are activated by feelings of personal responsibility and an awareness of the harmful consequences of actions (triggering guilt), and lead to social rather than personal benefit. Moral norms are 'self-expectations' that manifest in feelings of obligation to engage in behaviour. NAT was expanded upon by Stern (Stern *et al.*, 1999) as the Value-Belief-Norm Theory (VBN). Here, the salient difference is that not only does an individual feel personal responsibility, but feels personally responsibility for the consequences (known as ascription of responsibility).

The role – or not – of pro-social, altruistic behaviour has been discussed to a large extent in chapter 8, Research question 4: Why intentional cyclists 'ditch their cars' – and why bicycle advocacy says they should, particularly regarding the environment, bicycle advocacy, and the affordability of cycling.

In summary, moral and personal norms are not straightforward influences or motivators among interviewees. Pragmatic or 'selfish' motivations are given by interviewees for riding; they are not concerned with climate mitigation, environmental impact, or social justice and inclusion, but these are co-benefits of a behaviour that has more immediate, personal benefits. They are aware of the harmful consequences of driving or of social inequity, and cycling is consistent with their personal, moral norms, but cycling is not an altruistic act to mitigate these harms. Personal or internal norms upon which individuals draw are more likely to relate to self-discipline and commitment. Individuals have also expressed doubt regarding personal responsibility for consequences (ascription of responsibility), for example – that their acts of cycling are likely to have marginal positive impact on climate change or road traffic congestion, for example. The majority of interviewees are comfortable being 'selfish', and acting in their own best, personal interest.

9.4.4 Perceived behavioural control

The Theory of Planned Behaviour (TPB) proposes that an individual's intention to perform a behaviour correlates strongly with self-efficacy – how easy or difficult the behaviour is or is perceived to be. Interviewees had few concerns around behavioural control or self-efficacy, discussed here as having the necessary skills, knowledge and capability, finances, power, and support structures to bicycle-commute.

Skills: Riding a bicycle

Every interviewee had high levels of self-efficacy in terms of their belief that they had the capability and knowledge needed to ride a bicycle. Only one of the interviewees did not already know how to ride a bicycle; she easily learned how to do so upon becoming enchanted with the mode while a student in the US. They were also all fit enough to cycle longer distances that might be expected of commuters elsewhere (Banerjee *et al.*, 2022).

Self-efficacy: Riding a bicycle as transport

Every interviewee had already experienced cycling for transport either as a child (n=35), and/or in a city in Europe or the US as a student (n=5). Of the 36 interviewees, 26 already cycled for sport or recreation, some competitively, before starting to use a bicycle for transport; 24 had cycled as transport at university.

Any concerns about self-efficacy that arose were 'higher order' ones, such as how or what to pack, how to ride a road or mountain bicycle as opposed to a commuter bicycle (or vice versa), or how to ride in a skirt. Again, with one exception, no-one needed to learn how to fix punctures: for her, a '*huge enabling factor*' to make the transition to regular cycling was '*the way there have been so many people who have really stepped up to the fact that I know nothing, but I really want to learn, and have enabled me to do it … have enabled me to test the waters*.' [Interviewee 1]

Where interviewees felt less certain about cycling for transport, they again had high levels of self-efficacy in terms of their belief that could easily find out how and where to do so, and what would make it safer and easier. As Interviewee 30 explained it, he '*knew that cycling was doable*,' but had to set up a few enabling systems before he took action.

The information or knowledge sought by interviewees to enable a cycling practice was less in order to assist in decision-making about whether to cycle, but more about which route, what bicycle, and where to shower. This information was almost always sought from peers.

Interviewees 22, 29, and 4 set out to scout the best routes for commuting, either alone, with their cycling clubs, or as part of a bike bus. Interviewees 10 and 29 felt confident enough to ask a colleague if they could join their daily bicycle commutes. Interviewee 28 set up a WhatsApp group to assist others ride [at the time of interview there were more than 100 members]. Interviewee 3 worked out how best to combine cycling with public transport: '*I would arrive with my bike and just drop it there, [at the rail station], lock it up and I would leave my key with the inspector. We had an agreement, and he knows me; there are times where he would ride my bike around wherever he would need to go, too*.'

Interviewee 5 expressly sought information about '*getting lights'*, so that his bicycle travel was not '*limited to daylight hours.'* Finding out about panniers, to carry additional loads, added to his commuting skillset.

A number of interviewees describe how self-efficacy is a circular process: more cycling makes them more confident. Taking up cycling as sport, for Interviewee 4, meant that she became more confident and able to ride longer distances. She also talks of how cycle-commuting on Cape Town streets has altered her relationship with fear and risk: '*You do have to be a bit of a braver person … it's very powerful for me*.'

Although some cyclists altered their routes or temporarily stopped cycling because of risk, others feel completely confident about their ability to deal with it: Interviewee 36 wears '*those reflective orange things and I'm just a lot more careful. Because at one time I realized to myself you can't be ruled by fear. If I see a bunch of local dudes walking, then I always go wide because I've had some people try to grab me. But it's not a big concern.'*

Interviewee 29 had wanted to bicycle commute but was '*too scared'*. She had the confidence to ask a colleague if she could join him on his commute. On his advice, she rode her mountain bike rather than her road bike to commute, as it had better brakes, provided more flexibility in terms of road surface, and because '*cars give you a slightly wider berth.'* She also decided to '*never wear pink, if I'm commuting by myself, because I don't want to be identified as a gi*rl.'

Finances

Possibly self-evident, but owning or having access to a bicycle, and the right type of bicycle, is a critical resource in terms of whether or not a behaviour is possible (see also Félix, Moura and Clifton, 2019). By virtue of the study population and sampling for this research, all interviewees either own or have access to a private car; they have fewer resource constraints when it comes to purchasing a bicycle than do 'captive' cyclists would have. (Where interviewees talk of cycling being cheaper than driving, this is not because they cannot afford to drive or own a private car.)

All interviewees either already owned a bicycle, or were easily able to borrow one or purchase one. Having access to office bikes had made it easy for Interviewee 11 to simply take one to meetings, which already meant that she '*started cycling a lot more.'*

Power

Social power and resources are associated with high levels of flexibility in terms of decision-making about working times and structures. Interviewee 31: '*Ja and I've got the luxury of being able to pick my day*.' Says *Interviewee 15, 'I'm lucky to be able to kind of choose where I want to stay, but I want to stay in a place where I can use my bicycle*.'

The majority of interviewees fell into three categories: people who were self-employed and had high levels of control over travel decision-making; employees who worked in organizations that supported or encouraged bicycle commuting (with parking incentives, lockers and showers, or in activism); or individuals in senior positions in corporates or government, who were able to influence decisions around bicycle storage, end-of-trip facilities, or travel times.

The privilege and relatively seniority most interviewees have puts bicycle parking well within their 'behavioural control'. To reiterate Interviewee 25, '*you do need to have social power'*, a privileged resource that substantially increases self-efficacy, to for example request, negotiate, or require safe bicycle parking or other facilities. To be '*top of the food chain*' (Interviewee 25), the owner of your own organization and able to build shower facilities (Interviewee 24), or have the persuasive power to get employers to do so for you (Interviewees 28 and 31), makes leaving the comfort of private travel very much easier. As Interviewee 24 had said, the privilege to bicycle commute '*costs money'*. Interviewees 8, 13, and 18 all work in premium office space that includes lockers, showers, and indoor parking, while others might be able to lock their bicycles in the safety of the corporate car park.

Support structures

In every instance, the interviewee either was child-free, was not the primary caregiver, or (in one instance) the primary caregiver but able to do so full-time, from home (although, as a consequence, dramatically reduced her cycling). Interviewees mention wives, husbands (less often), and grandparents, as able to fetch and carry children in a car, thus enabling interviewees to ride without the challenge of trip-chaining and mobilities of care.

9.4.5 Self-concept or personal identity

Interviewees intentions to ride are supported not only by their abilities to ride, the confidence to fill the gaps in their route or commuting knowledge, and their social power to create bicycle-friendly environments and trip distances, but also by their beliefs in their personal abilities to act on these intentions (behavioural control). Interviewees describe themselves as '*diligent*' or '*disciplined*' (Interviewee 24), 'a *certain caliber of person'* (Interviewee 22), stubborn (Interviewee 31), '*brave*', (Interviewee 1), '*committed and passionate'* (Interviewees 5 & 13), or '*deliberate*' (Interview 5).

