

Cycling and social complexity:
An ethnography of (bi)cycle travel and urban transformations

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Abstract

Cycling and social complexity: An ethnography of (bi)cycle travel and urban transformations

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As policy makers grapple with rapid urbanization and motorization processes, human-scale transportation modes such as cycling are gaining new urgency, offering non-polluting alternatives to automobility. At the same time, urban planning paradigms tend to focus on purely technical solutions to transportation challenges, leaving questions of history, culture and social power aside. This dissertation contributes to a small but growing field of situated research investigating the role of socio-cultural life in fostering and inhibiting cycling practices as well as the wider potential of (bi)cycle histories in revealing the workings of power across urbanizing landscapes. Based on archival and ethnographic fieldwork from the Mexican bajío, it argues that while the bicycle may appear as a simple tool for promoting urban wellbeing and environmental sustainability, cycling practices nevertheless have layers of meaning, historical complexity, invisible work and affective significance and that are not always self-evident. These complexities are not only significant on a historiographical level, but they also have implications in terms of how cycling is mobilized in new urban-planning agendas, the possibilities and limitations of cycling infrastructure in different contexts as well as whose voices are included and excluded from these discussions. Emphasizing the heterogeneity of (bi)cycling, this dissertation aims to reframe cycling research with greater attention to social complexity, advancing critical theories in feminist science and technology studies, mobility justice as well as Latin American theorizing on ways of knowing otherwise. Rather than simply reflecting on cycling politics, this dissertation mobilizes bicycle and tricycle trajectories as an opening for considering a variety of complex challenges relating to the past, present and future of cities. Not only do cycling pathways lead us through diverse transportation histories, they can also reveal the need for attention to the ways that social inequities traverse broad regimes of (im)mobility and particular contours of resistance; an understanding of the processes through which social groups contest mobility injustices and formulate alternatives for building inclusive cities; as well as an appreciation of participatory, gender-transformative and insurgent approaches to urban design.

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I want to emphasize that the ideas and analyses presented in this dissertation emerged from listening and working with people with extensive lived experience and in-depth knowledge of local environments, cycling practices and histories. Although I wrote this dissertation as a solitary endeavor as a requirement for completing my PhD, it should be considered a collective work.

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Dedication:

For my pajarito Milán

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Glossary

<i>Agraristas</i>	A term referring to agrarian-reform advocates or movements.
<i>Aguas</i>	Shorthand for the city of Aguascalientes; A prepositional idiom for being careful or moving with care; The name of the bicycle movements <i>Aguas con la bici</i> and <i>Aguas con las chicas</i> .
Anti-pedestrian bridge (<i>Puente anti-peatonal</i>)	A term coined by the <i>Liga Peatonal</i> (Mexico's Pedestrian League) to refer to infrastructure designed to provide uninterrupted motor-vehicle passages by directing pedestrians through raised overpasses (and/or underground tunnels). The term anti-pedestrian bridge is used to reflect the accessibility challenges, inconveniences and mobility injustices that these structures provoke for active travelers.
<i>Bajío</i>	Mexico's central-lowland region, encompassing the states of Aguascalientes, Guanajuato, Querétaro and parts of Jalisco.
<i>Bicoficios</i>	Bicycles or tricycles used for different types of work, deliveries and/or street vending, also referred to as "workcycles."
(Bi)cycle	A term used to refer to a variety of cycling technologies, including bicycles, tricycles, customized variations and diverse workcycles.
<i>Bracero/Bracero program</i>	The Bracero program (from the term <i>bracero</i> meaning "one who works with their arms") was a series of laws and agreements initiated from 1942-1964 to facilitate temporary work contacts in the United States for farm and railroad workers from Mexico.
<i>Charro/ líder charro</i>	A government-appointed union leader or boss.
<i>Ciclovía</i>	A term used across Mexico (and in this dissertation) to refer to a variety of cycling infrastructure, including bicycle lanes, paths, recreational routes and shareways.

ENIGH	<i>Encuesta Nacional de Ingresos y Gastos de los Hogares</i> (“National Survey on Household Income and Expenses”).
<i>Hoy No Circula</i>	“No drive days”: An environmental policy first implemented in Mexico City in the late 1980s that prohibits the circulation of a percentage of vehicles from Monday to Friday, depending on the last digit of their license plates.
IMPLAN	<i>Instituto Municipal de Planeación de Aguascalientes</i> (“the Municipal Planning Institute of Aguascalientes”).
<i>Lechera</i>	A type of double-barred, steel-framed road bicycle, named after milk given its frequent usage for delivering household items and ability to carry large jugs of liquid.
MORENA	<i>Movimiento Regeneración Nacional</i> (“National Regeneration Movement”): A national political party established as a non-profit organization in 2011, registered as a political party in 2014, and the federal ruling party of Mexico since 2018.
NAFTA	North American Free Trade Agreement
<i>Panadero</i>	Baker
<i>Paseo dominical</i>	A car-free Sunday event organized in different municipalities, often with the aim of promoting active travel and community building.
<i>porfiriato</i>	A term coined by Mexican historian Daniel Cosío Villegas to refer to a period of dictatorial control when José de la Cruz Porfirio Díaz Mori (Porfirio Díaz) ruled Mexico the late 19th and early 20th centuries.
<i>Pueblo ciccletero</i>	Literally translating as “bicycle town” or “bicycle people.” An idiom used in Mexico as a synonym for underdevelopment (particularly from the 1970s-1990s); An expression that has been reappropriated to indicate pride in a local cycling culture or to refer to a connected and companionable locality.
<i>Rascuache/rascuachismo</i>	A Mexican and Chicanx concept used to qualify people or things of a working-class origin; A term that has frequently been

reappropriated, inferring an inventive, witty and subversive attitude.

Rielero/a

Rail worker

Rodada

A type of critical-mass ride organized by bicycle movements across different Mexican cities, usually held on a weekly basis.

PAN

Partido Acción Nacional (“National Action Party”): A conservative political party founded in 1939 that has succeeded in winning some national, state and local elections.

PRI

Partido Revolucionario Institucional (“Institutional Revolutionary Party”): A national political party, founded in 1929 as the *Partido Nacional Revolucionario* (PNR, “National Revolutionary Party”) that was renamed as the PRI in 1946. The party held uninterrupted power at the federal level for 71 years, from 1929 to 2000, and again from 2012-2018.

STFRM

Sindicato de Trabajadores Ferrocarrileros de la Republica Mexicana (“Union of Railroad Workers of the Mexican Republic”).

UNAM

Universidad Nacional Autónoma de México (“National Autonomous University of Mexico”).

Voceador

Newspaper deliverer

Chapter 1:

An introduction to cycling and social complexity

1.1 Introduction

“Del frío había vuelto a pasar al calor y a regresar al frío, del sueño a la vigilia, pero en ella había vuelto a quedarme. De nuevo había perdido y no lograba recuperar la tranquilidad... En la duermevela de esta terrible vigilia se me presentó la imagen de una bicicleta vista de costado, su dirección hacia la izquierda. Aunque las dos llantas hicieran contacto con el piso, en el centro y en medio de un puente de madera que atravesaba un precipicio, su equilibrio era inexplicable, una rareza en el mundo real. Era un equilibrio instantáneo, más implacablemente condenado que simplemente amenazado a negarse a sí mismo en favor de las leyes de la gravedad. Era una estructura completa, aunque de aspecto quizá más frágil que ligero. En el inminente momento en el que perdiera el equilibrio no sólo caería contra la base sino que se haría pedazos. Por más leve que fuera, el impacto contra el piso la pulverizaría sobre el abismo. Aun cuando fuera bella, verla no me complacía; me inquietaba. Aun cuando por plateada fuera deducible que estaba hecha de acero, a mí me parecía irreal, hecha del material del que, en efecto, están hechos los sueños. Y que se orientara hacia la izquierda en lugar de hacia la derecha, era otro dato que provocaba mi inquietud, como si significara que, de ponerse en movimiento, la bicicleta solitaria se dirigiría hacia el pasado, hacia atrás, hacia la inexistencia, y no hacia el presente que es, comoquiera que se le juzgue, por lo menos la entrada al porvenir, es decir, a la posibilidad de existencia. Pero a pesar de la alarma que despertó en mí la bicicleta de pronto más bien me alentó para animarme y montarla, asir el manubrio, girarlo y, con los pies en los pedales, arrancar y volver a empezar.

[From the cold, I felt heat returning to cold, lapsing between sleep and sleeplessness. Once again, I was lost and could not return to tranquility... In the wake of this terrible vigilance, I was presented with the image of a bicycle, hovering in place, pointing to the left. Although its two tires made contact with the ground, it sat in the middle of a wooden bridge that crossed a cliff, its balance inexplicable. It was an instantaneous equilibrium, held more by a persistent predestination than by a refusal of the laws of gravity. It was a complete structure, though perhaps more fragile than light in appearance. If it were to lose its balance in any imminent moment, it would not only fall against the ground, but also shatter. As light as it was, the impact against the floor would pulverize the bicycle into the abyss. Even though it was beautiful, seeing it did not please me; it made me uneasy. Even if it was fabricated from silver or steel, it seemed unreal to me, made of the materials from which dreams are indeed made. And its orientation to the left instead of to the right also caused me concern, as if it meant that, if it started moving, the solitary bicycle would go backwards, towards nonexistence. It would not move towards the present, which is, however it might be judged, the entrance to the future, that is, the

possibility of existence. But despite the alarm that the bicycle awoke in me, it suddenly encouraged me to rise up and ride it, to grab its handlebars, turn it and, with my feet on the pedals, to start over again].” - Bárbara Jacobs, *La Bicicleta Solitaria* (2007, bracketed text is my translation).

Despite their technological simplicity, bicycles are powerful and socially complex objects.

(Bi)cycles¹ not only provide a means of transport, but they also carry diverse social meanings and metaphors, local histories and aspirations as well as dynamic sensations and affectivities, as narrated in the dreamscape above. Bárbara Jacobs’ dream illustrates the bicycle’s appeal, not only hovering on an imaginative horizon, but also on a visceral level, revealing spectres of the past, the fragility of the present and the allure of the future.

Increasingly the bicycle’s practical and symbolic qualities are gaining prominence in the face of a variety of profound, conjectural challenges. As cities face rapid urbanization processes, the bicycle has figured prominently in discussions on how to live together cooperatively, including efforts aimed at rebuilding more socially connected, joyful and human-scale cities (Silva et al., 2021; Wild and Woodward, 2019). As local governments work to find pathways toward deep decarbonization, the bicycle is often promoted as an effective means of reducing transport emissions,² traffic congestion as well as noise and air pollution (Massink et al., 2011;

¹I use the term (bi)cycle here to include different two-wheeled cycles as well as a variety of other varieties, including front-and rear-loading cargo tricycles, tailored delivery trikes, foldable variations as well as other DIY and ready-made customizations. Most of the cyclists interviewed in this study use two-wheeled bicycles as their main means of mobility; however, I recognize the need for greater research on tricycle technologies and diverse *biciclos* (work cycles), as discussed by Claudio Sarmiento Casas (2019; 2022).

²Researchers have predicted that transportation will be responsible for 35% of all CO₂ emissions by 2050, requiring wide-reaching changes to meet environmental targets. While Latin America’s share of global CO₂ emissions has been relatively small, emissions from road transportation are expected increase rapidly in the coming years in line with an estimated doubling of light-duty vehicle ownership by 2030 (Schipper et al., 2009). In fact, research predicts that emissions will rise faster in Latin American and the Caribbean than any other developing region. Rather than reflecting any significant reductions in levels of income inequality, this estimated increase in car

Bearman and Singleton, 2014; Brand et al., 2021). Most recently, the COVID-19 pandemic has fuelled the impetus to increase cycling provisions to facilitate urban mobilities while allowing for physical distancing (Hong et al., 2020). Somehow this relatively small, (mainly) human-powered machine has appeared at the centre of several knots of socio-political interest despite, or perhaps because of, its technological simplicity.

Notwithstanding the growing prominence of the bicycle in academic and policy discussions, cycling practices have remained largely invisible in mainstream urban development and historical accounts. Tiina Männistö-Funk explains that, from a historical perspective, everyday cyclists have frequently been overshadowed by largescale narratives: “The history of rise and fall, often seen from the perspective of an anticipated re-naissance in our time, is the currently dominant narrative of bicycle history. It makes us see similar kinds of bicycle timelines—defined by economic shifts and motorization—everywhere we look” (2018: 11). Although the global rise in automobility has clearly influenced cycling histories in profound ways, the relationship is not always straightforward or equal across different social realities and geographical contexts: “While the diversity of contemporary cycle usage across nations is obvious, the significance and extent of differences in the historical trajectories through which they have arrived at these patterns is less well explored” (Cox, 2015: 51). These points underscore the need to “challenge oversimplified and universalised narratives of cycling that continue to promote a colonialist approach to historical writing” (Cox, 2017: 135). As a part of recent sustainability agendas, bicycle-promotion activities have also frequently been translated into technological fixes and ‘neighbourhood revitalization’ narratives that have limited social

ownership is largely attributed to the growth of car manufacturing in the region, particularly in Mexico (ibid).

impacts, while at times bringing unintended consequences that exacerbate urban inequalities (Hoffmann, 2016; Hoffmann and Lugo, 2014; Golub et al., 2016; Stehlin, 2015; Stehlin, 2019; Whitney et al., 2020; Anantharaman, 2017).

This dissertation contributes to a small but growing field of situated research investigating the role of socio-cultural life in fostering and inhibiting cycling practices (Vivanco, 2013a; Lugo, 2013; Anjaria, 2020; Freudendal-Pedersen, 2020; Hahn, 2012; Horton et al., 2012; Norcliffe, 2015) as well as the wider potential of (bi)cycle histories in revealing the workings of power across urbanizing landscapes. Specifically, I focus on the case of Aguascalientes, an intermediate city in Mexico's *bajío* region³ with strong community ties to cycling, to bring attention to unique mobility histories. Based on archival and ethnographic fieldwork, this dissertation argues that while the bicycle may appear as a simple tool for promoting urban wellbeing and environmental sustainability, cycling practices nevertheless have layers of meaning, historical complexity, invisible work and affective significance and that are not always self-evident. These complexities are not only significant on a historiographical level, but they also have implications in terms of how cycling is mobilized in new urban-planning agendas, the possibilities and limitations of cycling infrastructure in different contexts as well as whose voices are included and excluded from these discussions.

Emphasizing the heterogeneity of (bi)cycling, this dissertation aims to reframe cycling research with greater attention to social complexity, advancing critical theories in feminist science and technology studies (Bauchspies and de La Bellacasa, 2009; Star, 1991), mobility justice (Sheller, 2018b; Cook and Butz, 2018) as well as Latin American theorizing on ways of

³The *bajío* refers to Mexico's central lowlands, encompassing the states of Aguascalientes, Guanajuato, Querétaro and parts of Jalisco. This ethnography is focused mainly on the state of Aguascalientes, with some comparisons to the states of Guanajuato and Jalisco.

knowing otherwise (Escobar, 2007; Mignolo, 2009; Icaza, 2017). Thus, rather than simply reflecting on cycling politics, this dissertation mobilizes (bi)cycle trajectories⁴ as an opening for considering a variety of complex challenges relating to the past, present and future of cities. Not only do cycling pathways lead us through diverse transportation histories, they can also reveal the need for attention to the ways that social inequities traverse broad regimes of (im)mobility and particular contours of resistance; an understanding of the processes through which social groups contest mobility injustices and formulate alternatives for building inclusive cities; as well as an appreciation of participatory, gender-transformative and insurgent approaches to urban design. In this introductory chapter, I review my choice of fieldsite and methodology. I further discuss the outline of the following chapters and their contributions to cycling and social research debates.

1.2 Mobilizing situated methodologies and ecological thinking

Los ciclistas urbanos... comparten con nosotros una gran variedad de anécdotas e historias, fruto de su diversidad. Nos hacen parte de sus sueños y preocupaciones, de sus motivaciones e inseguridades... de sus reflexiones acerca de la ciudad. Nos proporcionan información sobre rutas y trayectorias en bicicleta y recomendaciones para circular con seguridad. Todas ellas, manifiestan su apego por la bicicleta y una motivación constante para cambiar el rostro de la ciudad.

[Urban cyclists offer a vast variety of stories and anecdotes, which is fruit of their diversity. They provide us with a window into their dreams and concerns, their motivations and insecurities, and their reflections on the city. They provide us with information on their bicycle routes and trajectories, and recommendations for circulating safely. Collectively, they show their attachment to the bicycle and a constant motivation to change the face of the city].” - Ruth Pérez López, *Por mi ciudad en Bicicleta* (2011: 10, bracketed text is my translation)

⁴In discussing (bi)cycle trajectories, I am not only referring past and present pathways, but also to a diversity of land-human-cycle relations as well as networks of repair, redesign, appropriation and placemaking.

Research on the bicycle has grown substantially in recent years, with studies increasingly exploring the public-health importance of bicycling (Bassett Jr et al., 2008; Woodcock et al., 2018), cycling policies (López and Montero, 2018; Anaya-Boig, 2021), barriers to cycling (Manaugh et al., 2017; Vietinghoff, 2021), bikesharing (Anaya-Boig et al., 2021; Spinney and Lin, 2018) among other aspects of cycling provisions and practices. Based this growing body of interdisciplinary research, scholars have identified a number of socio-environmental determinants of cycling, including those relating to the built environment (e.g., the availability and connectivity of bicycle infrastructure), the natural environment (e.g., topography and climate conditions), psychological and socio-economic characteristics (e.g., social class, gender and age) as well as issues relating to time, cost and safety (Handy et al., 2014; Rérat, 2019; Ton et al., 2019). These findings have even led some scholars to contend that that researchers are not “seeing the forest through the trees” and that “we already know *enough* about what needs to be done in order to encourage cycling” (Nello-Deakin, 2020: 1). Latin American scholars such as Paola Castañeda have helped to contest these assumptions, illustrating how they rest “on a body of literature overwhelmingly informed by the experience of Europe and North America” (2021b: 1). Castañeda proposes that, instead of relying on global generalizations, we consider shifting our attention to different forests to reveal distinctive trees and insights: “Crucially, this is more than about diversifying research sites – it is about encouraging critical engagement with the geographies of transport knowledge production” (2021b: 1). Lake Sagaris elaborates: “Cities in the Global South have also become overrun by car-centered urban planning, but in very different contexts, where huge swathes – often the majority of the population – have no hope of acquiring a car. This puts social justice, discrimination and exclusion in the foreground of debates around cycling” (2021: 2).

These recent debates have helped to synthesize many of my thoughts on cycling research since starting my PhD. One of my reasons for choosing the (bi)cycle as a research topic is the ability of this seemingly mundane object⁵ to reflect the complex challenges of cultivating more environmentally sustainable and socially just cities. With my previous experience living in the *bajío*, and with family in the region, I was compelled to bring greater attention to a context where cycling is an economic necessity for a large number of residents, but where transportation planning continues to divest from public transit and prioritize motor-vehicle infrastructure for the most privileged. In this context, new urban policy initiatives aimed at implementing cycling infrastructure based on the logic “if you build it, they will come”⁶ emphasize an objective of generating new cyclists—a process that reduces cycling to technical problem of infrastructural supply while invisibilizing the experiences and needs of *existing cyclists*. While effectively planning and implementing cycling policy may require new knowledge and competencies (McLeod et al., 2020), this dissertation emphasizes the value of local cycling histories, practices and situated knowledge in this process.

Aguascalientes offered an unconventional fieldsite, not only as a means of shifting the focus away from capital and megacities (dominant in cycling research in Latin American and beyond), but also to bring attention to unique cycling histories, creative forms of city-making and

⁵Also see: Vivanco LA (2013b) The mundane bicycle and the environmental virtues of sustainable urban mobility. *Environmental Anthropology*. Routledge, pp.39-59.

⁶“Build it, and they will come” refers to the potential of official cycling infrastructure, especially segregated lanes and paths, to attract new cyclists (Cervero et al., 2013). While studies continue to confirm the importance of dedicated cycling infrastructure for encouraging higher cycling rates (Pucher & Buehler, 2017; Cervero et al., 2019), much of this research treats cycling as a technocratic problem and may neglect much of the social and political dynamics of cycling (Cox and Koglin 2021; Castañeda and Montero, 2022).

social-movement advocacy. As Castañeda insightfully explains, a situated focus can help to “(1) create new standards and frames of reference for cycling cities; (2) critically evaluate the effects of cycling best-practices on already uneven urban landscapes; (3) elevate the technical and grassroots innovations produced by people in cities of the South” (2021b: 2). These points exemplify the continued relevance of feminist discussions on situated knowledge, challenging notions of objective history and recognizing that knowledge is only ever partial (Haraway, 2013; Hughes and Lury, 2013). These discussions also respond to the challenge of unsettling urban-planning paradigms that have been overwhelmingly established in and for cities of the global north and of taking seriously the diversity of urbanization processes (Roy, 2016; Castañeda and Montero, 2022).