At times, individuals cycle to feel part of a group to which they wish to belong; at others, individuals cycle because of who they believe themselves to be, or because of the way in which cycling enables them to be who they believe themselves to be (or want to be).

Interviewee 3, for example, started cycling to work '*based on the interest of wanting to be part of this group.'* Both interviewees 1 and 11 started riding to performatively align with the values of their new workplace, although both did already support bicycle commuting, just had not

yet had the opportunity to put it into practice. Interviewee 4 was '*more or less obliged*' to ride to conform to work ethos, but like interviewees 1 and 11, was already ideologically in support of the concept. Interviewee rides because it gives her the '*feeling of your behaviours are matching your values*.'

As Green *et al* and Steinbach *et al* found in the UK (Green *et al*, 2020; Steinbach *et al*, 2011), these identities or self-beliefs become more entrenched, and increasingly dominant motivations, the more often and for more purposes they ride, and the more of a minority they are. Interviewees don't necessarily start cycling because they are brave, disciplined, and so forth, but these are the personal discourses that keep them going. Likewise, people are able to 'announce' their values through various attributes (Leeuwen, 2007; Caimotto, 2020, p. 401): recall the strategic placing of a bicycle helmet described by Interviewee 4. Committing to cycling leads to individuals becoming more attached to their identities as cyclists, and is a powerful motivation to continue.

9.4.6 Frequency of past behaviour and habit

As noted in the section above (Through the lens of norm theories), among interviewees, the more they cycle, the more they cycle, and the more committed they become to cycling: this aligns with how Lee describes cyclists in a car-centric context engaging in 'active renegotiations' of their commuting practices, gradually drawing on more internal or embodied motivations to sustain a practice (Lee, 2016).

Although interviewees rarely describe their cycling behaviour, at any point along the transitions continuum, in terms of an automatic habit, their behaviour at Termination stage does aligns with what Gärling and Axhausen (Gärling and Axhausen, 2003) refer to as script-based choices. Interviewees describe a behaviour that started as a deliberated choice, and was then found to have a positive outcome (joy, fitness, cheaper, aligning with personal values and identity). The 'script' enables interviewees to simplify their decision-making: if it is raining, extremely windy, if they have to carry loads, travel further to see clients, go out after work, or travel in a dangerous area, they drive. Otherwise, they cycle. This aligns, too, with the literature, where for example Heinen *et al* (Heinen, Maat and Van Wee, 2011) propose that cyclists are less dependent on habit than are other transport users, as they have a number of changing daily factors, such as weather and transport load. The morality and ethics that Schwanen *et al* link to the development of habits are evident, in the way interviewees at Transition describe their practice in terms of 'moral' triggers, commitment, discipline, and diligence (Schwanen, Banister and Anable, 2012, p. 524).

The link between key events, life shocks, stressors, and mode re-evaluation and behaviour shifts are not straightforward among interviewees. In the majority of instances, interviewees already cycled as sport, or even made trips by bicycle; some say they would have liked to

cycle to work, but lived too far away, lived along a risky route, or needed a car in order to visit clients. The typical transition points or key events identified in the literature, such as changing residential or work location, getting married, having a first or second child, do not so much provide the window of opportunity to re-consider the way in which they travel, but rather to put into action a way in which they already desired to travel. Such disruptions do indeed shift individual's values – such as determining that only one household car is necessary and using the saved money to purchase a house for a growing family – but facilitate different yet already desired mode choices rather than serve as cues to contemplate a new and possibly new mode.

The more frequent a past behaviour, the more entrenched its habitual nature is likely to become, suggest (Schwanen, Banister and Anable, 2012, p. 524); in the case of interviewees, few were new to bicycle commuting, having had long histories of cycling as children or as students. This contributed to their recollections, positive attitudes, and self-efficacy; this was something they had done before, and could do again. Car-driving was perhaps also less ingrained as a habit in interviewees as it could have been in a similar cohort: most interviewees had led relatively multi-modal lives, taking student transport, trying out trains, taking other public transport, or owning and riding motorbikes.

9.4.7 Intention

This combination of attitudes, subjective norms, and perceived behavioural control and salient beliefs about outcomes, affect, self-concept, norms, and frequency of past behaviour toward the behaviour, all add up to intention – which precedes behaviour.

Each of the 36 interviewees described early in their mobility biographies a clear intention to either start cycling or to cycle more often. They explain this in terms of deciding to learn to ride on their return to South Africa (in one instance), purchasing a new or a different kind of bicycle, seeking out someone to accompany them en route, or hinting to a partner for a bicycle as a gift.

These intentions were almost at all times supported by high levels of behavioural control (self-efficacy, skills, opportunities, and resources) as well as positive affect (positive emotions about cycling), existing positive attitudes (evaluation of outcomes, in line with TIB), and a relatively high frequency of past behaviour (see above).

9.4.8 Self-Perception Theory

In terms of self-perception theory (Bem, 1972), 'forcing' an individual to take a particular mode or adopt a particular travel behaviour may eventually lead to a positive attitude toward that behaviour, as individuals search for cognitive consistency (acting in accordance with one's beliefs or attitudes) rather than live with cognitive dissonance (Dalege *et al.*, 2016; Kroesen and Chorus, 2020).

The interviewees who were '*shoved*' into cycling and '*more or less obliged*' to ride did not have to dig too deep to find cognitive consistency, however. They had each (four interviewees) already put themselves in a situation where this was not an entirely unexpected outcome: working for a sustainable transport government directorate, or a civil society organization focused on public space and non-motorized transport. They did not have to retrofit beliefs or values to match their attitudes.

They also did not feel compelled to benefit their self-image in their personal narratives (McRaney, 2014). Interviewees often shied away from the 'virtuous' (Wild and Woodward, 2019) and were entirely comfortable with explaining that they cycle for selfish reasons or for personal happiness. When pressed, interviewees do not all lay claim to reasons more 'noble' than hating traffic or loving cycling.

Yet self-perception theory does support and complement theories of personal identity and habit; current behaviour influences future behaviour, and possibly entrenches or perpetuates behavioural in less-than-optimal circumstances, such as riding in high winds, when weary, or in car-centric environments.

9.4.9 Facilitating conditions and the Theory of Interpersonal Behaviour

In this model of change – in addition to attitudes (formed by beliefs, and evaluation of outcomes) – social factors (norms, roles, and self-concept/self-efficacy or social identity) and affect (emotions) also lead to intention. Intention together with habits (frequency of past behaviour), and depending on facilitating conditions, lead to behaviour.

The facilitating conditions of Triandis' Theory of Interpersonal Behaviour are possibly what Chatterjee *et al* (Chatterjee, Sherwin and Jain, 2013) name 'mediating factors' and 'changes to the external environment', and what I have incorporated as triggers: living near to a place of work, having access to the right bicycle, meeting others who cycle, giving up access to a car or to parking, or having access to a shower or safe parking. These facilitating conditions or triggers are shown in Figure 40: Triggers to change or transitions, as identified by interviewees at five Stages of Change

9.5 BEHAVIOURAL THEORIES IMPLICIT IN THE ADVOCACY DISCOURSE

To some extent much of the advocacy discourse assumes a rational choice model in attempting to change cycling behaviour, appealing to a high expected return on cost and health, and a rational decision in terms of sustainability impacts.

The elements of a deficit model are evident, too, with an assumption that the provision of information, infrastructure, and access to bicycles will catalyze modal shift. This model is exemplified in advocacy publications or messages 'telling' individuals that they should bicycle commute because it is a sustainable, low-cost mode, for example Cape Town's Green

Maps, and the majority of the City of Cape Town's media releases and speech texts (CCT, 2015f; 'Cape Town Green Map: The Great Green Outdoors', 2015; 'Cape Town Green Map: Cycle your City', 2017).

In much of the advocacy discourse, as discussed in the previous, particularly regarding road traffic congestion, social cohesion, and the environment, there is an implicit – and at times explicit – call for altruistic behaviour, drawing on personal or moral norms. In one media release, in 2008, the City suggests that 'by cycling … we will be part of the solution, not part of the problem.'

> 'We all complain about congestion, but unless we change our thinking, our habits and our travel patterns, things will only get worse. If we all become part of the solution everyone will benefit' (CCT, 2008b).