My dissertation contributes to these discussions through ethnographic fieldwork in and surrounding the city of Aguascalientes conducted between 2017-2018, followed by analysis, writing, peer-review and publication between 2019-2021. I see ethnography, particularly as practiced through critical and feminist anthropologies, as a meaningful tool for exploring urban mobilities and immobilities. Through extended participation observation and in-depth interviews, ethnographers work to listen carefully to diverse voices, which is useful for surfacing silenced knowledge or for interrogating common-sense understandings about urban development (Fassin, 2013). In addition to using ethnography’s core methods of participant observation and in-depth interviews, my dissertation project aims to contribute to the development of hybrid and inventive methods (Lury and Wakeford, 2012) to help account for complex travel experiences and urban-development dynamics. For the purposes of my dissertation, inventive methods include those defined as creative (Knowles and Cole, 2008), mobile (Fincham et al., 2010) and counter-cartographic (Mekdjian, 2015). Inventiveness and creativity here are considered “active

component[s] of experience and perception, engaged in a constant interchange with the material textures of the existing world” (Elliott and Culhane, 2016). These approaches follow John Law’s (2004) and Kim Fortun’s (2012) provocation to reimagine the task of social research at a time of exhausted paradigms, to re-consider the ephemeral aspects of infrastructure and to think creatively about the transformative potential of methods. Penney Harvey and colleagues elaborate the importance of a nuanced approach in grappling with particular historical complexities and uncertainties:

Ethnography allows us to articulate a politics that begins with the acknowledgment of human-material entanglement, that assumes the simultaneous importance of both planetary ecologies and local historical conditions, that approaches research as an attentiveness to process rather than to discrete ‘research objects,’ and that fosters an awareness of the constitutive presence of uncertainty. (2019: 2)

To account for these understandings, this dissertation draws from feminist science and technology studies, and particularly Susan Leigh Star’s (1999) ethnographic approach, to conceptualize urban systems as composed of things and people *in ecological relationships*. An ecological perspective reveals interconnections (Haraway, 2013; Papadopoulos, 2011), bringing a plurality of relations into view. Through infrastructural inversion (Bowker, 1994) or a figure-ground reversal (Harvey et al., 2016), ethnographers work to uncover the complex inner working of socio-material relations which often go unnoticed in official histories and development paradigms. These approaches expose the reductive effects of standardization processes, encouraging a more expansive view of what counts as a valid category of social and cultural research (Hughes and Lury, 2013; Bennett, 2009).⁷ While acknowledging the complexity of

⁷Also see John Law and Anne Marie Mol’s (2002) call to move beyond a reductive binary distinction between simplicity and complexity: “the question no longer is, Do we simplify or do we accept complexity? It becomes instead a matter of determining which simplification or simplifications we will attend to and create and, as we do this, of attending to what they foreground and draw our attention to, as well as what they relegate to the background (11). That

material assemblages, this approach places particular emphasis on people and things that have been overlooked or rendered invisible in dominant discourse (Puig de la Bellacasa, 2011). Maria Puig de la Bellacasa explains that this focus stems from longstanding feminist concerns with devalued labours, which provokes greater analytic attention to those who are disadvantaged or harmed by an assemblage (ibid.).

Ethnographic research on infrastructure and social complexity has underscored the challenges of “looking for those underlying configurations that are not necessarily the site of active reflection..., while also attending to the ways in which people do sometimes reflect on the socio-material conditions that shape their life worlds” (Harvey et al. 2016 :6). This approach helps to grapple with the very uneven ways that cycling practices, and the wider social-material systems that support them, are acknowledged, overlooked, historicized or trivialized in different contexts. This approach also moves beyond what is normally understood as materiality to include such things as meanings,⁸ metaphors⁹ and spirituality¹⁰ as sites of social engagement and historical struggle (Puig de la Bellacasa, 2016; Barad, 2003; Stengers, 2005). In this sense, ecological thinking also re-orientes research towards how things change (Hughes and Lury, 2013),

is, “in a complex world there are no simple binaries. Things add up and they don’t. They flow in linear time and they don’t. And they exist within a single space and escape from it.” (2002: 20).

⁸Karen Barad (2003) posits that matter and meaning do not pre-exist as discrete entities, but rather are composed of *intra-acting* phenomena which “are the ontological inseparability of agentially intra-acting components” (815). That is, they become material and meaningful through *relations*.

⁹Donna Haraway argues that “The collapse of metaphor and materiality is a question not of ideology but of modes of practice among humans and nonhumans that configure the world—materially and semiotically—in terms of some objects and boundaries and not others.” (1997: 7).

¹⁰As Penny Harvey et al. explain “It is by means of historically and culturally specific sentiments, myths, desires, rules, taboos, and rituals that humans across the world interact densely with the world of things through work, magic, and other forms of activity” (2019: 14).

animating a non-essentialist understanding of cycling. These considerations were instrumental in broadening my ethnography methods, including bicycle object interviews to inform the cultural biographies of things (Gosden and Marshall, 1999; Woodward, 2016); critical-description techniques to account for more-than-human socialites (Tsing, 2013); as well as analyses of diverse visual and literary materials to reveal a plurality of truths.

These approaches also highlight the need for detailed historical attention to the social construction of mobility regimes and their attendant exclusions. The governance and control of movement stems from long and complex histories, as Hagar Kotef explains: “movement serves as a surface, a grabbing point for different forms of control; that its ordering and circulation are the organizing principle of different regimes; and that it is a privileged mode through which bodies and powers operate on and through one another” (2015: 15).¹¹ These insights provoke questions on how transportation developments tend to enhance fast-paced, privileged mobility at the expense of equity and free movement for all (Bullard and Johnson, 1997; Martens, 2006). In her work on mobility justice, Mimi Sheller explains that this history of liberalism as a regime of movement raises several questions for mobility scholars, including:

“Who can ‘appropriate’ the potential for mobility (including the right to stay still, as well as to move)? How can our understanding of sustainable transport and accessibility be inflected with a micro-politics of racial, gendered, (dis) abled embodiment, the meso-

¹¹Kotef’s *Movement and the ordering of freedom* (2015) traces the history of liberalism as a regime of movement that has continually operated through a matrix of differentiations and exclusions that are highly classed, racialized, gendered, and colonial: “The moving body, which stood at the core of liberal subjectivity, liberty, and law, was not completely erased from the political scene of liberalism... It left traces—even if at times latent—on later moments of this discourse. The focus on movement in the early sources of liberal theory allows us to excavate this hidden theme...: a contemporary split organized around mobility between (I) the citizen (often as a racialized, classed, ethnically marked, and gendered entity more than a juridical one), as a figure of ‘good,’ ‘purposive,’ even ‘rational,’ and often ‘progressive’ mobility that should be maximized; and (II) other(ed) groups, whose patterns of movement are both marked and produced as a disruption, a danger, a delinquency” (63).

politics of the planning, designing, and building of infrastructures of mobility, the macro-geopolitics of migration, racialization, borders, and travel, and finally, the wider geoeological processing of energy and material flows around the world? (2018a: 84-85)

These are not only historical and political concerns, but also ethical questions pertaining to mobility rights and exclusions (ibid).

Theorists of transportation equity and justice explain that the inequalities caused by exclusionary transport and land-use patterns are particularly insidious because policy makers frequently overlook these systemic issues within their social development agendas (Lucas, 2020). Yet lack of access to adequate transportation can create several negative outcomes, impeding people's opportunities and capabilities. Amartya Sen (1983) linked the concept of social entitlements to cycling, explaining the need to understand bicycles as having *multiple characteristics*:

let us concentrate on one particular characteristic, *viz.*, transportation. Having a bike gives a person the ability to move about in a certain way that [s]he may not be able to do without the bike. So the transportation *characteristic* of the bike gives the person the *capability* of moving in a certain way [...]. So there is, as it were, a *sequence* from a commodity (in this case a bike), to characteristics (in this case, transportation), to capability to function (in this case, the ability to move). It can be argued that it is the third category—that of capability to function—that comes closest to the notion of standard of living. (160)

From this perspective, (bi)cycles should be conceptualized as more than mere commodities, but also as a means for considering wider issues relating to people's capabilities to move and to access other vital activities and services (such as employment, education and health care).

Several social and transportation justice scholars have advanced these theories. Karel Martens and colleagues explain: "the social importance of cycling... lies in the expansion of a person's capabilities. In order to be justified on the basis of justice, cycling must therefore expand the things a person is 'able to do and be.' It should enlarge a set of functionings from which a person

can choose” (2016: 90). Martha Nussbaum posits that a just society requires the entitlement to life, good health, bodily integrity, as well as political and material control over the environment, amongst other capabilities (2011). Access to movement and the right to remain in place can both be seen as crucial components in the advancement and protection of such human capabilities (Sheller, 2018a). Transportation justice can thus be conceptualized as more than just a distributional paradigm, but also as a platform for considering issues of accessibility, capabilities and decision-making power.

Mobilities research advances discussions on transportation justice, connecting these issues to intersectional inequalities and *kinopolitics*—a concept that refers to both the politics of movement and the movement of politics (Sheller 2018a). These understandings help to move beyond sedentary notions of justice, approaching justice through a mobile ontology connecting multiple scales and interactions (ibid). From this perspective, current approaches to sustainable transitions (ranging from eco-modernization, multi-level transitions theory, the fifteen-minute city, among many others) are not inherently conducive to urban sustainability and require much greater attention to kinopolitical concerns (Sheller, 2021). In this sense, the availability of responses for developing more equitable and sustainable transportation systems not only hinges on changing current policy frameworks and urban-development plans, but also on our understanding of the multiplicity of mobility histories across different contexts (Lucas 2021) and accounting for wider mobility justice struggles.

Researching transportation systems through the lens of mobility justice shifts our focus towards a multi-scalar understanding of (im)mobile experience, the injustices of urban infrastructure, the coloniality of power, the global extraction of resources and the micro-material

relations surrounding these movements across different spatial and temporal contexts (Sheller, 2018a; Gopakumar, 2020). It also surfaces underlying philosophical movements and tensions. As Katherine McKittrick reminds us, “philosophical attention is needed because existing cartographic rules unjustly organize human hierarchies in place and reify uneven geographies in familiar, seemingly natural ways” (2006: x). Situated research is thus needed because cartographic rules are rarely left undisputed, and we can find terrains through which different stories and affectivities are revealed (ibid). Thus, while I critically analyzed the dominant philosophical and development paradigms underpinning current mobility landscapes through a variety of official archives and historical texts, I also worked to engage with grassroots archives,¹² localized counter discourses and popular philosophies.

While drawing from a long trajectory of anthropological thinking on movement and everyday travel across multiple sites (Marcus, 1995; Kirby, 2009; Vivanco, 2013a), this research also builds on recent work on mobile methods, which provides diverse ways of understanding and intervening in processes of movement as well as spaces of stillness (Freudental-Pedersen et al., 2010; Bissell, 2010; Sheller and Urry, 2016). Mobilities research unsettles dominant approaches to transport studies which presumes a rational, quantifiable, utility-maximising commuting subject (Doughty and Murray, 2016; Schwanen, 2020), a process that routinely others non-motorized forms of mobility, such as cycling (Davidson, 2022). Ride-along interviews with cyclists offer an experiential means of eliciting rich sensory data on interviewee’s (im)mobile experiences, travel routes and perspectives on changing cityscapes that can move beyond classical definitions of transport distance, scale and efficiency. Ride alongs

¹²I provide greater detail on these methods in chapter two.

also offer opportunities to build rapport in ways that go beyond the confines of traditional interviews. However, I follow Peter Merriman in approaching seemingly ‘novel’ methods with care (and some caution) given that the “push to promote innovative ‘mobile methods’ is in danger of encouraging researchers to abandon methods labelled ‘conventional’ – such as interviews, [engaged participant observation,] questionnaires, discourse analysis or archival research – rather than rethinking and reworking these methods” (Merriman, 2014).

Instead of seeing mobile methods as a foreclosure of other methods (and critical theoretical approaches), I worked to integrate them as a means of expanding and diversifying my ethnographic methods. This meant combining ride-along interviews with traditional ‘sit-down’ interviews with cyclists to allow for in-depth discussions from multiple perspectives and through different mediums.¹³ In-depth interviews included a variety semi-structured questions relating to cyclists’ experiences and perspectives on the city, including a visual activity in which I asked the interviewees to draw their typical travel routes and explain any areas of specific significance or concern.¹⁴ Although I have not integrated photos of any of these maps into the research chapters (as some interviewees asked me not to use them beyond the context of the interview), they provided a useful tool for exploring a variety of dilemmas in the build environment and the manifold ways that cyclists make sense of and maneuver around the city’s complexities. While the literature on ride-along interviews often promotes using go-pro cameras or other video recordings, these methods were unfeasible and inappropriate for this research context. Go-along

¹³All interviewees are referred to by pseudonyms in this dissertation, with the exception of don Salvador Hermosillo, Glenda Moreno and Patricia Castelli, who agreed to have their names published.

¹⁴I thank my committee members for suggesting and helping me to elaborate this method prior to starting my fieldwork.

interviews were only integrated in cases where participants felt comfortable (sometimes immediately after an interview, or in some cases after several months) and did not involve digital tracking (although at times I took photographs of specific infrastructural issues or points of interest if the interviewees were comfortable with that). Emphasizing an informal encounter, I simply asked the cyclists to show me their journeys thorough the city. The cyclists were often eager to show me the principal barriers that they encountered as a part of their everyday travel experiences, ranging issues with potholes, pavement, motor-vehicle speeds as well as inadequate street crossings, fragmented cycling infrastructure and inappropriate design. Through these discussions, cyclists exposed pervasive forms of inequality that underlie the city's new urban development projects.

While some mobility scholars have argued that go-along interviews can provide the “contextual insights of traditional ethnographic methods without the long-term, intense pattern of fieldwork typically associated with ethnography” (Carpiano, 2009: 265), I want to emphasize that these discussions took a considerable amount of time and trust building, often over several months and sometime years of discussion and exchange. I do not believe that the analyses provided in this dissertation would have been possible in a research context limited simply to ride-alongs or an accelerated research visit.

Working with the cycling movements *Aguas con la Bici* and *Aguas con las Chicas* provided additional opportunities to contribute to a variety of public activities relating to cycling, walking and public transit. As an active volunteer with these organizations, I participated regularly in bi-weekly *rodadas* (critical mass rides), attended and took notes at organizing meetings, as well as assisting in organizing and facilitating various events and campaigns. I was fortunate to work with these organizations at a time of elaborate public discussions on the

contours of two new mobilities laws, which were developed and passed at the municipal and state levels between 2017-2019. These public consultations provided access to meetings and interviews with a variety of policy makers and planners that I did not initially believe I would have access to as a part of this research, allowing for some analysis of the processes through which transportation services are governed and administered.

While taking inspiration from policy ethnographies (Nader, 1969; Chrisler et al., 2017; Wedel et al., 2005), this study is principally situated in a community-based research approach (Smith, 1990; Nichols et al., 2017; Vasudevan and Novoa E, 2021) in privileging the experiences of cyclists whose perspectives are not typically accounted for within dominant news-media and transportation-planning paradigms. In line with Charles Hale’s approach to engaged ethnography, it seeks to move beyond “cultural critique as a resting place for anthropological research and writing” (Hale, 2012). In this sense, a key research aim is to bridge the academic-social movement divide, allowing theory to operate in service of social-movement praxis (Frampton et al., 2006). Drawing from these frameworks, my fieldwork also involved the collaborative development of *Aguas con la movilidad*¹⁵—a news column on local mobility issues published in *La Jornada de Aguascalientes*—as an attempt to work towards open and collaborative forms of public scholarship.

Working towards an inclusive anthropology is, nevertheless, a practice that requires continued self-reflection and careful thinking. Anthropology (like the disciplines of sociology,¹⁶

¹⁵Like the organization *Aguas con la Bici*, the name *Aguas con la movilidad* holds multiple meanings, referring both to the city’s mobilities and to being careful or moving with care.

¹⁶For example, see: Steinmetz G (2017) Sociology and colonialism in the British and French empires, 1945–1965. *The Journal of Modern History* 89(3): 601-648.

geography¹⁷ and transportation studies¹⁸ from which this dissertation also draws) has a complicated and in many ways complicit relationship with histories and ongoing legacies of colonialism (Simpson, 2014). Critically turning the gaze back on anthropology, and academia more generally, forces researchers to unpack the epistemic baggage and structural injustices that prevent universities from working meaningfully towards decolonizing (Todd, 2018). In contending with these ongoing legacies, Anand Pandian proposes horizontal strategies to strive for a more open and accessible anthropology through “further circulating objects of knowledge, but also in propagating more radical techniques of knowing otherwise. At stake with such accessibility is a cultivation of mind open to affecting and being affected, open to all the vicissitudes and uncertainties of that interplay” (2018). Zoe Todd adds: “Decolonization of anthropology is not a done deal, not a fact, nor a data point. It is a process, one that must be engaged and re-engaged for as long as it takes to build something that reflects the ethics of the worlds we want to build, tend to, breathe life into” (2018).

One of the most difficult parts of this process has been the requirement of writing and completing a PhD dissertation as a fundamentally solitary rite of passage, a prerequisite that essentially diminishes the collective nature of ethnographic research and knowledge production. I want to continually acknowledge that the histories, ideas and analyses presented throughout this

¹⁷For example, see: Blais H, Deprest F and Singaravelou P (2011) French geography, cartography and colonialism: introduction. *Journal of Historical Geography* 37(2): 146-148.

¹⁸ For example, see: Wood A, Kębłowski W and Tuvikene T (2020) Decolonial approaches to urban transport geographies: Introduction to the special issue. *Journal of Transport Geography* 88: 1-5. Also see: Lowe K (2020) Undone science, funding, and positionality in transportation research. *Transport Reviews*. 1-18. Lowe argues that transportation studies in particular requires much greater critical reflection on researchers’ positionalities, the emphasis of many funding sources on engineering fields, and the neglect of attention in many cases to social issues, qualitative data and local knowledge.

dissertation emerged from listening, riding along and working with people with extensive lived experience and in-depth knowledge of Aguascalientes. While this analysis has also been shaped by my own knowledge and positionality, I want to acknowledge how many aspects of feminist studies, mobility justice and insurgent citymaking discussed in these chapters are already being practiced by local social movements and organizations who deserve immense appreciation and recognition for their collective work and knowledge.¹⁹

Acknowledging my own positionality as a settler raised in Canada was another area of concern for me during the research process. While acknowledging my privileges were certainly an important part of the research process, my level of concern about bracketing my positionality was not always well received by the organizations that I worked with, and I was continually told that I should never withhold my opinions and recommendations during meetings or decision-making processes. Reflecting back on these discussions, I think my anxiety about over-imposing my position were perhaps naïve, as local organizations and individuals are well equipped to stay true to their own needs and values, and intimately familiar with navigating the complexities of contrasting viewpoints—a process that is in many ways integral to the gender and conflict-transformative approaches that I will discuss further in this dissertation.

What a feminist approach to self-reflexivity continues to teach me is to question the terrain of my own conceptual certainties and to *slow down thinking* (Stengers, 2005)—a process that does not imply dwelling in doubt, but rather critically considering “which tensions are generative, which to grasp and which to refuse” (Harvey et al. 2019: 21). Slow thinking, as

¹⁹I also believe that they merit greater publication credit for their work and perspectives, and I certainly hope that my post-PhD publications will better integrate more co-authors from a variety of backgrounds.

Isabelle Stengers articulates, resists academic knowledge that rushes ahead in isolation, engaging instead in open and honest public discussions and finding openings where different kinds of knowledge and practices can unfold (2018). Stengers clarifies: “Fast science refers not so much to a question of speed but to the imperative not to slow down, not to waste time...” (2018:115). Furthermore, “while the autonomy of fast science may well have protected the reliability of scientific claims, it never ensured the reliability of a mode of development that we are now shamefully forced to recognise as having been, and still being, radically unsustainable” (2018: 118).

This dissertation thus takes inspiration from Latin America theorizing on *knowledges otherwise* (Escobar 2007), emphasizing a mode of thinking and relating that stays open to the multiplicity of historical and ongoing processes (Mignolo, 2012). As Rosalba Icaza thoughtfully clarifies, knowing otherwise arises as “a possibility for a critical re-thinking of the geo and body politics of knowledge, of the modern/colonial foundations of political economy analysis, and of gender” (2017: 29). Icaza explains that decolonial theory, from this perspective, is understood as “an option — in contrast to a paradigm or grand theory — among a plurality of options” (2017: 27). My dissertation aims to bridge these discussions with the field of cycling research, mobilizing situated, collaborative and subversive thinking that not only works to critically analyze prevailing development paradigms, but also to decentre them as a means of promoting a plurality of practices in the movement for epistemic and mobility justice.

1.3 Outline of Chapters

This dissertation works to explore cycling practices from multiple angles, including:

- the ways that historical records and official narratives present transportation systems;
- the divergent ways that research participants remember (bi)cycle mobilities across changing cityscapes;
- the diverse perspectives and angles through which cycling practices can be viewed during fieldwork encounters; and,
- the speculative ways that cycling and the built environment are reimagined and remade.

Rather than attempting to resolve the tensions between these overlapping lenses and temporalities, this research stays open to what Penney Harvey and colleagues identify as “an unsettled space that allows us to remain attentive to a multiplicity that does not settle, and to uncertainties that are never simply resolved” (2019: 2). Thinking with complexity thus contributes to cycling historiography, urban policy, and socio-cultural theory by shifting how mobile subjects, infrastructure, citymaking, sustainability and justice are understood and reimagined.

Chapter two begins by offering steps towards a social history of cycling in post-revolutionary Aguascalientes.²⁰ Drawing from archival sources and interviews with cyclists, I explore the changing role and symbolism of the (bi)cycle in everyday life and in development discourse. By tracing heterogenous cycling practices and meanings, this chapter attests to a variety of ongoing movements, struggles, discourses and counter-discourses, with the (bi)cycle

²⁰A small part of this chapter was published in a short photo essay: Soliz A (2019) Exploring cycling practices in Central Mexico through a local repair shop. *Transfers* 9(3): 109-115. Given that this chapter was made possible thanks to dozens of local families, popular historians and community groups who were extremely generous in sharing their stories of cycling and grassroots archives with me, I consider it to be a piece of local patrimony and a collect work. Thus, this chapter will ideally be further extended and co-published as a book in Spanish with colleagues in Aguascalientes.

expressing a diversity of sentiments towards the rhythms of urban life. Rather than simply speaking to the politics of cycling, this chapter suggests that a nuanced analysis of cycling histories offers important insights into the wider tensions surrounding urban-development processes, governance regimes and contested landscapes in what is now known as post-revolutionary Mexico.

Chapter three explores these themes further by investigating the current implementation of cycling infrastructure in a context of rapid-freeway expansion, neoliberal restructuring and public-transit divestment.²¹ Through participant observation in transportation spaces and interviews with a variety of cyclists, this chapter pays close attention to the fragmented implementation of cycling lanes in certain areas of the city, while drawing attention to the experiences of low-income and peri-urban cyclists who operate at the margins of broader motor-vehicle infrastructure. In contexts of widespread spatial exclusions, I suggest that a focus on diverse cycling practices is needed to account for both the planned and inadvertent strategies that cyclists assemble to bypass transportation barriers.

Chapter four brings this research into discussion with the literature on gender and cycling.²² Drawing from decolonial and intersectional feminist theory, this chapter complicates certain generalizations about the relationship between women and cycling. Through a

²¹ This chapter was published here: Soliz A (2021b) Divergent infrastructure: Uncovering alternative pathways in urban velomobilities. *Journal of Transport Geography* 90: 102926. I have made some minor adjustments to the version that now appears in this dissertation.

²²This chapter was published here: Soliz A (2021c) Gender and cycling: Reconsidering the links through a reconstructive approach to Mexican history. *Mobilities* 16(doi.org 10.1080/17450101.2021.1939109). I have made some minor adjustments to the version that now appears in this dissertation.

reconstructive approach to Mexican history, it examines cycling's changing roles and meanings as well as the ways that women confront gender stereotypes on and off of the (bi)cycle. This chapter aims to resituate diverse women's experiences in local cycling histories and current planning agendas. It posits the need for greater attention to the complex social processes that enable and restrict (bi)cycle travel, engendering multiple and at times conflicting meanings.

Chapter five further contributes to the transportation and mobility justice literature by focusing on the work of social movements in confronting a variety of challenges in the provision of active-transportation services.²³ First, it explores how social movements express and negotiate transportation-justice concerns to government and planning authorities. Next, I build on the concept of insurgent citizenship (Holston, 2008) to highlight the processes through which residents contest ongoing injustices and formulate alternatives for building inclusive cities. From the creation of makeshift cycling lanes in underserved urban areas, to the search for socially just alternatives to policing, social movements are forging new pathways to re-envision sustainable transportation systems. These insurgent forms of citymaking—understood here as insurgent mobilities—underscore the creative role of citizens in producing the city as well as the enormous amount of care work involved in these processes. As the final component of this research, chapter five also synthesizes the contributions of this dissertation.

The omission of a formal concluding chapter to this dissertation is not an oversight, but rather stems from two related considerations. First, although much of the material from these

²³This chapter was published here: Soliz A (2021a) Creating sustainable cities through cycling infrastructure? Learning from insurgent mobilities. *Sustainability* 13(8680): doi.org/10.3390/su13168680. I have made some minor adjustments to the version that now appears in this dissertation.

chapters has been published in various journal articles (as explained in footnotes 20-23), each chapter has been designed to speak in conversation with one another, while offering thoughts on areas for future research and policy mobilization. Secondly, this dissertation draws from calls for more open-ended forms of historical writing and social research praxis (Haraway, 2004). Specifically, it builds on Lucy Schuman's proposal to see socio-cultural research as a process of building working knowledges together (2012), a practice though which partially shared understandings can be created without relying on one overarching explanation or universalising conclusion. My dissertation attends to this call by pulling the threads of contrasting cycling histories and exploring the unique lived experiences and perspectives of cyclists in areas that have been overlooked in the literature and policy discussions.

Chapter 2:

Pueblos bicicleteros: Towards a social history of cycling in post-revolutionary Mexico

2.1 Introduction

In a time-honored corner of Aguascalientes' Primavera neighborhood, Don Salvador Hermosillo can be found sitting on a small stool in his workshop, hands covered in grease, carefully reassembling a bicycle from his collection of refurbished parts. With over six decades of experience repairing bicycles, his workshop is a landmark for cyclists from across the city.



Figure 1. Don Salvador Hermosillo in the repair shop. Photo by author

I met Don Salvador through my fieldwork on cycling histories. He dusts off his photographs and tells me about growing up in Aguascalientes in the 1940s and 1950s when “road traffic was almost all bicycle traffic.” Don Salvador explains that cycling has long represented an important aspect of the city life: “Bicycles have offered working people an important way of getting around, and that’s why we were known as a *pueblo bicicletero* (bicycle town).”

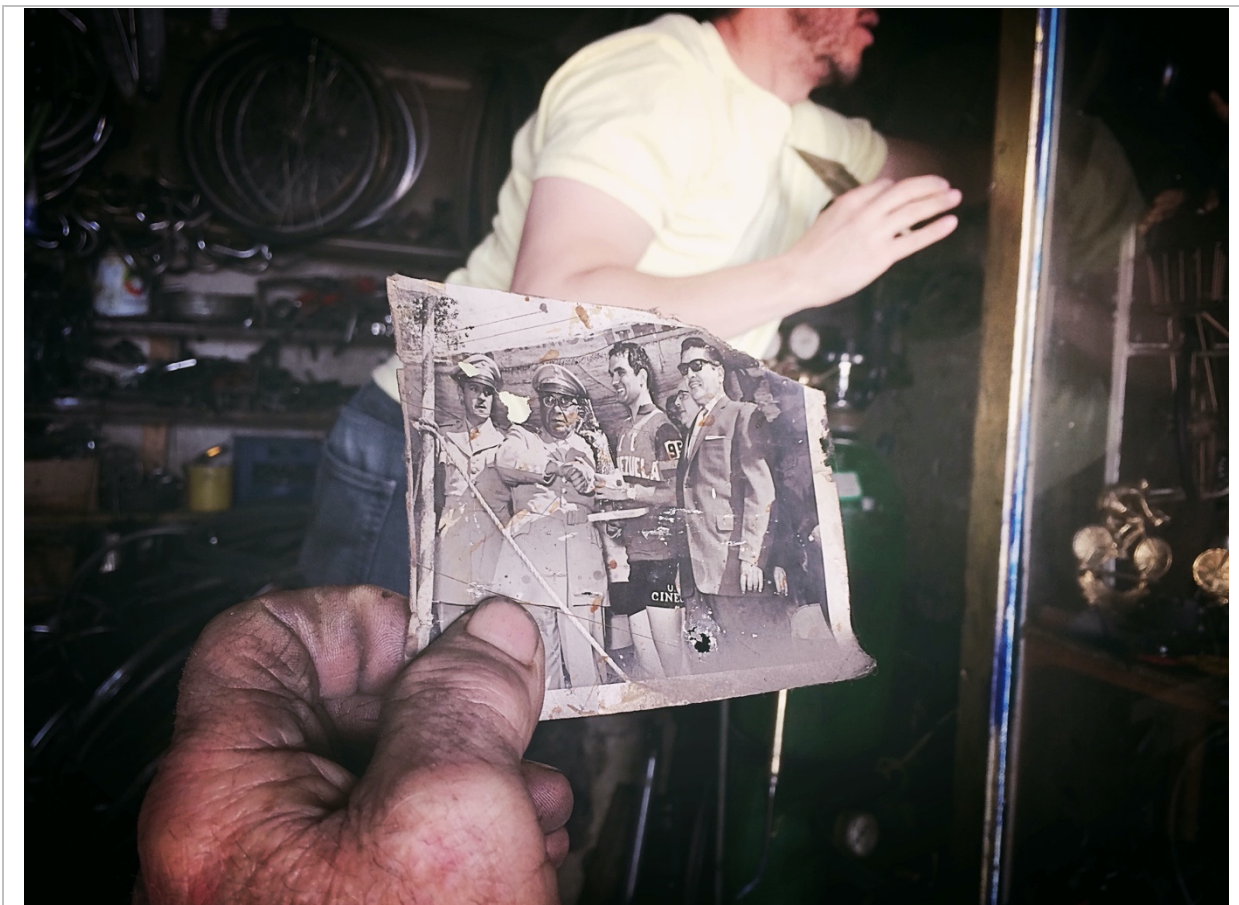


Figure 2: Don Salvador’s photos. Photo by author

For many residents of Aguascalientes, cycling has long represented an important aspect of everyday life. Yet, starting around the 1970s, resident began to report a growing hostility

towards cyclists due to a massive increase in car traffic and a change in political priorities: “Politicians wanted to modernize the city,” don Salvador recounts, “and they didn’t want Aguascalientes to be called a bicycle town any longer.” Policy makers in Aguascalientes were of course not alone in their disdain for cycling, as the term *pueblo bicicletero* was proliferated across the country’s news media and popular discourse (particularly from the 1970s to 1990s), carrying a number of loaded connotations. For some, the term *pueblo bicicletero* was used as a synonym for underdevelopment or to describe a place as being outmoded. Yet for many others, being a bicycle town—or a bicycle *people*²⁴—was simply a reality, and even provided a sense of local pride. How can we make sense of these different definitions? I suggest that this question needs to be understood both historically and contextually, with attention to the social dynamics and discourses at work in the development of urban landscapes.

Drawing from critical theories of urban change, this chapter focuses on the ways that transportation politics and practices are imbricated in historical power differentials and shifting forms of resistance. From this perspective, cycling is more than a simple transportation or recreational choice, but is rather a practice with “important economic, political, social, and cultural dimensions that endow certain kinds of meanings on the object and its user...” (Vivanco, 2013a: 9). This approach enables an analysis of how developmentalist discourse filters through to the everyday through dominant networks of power as well as an identification of counter discourses through more localised narratives of mobile practices (Doughty and Murray, 2016). While the term *discourse* is often understood as a “system of language” (Tonkiss, 1998), it can also be understood more broadly as constellations of knowledge, practices and materialities that

²⁴The expression can be translated both ways, since the word *pueblo* in Spanish refers to both a town and a local people.

shape and reshape society²⁵ (Foucault, 1975; Foucault, 1976). Feminist scholars have helped to broaden discourse analysis²⁶ by bringing greater attention to the relationship between discursive practices, embodied experience and socio-material phenomena (Barad, 2003; Doughty and Murray, 2016). This implies engaging with a diversity of experiences, memories, objects and webs of relationships to cycling, linking to what Donna Haraway refers to as a project of building open and ongoing stories rather than authoritative histories that end (2004: 1).

Decolonial theorists further stress the need to critically examine discourses of “modernity”²⁷ (Quijano, 1999), and “nationality”²⁸ (Quijano, 2007). Thus, while this chapter engages with national transportation texts and the idea of a postrevolutionary Mexico, it remains aware of the contradictions inherent to the universalisms and borders of a monolithic ‘nation

²⁵As Doughty and Murry (2016) explain, Foucault’s use of the term *dispositif* might translate better as ‘apparatus’ (rather than as discourse in a primarily linguist sense), referring to “a totality of discourses and practices, taking into account the workings of power and materialities” (304).

²⁶Some scholars have argued that Foucault’s position represents a type of poststructuralist antihumanism, in which discourse is constantly analyzed in an abstract way. However, others have helped to move beyond Foucault’s omission of subjectivity, analyzing the human body as “a point of overlapping between the physical, the symbolic, and the sociological” (Braidotti 1994: 4).

²⁷Specifically, when Anibal Quijano conceptualized *coloniality*, he suggested delinking from mainstream epistemology, with *decoloniality* becoming both an epistemic and political project (2000).

²⁸Quijano explains how “specific colonial structure of power produced the specific social discriminations which later were codified as ‘racial’, ‘ethnic’, ‘anthropological’ or ‘national’, according to the times, agents, and populations involved. These intersubjective constructions, product of Eurocentered colonial domination were even assumed to be ‘objective’, ‘scientific’, categories, then of a historical significance. That is, as natural phenomena, not referring to the history of power. This power structure was, and still is, the framework within which operate the other social relations of classes or estates” (2007: 168).

state^{29,30} (just as it remains critical of the idea of an essentialist global history of the bicycle). Yunana Ahmed identifies the coloniality of power as a void in critical discourse analyses, including how “the social and political structures which were founded during the era of colonization have continued” (2021: 140). As a largely ‘post-colonial’ artefact, the bicycle’s entanglement in these colonial power structures is inevitably complex (Lugo, 2018). Yet decolonial thinking can provide a window into how colonial power structures have, and continue to, produce issues of inequality and exclusion (Escobar, 2007; Ahmed, 2021). In her argument for decolonizing cycling research, Paola Castañeda suggests more than diversifying research sites, but also interrogating “disciplinary practices and epistemological assumptions through the practice of situating knowledge” (2021b). These perspectives help to intervene in developmentalist discourse by surfacing alternative ways of thinking, while bringing an appreciation of particular mobility practices and relations that move us beyond the authoritative lines of hegemonic history.

Building on these approaches, this chapter offers a partial³¹ history of cycling across the vast expanses of land now referred to as postrevolutionary Mexico. The bicycle’s introduction in

²⁹Phillip Abrams suggests withdrawing from an analysis of “the state” as a concrete material object while still engaging critically with ideas of hegemonic statehood: “The state is not the reality which stands behind the mask of political practice. It is itself the mask...” Abrams P (1988) Notes on the Difficulty of Studying the State (1977). *Journal of historical sociology* 1(1): 58-89.

³⁰James Scott elaborates: “although one may occasionally be able to speak of a hegemonic project of state elites, one must always speak of popular culture and resistance to such projects in the plural. The strength and resilience of popular resistance to any hegemonic project lies precisely in its plurality” (1994: xi).

³¹I use the term partial, drawing from theorizing on situated knowledge, recognizing that histories are always incomplete and processual, being produced through specific social, cultural, technical and environmental conditions (Haraway, 2013).

these contexts is meaningful, corresponding with the build-up to the Mexican Revolution of 1910-1920, known as one of the greatest social upheavals of the twentieth century. While cycling is rarely mentioned in transportation histories of revolutionary and post-revolutionary Mexico, cycling has played—and continues to play—a significant role, not only as a means of everyday travel, but also as a powerful socio-cultural symbol with shifting meanings. Specifically, this chapter asks:

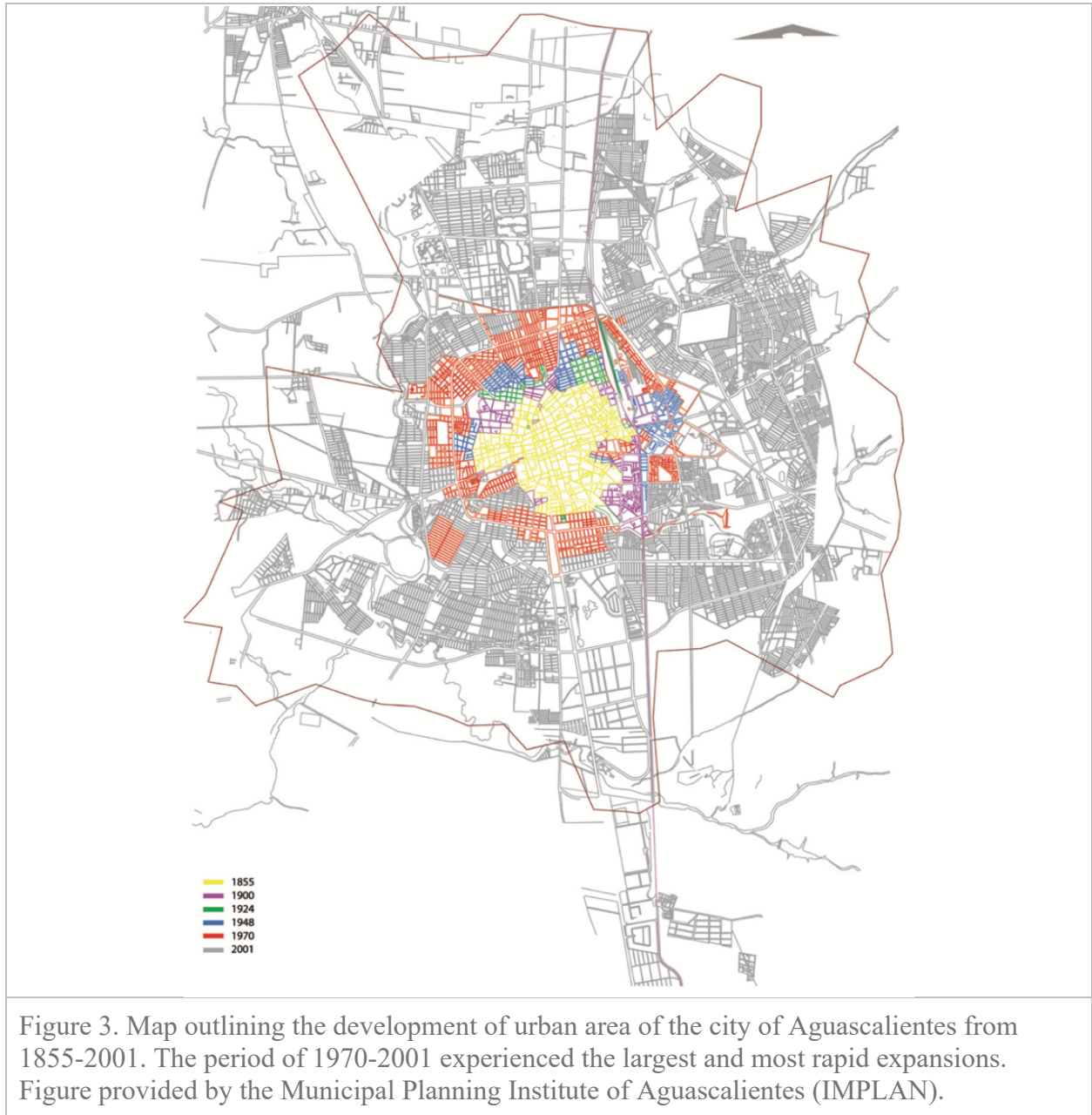
- *What did cycling technologies symbolize in pre-revolutionary society and how did this symbolism change over time?*
- *What roles have bicycles and tricycles played in both mainstream politics and in everyday life?*
- *What can this analysis of cycling trajectories tell us about the workings of power across urbanizing landscapes?*

To address these questions, this research pays close attention to the political dimensions of cycling, but also the more mundane and affective aspects of everyday travel. Social historians such as M. William Steele remind us that accessing archives on these types of experiences is never easy, given that the “daring few bicycle converts tend to dominate conventional historical accounts, precisely because in fact they dominated the production and consumption of the written word” (2010: 182). Social historians interested in everyday life are often forced to piece together scraps of information and to listen to the silences in official narratives (ibid.).

While providing analysis from across Mexico, I focus specifically on the case of Aguascalientes, given its significance as an intermediate city with strong community ties to cycling. Sitting at the center of the national territory, Aguascalientes is a city of many crossovers,

serving as a principal transportation route between the North and South and as a meeting place for what is often described as discretely ‘urban’ and ‘rural.’ In a significant area of Chicimeca resistance to the colonial “silver route” between Guanajuato and Zacatecas, the city was initially established in the late 16th century as a military base to fortify colonial resource-extraction and distribution channels (Salmeron Castro, 1996). At the beginning of the 20th century, it was the seed of leading critical and artistic expressions, but the city has also been a notorious corner of moral conservatism, as an extension of the bajío region (Martínez Delgado, 2014). The city has experienced rapid industrial and urban growth³² over the past century (as shown in figure 3), especially from the 1970s onwards, with the urban area increasing from 1,489 to more than 12,000 hectares in 2010 (ibid). While the city is acclaimed for its industrial development and growth in manufacturing, commerce and services, agricultural and livestock production remained predominant until recent decades (Salmeron Castro, 1996). The city is perhaps most well-known for its strategic role in the national train network, as well as for the prestige and dimensions of its train workshops—the largest in the country (ibid.), which served a foundational role in the city’s economy until their closure 1999. Over the past decades, the city has gained recognition for its work in automobile manufacturing as well as the expansion of its motorways. Less recognized in these accounts are the everyday mobility histories of the city’s residents, the majority of whom have not been car owners (Sánchez Rodríguez, 2019). What can we learn from rereading the archives while learning from the stories of local residents and their affective entanglements with cycling?

³² Gerardo Martínez Delgado explains, however, that over time the city’s demographic position decreased in relation to other Mexican cities, with Aguascalientes occupying the 9th place in terms of population size in 1910, and 18th place by the 1990s (2014).