To put an end to congestion challenges, individuals must become part of the solution – and remove their cars from the roads for the benefit of everyone. To encourage individuals to cycle – despite the discouraging cycling conditions – 'for the health of your family and your fellow Capetonians,' assumes altruistic motivations among people travelling (CCT, 2015f).

Capetonians, in the discourse, are also told off, and must be asked nicely, 'urged', 'encouraged' or 'persuaded to switch their cars for bicycles and public transport' (Stead, 2011)[108]. The City has made bicycle lanes, but they are not being used:

> 'The more cyclists who make use of the cycling lanes that are being provided by the City, the better the chances are that cycling will become an accepted norm – and not the exception – of transport in Cape Town for visitors and residents alike' (CCT, 2015d).

The City asks that individuals take responsibility, that 'residents also do their part and start changing the way they travel' (CCT, 2016a).

Media reporting on the Cycling Strategy in 2017 noted that 'we still have not seen the growth in commuter cycling which is required to have a noticeable impact on traffic congestion, greenhouse gas emissions and to improve mobility in the lower-income areas' (Staff writer, 2017). This shift was expected to be driven by individuals:

> 'We need our residents to take to the streets and to start a cycling revolution. Also, we all have to work together to create a more liveable city which is sustainable. I [MMC Herron] am urging residents and the cycling fraternity to join this very important conversation about how we can achieve this goal' (Staff writer, 2017).

[108] It could be worse – in Johannesburg, residents were to be *'made'* to cycle (Jennings, 2021b).

Yet as figures 37 to 41 show, saving money, fitness, avoiding traffic, mitigating personal stress, and contributing to wellbeing – personal motivations with immediate returns – are central in individuals preparing for and taking action to ride. In the words of Interviewee 27:

> *'Sustainability doesn't offer an immediate return… Saving money or making you fit and healthy are more immediate returns.'*

9.6 SEGMENTATION OF CYCLISTS

Identifying and segmenting user groups is key to promoting behaviour change. Chapter 2, Segmenting the market: categories and identities, has described the way in which cyclists have been segmented in scholarly research and policy. Cyclists self-describe in terms of their identities, while other categorizations focus on the frequency of cycling (naming full-time cyclists, part-time cyclists, almost always cyclists, sometimes cyclists, non-cyclist) or motivations for cycling (conscious cyclists, forced cyclists, pro-health, lifestyle cyclists, captive, choice, active, civic, individualist, and enthusiast cyclists).

Drawing from the findings presented in this thesis, I propose a segmentation for advocacy purposes based on the motivation behind the motivation: pro-social/altruistic, or personal utility/immediate benefit. The table below presents the ten themes (motivations), and suggests that individuals motivated by themes 1, 3, 4 and 8 are ultimately motivated by altruism or social good, while individuals motivated by themes 1, 5, 8, 7, 9 and 10 (the majority) are ultimately motivated by their own best interest or utility.

Table 10: Table showing themes and ultimate motivation – segmentation by altruistic motivation or by individual best interest.

Ultimate motivation	Theme
Altruism	**1.** Affordable, cost-effective mode (for individuals and for government)
Individual's best interest	**2.** Ease of use (beats congestion, saves time, no parking requirements, no logistics)
Altruism	**3.** Bicycle advocacy (explicit cycling activism /promoting cycling as an alternative to driving to reduce congestion)
Altruism	**4.** Environmentally friendly mode (air quality, climate change, green)
Individual's best interest	**5.** Saves money (cost of fuel, cost of parking, cost of second vehicle ownership)
Individual's best interest	**6.** Facilitates mental / emotional wellbeing (joy, happiness, fun, productive time)

Individual's best interest	**7.** Improves physical health
Altruism	**8.** Social justice advocacy (promotes social inclusion, liveable cities, mobility justice, economic inclusion)
Individual's best interest	**9.** Promotes physical fitness
Individual's best interest	**10.** Aligns with personal identity / aligns with values and intentional living

9.7 CONCLUSION

This chapter has reviewed the advocacy and the personal narratives through the lens of the behavioural theories presented in chapter 3, to consider how the behaviour of interviewees can best be interpreted and how this insight might be used to understand motivations and what underlies or leads to these motivations, in order to increase cycling mode share among car-drivers.

The chapter notes that among interviewees, there was no simple connection between the provision of information and action, supporting the literature's findings that the deficit model is not appropriate. Rational choice models, which propose personal utility as the key to decision-making, have merit, although the personal utility sought by interviewees shifts across the Stages of Change from cost and time utility to meeting their needs for connection, authenticity, validation of their personal identity, and bringing joy and wellbeing.

I draw on theories of personal change to understand the particular combination of knowledge (about the impact or outcome of behaviour), attitudes (developed from childhood, previous experiences of cycling, and modified by their own cycling practice), personal values, meanings, emotions, and past behaviour, that lead to entrenched cycling practice among interviewees.

Both the theories of Planned Behaviour and of Interpersonal Behaviour have good explanatory potential – the latter more so, as it takes into account the frequency of past behaviour, and the importance of emotion (the love of cycling). The self-efficacy (TPB's perceived behavioural control) and self-concept that is important in the latter model also resonate in the analysis. The Theory of Interpersonal Behaviour has not been applied to any great extent to understand travel behaviour, yet it seems to be a model that fits closely to the behavioural trajectories described in the mobility biographies. The personal discourses fit less easily into Theory of Planned Behaviour model, as evaluative judgements (the costs and benefits of cycling rather than driving), and affective judgements (positive feelings about

cycling), as the findings have shown, **do** play a key role in decision-making around cycling but are underplayed in this theory.

Drawing from the findings, I propose a segmentation for advocacy purposes based on the ultimate motivation – pro-social/altruistic, or personal utility/immediate benefit – rather than by level of choice, or primary trip purpose.

Further insights or implications of findings are discussed in the next chapter, Implications for advocacy.

10 CONCLUSION

This study has examined why middle- to high-income adults in Cape Town who have many mode use options (including their own cars) start cycling as a mode of transport (utility cycling), and what initially motivated and now continues to motivate them to shift and sustain their cycling practice along their adult life. I refer to these individuals as intentional cyclists. The study then compared these motivations to those used in the advocacy discourse in Cape Town to encourage or support utility cycling.

The overall aim of this work is to share interpretations of the findings around triggers and motivations for cycling, and thereby facilitate reflection on the way in which utility cycling is framed in the public advocacy discourse, and the implications for how such cycling is promoted to 'choice' users.

The study was catalyzed by the literature that suggests that to shift cycling practices in low-cycling countries, there is value in considering the role and influence of narratives of cycling choices, and in understanding what cycling means and why it is already attractive to those who do choose to cycle in low-cycling contexts.

The timeframe under study in this thesis is from 1976-2019, selected because 1976 sees the beginning of bicycle activism in Cape Town, and 2019 sees the first explicit activation of interventions proposed by Cape Town's 2017 Cycling Strategy.

10.1 RESPONSE TO RESEARCH QUESTIONS

10.1.1 Research question 1

To understand the context in which bicycle advocacy arguments have been developed, I first developed a series of timelines depicting key events in bicycle policy, infrastructure implementation, and advocacy between 1976 and 2019 in Cape Town (*research question 1*).

10.1.2 Research question 2

I then drew on this timeline to develop a narrative account of these interventions and associated advocacy discourses in South Africa, the Western Cape, and Cape Town (*research question 2*). This showed that the cost of fuel drove early bicycle policy and planning, catalyzed by middle-class bicycle activist officials and elected councillors who called for bicycle lanes to support bicycle commuters. Cycling as transport was explicitly associated with sport and exercise, and also expected to ease traffic congestion and air pollution. Master plans, demonstration projects, and infrastructure guidelines were dominant features of the 1980s – with South Africa's first classification of bicycle paths, as well as recognized signs, road markings, and traffic signals.

Social justice, social cohesion, transport equity, and transport integration were the dominant narratives of the early post-1994 South Africa, replacing the fuel-saving and congestion-mitigation focus of the 1970s and 1980s. The target audiences of bicycle interventions were no longer those who drove, but those who had little access to motorized transport or private cars. Cycling was framed as cheap and affordable. Cape Town's first Non-Motorized Transport Policy and Strategy, published in 2005, focused on the role of bicycles in poverty alleviation and redressing spatial inequity. At the same time, South Africa's re-emergence in the global arena meant that the global narratives around climate change, and using cycling to replace SOV use and mitigate urban obesity and congestion, become evident. The City of Cape Town's first five-year plan for transport, beginning in 2008, aimed to 'move away from a historic commuter system to including people walking and cycling – the long-term plan is to get you out of your car'. Cycling was envisaged as a solution to road congestion, and bicycles had become the visible symbol of 'sustainable transport'. By 2019, mitigating road traffic congestion and climate change had become increasingly urgent yet cycling mode share was not growing sufficiently. Individuals and communities were the focus of communication attention, to change their transport behaviour rather than leave action up to government.

10.1.3 Research question 3

Research question 3 considers how, in their personal discourses, intentional utility cyclists frame the triggers and motivations for adopting, increasing, and maintaining their cycling practice. I also investigated whether these motivations differ at different transitions or stages of behavioural intention.

Intentional cyclists – almost all of whom already cycled for sport or recreation before beginning to cycle-commute – describe how meeting others who cycle-commuted, obtaining a more appropriate commuting bicycle, experiencing challenges with finding parking, changing residential or work location (and then encountering traffic or being within cycling distance), and increasing sports activity, as common triggers that shifted them from one Stage of Change to another. There are no substantial differences between triggers that shift an individual from one stage to another (ie, what might shift Interviewee X from Preparation to Action might be what shifts Interviewee Y from Maintenance to Termination).

Interviewees describe their motivations for adopting, increasing, and maintaining their cycling practice in terms of cycling meeting their own needs. These needs could be to fit in, to save money on parking, or to benefit from the more agile nature of bicycle transport in vehicle traffic. Using time more meaningfully rather than driving in traffic is a common motivation: to train for cycling events, to engage with the urban environment or people from outside their social group and thereby engage with their privilege, to put in place transition time between home and work. Individuals use their cycling practice to develop and entrench their personal identities, as people who are disciplined, who live consciously and in line with their values,

and who are committed to their decisions. They use cycling to feel happy, to enjoy time outdoors, to mitigate some of the onerousness of 'adulting': cycling is therapy, it is fun, it is reminiscent of breaking the rules as a child, and it is demonstrative of personal agency.

These motivations shift across individuals' cycling biographies. During early stages of change, individuals more commonly start cycling to save money (as students and later to save on a second household vehicle purchase), increase their fitness, or avoid traffic and parking issues. Over the years, their motivations become more intrinsic, and wellbeing and personal identity are more common dominant motivations. Wellbeing includes the feelings of empowerment, productive time, fun, happiness, and adventure noted above.

10.1.4 Research question 4

Research question 4 investigates the extent to which motivations and framings of cycling's benefits are shared or divergent between these personal discourses and the public advocacy discourses, and determines that there is substantial divergence.

The affordable nature of bicycle transport, and its offer of low-cost mobility – a key advocacy narrative – is ultimately not a concern to interviewees, who already have invested in car ownership. They are motivated by saving on 'grudge' costs: vehicle wear and tear, insurance, and particularly on parking, the cost of car-guards or road toll fees. A number have decided to use a bicycle rather than purchase a second car for the household.

Advocacy discourse assumes that individuals cycle for altruistic reasons, and emphasizes the environmental and congestion mitigation benefits of cycling, as well as cycling's potential for building communities and overcoming division and spatial injustice.

While all interviewees do care about the environment, they concede that this is rarely what gets them to start or continue cycling, and they do not believe, on the whole, that their bicycle trips will contribute to emissions reduction at scale. Interviewees 'love' the engagement with diverse communities and are buoyed by finding a way out of their privileged 'bubbles', but these are coping mechanisms for themselves. Interviewees cycle to 'beat' the traffic, not to 'mitigate' or 'ease congestion' – to cycle to mitigate congestion would mean an altruistic approach, removing oneself from traffic to ease the trip for someone else. The appeal is 'selfish': their own suffering is reduced, rather than that of others. And while there are individuals for whom cycling is a 'moral and ethical obligation' with respect to the environment, or who cycle to 'stretch those boundaries' with respect to community cohesion and connection, the majority are unconvinced of their individual impact. Interviewees are grateful that their practice does also contributes to carbon mitigation, less traffic, better air quality, or more permeable social engagement, and that a behaviour that brings them joy is also ethical, 'green', egalitarian, and 'virtuous', but they describe these benefits as by-products of a practice rather than primary motivations.

'Health' in the sense of daily, low-key physical activity in the way described in public advocacy, was rarely a motivator. With rare exceptions, interviewees are not examples of individuals who would benefit from the public health framing of cycling – cyclists in this study are already healthy, fit, and active.

Advocacy rarely promotes cycling because it will bring joy, yet ultimately wellbeing and personal identity are the most frequently given dominant motivations for cycling at Termination stage. Whatever the 'other' benefits of cycling might be, as one interviewee puts it, if you don't already love cycling, you won't cycle.

10.1.5 Research question 5

In answering *research question 5*, I share insights in terms of behavioural theory, segmentation, and advocacy to advocacy and transport policymakers as a result of this investigation into motivating factors at various in bicycle use.

The City's most recent strategic approaches to cycling behaviour had intended 'market[ing] cycling as a smart travel option … by highlighting the cost savings, environmental benefits, and health benefits' (CCT, 2017c, 2018, p. 212; Jennings, 2021a). However, knowing about these benefits is seldom enough to persuade someone to 'abandon their car' – saving money, fitness (rather than health), and avoiding driving in traffic, are more likely to motivate individuals to consider and take action to bicycle commute. Only two interviewees saw cycling as a health-giving or sustaining activity (to lose weight or to manage ill health), but rather as a way of fitting in additional sports training into their days (in many instances, interviewees were training for events that required exceptional fitness). Only a minority of interviewees sought information to support starting cycling: for those who did seek information, most often they were after practical rather than ideological information.

As they increased the amount or purposes of cycling, individuals became less motivated by the pragmatics of cycling and more by their sense of who they were, what they valued, and what made them happy. Cycling meets their own best interests. Rational choice models, which propose personal utility as the key to decision-making, thus have merit, although the personal utility is not necessarily cost or time.

Drawing from the findings, I propose a segmentation for advocacy purposes based on the ultimate motivation – pro-social/altruistic, or personal utility/immediate benefit – rather than by level of choice, or primary trip purpose.

I draw on theories of personal change to understand the particular combination of knowledge (about the impact or outcome of behaviour), attitudes, personal values, meanings, emotions, and frequency of past behaviour, that lead to entrenched cycling practice among interviewees. Both the theories of Planned Behaviour and of Interpersonal Behaviour have good

explanatory potential – the latter more so, as it includes the frequency of past behaviour and the importance of emotion.

All interviewees had positive beliefs about the potential outcome of cycling, and positive evaluations of the outcomes: they believe cycling will meet their needs. They also have high levels of self-efficacy or perceived behavioural control: they have the necessary skills, knowledge and capability, finances, power, and support structures to bicycle-commute.

With respect to past behaviour, most interviewees have been cycling since childhood; a substantial number kept cycling while at university, and returned to cycling as working adults. Many interviewees see their identities as cyclists as having begun as children, and by the time the individuals in this study started preparing to cycle as adults, with two exceptions all already knew how to ride a bicycle, had spent considerable time cycling as children (and often as adults, for sport). Few interviewees, even at Termination stage, describe their cycling behaviour as automatic habit but rather as a preferred first choice mediated by other realities; they have an internal 'script' that enables them to simplify daily decision-making: if it is raining, extremely windy, if they have to carry loads, travel further to see clients, go out after work, or travel in a dangerous area, they might drive. Some do cycle no matter what ('hardegatheid'). What sustains these cycling practices is not so much routine or automatic habit but personal identity, commitment, and wellbeing; where individuals are less identified as cyclists, they appear to be more likely to drive when circumstances are challenging.

With respect to emotion, interviewees had positive first associations with or earlier memories of cycling. These associations were of joy, independence, freedom, and often 'mischief', daring, or counter-culture. They have high self-efficacy and perceived behavioural control, with the necessary skills, knowledge and capability, finances, power, and support structures to bicycle-commute. Simply put, they love cycling.