Archival research for this study included the analysis of hundreds of documents ranging from newspaper records and transportation policies, crime registries and secondary literature. Information on cycling within the official archives was scarce, despite the vivid accounts from local residents of the importance of cycling in everyday life. These contradictions provided strong grounds to read between the lines of official documents and to complement this research

with interview data. Through a cultural approach to archival research on cycling, Georgine Clarsen reminds us to “carefully read against the grain” and to “allow room for alternative interpretations to emerge” (2015: 709). In an effort to provide an inclusive account of cycling history in the region, I also conducted extended interviews with cyclists from several generations. While inevitably intermittent and patchy, these interviews provided insights into the important roles that bicycles and tricycles played for local families and workplaces, as recounted by don Salvador and other ‘veteran’ cyclists.

Photographic archives also helped to supplement this research and bring cycling practices from the background to the forefront of analysis. I see visual archives as offering valuable spaces for expanding dialogue on local mobilities, while remaining aware of the limitations of photographic testimony. As Peter Burke elucidates: “Two of the principal limitations of photographs have been described as ‘fragmentation’ – in other words the necessary selection of a fragment of a larger whole, torn from its context – and ‘congealing’, in other words turning movement into a ‘still’” (Burke, 2010: 436). These limitations are exemplified in this study given that the names and histories of many of the cyclists in the visual archives were not available, necessitating thinking with care about photographs as a complement to related research data. My goal is thus to help raise new questions and speculative interpretations on cycling histories, eliciting what Walter Benjamin calls that “tiny spark of contingency” (Benjamin, 2005: 510)– opportunities to find divergent affectivities or glimpses of the estranged.

These methods build on work on grassroots archives to better integrate sources created by resident who have been overlooked in mainstream accounts, including family albums, popular media, oral histories, and other forms of ‘counter-mapping’ to “reveal patterns that cause us to ask questions and rethink history” (Carpio, 2020: 57). Following Deborah Thomas, this

dissertation integrates mixed media as form of affective ethnographic engagement, encouraging wider “conversations about ethnography as process, relationship, and representation” (2019: xv). Drawing from critical anthropological work on cycling ontologies³³ (Vivanco, 2013a; Vivanco, 2013b), I also suggest that the bicycles themselves can come to serve as archives, holding living memories of cycling histories and their movement across contested landscapes.³⁴

This chapter begins by tracing the emergence of elite cycling culture during the porfirian dictatorship and examining how the (bi)cycle was transformed by the immense social mobilizations and militarization that followed. It then turns to an analysis of cycling politics and practices in the aftermath of Revolution, following the (bi)cycle’s changing meanings and movements through processes of reconstruction and economic nationalism. Following a “golden era of cycling,” I analyze the emergence of conflicting discourses and practices of cycling as well as their entanglement with changing political-economic processes. Finally, this chapter concludes by contemplating the imprints left by these cycling histories on urban landscapes and

³³Luis Vivanco explains the importance of “the idea that bicycles are ‘things’ in the sense that as machines they are actual material objects—not just ciphers onto which specific groups of people project their own desires and uses—and the very materiality of the machine contributes to the experience and perceptions of its users. Further, as material objects, bicycles are not static or unidimensional things, factors that make those experiences and perceptions all the more interesting” (2013: xx).

³⁴As I have mentioned above, part of the difficulty of studying cycling trajectories in this context is that they have been eclipsed by motor-vehicle histories that have deemed of greater significance in mainstream development paradigms. While the dearth of documented cycling history can lead to the impression that it has been insignificant, oral-history interviews provide valuable sources of alternative information for navigating and reinterpreting official archival data. The integration of grassroots archives, including the bicycles themselves, provides additional layers to these understandings, including the prominence of cycling and other forms of travel across generations of riders, the significance of networks of (bi)cycle repair and reappropriation, topographical changes in travel routes as well as other historical traces which are scattered beyond dominant narratives of development. The ability to move back and forth between (bi)cycle materials, activist and archival engagements throughout the fieldwork process allowed for a retracing of these cycling histories.

current modes of movement. I posit that these traces offer insights into the socio-political tensions and contested discourse surrounding urban-development processes and everyday mobilities in what is now known as post-revolutionary Mexico.

2.2 Authoritarian turns (1870s-1910)



Figure 4. Wooden Bicycle Wheel. Photo by author

Don Eliseo (a bicycle collector in Aguascalientes and a regular of Don Salvador’s repair shop), uncovers the oldest archive in his trove of cycling history: a wooden wheel bound in rusted metal casing, which he guesses dates back to the mid-nineteenth century (figure 4). Although he can’t remember exactly how it ended up in his collection in Aguascalientes, he affirms that the wheel was surely brought to Mexico from Europe, and it most certainly “*belonged to someone very rich.*”

As confirmed by a small number of historians, (bi)cycles were first introduced to a wealthy Mexican minority in 1869 as a part of the “Parisian mania,” when a French, three-wheeled *velocipede* arrived in Mexico City (Beezley, 2018; De la Torre Rendón, 1998). The following decades saw the transformation of velocipede construction, with the general adoption of lighter, all-metal wheels in 1871 and later with the invention of the modern “safety” bicycle, which provided equalized wheels and air-filled tires (Herlihy, 2004). With the commencement of a long dictatorship in Mexico led by Porfirio Díaz from 1876-1911 (a period referred to as the *porfiriato*), these bicycles gained increasing popularity among wealthy Mexican, American and European inhabitants, particularly in Mexico City (Beezley, 2018; Gaitán, 2015).

Historians describe how elite residents sought to remake Mexico City to demonstrate the country’s modernization (De la Torre Rendón, 1998; Zamora Perusquía, 2011; Fuentes, 1992). Emphasizing the porfirian vision of “order and progress,” the upper class hailed the arrival of department stores, railway lines, and the six thousand safety bicycles that came into circulation across Mexico City during this timeframe (Beezley et al., 2010). Newspaper reporters speculated that these “safeties” would soon become the major means of transportation across the country, with retailers and cycling clubs springing up in Mexico City, Guadalajara, Puebla and Monterrey (Beezley, 2018).

Arguing that the modern bicycle would reform society, cyclists advocated for better roads, traffic regulations, as well as a bicycling license-plate policy that would help recuperate stolen bicycles and punish thieves (*ibid.*). Silvestre Terrazas authored Mexico’s first book on cycling in 1896, emphasizing issues of health, “hygiene” and the development of “moral

conditions” through cycling.³⁵ Even when Mexico City’s municipal government banned bicycles from the historic centre, bicycle clubs appealed directly to the Díaz regime, which overruled the ban. Historian William Beezley considers how the enthusiasm of Mexico’s elite for cycling constituted a type of *Porfirian persuasion*, involving a desire to adopt European and American activities as a form of class differentiation: “for the modern Mexican mounting his wheel and weaving in and out of the crowds during the afternoon’s paseo on the Reforma demonstrated his wealth, position, and above all his progressive character” (2018: 52).³⁶

While this period was marked by an increase in bicycle ridership, it was also accompanied by widespread assaults on human rights. The porfiriato is considered a classic example of a neo-colonial regime (Schell, 1993), one that transformed Mexico into one of the safest countries in the world for foreign investments and the wealthy; but among the least safe for the rural poor and Indigenous people (Meade, 2016). Notwithstanding a tenfold increase in railway networks, national telegraph lines and the construction of steam-powered factories across the country’s industrial centres, the porfirian economic-development model primarily benefited close supporters and foreign investors (Fernández, 2004). State governors were generally appointed by the Díaz regime and granted free reign, such as the case of governor Alejandro Vázquez del Mercado in Aguascalientes (Salmeron Castro, 1996).

³⁵Salvador Morlet’s famous song *Polka Mexicano*, also reflected this bicycling rush:
De todas las modas que han llegado de París y Nueva York,
hay una sin igual, que llama la atención.
Son bicicletas que transitan de Plateros a Colón,
y por ellas he olvidado mi caballo y mi albardón. (Morlet, 1896)

³⁶Also see: http://mediateca.inah.gob.mx/islandora_74/islandora/object/fotografia%3A450950

The porfiriato put a strong emphasis on transforming popular culture and public celebrations, which the dictatorship regarded as “primitive,” by instituting military parades that attempted to enforce the regime’s authority, often featuring bicycles³⁷ (Beezley, 1994). Although the use of automobiles increased among the most wealthy urban inhabitants (with two thousand cars circulating in Mexico City by 1910³⁸), bicycling provided continued opportunities for upper-class inhabitants to publicly perform their class status (Beezley, 2018).

The Díaz regime relied considerably on a group of technocratic advisors exposing positivist thinking based on the philosophies of Auguste Comte, Herbert Spencer and Charles Darwin (Stehn, 2012).³⁹ Positivism became popular among political leaders in Mexico during the porfiriato (and across Latin America), as it provided a seemingly achievable technical path to modernization based on European and North American models favoring a “strong state,” agricultural efficiency as well as private ownership of land and resources (Meade, 2016). This modernization discourse translated into agrarian policies that increasingly consolidated ‘estates’ through a series of laws that declared vast expanses of land as “vacant” and allowed select individuals to win control, leading to widespread land dispossessions (ibid).

³⁷For example, see:

http://mediateca.inah.gob.mx/islandora_74/islandora/object/fotografia%3A440806

³⁸As Freeman (2013: 217) explains, “with prices ranging from 2,000 to 20,000 pesos a piece, motoring remained firmly confined to the wealthiest members of society.”

³⁹According to Leopoldo Zea, positivism began gaining traction in Mexico in 1867, explaining that “Hispanic-American countries interpreted positivism in various ways” (1943). Alexander Stehn notes that Zea’s analysis “interprets the various Latin American positivisms as failed practico-theoretical attempts to reconcile much older problems stemming largely from the history of colonialism” (2012: 50).

As modernized transport and industries attracted an influx in foreign capital (especially from the U.S. and UK), these processes also resulted in widespread food insecurity and landlessness, particularly for the country's majority rural population⁴⁰ (Meyer, 1986). Even as the economy improved at the macro level through the construction of factories and changes in agriculture, the shift to exportable goods (such as coffee, tobacco, henequen and sugar) replaced the production of maize other essential crops that many people survived on (Meade 2016). Octavio Paz explains how Mexican positivism differed from European variants, producing a type of physis spilt: "those wealthy men who swore by Comte and Spencer were not enlightened bourgeoisie and democrats but rather the ideologues of a land-owning oligarchy" (1998: 324, my translation). Philosopher Leopoldo Zea maintained that the regime used positivism as an ideology of progress in order to maintain colonial forms of oppression while also creating new ones (Zea, 1968). Díaz and his *científicos* increasingly developed policies based on theories of social Darwinism, arguing that wealth was a form of social superiority that commanded moral supremacy (Stehn, 2012).⁴¹ The Díaz regime used *rurales*—an armed, mounted police militia—to seize lands and to suppress rural rebellions. Indigenous communities and campesinos were forced to make futile attempts to win back their land through courts and petitions. By 1900, over ninety percent of communal lands were appropriated, with an estimated 9.5 million people being forced off their lands and into the service of hacendados (Meade, 2016).

⁴⁰ In 1900, over 77 percent of the population lived in rural areas (Meade, 2016).

⁴¹ Stehn elaborates, "positivism should not be conflated with Porfirianism... Of course, this is not to deny that the *científicos* called themselves "positivists" and used portions of positivism to legitimate their positions" (55).

While post-colonial patterns of land-grabbing and enclosure are by no means limited to the Mexican context, porfirian promises of order and progress were mobilized and contested in very particular ways. Originally a symbol of modernity and bourgeois leisure, the bicycle played a shifting role in this increasingly hostile and repressive context, including the expansion of bicycle policing (Zapata Bello, 2019). Novelist Carlos Fuentes (1992) explains how popular artwork mobilized the contradictions of the time through the image of the bicycle, exhibiting how “these ‘modern’ vehicles were not capable of shedding the weight of the past” (317). In the 1895 engraving *Corrido Las Bicicletas*,⁴² renowned printmaker Jose Guadalupe Posada (born in Aguascalientes) used the figure of elite cyclists to satirize the bicycle craze, using it as a metaphor for the ways that wealthy landholders dispossessed communities and trampled on human rights.

Posada’s 1898 engraving of *Calavera las bicicletas* (figure 5) further displays bourgeois cyclists as skeletons, providing a strong critique of progress narratives through a reminder of inevitable mortality. Anthropologist Claudio Lomnitz explains how the forward movement of technology and history, represented by Posada (and others⁴³) through the bicycle, is revealed as a vehicle of death, “transporting people who are in every way like their ancestors except in their ridiculous insistence on racing” (2005: 381). Fuentes elaborates that these images “merged the contradictions of the time through the figure of Death riding a bicycle, meshing the old and the new through the inevitability of mortality” (1992: 317, my translation). These images exhibit the

⁴²The image is available here:

<https://www.metmuseum.org/art/collection/search/735265?searchField=ArtistCulture&sortBy=Relevance&ft=Jos%c3%a9+Guadalupe+Posada&offset=0&rpp=20&pos=16>. Accession Number: 30.82.112.

⁴³For additional examples, see Beezley 2018.

ways that the goals of equality were rejected by the powerful: “Posada had used the skeleton as a sign of truth, and of a very particular truth: the universality of death proved the fundamental equality of [all humans]” (Lomnitz, 2005: 418).

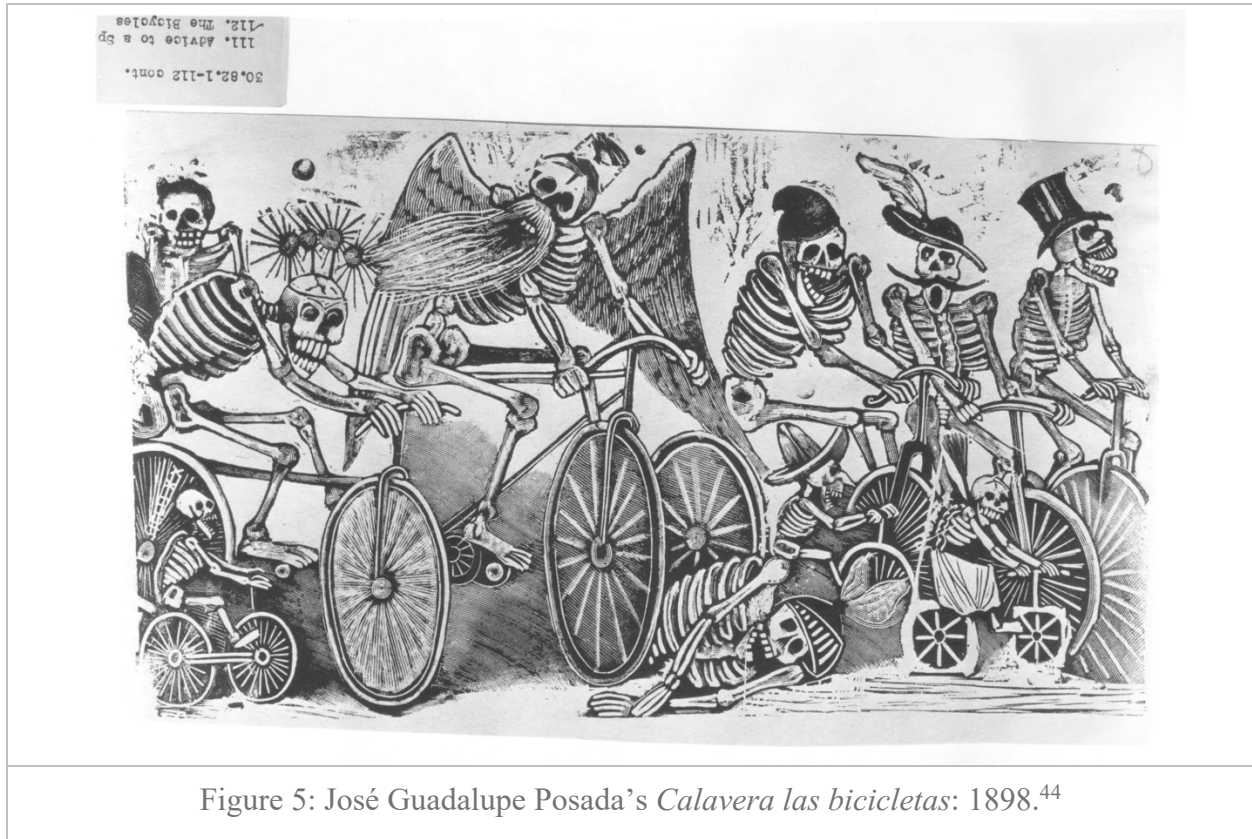


Figure 5: José Guadalupe Posada’s *Calavera las bicicletas*: 1898.⁴⁴

The early 1900s marked growing opposition to the regime’s development strategy based on dictatorial control, violent land dispossessions and foreign neocolonization. Along with a global contraction and market downturn in the U.S. (Mexico’s main trade partner), famine and

⁴⁴As part of The Met’s Open Access program, this image is “available for unrestricted commercial and noncommercial use without permission or fee.” Additional information is available here: [https://www.metmuseum.org/art/collection/search/372097?searchField=ArtistCulture&sortBy=Relevance&ft=Jos%
c3%a9+Guadalupe+Posada&offset=0&rpp=20&pos=7](https://www.metmuseum.org/art/collection/search/372097?searchField=ArtistCulture&sortBy=Relevance&ft=Jos%c3%a9+Guadalupe+Posada&offset=0&rpp=20&pos=7). Accession Number: 30.82.62.

economic conditions worsened, leading to conflicts in which opposing segments of the elite turned on each other (Villegas, 2019). The location of Aguascalientes at a key crossroad in the country's communications and train networks intensified pressure for change, with popular movements emerging in different parts of the state (particularly in mining areas), and with many joining rebel forces to the North of the country (Salmeron Castro, 1996).

The rise of a mass movement to topple the dictatorship is shown through the growing revolts against the porfiriato, bringing together broad-based sectors on the population. Bicycles appear in photos of these uprising, circulating both within protests (e.g., figure 6) and as vehicles of policing along their edges.⁴⁵ Some historians assign the official start of the revolution with the presidential candidacy of Francisco I. Madero: a wealthy provincial landowner, industrialist, and banker who galvanized the mounting opposition to the Díaz regime (Villegas, 2019; Beezley et al., 2010).



⁴⁵ Also see: http://mediateca.inah.gob.mx/islandora_74/islandora/object/fotografia%3A421373

Figure 6: “Manifestación del centro democratico antirreeleccionista” 1910. Photo provided by: SECRETARIA DE CULTURA.- INAH.-SINAFO F.N.-MEX (Image reproduction authorized by: Instituto Nacional de Antropología e Historia, México, Fototeca Nacional).⁴⁶

The Mexican revolution of 1910-1920 marked a new era aimed at addressing socio-economic and regional disparities. Framed as a war of national liberation, revolutionary leaders emphasised social justice, equality and the redistribution of resources, including widening access to transportation technologies.

2.3 Reframing the Revolution (1910-1920)



Figure 7. Photo by author

⁴⁶http://mediateca.inah.gob.mx/islandora_74/islandora/object/fotografia%3A12613.

Don Eliseo shows me an early steel frame from Mexico's bicycle history, passed down through the generations (figure 7). According to family history, these bicycles were still largely inaccessible for the average family in Aguascalientes during the Revolution. Although there were several attempts to spur a bicycle-manufacturing industry in Mexico (Beezley, 2018), this task took several decades. In this context, the bicycle remained a luxury import item, with growing working-class appropriations. Don Eliseo picks up the frame, emphasizing its steel construction that has withstood the country's historical transformations. As this cyclist illustrates, the materiality of the bicycle—its iron constitution as well as politics of its manufacture and circulation—was significant to the revolutionary struggles of the time.

By the end of the porfiriato, foreign companies had controlling interests in Mexico's oil and mining industries (including iron-ore,⁴⁷ copper, gold, lead and tin), monopolizing both above-ground processing works and subsoil rights (Meade, 2016). While profits in these industries were high, wages and working conditions were terrible,⁴⁸ and the typical workday was 12–15 hours long.⁴⁹ As demands for national control over resources and political participation

⁴⁷Miller explains: "Although there were iron foundries in Mexico before the Díaz era, the first integrated steel mill in any part of Latin America, *Fundidora de Fierro y Acero*, was established in Monterrey in 1900, and it began producing three years later. By 1910 the company's annual production was fifty-five thousand tons;" However, this "industrial progress scarcely touched the majority of people" (1989: 271).

⁴⁸"Men were paid 75 cents, women and children as little as 11 cents, for a day's labor. Many were never paid in cash, instead receiving vouchers that could only be redeemed at the company store for food or housing in the company towns that encircled plants and mines."

⁴⁹Kedall Brown's analysis of Mexico's mining history and its relationship to revolutionary struggles offers a somewhat different take, noting that mine labour in Northern Mexico experienced some economic gains in comparison to other sectors: "their wages tended to be regular and reliable. All this undercut revolutionary sentiment among the miners when the Mexican Revolution erupted... During the Revolution, peasant violence sometimes disrupted mining, angering the miners and hindering a revolutionary linkage of the peasantry and the mining proletariat. Unlike miners in Chile, Bolivia, and Peru, Mexican miners did not call for

rose, workers from a broad array of sectors joined dissident elites in a prolonged uprising beginning in the Spring of 1910.

The military phase of the revolution (1910-1920) involved battles in almost every major city across the country. Estimates of human losses during this timeframe vary between 1 million (Miller, 1989) and 3,500,000 (of a total population of 15 million), including victims of the armed conflict, hunger, epidemics and migration (Escalante Gonzalbo et al., 2010). Although the Revolution began as mainly a political movement to overthrow the dictatorship,⁵⁰ it became an increasingly complex social upheaval as the violence proliferated, as citizens expressed serious grievances, and as different revolutionary leaders championed specific reforms. Some revolutionaries called for protective labour laws while others focused on land redistribution, public education, the limitation of church power, the nationalization of utilities or restrictions on foreign businesses, among other demands (Lomnitz, 2005).