10.2 IMPLICATIONS FOR ADVOCACY

A purpose of this study has been to enhance cycling advocacy's understanding of why, in a low-cycling city where cycling conditions are hostile, individuals who can choose the way in which they travel, decide to travel by bicycle.

The intention is to contribute to more effective policy and programmatic approaches to shifting behaviour within this difficult-to-change cohort.

10.2.1 Develop a robust Theory of Change for advocacy approaches and interventions

A Theory of Change is a systematic approach to aligning activities, communication, and outputs with intended outcomes and intended impacts – by making more explicit the assumptions about drivers of change. Such an approach should be supported by a robust root-cause analysis.

Segmenting cyclists by motivation rather than by trip purpose – personal benefit, normative needs, or altruism – is one way in to developing such a Theory of Change. A Theory of Change narrative would consider, **if** individuals are motivated by relieving personal suffering in traffic, **then** an advocacy approach should focus on parking cost savings. **If** individuals are motivated by a desire to multi-task commuting and sports training, **then** …

10.2.2 Align discourses and legitimize wellbeing and 'selfishness'

The research finds a mismatch between advocacy and individuals' motivations, particularly during later stages of cycling behaviour. Advocacy tends to focus on the affordability of cycling, its public health benefits, its ability to ease road traffic congestion, and its social and environmental benefits. These assume altruistic motives for cycling. Among interviewees, the side-effects of carbon mitigation and the opportunity to permeate social divides are welcomed but are not primary motivations. Interviewees enjoy saving money, but affordability, as such, is not a major concern to this cohort who own their own cars as well as relatively high-end bicycles.

Thus promoting the wellbeing value of cycling, and the alleviation of personal suffering (parking, traffic, drudge), has value, as does supporting programmes and interventions that remind individuals of (or introduce them to) the joy of cycling. Positioning cycling for this cohort as a virtuous activity is not necessarily successful, and 'fun' and personal benefit are legitimate reasons for choosing cycling. Unless an individual enjoys, or loves cycling, they are unlikely to cycle-commute, no matter what the benefits might be. In positioning cycling as a worthy activity, advocacy is missing an opportunity to frame cycling in a way is strongly resonant with potential intentional cyclists.

10.2.3 Develop information to support ascription of responsibility

As one interviewee puts it, *'sustainability doesn't offer an immediate return… Saving money or making you fit and healthy are more immediate returns.'*

To support altruism and social utility, develop advocacy approaches that provide some measure of immediate return – this could mean providing examples of the evident impact of individual behavioural shift, such as personalized information about the carbon reduction

impact of one bicycle trip to a routine destination. (I use a popular sports tracking app that provides me with immediate evidence of carbon savings by cycling rather than driving.)

10.2.4 Highlight the 'doable' and socially acceptable nature of cycle commuting

Segmenting cyclists by Stage of Change, and developing interventions that might either catalyze an initial cycling practice or support a longer-term practice, is a further recommended advocacy approach.

During early Stages of Change, meeting others who cycle, finding others to cycle with, and realizing that cycling is 'doable' in a Cape Town context, emerged as a central trigger to cycling. This aligns with the literature, where peers or role models, or having someone to cycle with, are identified as important psycho-social triggers to sustain cycling (Green *et al.*, 2010, p. 7). Personal and employer support, especially in low-cycling contexts, enables individuals to keep up a cycling practice.

10.2.5 Identify opportunities for fostering personal and social identity

Social acceptance, of course, means different things to different people. By identifying motivating personal and social identities, advocacy approaches are able to direct interventions more strategically and more personally. This is a tricky balance, however: as this research has shown, for some individuals, being 'cool' is an attractive identity and motivator; for others, an activity being 'cool' is reason to avoid it.

10.2.6 Support and grow a sense of behavioural control

Attitudes, emotion, and perceived behavioural control are important in shifting individuals to start and maintain a cycling practice. These are attributes largely developed among interviewees as children or young adults, and further developed through sport or recreational cycling.

This support could include developing the self-efficacy that emerges as key to sustaining a practice: knowing how to cycle and knowing how to cycle as transport (what routes to take, how to pack, how to carry loads, location of showers, how to advocate for end-of-trip facilities), and where to find cycle-commute colleagues.

10.2.7 Encourage cycling as sport – among children and adults

Supporting cycling among children – as sport and as transport – is a highly valuable advocacy intervention, and is critical in developing self-efficacy. When considering other modes of transport, interviewees have drawn on happy memories of cycling as children or students, which contributed to cycling being a viable option. They also draw on their know-how and capability: they know how to cycle.

Further, sports cycling and commuter cycling are not mutually exclusive, and cycling for 'fitness' rather than 'health' or gentle embedded exercise is a driver of bicycle commuting in Cape Town. Sports cyclists are an important target market for bicycle commuting. Framing cycling over longer distances for fitness purposes could be a successful advocacy approach.

10.2.8 Identify points of intervention

Life-change events have been identified as playing a role in triggering transitions in cycling practice. These include changes in work or home location, a change in working circumstances, retiring, encountering increased traffic, access to office bicycles, or meeting role models among new colleagues. For two interviewees, having a car stolen was the trigger to cycling.

By identifying potential trigger points, it is possible for advocacy to again direct interventions more strategically and more personally, for example in corporate or large employer environments.

10.3 LIMITATIONS AND RECOMMENDATIONS FOR FURTHER RESEARCH

During the course of conducting this research, a number of new questions emerged. Some reflect the delimitations of this study design, and others reflect the inevitable limits to scope of the analysis.

This research focused on car-owning individuals who do cycle as transport, and on the Stages of Change during which individuals were actively cycling as transport. The following are points for consideration in further studies.

10.3.1 Comparing non-utility cyclists with utility cyclists

I conducted in-depth interviews and constructed mobility biographies only with the individuals who do cycle for transport. However, similar in-depth interviews with those selected for survey participation could have revealed valuable insights into the differences between car-owning individuals who do cycle as transport, compared to those who do not. Interviewees had overcome the pragmatic challenges the survey respondents cited as barriers (distance, fear, safety concerns, lack of showers); a comparative investigation into antecedents to behaviour, and for example perceived behavioural control, could reveal opportunities for advocacy intervention.

Such insights would also enable a robust root-cause analysis, to feed in to a robust Theory of Change for advocacy interventions.

10.3.2 The role of cycling experiences as children and internationally

It is possibly noteworthy that fewer survey respondents had cycled as children, or had cycled as transport internationally, and therefore had had less exposure to bicycle transport as children or as adults.

The purposive and snowball sampling (with saturation as described) led to findings that almost all interviewees had cycled as children. Only one individual learned to cycle as an adult. A study that deliberately sought and interviewed only individuals who started cycling as adults might reveal a different set of triggers to or motivations for cycling. This could lead to valuable insights for advocacy interventions among a cohort not studied here.

10.3.3 Understanding relapse and return

The literature about walking in Africa focuses on retaining pedestrian mode share, as motorization increases on the continent. In this study, of particular interest were the sustaining motivations of individuals who have reached Termination stage in the Stages of Change model – the stage at which they no longer see driving as their default mode, but where bicycle transport is their first and preferred choice. These are individuals who have kept cycling. However, my research did not focus on two other Stages of Change: relapse, and return. A study that considered why individuals from this cohort did not reach Termination stage, but relapsed and did (or did not) return, would offer valuable insights into retaining bicycle mode share in addition to growing it.

10.3.4 Applying this approach to advocacy for walking and public transport

The City of Cape Town's transport policies also aim to drive a shift from private cars to walking and public transport use. This research focused exclusively on approaches to cycling mode shift. Given the findings of this research, however, walking and public transport use are less likely to appeal to these cohort under study: among other benefits, cycling offers door-to-door flexibility, convenience, speed, fitness training, and joy and wellbeing, none of which walking or current public transport options in Cape Town offer. Among interviewees, there were examples of those who switched from public transport (trains or shuttle buses) to cycling, for these very benefits. A few individuals walk as an alternative to cycling, if the distance is less than a few kilometres.

Nonetheless, there is value in applying this same research approach and method to seeking examples of car-owning individuals who do walk or take public transport, and developing insight into what it might take to grow these modes among this cohort.

10.3.5 Reviewing and reappraising approaches to hard cycling infrastructure in Cape Town

Both policy and advocacy draw from the elements of a deficit model with respect to infrastructure, with an assumption that the provision of infrastructure will catalyse modal shift. Overwhelmingly, Cape Town's bicycle infrastructure currently comprises either shared facilities with pedestrians, or painted lines in mixed traffic. Although not part of this research and analysis, advocacy does routinely decry the 'paint as infrastructure' approach and calls for fully segregated facilities for safety purposes.

Findings in this research are that slow cycling does not appeal to the majority of interviews, but rather a removal of limits – to space, to constraint, and to social barriers. Where individuals ride for distances longer than 3 km, this is usually on routes without bicycle infrastructure; this leaves cyclists free to exercise their right to faster-flowing public roads, [109]when unencumbered speed is the motivation to ride. 'Bike lanes relegate us to the status and behaviour of a pedestrian, meaning we have to constantly renegotiate our status at every and multiple conflict points' [Int 32] (Jennings, 2021a). Says Interviewee 36: 'The idea of a bike lane, what everyone is asking for, feels like a limitation. I find it slow. I'd rather be in the road. Our money has gone to making this road network, which actually is ideal for bikes and not so great for cars'.

This reflection is not to be understood as a rejection of high-quality bicycle infrastructure or scorn for the importance of safety, but a call for an interrogation of the assumptions around any infrastructure as catalytic, and a recognition of the risk of losing longer-distance, higher-speed commuters if they are forced to use slow, shared facilities. Designing for a hoped-for new cohort of cyclists while failing to understand the needs of existing cyclists, is a risky undertaking, where the intended removal of barriers to cycling for some might inadvertently introduce barriers for others.

It is noteworthy that in this research, individuals who did not cycle as transport claimed a lack of infrastructure as a reason (although they did cycle these same roads for sport), but among individuals who did cycle as transport, very few either used the existing infrastructure or cited infrastructure as a trigger to cycling. The proximate compared to the ultimate reasons for rejection of utility cycling are worth investigation, rather than the uncritical acceptance of given reasons of lack of infrastructure. While the proximate problems may be inadequate infrastructure, the ultimate problems might be needs for trip-chaining, lack of end-of-trip facilities, or a complete lack of interest and a preference for the benefits of car-driving. This is further explored in Jennings, Petzer, and Goldman, 2017.

[109] In the Road Traffic Administration Act, 2012 (Act 6 of 2012), 'duties of cyclists' include that 'A cyclist riding on a public road must— (a) if the road has a pedal cycle lane, ride only in the pedal cycle lane and may not ride on any other portion of a public road except when crossing the road.'

10.4 CONTRIBUTION

This thesis has developed new knowledge or insights about (i) why individuals who own private vehicles do cycle in Cape Town, and why car-owners shift to cycling; (ii) the role of soft rather than hard infrastructure in facilitating cycling in Cape Town; (iii) the longitudinal, mobility biography method; (iv) the intersection between individual motivations and motivations espoused in the advocacy discourse; (v) theories of behaviour change as they relate to transport decision-making, and thus alternative approaches to market segmentation for behavioural intervention; and (vi) the transferability of this knowledge generated in Cape Town between developing world cities and those of those of the global North.

This sub-section considers these findings below.

10.4.1 Why individuals who own private cars do cycle in Cape Town

The first contribution is in-depth and first-hand insight into the triggers and motivations given by car-owning utility cyclists in Cape Town for cycling instead of driving. The City of Cape Town has identified limited data on cycling use, limited engagement with stakeholders, and 'how people think about cycling', as barriers to growing cycling. This study has collected data on both cycling use and the way in which a particular cohort of people think about cycling, which is able to contribute to how advocacy thinks about and frames cycling use and cycling, and the way in which this mode can be encouraged.

There are substantial gaps in the knowledge about why individuals in Cape Town (and South Africa as a whole) do ride as transport; the scholarly focus has been on barriers to utility cycling. Further, there is a dearth of scholarly work on 'choice' cyclists, and on the role of psycho-social motivations and cycling. This research makes an original contribution in this area, in terms of study population and research approach. The study population is also novel in terms of international research: a specific cohort of car-owning privileged users in a low-cycling city.

This includes new knowledge about why car-owners shift to cycling, and constitutes a focus on cycling rather than 'NMT' as a single entity.

10.4.2 The role of soft rather than hard infrastructure in facilitating cycling in South Africa

This research has focused on the intrinsic factors for cycling – the motivations and triggers to change that include values, beliefs, self-concept, and emotion.

The 'soft infrastructure' narratives around motivation (in policy or media releases for example) resonate with their likely target audiences at preparation phase – around saving

money and convenience or ease of use, but are less resonant as individuals progress through a Stages of Change continuum.

10.4.3 An addition to the body of knowledge about the longitudinal, mobility biography

This research took a longitudinal approach, and used qualitative methods to better understand the process of behavioural change and intersections between attitudes, values, salient beliefs, and travel behaviour. The study did not compare individual characteristics with contexts and settings to understand propensity to cycle and associated barriers, but did settle upon two key behavioural categories: altruistic or best-interest motivations.

The Stages of Change Model has not commonly been applied to segment cycling behaviour. This research identifies the 'step' or 'transition' phase (Stage of Change) within each mobility biography, and assesses what interviewees report as the trigger that moved them from one stage to another.

This research is among the few examples of qualitative work in travel behaviour studies in South Africa, and complements the primarily quantitative studies globally. In terms of method, this research noted the typologies of cyclists largely developed through cross-sectional, often self-reported survey studies drawn from a broad study population, but instead segmented cyclists through longitudinal biography data drawn from a narrow study population. Biographies (without leading prompts) rather than survey questions enabled meanings and motivations to emerge from the data itself (the words of interviewees) rather than the preselected meanings and motivations of survey questions. This limited interview bias.

Longitudinal data enabled an understanding of how motivations change over time.

10.4.4 The intersection between individual motivations and motivations espoused in the advocacy discourse

A further contribution is the entirely new comparison between the advocacy discourse and the personal discourses, and insight into the way in which policy makers and advocacy compared to individuals understand motivations to cycle.

The research finds a mismatch between advocacy and individuals' motivations, particularly during later stages of cycling behaviour. Advocacy tends to assume altruistic motives for cycling, while individuals identify 'selfish' motivations for personal benefit.

10.4.5 An exploration of theories of behaviour change

Life events or life shocks

The major 'life events' or 'life shocks' that enable individuals to make the change to cycling are changes in places of residence or employment, or meeting others who supported a cycling practice. In understanding the triggers to transitions, however, this research found that while 'discrete life events' and 'mobility milestones' had some impact on shifting behaviour, that 'micro-triggers' and 'non-conspicuous' events were as important: attending an event, meeting someone else who cycled, wanting to recover from burnout, reading a book, watching a documentary, getting a new or a different kind of bicycle, or 'realizing' that they could cycle to work. Physical health rarely triggered a turning point.

Some interviewees (who were already cyclists) describe a sudden, even whimsical preparatory action based on a desire to re-engage with a childhood pastime, or the sudden realization that – after a life of cycling as a child, or for sport – this was also a mode of transport for adults; as interviewees describe it, there was no life shock or life event that triggered this phase, but a 'putting two-and-two together' that they could train and commute at the same time, for example.

Information seeking

Interviewees seldom sought information about bicycle commuting, but if they did, this related to logistics (where to leave clothes, where to shower); they asked peers for this information. Because interviewees describe gradual rather than life-shock related shifts, they cannot pinpoint exactly when the travel decision was made, and at what point they searched for information.

Understanding Termination

Like a number of recent studies, this research has also used the Stages of Change model, but unlike other studies, this research included the 'final' stage, that of termination (the stage at which point the individual no longer wishes to return to a previous behaviour). This has contributed to the knowledge about the complexities of habitual travel behaviour with respect to cycling.

Segmenting cyclists

Of particular implication for policy and advocacy is my proposal that promotion approaches recognize that individuals are motivated by personal gain or their own best interests, and only a few by altruism. Categorizing cyclists by behavioural motivation, stratified by 'choice' or 'captive', is worth exploring as an advocacy targeting approach.

Finally, although the Theory of Planned Behaviour is more commonly used in understanding travel behaviour, this research suggests that that of Interpersonal Behaviour (TIB) has value for further exploration.

10.4.6 A history of bicycle advocacy in Cape Town

An additional contribution is a detailed, chronological account of bicycle advocacy in Cape Town (and nationally), in both narrative and timeline format.