As armed revolts continued to break out, Díaz was forced out of office in May 1911 through the *Treaty of Ciudad Juárez*, leading to Madero's democratic victory later that year. The ongoing sequence of armed conflicts saw an evolution in transportation and military technologies, including cavalry charges and combative airplanes (McLynn, 2001) as well as a

economic nationalism. The Constitutionals, who emerged triumphant from the Revolution, aimed to exert more control over foreign-owned mines and garner more tax revenues from them. In many cases the miners disliked, even hated, foreign managers and technicians, but they did not protest against foreign investment or ownership" (2012: 136). However, pro-revolutionary movements in other mining areas, such as the state of Aguascalientes, could complicate this understanding.

⁵⁰Madero, for example, was relatively uncritical of the porfirian political economy. Beezley explains that in *La Sucesión presidencial* (1910), Madero praised transportation and economic developments obtained during the Díaz regime, explaining the country's hardship in terms of the dictatorship's failure to develop a more peaceful means of presidential transition (2010).

significant redistribution of automobiles (Freeman and Soto, 2018). Images of military parades during this timeframe (e.g., figure 8)⁵¹ suggest that the bicycle remained a means of brandishing political right.



Figure 8: “Militares en bicicletas participan en los festejos del 16 de septiembre, estereoscópica,” 1911. Photo provided by: SECRETARIA DE CULTURA.- INAH.-SINAFO F.N.-MEX (Image reproduction authorized by: Instituto Nacional de Antropología e Historia, México, Fototeca Nacional) ⁵²

In major cities, such as Guadalajara and Mexico City, the early years of the revolution were fairly calm (Escalante Gonzalbo et al, 2010). Numerous rural areas and intermediate cities, however, experienced ongoing agitations (ibid). In Aguascalientes, revolutionary leader Alberto Fuentes (with support from train workers, miners and agricultural workers) won as governor, but faced constant opposition from hacendados, the church and other members of the elite who still controlled the local legislature (Salmeron Castro, 1996). The coup against Madero’s presidency, led by Victoriano Huerta, allowed the traditional elite to regain control of Aguascalientes and

⁵¹Also see: “Militares con bicicletas formando una valla”:

http://mediateca.inah.gob.mx/islandora_74/islandora/object/fotografia%3A58656

⁵²http://mediateca.inah.gob.mx/islandora_74/islandora/object/fotografia%3A489432.

neighbouring states (ibid), a move that fueled ongoing conflicts demanding land and labour reform.

Known as *la Decena Trágica* (“ten tragic days”), the presidential coup took place in February 1913. Although the conflict is often referred to as a primarily a civil war, foreign powers which had economic and strategic interests in Mexico, including the governments of the U.S. and the U.K., figured prominently in these power struggles, including strong support from the U.S. ambassador (Henry Lane Wilson) for Huerta’s coup (Blaisdell, 1962).

Survivors of the subsequent phase of the revolution remember the anguish and insecurity that surrounded daily life. For many, simply leaving the house meant risking one’s life (Escalante et al. 2010). In Aguascalientes, hundreds of train workers faced layoffs, in addition to huge employment losses for miners and agricultural workers (Salmeron Castro, 1996). The destruction of buildings⁵³ and entire towns was frequent, forcing many inhabitants to abandon their houses and belongings to go into hiding or join in the conflict. One oral-history account describes feeling like they were living in a thicket of thorns to avoid being discovered (Escalante Gonzalbo et al, 2010).

Many wealthy landowners sold their properties, just as many estates were appropriated by revolutionary forces, which (it would appear) brought a greater number of bicycles into

⁵³ For example, see: “Edificio en la esquina de la 5a. calle de Balderas, después de las descargas de artillería,” http://mediateca.inah.gob.mx/islandora_74/islandora/object/fotografia%3A390486 (D.R. Instituto Nacional de Antropología e Historia, México, Fototeca Nacional); “Reloj de la glorieta Bucareli destruido por las balas,” http://mediateca.inah.gob.mx/islandora_74/islandora/object/fotografia%3A22527 (D.R. Instituto Nacional de Antropología e Historia, México, Fototeca Nacional).

circulation within and beyond the revolutionary movements. Across numerous cities, the growth and convergence of multiple transportation modes—including bicycles, carriages, horses, trams, automobiles and buses—marked a long and conflictive period of disputes over the traffic and the right to the street (Pino Hidalgo, 2018). Photo archives suggest that bicycles may have been used in revolutionary charges (e.g., figure 9), helping to overthrow Huerta’s regime in July 1914 by a coalition of different regional forces, including those under the command of Pancho Villa, Emiliano Zapata and Venustiano Carranza.



Figure 9: “Venustiano Carranza y Militares, al pasar entre una valla,” 1914. Photo provided by: SECRETARIA DE CULTURA.- INAH.-SINAFO F.N.-MEX (Image reproduction authorized by: Instituto Nacional de Antropología e Historia, México, Fototeca Nacional).⁵⁴

⁵⁴http://mediateca.inah.gob.mx/islandora_74/islandora/object/fotografia%3A420374.

When the different regional forces from across the country met in Aguascalientes in 1914 for the National Revolutionary Convention, they were unable to reach a political agreement, leading again to civil war. While Venustiano Carranza (another wealthy landowner) emerged as the victor in 1915, most areas of the country experienced ongoing instabilities up until the 1920s. Aguascalientes experienced 28 changes to its local government during this timeframe, widespread food shortages and hunger persisted, road disrepairs led to transportation blockages, and the city saw a population decline (Salmeron Castro, 1996).⁵⁵

Carranza had consolidated enough power as acting president to move forward with a constituent congress to draft a new constitution in 1917 based on revolutionary principles. Although *Villistas* and *Zapatistas* were excluded from the Constituent Congress, historians explain that their political challenges influenced many delegates to radicalize the Constitution (Benítez, 2015), leading to the addition of articles on agrarian reform, labour rights, and economic nationalism.

As the Carranza administration began to conceptualize postrevolutionary reconstruction, it did so as urban spaces across the globe were being remade through the use of motor vehicles (Freeman and Soto, 2018). In an attempt to emulate this model, Carranza declared in 1918 that “highways deserve special attention,” advocating for “the social reconstruction of the nation” through “the repair of old roads... and in the building of new ones” (as cited in Bess 2017: 1). Although Carranza’s presidency was informed by the “anti-positivist” philosophies of the time,

⁵⁵Martínez Delgado quantifies this process in Aguascalientes at the State level (dating back to the porfiriato), noting that in 1900 the death rate was higher than the birth (37.9 compared to 22.2 respectively), a process that was not inverted until the 1920s (2014: 486).

there were overlooked philosophical continuities from Mexico's technocratic predecessors (Stehn, 2012). Didier Jaén elaborates:

'Order and progress' the motto of Positivism, did not cease to be the motto of Mexican society after the Revolution. What the Revolution did was to change the basis of that order and to widen the field of social progress... Order and progress were not ends in themselves but the basis for an ideal future development. (1997: xv)

The expansion of transportation networks was key to this ordered vision of national reconstruction and would largely inform the modernization strategies in the decades to come (Bess, 2016).

Álvaro Obregón was elected as president in October 1920—the first in a succession of revolutionary generals (including Plutarco Elías Calles, Abelardo Rodríguez, Lázaro Cárdenas, and Manuel Ávila Camacho) to hold the presidency until 1946. Although these leaders sought to differentiate themselves from the Díaz regime, they shared a strong belief in the potential of large-scale infrastructure projects to stimulate economic development across the country (Bess, 2016). Several historians have analyzed how this shared vision created opportunities for technocrats trained under the porfiriato to join forces with post-revolutionary leaders (Knight, 1985; Gauss, 2010). Historian Michael Bess explains how transportation infrastructure in particular “represented an important moment of historical continuity between the liberal regime under Porfirio Díaz and the revolutionary states that followed” (2016: 56).⁵⁶ However, road building, like promises of economic improvement and cultural “integration,” remained a

⁵⁶For example, Bess explains: “Holding government posts, technocrats, such as Alberto J. Pani, who served for Carranza as Secretary of Industry, Commerce, and Labor (Secretario de Industria, Comercio y Trabajo, 1917–1919) and later for Obregón and then Calles, as Secretary of Finance (Secretario de Hacienda y Crédito Público, 1923–1927), championed big infrastructure programs in support of industrialization. Pani and other technocrats were committed to applying technocratic principles to economic growth (such as initiating an extensive system of highways), believing these policies would ultimately benefit poor and rural Mexicans.” (2016: 60).

disputed project, as I will explore in the following sections. As citizens became deeply conflicted about this development paradigm, the bicycle would continue to appear in intermittent and significant ways in a variety of urban movements.



Figure 10: Aguascalientes, 1923. Photo provided by: © Biblioteca Central Centenario-Bicentenario, Fototeca Alejandro Topete del Valle.

2.4 Consolidating the revolution cycle (1920s-1940s)



Figures 11 A-C. Photos by author

Don Salvador attests to the growing presence of imported bicycles in Aguascalientes (and across Mexico) over the coming decades, such as Philips, Columbia, Hercules, Cleveland, Sterling, Rambler, Gales and Monarch brands. The mechanic recalls from his childhood and his parent's accounts that enhanced features such as built-in bike racks, fenders, children's seats, air pumps and traction-powered lights (e.g., figures 11) were invaluable for commuting longer distances and navigating the region's "destroyed roadways." As archives from surveyors confirm, the armed conflicts had damaged thousands of kilometers of streets and roads across the country (Bess 2016).⁵⁷ While political leaders worked with commercial interests to renew and expand transportation systems over the coming decades, everyday citizens also played active roles in negotiating and contesting these projects (Waters, 2006). Although the role of the bicycle in these debates is elusive in the transportation literature, Don Salvador's accounts (in addition to other archives) help to bring cycling from the background to the forefront of the discussion.

Photos of Mexico City from the 1920s show the growth of decorative bicycle parades (e.g., figure 12), suggesting a transformation of cycling elitism to more popular cycling mobilizations. The federal transportation policy of 1928 attests to the presence of bicycles on roadways across the country by laying out clear safety rules for automobiles with respect to sharing the road with cyclists and other forms of non-motorized transportation. Article 45 of the 1928 regulation states: "Drivers of automobiles or mechanical-propulsion vehicles should be cautious when there are animals, animal-traction vehicles, horse-riders or cyclists on the road, which should be passed or crossed slowly" (my translation).

⁵⁷Bess estimates that "by 1920, Mexico had fewer than 28,000 kilometers of roads—largely unsuitable for motor travel—whereas the United States had one hundred thousand kilometers of asphalt concrete roads" (2016: 62).



Figure 12: “Bicicletas adornadas en una calle,” Ciudad de México, 1920. Photo provided by: SECRETARIA DE CULTURA.- INAH.-SINAFO F.N.-MEX (Image reproduction authorized by: Instituto Nacional de Antropología e Historia, México, Fototeca Nacional).⁵⁸

Bicycles also begin to appear as a regular aspect of city life in photos of downtown Aguascalientes (e.g., Figure 13). Further, legal archives from the 1920s and 1930s reveal multiple judicial proceedings for cases of stolen bicycles, representing a significant portion of cases reviewed by local judges during these years, and with charges for stolen bicycles involving prison sentences of up to 4.5 years (AHA, 2017). The increasing presence of legal proceedings involving stolen bicycles—and the severe sanctions imposed for these acts of theft—implies that the incidence of cycling was not only growing, but also that the bicycle represented a highly

⁵⁸http://mediateca.inah.gob.mx/islandora_74/islandora/object/fotografia%3A217889.

valuable technology in cities such as Aguascalientes where (as don Salvador recounts) automobility remained out of reach for the majority of inhabitants.



Figure 13. Aguascalientes, 1921-25. Photo provided by: © Biblioteca Central Cetenario-Bicentenario, Fototeca Alejandro Topete del Valle.

News archives and popular memory further attest to a number of bicycle races in the region. Local historian Carlos Reyes Sahagún discusses a bicycle race that took place during the spring festival in Aguascalientes, on the 30th of April 1923 on Alameda Avenue:

The participants had to complete ten improvised rounds around the circuit and, contrary to what happens these days, more than seeing who finished first, the race was about seeing who could withstand the most. There were five participants. The report of the race did not explain how many cyclists finished, but rather described who was left out of the race by the first round, how another cyclists did only three, and how one ended up fainting, but finishing. (2019a: my translation)

Over the coming decades, these events became increasingly popular in Aguascalientes (Martinez Rodriguez et al., 2013) and across the country (Zapata Bello, 2019). Reyes Sahagún's account from Aguascalientes highlights the emphasis of these events on endurance and survival over ideas of triumph, providing parallels to issues of everyday subsistence that characterized these reconstructive decades.

The 1920s and 1930s are widely known as the period in which the Mexican revolution was consolidated. Yet, even as the new constitution offered radical reforms,⁵⁹ historians argue that these changes need to be analyzed amid a volatile world economy and competing local priorities: “if the diverse interests and goals of Mexican capitalists and generals, workers and communities, enter the narrative, a history emerges that is more complex, often conflictive, at times violent, and certainly not the history of a singular trajectory that might be called ‘the Revolution’” (Tutino, 2017: 324). On the one hand, postrevolutionary leaders struggled to appease the industrial and commercial elites who had profited during the previous decades; on the other hand, they attempted to settle a growing number of workers' disputes by granting modest wage increases and political access (ibid).

In Aguascalientes, for example, progressive governments aligned with the Revolution instituted limited land redistributions while raising the minimum wage and a reducing the workday to 9 hours—reforms that were met with ongoing opposition from large landowners and the urban elite (Salmeron Castro, 1996). Despite the depth of revolutionary changes in terms of land redistribution and the commercialization of agriculture, the richest producers largely

⁵⁹For example, see article 27 (land) and article 123 (labour). Article 28 further enabled government intervention in all aspects of the economy, including the nationalization of industries.

maintained power over smaller producers who received *ejido* (communal) landholdings. In the state of Aguascalientes and the surrounding region, the most productive lands remained largely in the hands of the old elite, who also benefited disproportionately from the technological improvements associated with agricultural ‘modernization’ (Martínez Delgado, 2017). These elites became producers of the most productive and valuable crops in the national market (such as grapes and guava), while staple crops (such as maize and beans) were concentrated in the *ejidos* (ibid).

These decades also saw a massive increase in labour unions across the country—reaching nearly 3,000—with constant strikes aimed at improving working conditions (Escalante Gonzalbo et al., 2010).⁶⁰ The *Guerra Cristera* (Cristero War) of 1926-1929—a violent struggle in central-western Mexico led by the church hierarchy and prosperous landowners against several articles of the new constitution—further exacerbated these tensions.⁶¹

To some extent, the expansion of transportation infrastructure helped to maintain a sense of political legitimacy through these turbulent decades (Freeman, 2011; Mendoza Vargas, 2015). President Calles established the *Comisión Nacional de Caminos* (National Road Commission) in the mid 1920s, leading to the completion of nearly 10,000 kilometers of roadways over the coming decades (Gómez, 1990). Subsequent administrations worked to advance legal reforms that emphasized national sovereignty over transportation infrastructure and that limited foreign investment in highways: “In the process, motor roads became potent nationalist symbols, which

⁶⁰There were 173 reported strikes across the country in 1921, a number that continue to grow, peaking at 674 strikes in 1936.

⁶¹It is estimated that over 250,000 lives were lost to the war, while agricultural losses led to widespread food shortages (Escalante et al. 2010).

many elite and ordinary Mexicans came to associate with forging the country's revolutionary ideals" (Bess, 2016: 61). These largescale transportation ventures emerged alongside the country's nationalist development experiment that accelerated in the 1930s and 1940s, with a strong emphasis on manufacturing and the nationalization of industries, including rail, electricity and petroleum. Notwithstanding the success of some economic nationalist policies, foreign automotive companies such as Ford motors continued to benefit from a number of tax breaks, access to cheap labour, and the government's assurance that it would resolve any "union problems"⁶² (Fernández Christlieb, 1991).

While car manufacturing and ownership was clearly on the rise, policies privileging motor-vehicle infrastructure did not translate into widespread accessibility. As economic disparities remained pronounced, the private automobile was out of reach of the majority of inhabitants, while cycling became an increasingly vital means of everyday travel and work. By 1935, 32,531 motor vehicles were registered across Mexico, compared to 29,693 bicycles; however, within only three years, the number of bicycles doubled, reaching 65,527, remaining at a similar level to cars for several decades (Pino Hidalgo, 2018). These figures reveal a different

⁶²Federico Fernández Christlieb explains: "The specific case of the automobile transnationals is a case of impunity and ideological complicity that has allowed them to grow with enormous profits in our territory and develop a modern enclave model that has become, due to the strength it has acquired, practically immovable. The institutionalization of our Revolution has accompanied the entry of many powerful companies in the industry. There were endless political mechanisms for this, such as the concessions granted in the early twenties to Ford, which was graced with a 50 percent reduction in taxes on its imports of auto parts and disassembled vehicles into Mexico. After this, its establishment was simpler, since it could operate with cheap Mexican labour and without the risk of labour uprisings, since it had the promise of the then President, Plutarco Elías Calles, that it would not have any union problems. This was very good for Ford, since it had just confronted American workers in Detroit" (1991: 31, my translation).

trajectory from bicycle histories in the Global North, in which cycling is often understood to be in decline by this period⁶³ (Watson, 2012). In fact, the opposite was true in Mexico.



Figure 14. “Mujeres arreglando una bicicleta,” 1940. Photo provided by: SECRETARIA DE CULTURA.- INAH.-SINAFO F.N.-MEX (Image reproduction authorized by: Instituto Nacional de Antropología e Historia, México, Fototeca Nacional).⁶⁴

In a fascinating news feature on Aguascalientes’ early bicycle distribution networks, Fernando de Alba Mora (2013) explains that some of the earlier vendors that emerged in the

⁶³Global bicycle histories account for some variations. For example, Bopp & Piatowski note that “the bicycle enjoyed a brief revival during WWII when auto production was halted” (2018). Herily explains, “While demand for the utilitarian bicycle declined sharply in Western countries after the war, it continued to rise throughout the developing world, giving Raleigh and other industry leaders a new mandate. In 1949, *The Economist* noted that the British cycle industry was exporting large numbers of bicycles to India, Pakistan, Malaya, and Africa, adding that ‘a good number of machines go to the Middle East and South America’” (2004: 325). Greater research is needed, however, to account for variations between different regions, cities and rural areas, particularly in Latin American history.

⁶⁴ http://mediateca.inah.gob.mx/islandora_74/islandora/object/fotografia%3A155151.

1940s were “individuals of modest origin,” who worked tirelessly to create a local bicycle market and raise the local standard of living, not only by providing better transportation options for workers, but also by enhancing distribution networks for food deliveries and street vending:

Workers frequently used ‘tourism’ bicycles to deliver milk, bread, *pulque* and a variety of items from the town Calvillito and other areas, promoting the popularity of cycling. These “lechera” bicycles (nicknamed for their ability to carry four canisters of milk on their rack and on the sides) were renowned for their resistance and endurance thanks to their double-barred frame, proving highly efficient in Aguascalientes given the relative absence of motor-vehicle traffic during this timeframe. (My translation)

As shown in figure 15, cargo tricycles and wooden push carts were also an important part of these informal economies, becoming characteristic in Aguascalientes’ food distribution networks, which often relied on traditional, reusable packaging for food items (Martínez Delgado, 2017). These work cycles took on a variety of shapes and forms, including front-and rear-loading cargo tricycles, water-jug delivery trikes, foldable variations as well as other DIY and ready-made customizations that have made invaluable contributions to local economies (Sarmiento Casas, 2019; Sarmiento-Casas, 2022). Don Salvador’s clients explained that the introduction of the *Braceros Program* (a foreign temporary workers’ agreement between Mexico and the United States) starting in 1942, also contributed to the influx of many varieties to the region, as citizens (many from rural areas) returned from the United States with a number of goods. Despite the parallel growth of automobility, bicycles and tricycles maintained a thriving social and economic life in Aguascalientes and across the country, albeit largely through informal channels (Martínez De Luna, 2018).



Figure 15. Aguascalientes, 1946. Photo provided by: © Biblioteca Central Centenario-Bicentenario, Fototeca Alejandro Topete del Valle.