10.4.7 The transferability of this knowledge

This research has, by reflecting on findings as they relate to the international literature, made the case that there is sufficient comparability between the intentional cyclists of this study and their cohort in low-cycling developed world cities for findings and learnings to be relevant and transferable beyond Cape Town.

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12 APPENDICES

12.1 CONSENT FORM

JNNGAI001 PHD INFORMATION SHEET & CONSENT FORM:

PHD research, Gail Jennings:

Triggers and transitions in [choice] utility cycling in Cape Town, South Africa: an enquiry into the connections and relationships between public and personal discourse, and with transport decision-making

I am conducting research towards a doctoral degree, researching the way in which people understand their reasons for cycling (or not cycling) as a mode of transport in Cape Town. I am only interested in, for the purposes of this research, people who have access to a private car as an alternative mode.

I would like to invite you to participate in the project.

What the project is about

I would like to interview people who cycle (as a mode of transport or as sport/recreation) and would like to develop a deeper understanding of your cycling mobility biography: what led you to consider cycling as a mode of transport, how you started a regular utility cycling practice, what motivates you/sustains you in this practice, and perhaps what has led you to stop cycling as a transport mode. I am also interested in understanding your cycling biography if you don't cycle specifically to work (commuting), but replace car trips with bicycle trips (such as shopping, or recreation).

Voluntary participation

You do not have to participate, ie your participation is voluntary. The choice to participate is yours alone. If you choose not to participate, there will be no negative consequences. If you choose to participate, but wish to withdraw at any time, you will be free to do so without negative consequences.

Your commitment

I would like to interview you in person, for perhaps an hour or so, on one or two occasions (I will meet you where what works best for you).

If you consent to this, I will record our interview for transcription purposes. Otherwise, I will take detailed notes.

If you are comfortable with this, I may ask to join you on your current bicycle commute route, to understand any environmental influences to your practice.

I will interpret your interviews within a framework of a variety of behavioural theories (what motivates people to 'change'). None of the theories (nor my interpretation) will ascribe any judgment or value, and no motivations for change are 'wrong'.

Benefit to you as a participant

There is no DIRECT benefit to you as a participant, and no payment or reimbursement is available for this research. I do not anticipate that there is any risk of harm to you in participating in this research.

The contribution of this research, however, may interest you. Most behavioural work investigating the links between knowledge, attitudes and travel behaviour in general (and utility cycling in particular) has been undertaken in the Global North and Australia/New Zealand, not in South Africa. I intend that this work will substantially improve the evidence-base for policy and advocacy interventions in Voluntary Travel Demand Management and other behavioural strategies (in other words, help us to understand what motivates choice users to ride, and eventually assist us to persuade more people to cycle as a transport mode).

Anonymity / confidentiality

I will delete recordings after I have transcribed them, and will identify you by a code only (and other data such as gender, age, the area of Cape Town in which you live). I am aware that the study population is a small one, and many participants are likely to know each other (in fact, my sampling method means I am likely to ask you to recommend interviewees to me from your circle). Please discuss with me any concerns you may have, and I will amend any identification details accordingly.

Sharing my findings

I will use the data to write up the narrative of my PHD thesis, as well as publish this in scholarly journals. I may present work at conferences or workshops.

I will also be able to share findings with you individually, and as a group (depending on confidentially concerns).

Finally

I look forward to spending time with you sharing your cycling mobility history.

You are welcome to contact me at gail@gailjennings.co.za, or my supervisors Assoc/Prof Mark Zuidgeest mark.zuidgeest@uct.ac.za or Assoc/Prof[110] Roger Behrens

[110] Both Associate Professors at the time of drafting the consent form

roger.behrens@uct.ac.za, at the University of Cape Town, Centre for Transport Studies, Faculty of Engineering and the Built Environment.

I consent to participating in this interview as described above, and for the data to be used for research and publication purposes as described above.

Name

Signature

Date and place

12.2 ETHICS APPROVAL

APPLICATION FORM

Please Note:
Any person planning to undertake research in the Faculty of Engineering and the Built Environment (EBE) at the University of Cape Town is required to complete this form **before** collecting or analysing data. The objective of submitting this application *prior* to embarking on research is to ensure that the highest ethical standards in research, conducted under the auspices of the EBE Faculty, are met. Please ensure that you have read, and understood the **EBE Ethics in Research Handbook** (available from the UCT EBE, Research Ethics website) prior to completing this application form: http://www.ebe.uct.ac.za/ebe/research/ethics1

APPLICANT'S DETAILS		
Name of principal researcher, student or external applicant		Gail Jennings (JNNGAI001)
Department		Centre for Transport Studies, Department of Civil Engineering
Preferred email address of applicant:		gail@gailjennings.co.za
If Student	Your Degree: e.g., MSc, PhD, etc.	PhD
	Credit Value of Research: e.g., 60/120/180/360 etc.	Click here to enter text.
	Name of Supervisor (if supervised):	Prof Roger Behrens / Prof Mark Zuidgeest
If this is a researchcontract, indicate the source of funding/sponsorship		Click here to enter text.
Project Title		Triggers and transitions in [choice] utility cycling in Cape Town, South Africa: an enquiry into the connections and relationships between public and personal discourse, and with transport decision-making

I hereby undertake to carry out my research in such a way that:

- there is no apparent legal objection to the nature or the method of research; and
- the research will not compromise staff or students or the other responsibilities of the University;
- the stated objective will be achieved, and the findings will have a high degree of validity;
- limitations and alternative interpretations will be considered;
- the findings could be subject to peer review and publicly available; and
- I will comply with the conventions of copyright and avoid any practice that would constitute plagiarism.

SIGNED BY	Full name	Signature	Date
Principal Researcher/ Student/External applicant	Gail Jennings	Signed by candidate	**04 Oct 2018**

APPLICATION APPROVED BY	Full name	Signature	Date
Supervisor (where applicable)	R Behrens (co-supervisor)		**05 Oct 2018**
HOD (or delegated nominee) Final authority for all applicants who have answered NO to all questions in Section1; and for all Undergraduateresearch (Including Honours).	Click here to enter text.		Click here to enter a date.

12.3 INTERVIEW GUIDELINE

[when did you start riding in this way]

[what was it that encouraged you to start riding in this way]

[what else was happening at the time?]

[what changed for you?]

[tell me what you like about riding?

[where are living at the time?]

[where are you working at the time?]

[how else do you travel/]

[how do you decide whether to ride or take the car?]

[how do you persuade yourself to ride if you don't 'feel' like riding]

Other types of riding and with who?

Tell me about how you used to use your bicycle before this current phase of riding?

[type of bicycle]

[what was it that encouraged you to start riding in this way]

[what else was going on at the time?}

[trip times]

[trip distances]

[trip purposes]

[clothing]

[reasons for riding]

[when did you start riding in this way]

[what else was happening at the time?]

[what changed for you?]

[what was it that encouraged you to start riding in this way]

[what else was happening at the time?]

12.4 ONLINE SURVEY

Table 11: Online survey, to capture data from individuals in Pre-contemplation or Contemplation Stage of Change.

Do you currently ride a bicycle for sport or recreation fairly regularly (or have you until recently been a regular rider)? For the purposes of this survey, we are defining 'regular' as at least once a month, or that you try to ride at least once a month.	Response
Do you currently use a bicycle as a form of transport to non-recreational destinations (ie commute or ride to the shops? (Or have you until recently used a bicycle in this way?) Here, we define 'currently' as at least 3-4 times a month [For this survey we are only interested in people who do not ride as a form of transport – if you do commute by bicycle, or use a bicycle to travel to shops or other non-recreational destinations, you are welcome to contact me to participate in the larger research.)	Response
Do you ride on public roads in Cape Town and surrounds?	Response
	Other (please elaborate)
Do you own, or have access to, a private car (including e-hailing or a car owned by someone else in your household)?	Response
What is your gender?	Response
Have you used a bicycle as a form of transport or utility in a country other than South Africa?	Response
Did you use to ride a bicycle to school, to friends, or for other forms of transport, as a child?	Response
How far from your place of work do you live?	Response
	Other (please specify)

In which part of Cape Town do you live? Please share the name of your suburb or area.	Open-Ended Response
To which part of Cape Town do you travel to work or the majority of your other utility purposes? Please share the name of the suburb or area.	Open-Ended Response
Have you ever participated in any bicycle awareness events that encourage bicycle transport? Please tick all the apply or add in more details. A few examples are provided below:	Open Streets
	Moonlight Mass
	Critical Mass
	Pedal Power Association Safety Awareness rides
	I have not participated in any such events
	Other (please elaborate)
What reasons or motivations did the organizers of the event give in encouraging participants to ride a bicycle as a form of transport?	Open-Ended Response
Have you ever considered riding to your place of work or to other non-recreational destinations?	Response
If you have considered riding to your place of work or to other non-recreational destinations, what are your reasons for wanting to do so? (There are no right or wrong answers!)	Open-Ended Response
We're interested in the challenges that prevent you from riding to work or for other non-recreational purposes. Please tick as many as are appropriate.	There are no shower facilities at my place of work
	There are no shower facilities nearby my place of work
	There is no bicycle infrastructure on the route to my place of work
	I already have convenient car parking at my office

	I need to be able to use my car for work purposes during the day
	I need to be able to use my car immediately after work
	I carry goods or other items that cannot fit on my bicycle
	My place of work is too far from my home
	The route between home and my place of work is too dangerous (traffic)
	The route between home and my place of work is too dangerous (personal safety)
	I need to perform multiple tasks on my way to work (such as shopping, or taking children to school)
	I do not have the flexibility to cycle home before it gets dark in the evenings
	I do not have the flexibility to make other arrangements if the weather turns against me
	There is no secure place in which to keep my bicycle
	Other (please elaborate)
Which of the above are the top two reasons you do not cycle to work or for non-recreational purposes?	There are no shower facilities at my place of work
	There are no shower facilities nearby my place of work
	There is no bicycle infrastructure on the route to my place of work
	I already have convenient car parking at my office
	I need to be able to use my car for work purposes during the day
	I need to be able to use my car immediately after work
	I carry goods or other items that cannot fit on my bicycle

	My place of work is too far from my home
	The route between home and my place of work is too dangerous (traffic)
	The route between home and my place of work is too dangerous (personal safety)
	I need to perform multiple tasks on my way to work (such as shopping, or taking children to school)

12.5 DATASET 2: PUBLIC ADVOCACY DISCOURSE

For this dataset I have excluded social media (facebook, twitter, linked-in, blogs, etc) and have included only traditional media sources (print and online versions of newspapers, newsletters, magazines), largely to ensure consistency across the timeline under study (social media did not exist for most of the period under study). Websites refers to the websites of newspapers or magazines. Policy in the first column refers to a deliberate set of guidelines to guide decisions and achieve an outcome, a principle or course of action 'adopted or proposed by an organization or an individual'. This therefore can include a strategic document, a framework, a guideline, toolkit, or other such document but not only a formal policy. The second Policy column is the combination of 'official' discourse, as opposed to civil society or media discourse where the source has not been primarily government.

12.5.1 Weighting and formula

Policy and Civil Society/Media advocacy codes have been weighted according to relative importance with respect to likelihood of advocacy influence. In order to compare the relative prevalence of reasons for cycling advanced in advocacy media texts, an index was developed in which different forms of texts were allocated different levels of importance. So, for instance, mention in an official policy media release was deemed to be more important than mention in a speech, and weighted accordingly. To calculate a weighted score (out of 100) for reasons to cycle advanced in policy, mentions in media releases were weighted at 50%, in official policy documents at 40%, and in speeches at 10%. To calculate a weighted score (out of 100) for reasons to cycle advanced in media advocacy, mentions in opinion pieces were weighted at 35%, in news articles at 35%, in petitions at 25%, and in magazine articles at 5%.

Table 12: Weighting of relative importance of policy and media texts.

40%	50%	10%	100%	5%	35%	35%	25%	100%
Policy (formal)	Comms, Media Releases	Speeches	Policy	Magazines	Opeds, Letters, Cartoons	Newspapers & Websites	Comms, Petitions	Civil Society & Media

Table 13: Time-period 1976-1979 (advocacy dataset). The table shows the code-count, and the final row the number of texts.

Theme	Policy	Comms, Media Releases	Speeches	Policy	Magazines	Opeds, Letters, Cartoons	Newspapers & Websites	Comms, Petitions	Civil Society & Media
affordability				0.0		3	3	1	2.4
environment	1			0.4		1	3		1.4
ease of use				0.0		2	8	1	3.8
social advocacy				0.0					0.0
bicycle advocacy	2			0.8		6	3	2	3.7
wellbeing				0.0		2	1	1	1.3
personal identity				0.0					0.0
physical health	1			0.4		5		1	2.0
fitness				0.0			2		0.7
saves money	1			0.4		10	8	1	6.6
						10	8	3	

Table 14: Time-period 1980-1993 (advocacy dataset). The table shows the code-count, and the final row the number of texts.

Theme	Policy	Comms, Media Releases	Speeches	Policy	Magazines	Opeds, Letters, Cartoons	Newspapers & Websites	Comms, Petitions	Civil Society & Media
affordability	5	1		2.5		2	3		1.8
environment	6			2.4		3	2		1.8
ease of use	3			1.2		2	2		1.4
social advocacy	1			0.4					0.0
bicycle advocacy	6	1		2.9		1	4		1.8
wellbeing				0.0		1		1	0.6
personal identity				0.0					0.0
physical health	5			2.0		1	2	1	1.3
fitness				0.0					0.0
saves money	3			1.2		2	5	1	2.7
	6	1	1			5	7		

Table 15: Time-period 1994-2007 (advocacy dataset). The table shows the code-count, and the final row the number of texts.

Theme	**Policy**	**Comms, Media Releases**	**Speeches**	**Policy**	**Magazines**	**Opeds, Letters, Cartoons**	**Newspaper & Websites**	**Comms, Petitions**	**Civil Society & Media**
affordability	5	5	3	4.8	1	4	8	6	5.8
environment	7	6	2	6.0		6	6	6	5.7
ease of use	4	2		2.6		1	6	3	3.2
social advocacy	4	4	1	3.7			3	4	2.1
bicycle advocacy	6	3	2	4.1		2	8	2	4.0
wellbeing	2	1		1.3			1	1	0.6
personal identity				0.0		1			0.4
physical health	3	2	3	2.5		1	3	1	1.7

fitness	1			0.4		1	2	3	1.8
saves money	3	2	2	2.4		4	6	6	5.0
	8	9	3			12	12	8	

Table 16: Time-period 2008-2013 (advocacy dataset). The table shows the code-count, and the final row the number of texts.

Theme	**Policy**	**Comms, Media Releases**	**Speeches**	**Policy**	**Magazines**	**Opeds, Letters, Cartoons**	**Newspaper & Websites**	**Comms, Petitions**	**Civil Society & Media**
affordability	3	11	2	6.9	2			1	0.4
environment	9	18	1	12.7	2	5	5	4	4.6
ease of use	5	13		8.5		7	8	5	6.5
social advocacy	5	19	3	11.8		8	3	5	5.1
bicycle advocacy	6	15	1	10.0		9	6	8	7.3
wellbeing		6		3.0		4	2	2	2.6
personal identity				0.0		2	1	1	1.3
physical health	5	8	1	6.1		3	5	1	3.1
fitness	1	1		0.9			2		0.7
saves money	4	9	1	6.2		8	6	1	5.2
	6	25	3		2	20	8	8	

Table 17: Time-period 2014-2019 (advocacy dataset). The table shows the code-count, and the final row the number of texts.

Theme	**Policy**	**Comms, Media Releases**	**Speeches**	**Policy**	**Magazines**	**Opeds, Letters, Cartoons**	**Newspaper & Websites**	**Comms, Petitions**	**Civil Society & Media**
affordability	5	6	2	5.2	1		3	1	1.1
environment	14	7	2	9.3		3	3	5	3.1
ease of use	10	10	2	9.2		1	3	3	1.9

social advocacy	7	5	2	5.5	2	4	8	9	5.8
bicycle advocacy	14	11	2	11.3		5	6	7	5.0
wellbeing	3	4		3.2	3	6	3	4	4.0
personal identity				0.0	1	1			0.4
physical health	9	7	1	7.2		1	1	4	1.6
fitness				0.0		1			0.4
saves money	7	7	1	6.4		2		2	1.2
	14	13	33			9	9	8	