Notwithstanding the increased prominence of cycling, the government continued to emphasize motor-vehicle infrastructure—a process that was intimately tied to the revolutionary projects of cultural and political integration. In the interest of redefining a national development trajectory, post-revolutionary leaders continually attempted to “unify” the country—assimilating over 60 indigenous languages under one language, one coin and the ideal of a modern and democratic mestiza nation (Ruiz Lagier, 2019; Moreno Figueroa, 2010). As a part of these efforts, the building of motorways factored into attempts to build a ‘cohesive’ society with “moralizing, educative, and civilizing influences” (Luis Meyer, as cited in Bess, 2016: 61). The Ministry of Public Education (created by José Vasconcelos) played a key role in this project, advocating for road building (Bess 2016b) and the expansion of rural schools designed to turn campesinos into “patriotic, scientifically informed commercial producers” (Vaughan, 1997: 189). Cultural “assimilation,” however, was an extremely contentious undertaking, as were

related efforts to appease campesino organizations and labour unions by granting modest concessions and limited political access. Authors such as Rocío Ruiz Lagier argue that these processes contributed to the proto-institutionalization of the Revolution and the continued rule of a single national political party—the *Partido de la Revolución Mexicana* (Mexican Revolutionary Party, or PRM) which was renamed the *Partido Revolucionario Institucional* (Institutional Revolutionary Party or PRI)—for most of the country’s post-revolutionary history.⁶⁵

Despite the continued discourse of inclusion, 31.5% of the population in Northern Mexico continued to live in extreme poverty by 1940, whereas this figure reached 60% in Southern Mexico (Escalante Gonzalbo et al., 2010). Lomnitz notes that the revolution’s social justice was not (in the end) about equity on a broad scale, but rather about devising some basic compensatory mechanism to reduce disparities between the exploiters and the exploited⁶⁶: “the radical government of Lázaro Cárdenas, which was the peak of state-led revolutionary reform, was characterized by revolutionary concessions to radicalized popular groups (agraristas, workers, teachers) and by its willingness to turn power over peacefully to a more conservative faction” (2005: 399-400).

These dynamics are significant for the study of cycling, given that it is within this context

⁶⁵The PRM/PRI maintained the presidency continuously until the year 2000, and again from 2012-2018.

⁶⁶For example, “agrarian reform in Zapata’s plan de Ayala was cast as a law of *restitution*. Labor laws, too, were framed in the same spirit: capitalists had violated basic worker’s rights; they would now have to pay compensation. In the 1917 constitution, ownership of Mexico’s soil and subsoil is said to originate in the nation: expropriation (for instance, of oil) was, again, really only restitution” (Lomnitz, 2005: 399).

of cultural “assimilation,” political domination and economic inequality that cycling would, in the decades to come, become a site of contention, social mobilization and competing discourse.

2.5 A golden era of cycling (1940s-1960s)



Figure 16 A-C. Photos by author

Of all of the bicycles in don Salvador's workshop, the mechanic points to the *lechera* as the most emblematic of Mexico's 'golden era of cycling.' As one of don Salvador's clients remarked: "The streets of Aguascalientes were flooded with these *caballos de acero* (steel horses). *Rieleros*, postal workers, food deliveries, entire families hanging off of the bike... The *lechera* symbolizes *un México bicicletero*."

This timeframe was characterized by a strong emphasis on import-substitution industrialization (ISI) when a second generation of leaders came to power through the PRI, including Presidents Manuel Ávila Camacho (1940–46), Miguel Alemán Valdés (1946–52), Adolfo Ruiz Cortines (1952–58), Adolfo López Mateos (1958-1964). Historians Charles Hale and Lucrecia Orensanz observe that this phase marked the institutionalization of the Revolution, which according to official discourse, would move the Revolution beyond its agrarian phase towards an industrial model:

All of the original ideals of the Revolution—the communal ejido as the new axis of rural Mexico, the rediscovered indigenous population as the bastion of Mexican nationality, the labour union as the defender of the urban worker, the expropriation of subterranean resources as a counterweight to foreign capital—were subordinated to the goals of modernization, through industrial development and agricultural technology (1997: 823, my translation)

The post-WWII period in particular generated a number of structural economic changes as policymakers aimed to emulate modernization efforts through large-scale industrialization and rapid economic growth (Freeman and Soto, 2018).

Deep investments in the steel industry under this model corresponded with the formation of a national bicycle-manufacturing industry. In 1952, Italian-born Giacinto Benotto arrived in Guadalajara to manage Cónдор (one of the first bicycle factories in Mexico) and would later establish Benotto industries in Mexico City—a brand considered by many as emblematic of

Mexican cycling. This move was followed by the establishment of several additional Mexican bicycle manufacturers, including Búfalo, Acer, Productos Continentales and Mercurio (among dozens more). The following years saw a massive increase in registered bicycles, *surpassing the number of motor vehicles*: In 1954, 310,304 bicycles were registered, a number that rose to 446,771 bikes by 1959 (compared to 273,697 motor vehicles in 1954 and 437,657 in 1959) (Pino Hidalgo, 2018).

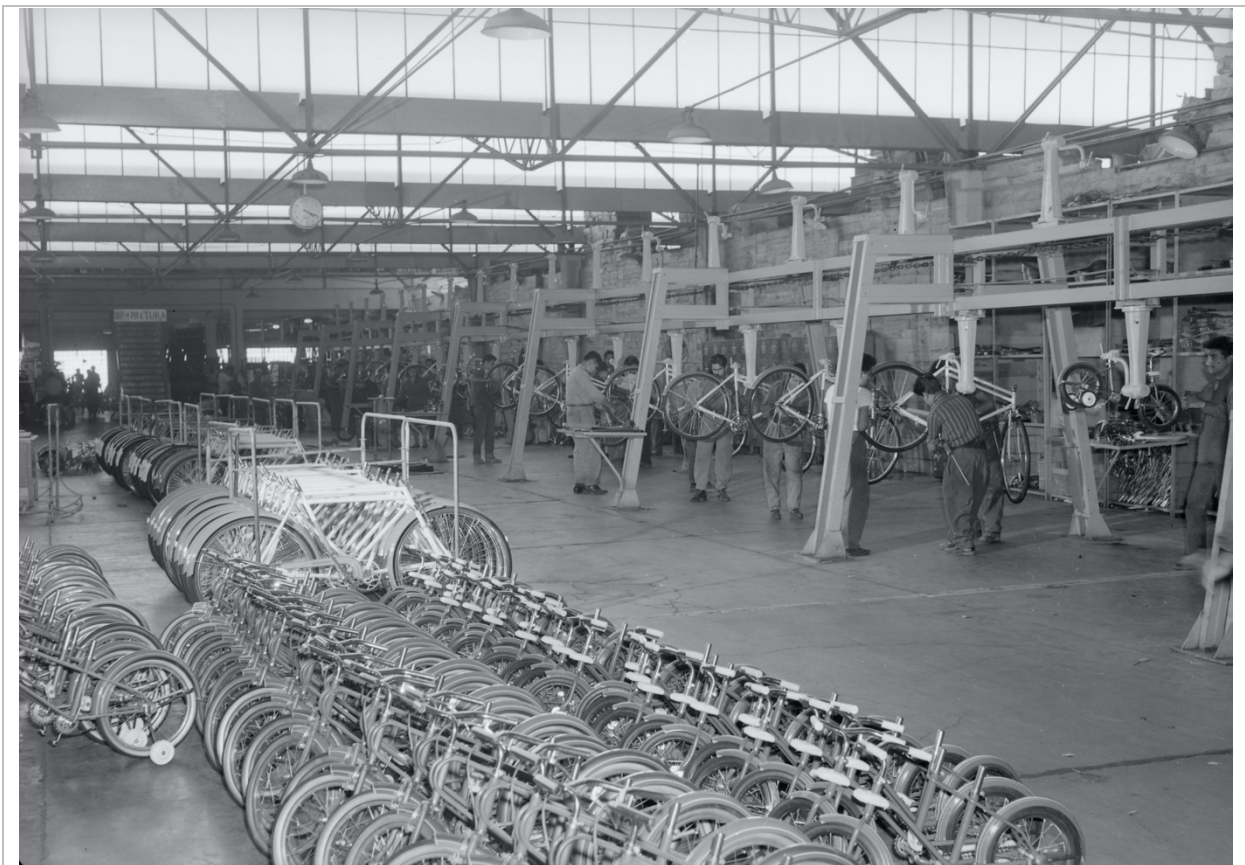


Figure 17. “Obreros fabrican bicicletas en Acer Mex.” Photo provided by: SECRETARIA DE CULTURA.- INAH.-SINAFO F.N.-MEX (Image reproduction authorized by: Instituto Nacional de Antropología e Historia, México, Fototeca Nacional).⁶⁷

⁶⁷http://mediateca.inah.gob.mx/islandora_74/islandora/object/fotografia%3A412894.

This rise in bicycle ridership went hand-in-hand with increased urbanization processes across the country, as rural inhabitants relocated to cities, adopting cycling in the search for new work and increasingly *as a form of work* (Pino Hidalgo, 2018). Between 1940-1960, the percentage of Mexican citizens living in urban areas grew from 30 to 50.7%. Most cities, however, started small: In 1940 only six cities had more than 100,000 residents and only Mexico City's population extended beyond one million (Escalante Gonzalbo et al., 2010). The population of the city of Aguascalientes doubled during this timeframe (growing from 161,693 inhabitants in 1940 to 338,142 by 1970)⁶⁸ (Salmeron Castro, 1996).

EL INFORMADOR Miércoles 20 de Enero de 1965.

DE LA MEJOR CALIDAD: SEA LO QUE SEA, LO TIENE SEARS..!

SEARS **GRAN BARATA GENERAL**
Aproveche las más excepcionales ofertas en todos nuestros departamentos. TODO SIN ENGANCHE..!

Estupenda bicicleta
 Sears **ELGIN**
 Rodada 28. Regular \$559, ahora por sólo
 MENSUAL \$60 **\$498**

- Fuerte construcción de incomparable calidad y máxima resistencia.
- Sin equipo.
- En color negro.

TODO SIN ENGANCHE Y HASTA 18 MESES DE PLAZO

Figure 18. Lechera ad, 1965.⁶⁹

⁶⁸At the state level, however, the population grew at a slower pace than the national average until the end of the 1950s (Salmeron Castro, 1996).

⁶⁹Source: El informado, Guadalajara, January 20, 1965.

With the establishment of national industries, Mexico soon became a leading bicycle producer, allowing increased access for families with modest earnings, particularly with the introduction of weekly payment-plan options (e.g., figure 18). Local historian Fernando de Alba Mora recalls that in 1955 a Búfalo bicycle cost 600 pesos, and workers in Aguascalientes could have 12.50 reduced from their salary each week as payment (2013). The increase in bicycle models at a variety of prices led to a huge upsurge in distributors and mechanics in the city, including figures such as don Joaquín Obregón (of *La Flecha*), doña Rosendo Castañeda (of *Ferretería el Gallo*), Don Abel Robles (of *Bicicletas Abel*) and Don Ciriaco Ponce who was known affectionately throughout the city for establishing his bicycle business from his modest savings as a *bracero* as well as his continued work as a mariachi singer (ibid.). Some local businesses in Aguascalientes also started manufacturing cargo tricycles in the early 1950s, including *Bicicletas Camarillo*. Don Salvador, who had previously worked in a local restaurant, started training as a mechanic during this timeframe, later to adopt his workshop from a relative.

There is some evidence of initial cycling hesitancy and even distain in mid-century Aguascalientes, with cycling playing a role in some local road-safety debates and road education campaigns (e.g., figure 19). Carlos Reyes Sahagún observes that the city experienced varying levels of backlash against cyclists, including concerns about cyclists speeding as well as their apparent lack of safety equipment:

El 23 de junio de 1946, el diario de la cadena García Valseca publicó una protesta en contra de la actitud de 'un grupo de ciclistas,' que habían 'hecho uso de nuestras arterias como si fueran pistas de carreras y ya se han registrado accidentes provocados por velocidad excesiva, hemos tenido conocimiento de que algunas agencias de bicicletas no las dotan de sirenas y aparatos generadores de luz eléctrica...' ¡Imagínese! Pretender en ese tiempo que los aparatos contarán con 'generadores de luz eléctrica' –yo las conocí como farolas– y silbato. Sin duda se trata de una asignatura pendiente, en términos de avanzar hacia una ciudad con ciclismo urbano, a las que se suman nuevos requerimientos, propios de esta obsesión por la seguridad que caracteriza a nuestro

tiempo, el uso de casco y chaleco reflectante, algo que a nadie se le ocurrió en aquella época.

[On June 23, 1946, a newspaper of the García Valseca chain published a protest against the attitude of ‘a group of cyclists,’ who had ‘made use of our roads as if they were race tracks.’ The report noted that ‘collisions have already been recorded due to the cyclists’ excessive speeding, and we have learned that some bicycle agencies do not equip them with sirens [later referred to as bells] and electric light generators’ (or bike lights). Undoubtedly, this was a transient issue, in terms of advancing towards a cycling city that would implement new requirements—a process that is now a more typical safety obsession of our time, including the use of a helmet and a reflective vest, something that no one thought of at the time.] (2019c: bracketed text is my translation)

As Reyes Sahagún explains above, some of the hostility towards cycling likely reflected the bicycle’s changing status, a process that the author believes was part of the transition towards a city that would more widely embrace urban cycling, albeit with an increasing emphasis on safety requirements.



Figure 19. Festival de educación vial, 1958, Aguascalientes.⁷⁰

⁷⁰Source: El sol del Centro, Aguascalientes, June 10, 1958.

Don Salvador remembers that “cars were the main concern” for most residents: “There still weren’t very many of them on the street, but we all knew that they were dangerous...”

Another cyclist recalls that during this timeframe “signs around the city read ‘*cuidado con los auto*’ (be careful with your cars) and ‘*don’t use your horn, use your breaks*’ ... This meant that cars needed to learn some respect and to slow down... We don’t see this anymore. Now they expect us (the cyclists) to always get out of the way.”

In surrounding towns, mechanics and distributors helped to circulate and service bicycles and tricycles in rural and peri-urban areas:

Don Ciriaco helped to calm some of the resistance to change that existed in smaller communities where people complained about flat tires and frequent breakdowns. He visited these areas every week on his regular route, and the residents’ hesitancy around cycling gradually disappeared (de Alba Mora, 2013: my translation)

Although bicycles and tricycles may have experienced some varying hesitancies in the region, their accessible cost, informal affordances and association with everyday life were increasingly embraced through the 1950s and 1960s, as affirmed by numerous residents interviewed in this study and in some historical accounts documented in the news media (Reyes Sahagún, 2019b; Reyes Sahagún, 2019d; Reyes Sahagún, 2019e).

Cycling became the principle means of transportation for a booming train-worker population as well as for many working in agriculture, manufacturing, construction, domestic work and other professions. In a feature in *Revista Ferronales*, Francisco Montalvo Palos, who worked as a metal fabricator in the train workshops for 18 years, described the arrival of hundreds of pedalling rieleros each morning as an incredible sight, noting the importance of cycling for rail workers in traversing a workplace spanning 832,598 square meters:

La bicicleta era el principal medio de transporte con la que se movían en el interior de los talleres ferrocarrileros, ya que no les permitían andar en otro tipo de transporte... La mayoría de los ferrocarrileros contaban con su propia bicicleta, ya que el traslado de los talleres ubicados en la puerta sur a los talleres ubicados en la puerta norte era una distancia considerable y se optaba por utilizar la bicicleta.... Las bicicletas que más se utilizaban era la bicicleta “la turismo”, mejor conocida como “la lechera”, “la hércules”, todas las bicicletas tenían su “canastilla”, donde colocábamos nuestro lonche o chamarra, nosotros fabricábamos nuestras propias canastillas en los talleres las hacíamos con aluminio o alambrón. En los talleres contábamos con tres agencias de bicicletas, las atendían “el pilo” y “el gori”, quienes también eran ferrocarrileros, una de las agencias estaba ubicada en el departamento de ejes y ruedas y otras que recuerdo estaba en el departamento de coches y carros, nos cobraban por cualquier arreglo. En el cuarto de herramientas nos fabricaban una “masa especial” que se colocaba en los rines donde van los rayos de la bicicleta, nos la vendían a \$20 (veinte pesos) los torneros, para que no se desnivelara nuestra bicicleta nos ponían un balero sellado para soportar más peso ya que nuestras bicicletas brincaban mucho los rieles en los talleres. A las 6:45 am se veía el desfile de bicicletas cuando ingresábamos a los talleres a trabajar de igual forma dando las 15:00hrs se veía el desfile de bicicleta a la salida de los talleres, era una cosa muy bonita y era raro el compañero que no contara con su bicicleta, también teníamos que soportar las bromas de los mismos compañeros cuando nos escondían la bicicleta y nos las pintaban

[The bicycle was the main means of transport with which the railroad workers moved around the workshops, since we were not allowed to use any other type of transport... Most of the railroad workers had their own bicycle, since the trip from the workshops located at the south gate to the workshops located at the north gate was a considerable distance. The bicycles that were most used were the ‘tourism’ variety, better known as ‘the lechera’ or ‘hercules.’ All the bicycles had a basket where we placed our lunch or jacket. We made our own baskets in the workshops with aluminum or wire rod. In the workshops we had three bicycle agencies: they were attended by ‘el pilo’ and ‘el gori,’ who were also railroad workers. One of the agencies was located in the axles and wheels department, and the others that I remember were in the car department. They charged us for any repair. In the tool room they made us a ‘special casing’ that was placed on the rims where the spokes of the bicycle go. They sold us special pieces for 20 pesos, which were used so that our bicycle would not be uneven: they installed a sealed bearing to support more weight since our bikes jumped the rails a lot in the shops. At 6:45 am, you could see the bicycle procession when we entered the workshops to work, and the same thing at 3:00pm. It was a very beautiful sight. And it was considered strange if coworkers did not have their bicycles with them. We also had to endure some of our coworkers’ jokes when they hid our bicycles or painted them]. (1966: bracketed text is my translation)

As the owner of a 1950’s Benotto explains, “Nearly everyone from Aguascalientes has a parent or relative who was a rielero, and that’s what made us a pueblo bicicletero. This is why there are

still so many lecheras here.”



Figure 20. “En la locomotora.” Photo provided by: © Centro de Estudios del Patrimonio Ferrocarrilero de Aguascalientes, Instituto Cultural de Aguascalientes.

Cycling also remained a significant mode of distributing household goods in many cities across the country for several decades, including for bakers (e.g., figure 21), newspaper deliverers, and postal service workers as well as for many grocery deliveries (for example, see Martínez Delgado 2017: 420).



Figure 21. “Panadero en bicicleta con canasta en la cabeza,” Ciudad de México, 1957. Photo provided by: SECRETARIA DE CULTURA.- INAH.-SINAFO F.N.-MEX (Image reproduction authorized by: Instituto Nacional de Antropología e Historia, México, Fototeca Nacional).⁷¹

In Aguascalientes, Bicycle Mayor Josafat Martínez de Luna (2018) recalls that buses transiting from smaller neighbouring municipalities such as Calvillo were equipped to accommodate dozens of (bi)cycles on roof-racks, enhancing informal rural-urban food distribution and providing better intermodal transportation options than what you can find currently in the region (Figure 22).

⁷¹http://mediateca.inah.gob.mx/islandora_74/islandora/object/fotografia%3A338321



Figure 22. Report on intermodal transport from *Periódico Momento*. The note reads: “On the same route that their ancestors traveled, first by horse and now by bicycle, the Calvillo ‘Aguamieleros’ have found a more comfortable way of returning to town after selling their products. The sit comfortably on the bus, while their bicycles ride happily above” (archival work provided by Josafat Martínez de Luna, 2018, my translation).

Oral history interviews from this study attest to the high value ascribed to bicycles during this timeframe. As one retired train worker from Aguascalientes recounts:

I remember my father explaining to me how he saved up to buy us a family bicycle from his modest salary. I remember him sometimes taking us to school on the bike. It was close enough to walk, but we loved going together by bike. My brother would sit in front on the frame, and I would ride behind on the rack with our backpacks.

Cyclists explain that pedaling over unpaved roads rarely posed any mayor problems, even for long-distance rides, as road-flattening machines were used frequently on local roadways and bicycles were often equipped with built-in air pumps to remedy leaking tires. At a time when road traffic consisted mainly of pedestrians, cyclists and animal-drawn transit, bicycle travel was often described by riders from this generation as ‘enjoyable,’ ‘efficient,’ and ‘freeing.’ For train

workers, these gratifying sensations are often described in contrast to the exhaustive labour conditions of the time, offering an “escape from a day of hard labour.”



Figure 23. “Festivales donde participan obreros que hacían pirámides sobre bicicleta.” Photo provided by: © Archivo Casasola; Centro de Estudios del Patrimonio Ferrocarrilero de Aguascalientes, Instituto Cultural de Aguascalientes.

Corresponding with Mexico’s golden age of cinema, the bicycle figured increasingly in a number of films, including *Piernas de Oro*⁷² (1958) as well as Germán ‘Tin Tan’ Valdés’ *¡¡¡Ay Amor Como Me Has Puesto!!!*⁷³ (1951) and *El campeón ciclista*⁷⁴ (1957). In *El Bombero*

⁷²“Golden Legs”

⁷³“Oh Darling! Look What You’ve Done!”

⁷⁴“The Cycling Champion”

*Atómico*⁷⁵ (1952), the popular actor Cantinflas plays a humble newspaper deliverer who assertively reads while pedaling around the city (figure 24). These films share a similar humorous appreciation of working-class cyclists—bakers, newspaper delivers and even thieves—who overcome obstacles and even go on to win cycling championships in some cases. Alfredo Mirandé and Raymond Williams (2016) explain how actors such as Cantinflas imitated working-class dress and style, personifying *rascuachismo*—a distinctly Mexican and Chicana concept used to qualify people or things of a working-class origin. The authors explain that, like other terms with traditionally negative connotations, *rascuache* has frequently been reappropriated and turned on its head:

Rascuachismo is an underdog aesthetic that presupposes the perspective and world view of the have-nots ... Responding to a material level of subsistence and existence instills an attitude of survival and inventiveness... Thus, to be rascuache is to be witty, irreverent, and to subvert and turn ruling paradigms upside down. (132)

Rascuachismo denotes the quality of objects such as work cycles, the places where such objects frequent as well as the inventiveness of people (such as Cantinflas) who personify *rascuache* (ibid).

In a news feature on Gabino Rodríguez Rodea—a bicycling carpenter from an underserved neighbourhood who would later compete in the Olympics—Georgina Hidalgo examines how the cyclist idolized Cantinflas as the embodiment of the urban underdog (2018). Hidalgo explains that these films did more than simply reflect the growing popularity of cycling: they were also inspirational for many working-class cyclists who fought against the odds to excel in competitive cycling. Like many Mexican cyclists who competed in national and international bicycle races, Rodríguez never had the opportunity to train in expensive facilities, nor was he

⁷⁵“The Atomic Fireman”

given grants, a competitive bicycle or other official support (ibid). Rather these cycling-class heroes worked tirelessly to “triumph over all obstacles, even economic ones” (ibid).



Figure 24. Cantinflas en *El Bombero Atómico*, 1952.⁷⁶

The *Vuelta por el Centro de la República*—a regular competitive cycling event that continued between 1948-1960—further detonated the popularity of competitive cycling across the country, uniting Mexico’s urban and rural “proletarian” cyclists who depended on bicycles and tricycles for work with the world cycling elite:

The organization of the *Vuelta del Centro* had great significance for Mexican sports and is considered one of the amateur events with the greatest social and recreational impacts in the country's history, not only due to the effect it generated throughout the territory, but also given the international prestige that the event acquired... Its success had to do

⁷⁶Director: Miguel M. Delgado. Writers: Cantinflas, Miguel M. Delgado, Carlos León. Posa films

with the wide journalistic and radio coverage that it received, as well as the fact that both urban youth who used the bicycle as a means of transport or work (milk deliverers, bakers, messengers and cleaners) and rural youth who had replaced their horses with pedaling machines, saw in cycling a sporting opportunity and a popular spectacle that they performed as a part of their everyday lives. (Zapata Bello, 2019: 1210, my translation)

Other renowned cyclists who emerged at this time included Simón Sánchez, Juventino “El Borrao” Cepeda, Ricardo “El Pollero” García, Refugio “El Chango” Vélez, Ángel “Zapopan” Romero, Rafael Vaca, Felipe Liñán, Mauricio Mata, Porfirio Remigio (Sánchez and Alpizar, 2021) and later Carmen “Popis” Muñiz. Edmundo Alpizar, a cycling trainer for UNAM, reflected on the “rural conditions” that many of these cyclists emerged from, noting that young people across the country increasingly wished to emulate their idols’ success: “Towns were crowded along the race’s routes, with everyone cheering on the participants, becoming a festivity as the multi-coloured caravan of cyclists continued on their way” (as cited in Sánchez and Alpizar, 2021, my translation).



Figure 25. Cycling race in Aguascalientes, 1956.⁷⁷

⁷⁷Source: El Sol del Centro, Aguascalientes, July 2, 1956.

In addition to these large-scale national events, Reyes Sahagún (2019a) explains that cycling competitions were constant throughout the bajío, and especially in Aguascalientes (e.g., figure 25), including races to neighbouring areas such as Chicalote, Cosío and Rincón de Romos. Don Salvador reflects on his work organizing the race “la medallita” over several decades as one of his greatest life accomplishments, with time-withered photos still showcased proudly across his workshop (figure 26).

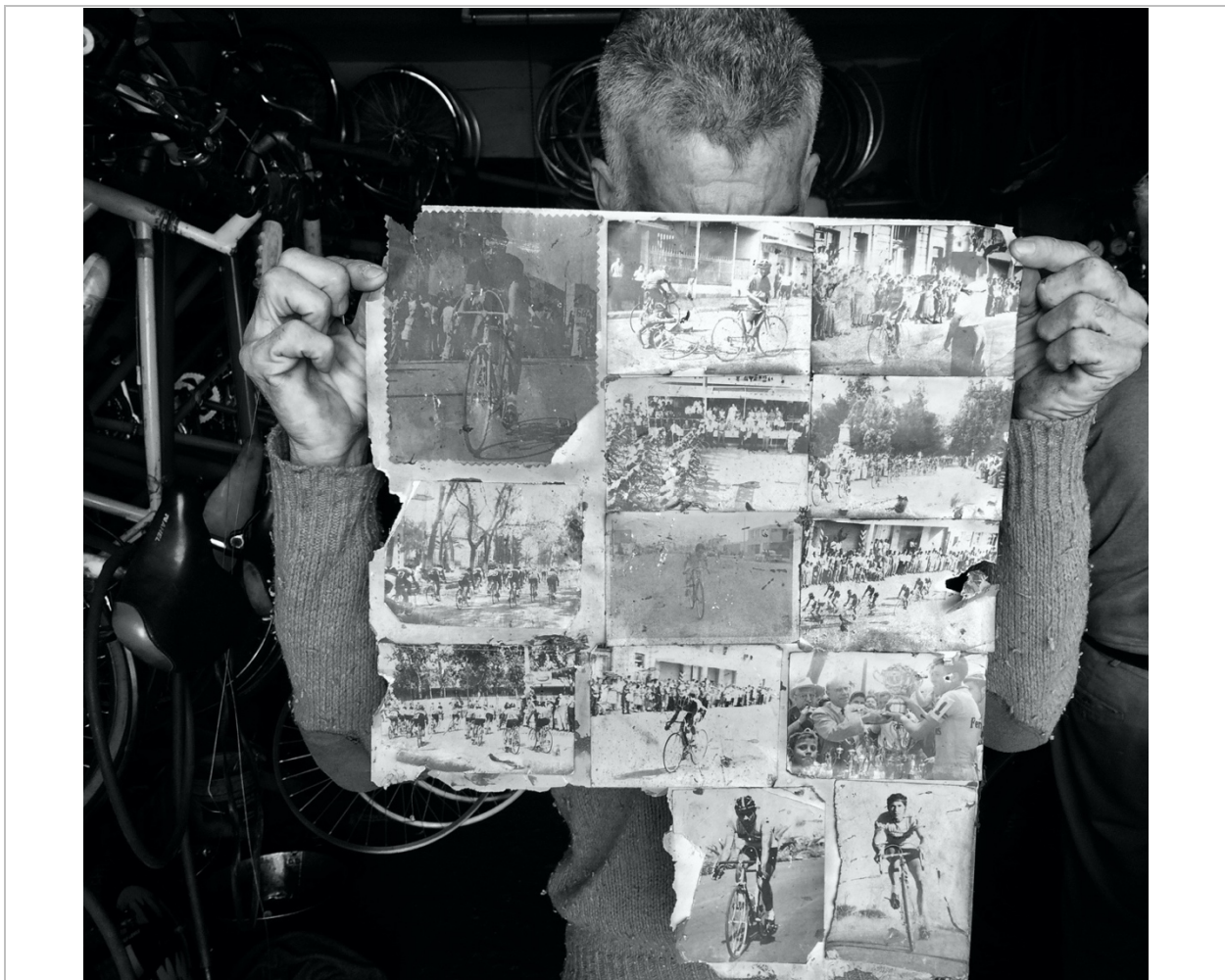


Figure 26. Memories of *la medallita*. Photo by author

Politicians such as Adolfo López Mateos capitalized on the bicycle’s popularity and association with everyday life, using bicycle messengers to mobilize political propaganda (e.g.,

figure 27). Later as President, López Mateos appears to have showed his support for the cycling industry through factory visits, such as those displayed at the Acer México.⁷⁸ However, the development of transportation infrastructure under López Mateos' presidency, like his predecessors, continued to center on automobility. Even as the massive growth and popularity of cycling offered significant opportunities to enhance transportation systems to better facilitate travel for an already abundant population of bicycle and tricycle riders, policy makers instead continued to privileged car travel and related industries.



Figure 27. “Bicicletas con propaganda de apoyo a López Mateos,” Tapachula, Chiapas, 1957. Photo provided by: SECRETARIA DE CULTURA.- INAH.-SINAFO F.N.-MEX (Image reproduction authorized by: Instituto Nacional de Antropología e Historia, México, Fototeca Nacional).⁷⁹

⁷⁸For example see: <https://mediateca.inah.gob.mx/repositorio/islandora/object/fotografia:413043>

⁷⁹http://mediateca.inah.gob.mx/islandora_74/islandora/object/fotografia%3A255332.

Michael Bess (2017) explains the trajectory of transportation development under this second generation of PRI leaders, with motorways serving a strategic tool for fomenting political negotiations. Whereas the Cárdenas administration had fostered both left- and right-wing alliances through large-scale infrastructure, Ávila Camacho used motorways largely as a reconciliation strategy: “He signaled to Mexican conservatives and foreigners that the federal government had pivoted to the right in political terms, while retaining populist language in speeches that described motorways as ‘public’ goods” (ibid: 144). Known as the “businessman president,” Miguel Alemán took these pro-business goals even further, emphasizing “revolutionary” ideals while targeting working class patronage: “he strategically used road building to forge political alliances that ultimately benefited business allies by reducing the cost of shipping and increasing demand for motor travel” (ibid: 146).

During the following years, Presidents Ruiz Cortines, López Mateos and subsequent administrations “doubled down on the automobile as a seemingly effective tool to both industrialize and mobilize the nation... By 1960, seventeen different firms were building forty-one distinct vehicle models” (Freeman and Soto, 2018: 10). Some of the cyclists I interviewed recalled that advertising from the automotive industry became particularly aggressive by the 1950s and 1960s—centring the idea of a good middle-class family life around the private automobile (e.g., figure 28)—a tendency that was increasingly emulated in films and later in *telenovelas*. Geographer Héctor Mendoza Vargas (2015) observes that these processes signalled a shift in which automobile ownership became a cultural novelty with deep effects across Mexican society.



Figure 28. Ad, 1958.⁸⁰

The expansion of motorways and automotive industries, nevertheless, became a site of increasing social dispute. There is evidence that national highway construction was viewed favourably by some rural Mexicans as a means of reducing economic and spatial inequalities: “Motor highways improved mobility for working-class Mexicans, facilitating the spread of ideas and products to the countryside” (Bess, 2014). These views, however, were not universal. Increasingly communities complained that motor-vehicle infrastructure supported corporate distribution networks that extended the market for soft drinks, refined flour and sugar beyond the cities, undermining local businesses and small-scale agriculture, while consolidating the

⁸⁰Source: El Sol del Centro, Aguascalientes, July 25, 1958.

political-economic power of foreign businesses (Gómez, 1990; Bess, 2014).

Although motorways encouraged nation economic growth, contributing to the ‘Mexican miracle’ (a period of sustained gross-domestic-product growth between 1940-1970), they also tied the Mexican economy to transnational commercial trends in highly uneven ways (Bess, 2017). The post-revolutionary state attempted to challenge foreign influence over local economies, yet the extension of new motorways through industrialization policy limited democratic reforms: “National politicians favoured a corporatist model that included farmers and workers in modernization plans, but restricted individual agency and dissent.” (Bess 2014: 124). The literature on American automotive operations in Mexico exemplifies these tensions. In 1962 the Mexican government approved an import-substitution policy that created a public-private initiative with the ‘Big Three’ auto firms (Ford, General Motors, and Chrysler) to expand the manufacturing industry. Stephen Bachelor explains that U.S. employers forged a corporate culture that sought to promote worker loyalty to boost productivity; yet when workers pressed for economic and political concessions, companies responded with extreme hostility:

On the one hand, American automotive firms recruited Mexican representatives to serve as goodwill ambassadors on their behalf and saw the development of an industrial working class as good for business. On the other hand, however, corporate rhetoric relied on conventional stereotypes of Mexico as inferior and made American acculturation of the workforce a goal. When this policy faltered in the face of labour resistance, U.S. carmakers fell back on repressive measures that would have been familiar to Mexican railroad workers of the nineteenth century (as cited in Bess, 2014: 125).

Geographer Federico Fernández Christlieb (1991) argues that this process reflected a neo-colonial development model in which subordinated countries were made into suppliers of raw materials and markets for manufactured products, (re)establishing an unequal relationship that could only be successfully challenged during certain periods of Mexican history. Despite the blatant abuses of power on the part of international automotive industries, the author

observes that political leaders failed to challenge labour abuses and the notion of the automobile as a dominant symbol of progress (ibid). Similar to the status of the bicycle some 60 years earlier, the motorcar became a new symbol of progress, being mobilized into public spectacles to promote narratives of urban modernization (Freeman, 2011; Freeman and Soto, 2018). As a part of this process, Fernández Christlieb observes that car drivers became owners of a symbol that imbued them with prestige and differentiated them from working-class and rural Mexico (1991). These changes, nonetheless, ushered new concerns and forms of resistance to the destruction of local livelihoods, environmental degradation and the prioritization of elite mobilities (Bess, 2020).

In Aguascalientes, critical reflections on advertising from the automotive industry as a pervasive form of visual contamination spang up in the local news (e.g., figure 29), as did continued concerns about road safety and increasingly traffic collisions. In some cases, these concerns were also framed within an environmentalist agenda. In 1950, for example, professor Jesús Aguilera Palomino noted community opposition to the construction of *Avenida oriente-poniente*, maintaining that the project would “destroy an important forested zone, leading to increased pollution and erosion while impacting the climate and future generations”⁸¹ (as cited in Martinez Delgado 2014, my translation).

⁸¹Op-ed published in *El Sol del Centro*, Aguascalientes, July 18, 1950.

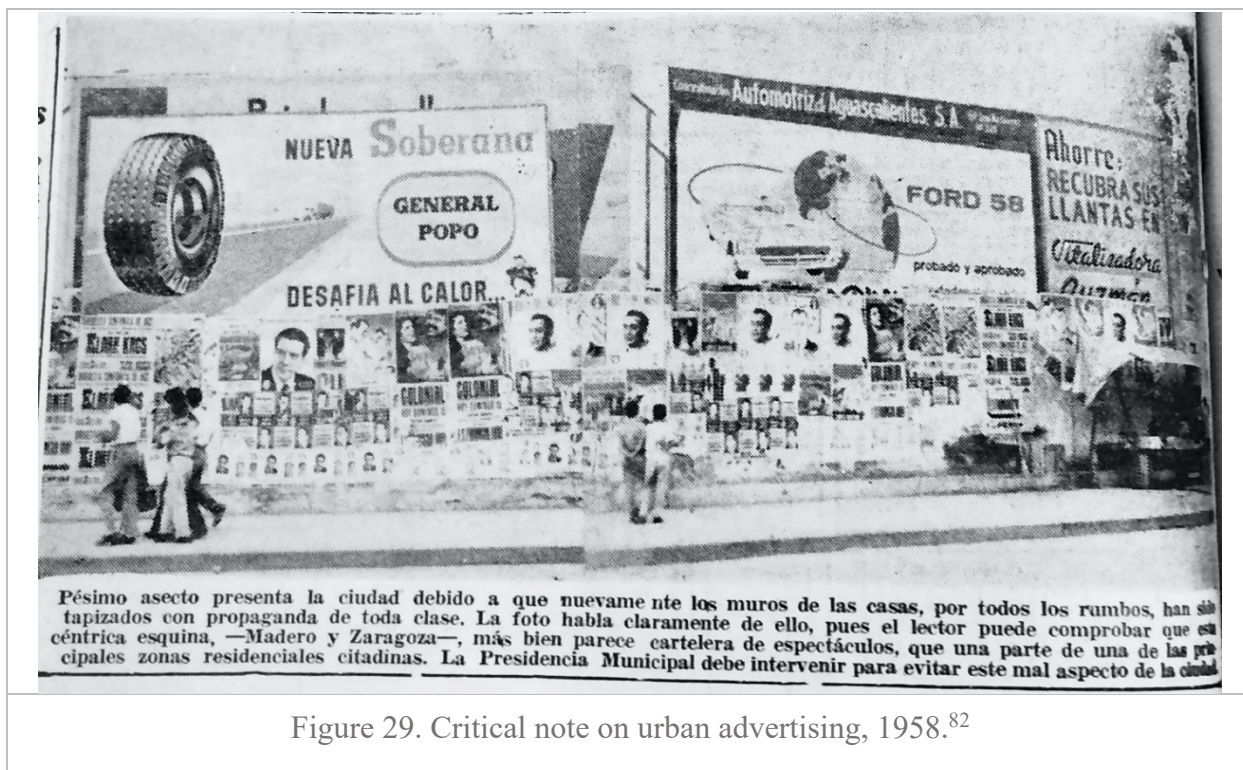


Figure 29. Critical note on urban advertising, 1958.⁸²

What role did cycling play in these discussions? While it is difficult to find definitive answers to this question (mainly due to the lack of concrete archives on the topic), some citizens began to connect their mounting concerns about automobility and uneven development to a nascent pro-cycling urban agenda. Fernández Christlieb observes the rise of pro-cycling and pro-pedestrian advocacy by the early 1950s, with authors such as Gabriel García Maroto criticizing the dehumanizing values of automobility and discussing the urgent need for local governments to better facilitate travel on two wheels (“*el caminar sobre dos ruedas*”) (as cited in Fernández Christlieb 1991: 124). These pro-cycling claims would expand over the following decades, including assertions that “Latin American society will not be able to develop democratically if, in addition to other things, it does not promote the mass use of bicycle and tricycle technologies

⁸²Source: El Sol del Centro, Aguascalientes, June 14, 1958.

(Ricardo Narravo as cited in Fernández Christlieb 1991:181, my translation).

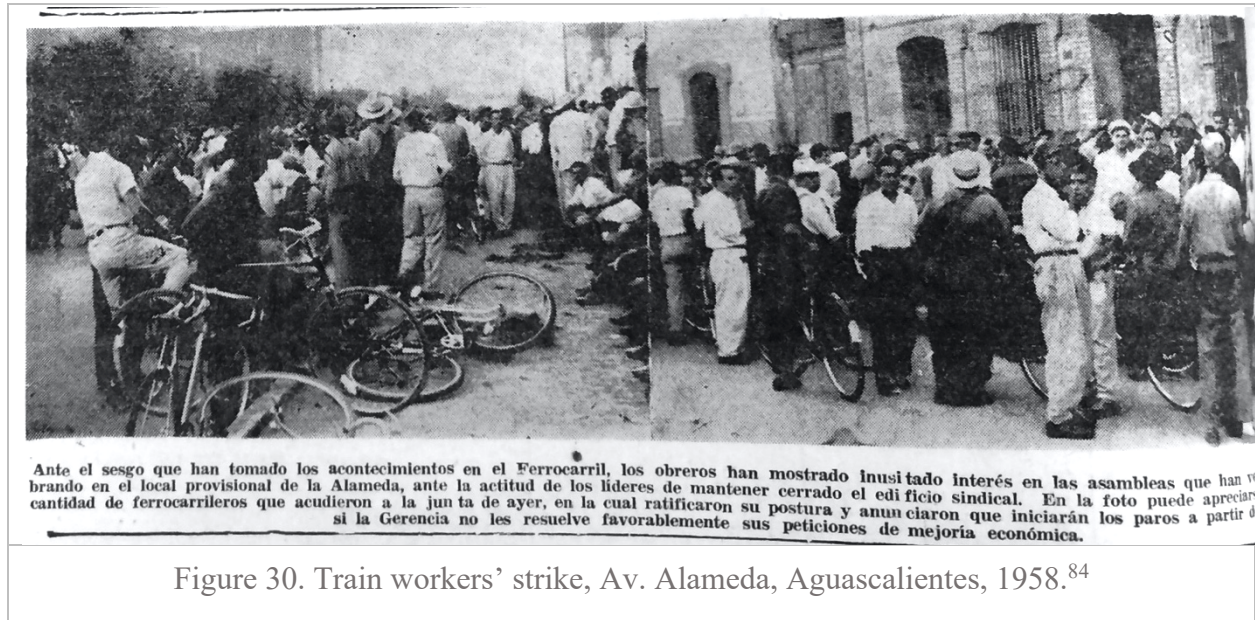
Indeed, cycling proved invaluable to mounting workers struggles—including the train workers strikes in the late 1950s—as the government’s rapid industrialization experiment continually resulted in low wages, precarious working conditions and other forms of political domination. Historian Robert Alegre’s research on the train workers’ movements shows how PRI-appointed union leaders, disparagingly referred to as *charros*,⁸³ worked hand-in-hand with government and railroad officials to freeze wages; In response to these forms of union manipulation, a series of strikes erupted in 1958 and 1959, not only winning a wage increase for train workers, but also spurring wide-reaching struggles across the country to democratize unions and other political institutions:

During the course of the movement, dissident men and women politicized informal relationships at work and in neighborhoods. Friends, acquaintances, and neighbors became political comrades, mobilizing around class and gender identities based on individuals’ relationship to the industry. On streets and worksites, railway men and women created a repertoire of habits, behaviors, and acts that they came to associate with being a proper *rielero* or *rielera*. In 1958 and 1959 they drew on these identities, as well as the affective ties made by years of living together, to create a cohesive movement. In 1958 and 1959 discontent erupted when members of the STFRM staged a series of strikes that constituted the most threatening grassroots working-class movement and the largest labor strikes since those during the revolution of 1910. Railroad workers went on strike three times during those two years, demanding not only higher wages but also the transformation of their union into a workers’ democracy, which required the end of the collaborationist union politics that had helped solidify postwar PRI rule. (2013: 5)

In Aguascalientes, the train workers that I interviewed recall vividly the inequalities that existed between charro leaders and everyday *rieleros* and *rieleras*, as well as the violent threats that

⁸³Alegre elaborates that charro leaders “helped keep freight rates on cargo low and thereby assisted strategic industries that were critical for industrialization, such as mining. Along with PRI officials, STFRM charros instructed the rank and file to accept low wages for the good of the country’s economy. In exchange for their compliance, the PRI backed these officials despite allegations that union elections were rife with fraud; in addition to receiving better pay, charros promoted their friends to management positions...” (2013:2).

surrounded work life for union dissidents. These train workers also remember affectively how “bicycles were a part of these struggles,” helping to facilitate a variety of subversive actions that mobilized the fight for democratic unionism and a more equitable society (e.g., figure 30).



The 1960s saw a rise in labour disputes, activism in rural areas and urban peripheries as well as progressive-student movements pursuing wide-reaching changes across the country. These movements are far too diverse and complex to summarize comprehensively in this chapter,⁸⁵ but they are also far too relevant to the study of urban change to exclude from any

⁸⁴Source: El Sol del Cetro, Aguascalientes, June 25, 1958.

⁸⁵For example, see: Zermeño S (1994) *México, una democracia utópica: el movimiento estudiantil del 68. siglo XXI.*; Bennett V and Bracho J (1993) Orígenes del Movimiento Urbano Popular Mexicano: pensamiento político y organizaciones políticas clandestinas, 1960-1980. *Revista mexicana de sociología.* 89-102.; Rubio B (1987) *Resistencia campesina y explotación rural en México.* Ediciones Era.; Aviña A (2014) *Specters of revolution: Peasant guerrillas in the Cold War Mexican countryside.* Oxford University Press.

analysis. Given the growing issues of urban overcrowding,⁸⁶ for example, the 1960s witnessed an influx of insurgent movements in Mexico's urban peripheral settlements refuting their status as second-class citizens and demanding infrastructural and service improvements: "Neither solidly linked to the state nor completely ignored or repressed, the urban masses occupied an uncertain, unpredictable netherworld..." (Maffitt, 2014: 113). While Aguascalientes did not suffer the same level of overcrowding as Mexico City, it continued to experience a huge deficit in affordable housing, a process that was contested both within and beyond the legal limits (Martínez Delgado, 2014).

The most well-known example of activism during this timeframe is the 1968 student movement, as a coalition of thousands of students took to the streets, not simply to protest the Olympic games, but also to mobilize broad-based support for structural political change, including an end to the lasting authoritarianism of the PRI regime:

El 68 fue, antes que nada, el espíritu de una generación, el espíritu lúdico y gozoso de quienes quisieron cambiar a México y creían posible cambiar al mundo, llevar la imaginación al poder y la poesía a las calles. Fue una tentativa desmesurada y hermosa, pero esa desmesura es su grandeza y aún hoy da sentido a nuestras vidas. Fue real: ahí están los muertos; su memoria es la fuerza ritual y ancestral que cohesiona y da continuidad a las luchas presentes...

[1968 was, above all, the spirit of a generation, the lively and animated spirit of those who wanted to change Mexico and believed it was possible to change the world, bringing imagination to power and poetry to the streets. It was a boundless and magnificent attempt, one that continues to give meaning to our lives. It was real, as evidence by the dead, and its memory is the ritual force that unites and gives continuity to present struggles.] (Eudoro Fonseca Yerena as cited in Camacho Sandoval, 2019: 236, bracket text is my translation)

⁸⁶According to a UN report published in 1960, Mexico was ranked the country with the 3rd highest level of overcrowding the world, surpassed only by Nigeria and Pakistan (Maffitt, 2014).

The October 2nd Tlatelolco Student Massacre in Mexico City had lasting socio-cultural and political impacts across the country. Protests erupted in Aguascalientes following the massacre, including notable participation from rural schools (such as *la Escuela Normal Rural Justo Sierra*) in alliance with the National Federation of Socialist Campesino Students of Mexico (Camacho Sandoval, 2019). For many, these events severely called into question the Mexican government's international reputation as a neutral and peaceful country of asylum (Ruiz Lagier, 2019; Guzmán, 2016). Rocío Ruiz Lagier elaborates that student massacres, especially the one on October 2, 1968, are among the few episodes that have been transmitted internationally or passed down through collective memory, perhaps because they were not campesinos, rural teachers, or indigenous people, but students (2019). Yet the persecution of dissident movements continued, particularly as a part of the US-led 'dirty war' (1964-1982), including the militarization of rural areas, targeted attacks and massive arrests of both militant guerilla groups as well as non-violent social movements and other political dissidents (ibid).⁸⁷

While the precise role of cycling in these diverse struggles remains largely undocumented, the political repression, economic inequalities and social mobilizations that characterized this timeframe certainly impacted the (bi)cycle—a process that will become increasingly apparent in the following decades.

⁸⁷Also see: Ortiz Briano S and Camacho Sandoval F (2017) El normalismo rural mexicano y la “conjura comunista” de los años sesenta. La experiencia estudiantil de Cañada Honda, Aguascalientes. *Revista Mexicana de Historia de la Educación* 10: 243-266.

2.6 ‘Bicycle towns’ and motorized cities (1970s-1990s)



Figure 31. Vagabundo. Photo by author

Don Eliseo uncovers his almost untarnished vagabundo bike, evoking vivid memories of 1970s Aguascalientes. These legendary lowriders with banana-shaped seats, loosely imitating chopper motorcycles, started being manufactured in Mexico in 1967 by Windsor Mexico. Following the success of chopper bicycles from the UK, Windsor added a few additional features to the vagabundo, including counterbalance breaks and shock absorbers, increasing their appeal for young riders. Don Eliseo remarks: “Who doesn’t remember these lowriders from their youth,” explaining the popularity of these models despite their impracticality for long-distance rides. The growing presence of these lowriders marked a turn in cycling industry politics—one that would increasingly direct marketing towards children and youth (e.g., figure 32) while largely

promoting cycling as a form of leisure (Fernández Christlieb, 1991). These politics, however, did not stop a variety of road models, mountain bikes, lecheras, cargo tricycles, and other work cycles from maintaining prominence in Aguascalientes (e.g., figure 33) and across the country (Martínez De Luna, 2018; Sarmiento Casas, 2019; Sarmiento-Casas, 2022).

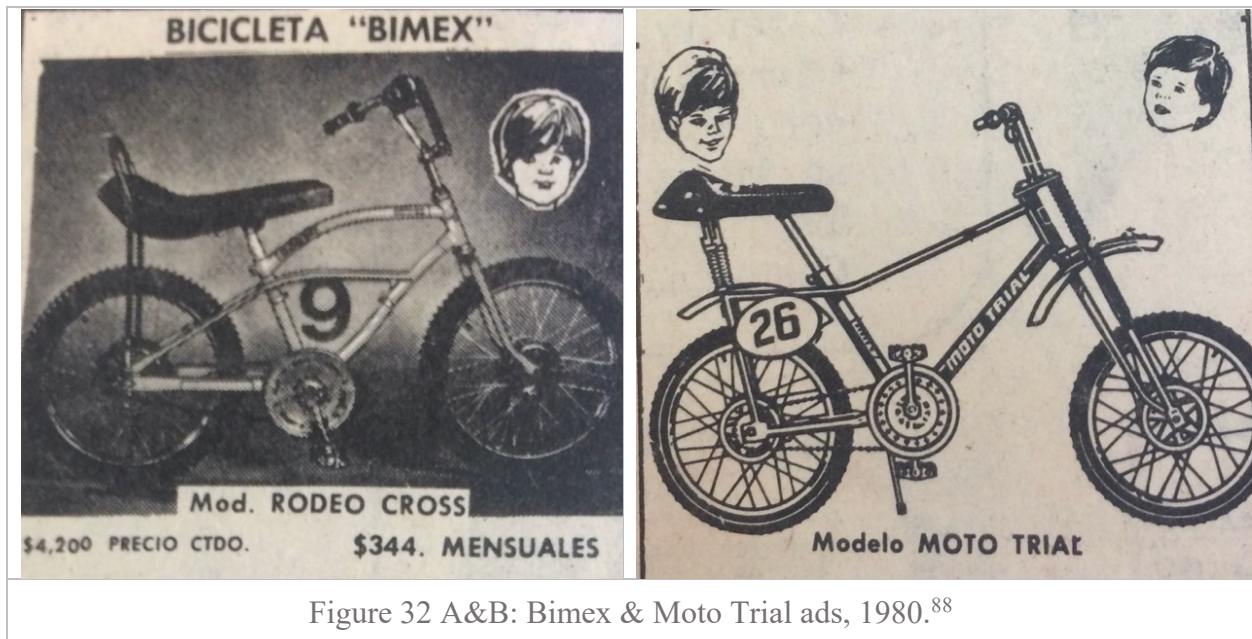


Figure 32 A&B: Bimex & Moto Trial ads, 1980.⁸⁸

Across Mexico, the 1970s and 1980s brought a series of drastic economic challenges, urban transformations and neoliberal reforms that produced massive changes and privatization of transportation systems. Import-substitution industrialization had shown ongoing difficulties in resolving political-economic contradictions, including problems of chronic deficit, state financial crisis and social issues provoked by the heavy prioritization of industrial growth at any cost (Alarcon and McKinley, 1992). These changes included the oil shock of 1973, the subsequent devaluation of the peso and a radical restructuring the economy under PRI Presidents Luis

⁸⁸Source: El Sol del Centro, Aguascalientes, December 10, 1980.

Echeverría Álvarez (1970-1976), José López Portillo (1976-1982), Miguel de la Madrid Hurtado (1982-1988), Carlos Salinas de Gortari (1988-1994) and Ernesto Zedillo Ponce de León (1994-2000). These phases of neoliberal economic restructuring included massive cuts to public spending, a concentration on transnational-led export manufacturing and a variety of additional reforms that led to the end of railway passenger transport, the growing economic domination of foreign-owned automotive firms (Alarcon and McKinley, 1992) and the authorization of thousands of kilometers of privately financed superhighways, which became some of the most expensive toll roads in the world (Freeman and Soto, 2018). The consolidation of the Border Industrialization Program and later the North American Free Trade Agreement, for example, enabled a boom in foreign-owned automotive maquiladoras, increasing from 53 in 1980, to 187 in 1990 and 313 in 2006, with Mexican workers earning roughly one-eighth of the wages earned by workers in the United States (Klier and Rubenstein, 2017). Based on an economic-development plan featuring “competitive wages” and “labour peace” as its main strategies, the neo-liberal turn tended to exacerbate the problems of social exclusion, bringing precarious employment to greater segments of Mexican workers (Bayón, 2009).⁸⁹

Concurrently, access to individual credit expanded substantially, provided by both the national bank and the automotive industry, leading to increased automobile ownership for middle-class families (Freeman and Soto, 2018). Car ownership also became a key feature in popular telenovelas on family prosperity—an industry that received generous government

⁸⁹Bayón elaborates: “Between 1995 and 2000, the number of jobs in *maquiladoras* increased from 650,000 to 1.3 million, albeit at wages almost 40 per cent lower than those paid in standard manufacturing plants” (2009: 302). ... “In contrast to Latin American countries with more formal labour traditions – leading to broader social protection and better compliance with labour law – Mexico’s main adjustment mechanism has not been unemployment but a steep fall in wages, the growth of the informal sector and emigration” (2009: 310).

support.⁹⁰ Car ownership, along with access to adequate infrastructure for daily travel, however, would remain highly unequal in a variety of contexts (Whitney et al., 2020).

Although the total number of bicycles circulating in Mexico continued to increase over these decades, this growth did not appear to parallel that of motor vehicles, at least not according to official data: In 1978, 3,360,000 automobiles were reported across the country, whereas the number of registered bicycles only reached 766,295 (Pino Hidalgo, 2018). These figures, as Ricardo Pino Hidalgo explains, need to be read with extreme caution. Firstly, the cancelation of required bicycle registration and licencing system in the 1970s meant that many cyclists simply chose to not to report their vehicles. Pino Hidalgo posits that the development of the National Survey on Household Income and Expenses (ENIGH by its Spanish acronym) in the 1990s provides more comprehensive data and greater clarity on these figures: “In 1994, at least 3,242,852 bicycles were reported across the country... meaning that 17% percent of households had at least one bike, whereas the number of homes with cars barely reached 21%” (2018: 8, my translation). The author explains important variations in these figures, with 22% of households in rural areas having bicycles compared to only 16% of urban localities.⁹¹ Figures from the 1994 ENIGH on car ownership display even greater disparities, with only 4% of rural household having access to a motor vehicle, compared to 26% of urban households (ibid.). Although these

⁹⁰Authors such as Gabriela Soto Laveaga (2007) have documented the emergence of the Mexican government’s conservative campaigns in the 1970s to reduce population increases, including the provision large subsidies to soap operas to focus on dissuading citizens from having large families, depicting ideas of a prosperous family life as one with fewer children and greater household wealth. In this attempt to limit family sizes through a conservative approach (suppressing calls for reproductive justice), these campaigns tended to reinforce class and racial divides (ibid). Greater analysis is needed of the role of automobility in these media campaigns.

⁹¹These surveys quantify an urban locality as any municipality with over 2,500 residents. Official data indicate that the percentage of people living in cities across the country shifted from 58.7% to 71.3% between 1970-1990.

figures need to be read with continued care (particularly in terms of regional and gender differences, as I will explore in greater detail in four), they do suggest that the bicycle maintained a stronger ‘foothold’ in rural areas. They also indicate that, despite an unprecedented rise in car ownership across the country, automobility remained largely inaccessible to the vast majority of households.

As a mid-sized city, Aguascalientes’ mobility landscape seemed to hover in an ambiguous in-between place. Many of the cyclists interviewed in this study affirmed that Aguascalientes largely remained a cycling city for several decades. Reyes Sahagún recalls that many principal roadways remained unpaved until the 1970s (Reyes Sahagún, 2019b). Even as the city’s paved roadways and motor-vehicle fleet rapidly increased (Martínez Delgado, 2014), Sociologist Genaro Zalpa Ramírez (from Mexico City) wrote an op-ed in 1983 describing Aguascalientes as a highly bikeable city:

Aguascalientes’ relatively flat terrain allows for the use of the bicycle without the need for extraordinary physical effort. Its climate, including varied but not excessively cold winters, nor excessively hot summers, makes the bicycle a comfortable form transport throughout the city without having to travel great distances. Some time ago, I measured the time required to travel by bicycle from the *Plaza de Armas* downtown to the University a group of Sociology students. It was twenty minutes at normal speed, respecting traffic lights and traffic rules in general. (as cited in Reyes Sahagún, 2019f: my translation)

Reyes Sahagún recalls that the Integral Family Development Centre (DIF) organized the city’s first *paseos dominicales* (car-free Sundays) from 1980-1986, running along a few central streets.⁹² The author recalls that, rather than stemming from a strategy to combat traffic

⁹²It’s uncertain if these events were inspired by similar initiatives across Latin America, such as Bogota’s ‘*ciclovía recreativas*’ (car-free days), which emerged in the 1970s. Given that the difference in terminology (*ciclovía* in Mexico refer to dedicated cycling lanes and paths, rather than referring to a *paseo dominical* or *rodada*), it would appear that these events emerged in distinct ways.

congestion (per se), these events assumed a celebratory and convivial local cycling culture (2019d). These dynamics stood in contrast to larger cities, especially Mexico City, where planner and engineers had already been engaged in radically reconstructing streets for a mass automobility since the early post-WWII years (Freeman and Soto, 2018).



Figure 33 A-D. Aguascalientes, 1984. Photos provided by: © Biblioteca Central Cetenario-Bicentenario, Fototeca Alejandro Topete del Valle.

The mid-1980s, however, quickly ushered major changes for the city of Aguascalientes, involving a huge influx of new residents⁹³ as well as the state's insertion into a neoliberal economic network, including an increase in direct foreign investment and automobile

⁹³Between 1970 and 1990, the city's population grew from 224,535 to 506,274 (Salmeron Castro, 1996).

manufacturing in the city (Camacho Sandoval, 2021; Martínez Delgado, 2014). These changes rapidly accelerated the expansion of the city's urban area (see figure 3), the growth of new urban peripheries, the abandonment of the historic centre by many upper-class families, along with the development of new 'gated communities' (Camacho Sandoval, 2021). Edith Jiménez explains that this process has largely taken shape under the influence of a more dirigiste state government and in the creation of land reserves mainly on the eastern and outer edges of the city, allocated for low-income housing, contrasted by the parallel development of high-income enclaves (2000). Fernando Camacho Sandoval elucidates,

The expansion of the city has been characterized by the generation of socially differentiated peripheries. On the one hand, housing for the upper- and middle-upper strata has grown mainly in the northern and western sides of the city, while low-income peripheries tend to be concentrated to the east, especially after the second and the third rings of circulation... These results show how neoliberal globalization and economic liberalization have been reflected in the city through more segregated and dispersed growth patterns, which add to the matrix of socio-spatial inequality. (2021: 99, my translation)

This accelerated pattern of segregated urban growth has further exacerbated existing socio-economic disparities, while generating new mobility related inequalities through uneven access to private transport, deteriorating investments in public transit, and the continued privileging of motor-vehicle infrastructure. While residents interviewed in this study affirmed the continued necessity of cycling for many commuters—especially for low-income residents residing in urban peripheries and surrounding municipalities—the city's rapid development trajectory increasingly made bicycle and tricycle commuting a challenging and precarious undertaking (a process that I explore in greater detail in chapter three).

Residents in Aguascalientes explain that these processes led to a growing level of distain and hostility towards cyclists, particularly from policy makers and in the national news media.⁹⁴ The term *pueblo bicicletero* was depreciated as a part of this trajectory, becoming in some cases a classist designation ascribed to a community that depends on cycling for everyday life (Sarmiento-Casas, 2021; Zapata Bello, 2019). Rebecca de Buen Kalman explains:

Pueblo Bicicletero is a common derogatory term in the Mexican lexicon used to describe underdeveloped towns implying that people cannot afford cars and ‘have no choice’ but to bike for mobility. This term signals the historical stigma attached to cycling mobility as an indication of poverty and lack of development. (2021: 1)

Newspaper archives from the 1970s-1990s highlight these tensions. In an article on the arrival of automatic telephone service to Arandas, Jalisco, an unidentified journalist refers to the town as a *pueblo bicicletero*, due to a perceived lack of both communication and motor-vehicle infrastructure (1977).⁹⁵ In a different article on the naming of Adolfo B. Horn as the executive of the year, the author congratulates the former US-consular general for “influencing Kodak, Burroughs, General Instruments, Penn Walt, Motorola, IBM and other transnationals to install plants in the city of Guadalajara” and for “changing the face of Guadalajara from a ‘bicycle town’ to a centre of industrial development” (1982, my translations).⁹⁶ While the latter article does not refer explicitly to transportation infrastructure, it shows how the term *pueblo bicicletero* came to function as a synonym for all things “un-modern.” This discourse continued to circulate

⁹⁴I was not able to find specific examples of this distain in the local-news archives from Aguascalientes for this timeframe; however future research would certainly be useful to further explore these dynamics. The archives have not been digitalized, but there are hundreds of thousands of news articles available for review through the *Archivo del Estado de Aguascalientes*.

⁹⁵Source: El Informador, Guadalajara, November 11, 1977.

⁹⁶Source, El Informador, Guadalajara, February 3, 1982.

well into the late 1990s.⁹⁷ In 1999, for example, Jaime Garcia Elias wrote an article celebrating Guadalajara's urban transformations, proclaiming that the bicycle was becoming "a zoological species facing extinction," allowing for the city to reach a new state of "glory" (my translation).⁹⁸

This discourse, however, was by no means static or uncontested (Sarmiento-Casas, 2021; Zapata Bello, 2019; Pino Hidalgo, 2011). Don Salvador, for example, noted that most cyclists in Aguascalientes "*didn't pay much attention to those words.*" Clara, a domestic worker from a neighbouring town close to Aguascalientes and who grew cycling with her family in the 1970s and 1980s explained that she has always, and continues believe that "*being a bicycle town is a source of local pride.*" This dignity and celebration of local cycling culture was emulated by countless cyclists interviewed in Aguascalientes as a part of this study, from retired train workers, to paramedics and bicycle-movement activists.

These counter-discourses also gained traction in academic and artistic spaces. In 1973, Austrian philosopher Ivan Illich (also referred to as "the prophet of Cuernavaca" for his critical educational work in Mexico) published his seminal book *Energy and Equity*, arguing that high speed is the key factor fuelling destructive transportation systems and undemocratic processes. For Illich, truly equitable social relations would only be possible when speed is adequately calmed, making cycling a paragon of just energy transitions: "Participatory democracy demands

⁹⁷For a more recent (2014) example, see: <https://www.elpuntosobrelai.com/grave-deficiencias-en-los-semaforos-de-la-capital-del-estado/>

⁹⁸Source: El Informador, Guadalajara, October 15, 1999.

low-energy technology, and free people must travel the road to productive social relations at the speed of a bicycle” (Illich, 1973: 20).

Mexican poet and philosopher Gabriel Zaid advanced these themes in his (1975) book *Como leer en Bicicleta* (how to read while cycling), in which the bicycle is mobilized as a powerful cultural and political symbol. Zaid was, and continues to be, deeply influenced by Illich’s writing (Zaid, 2011), explaining that many of the leading international environmentalist trends of the era (such as those discussed in E. F. Schumacher’s 1973 *Small is beautiful*), were presented earlier in Illich’s work, including *Deschooling society* (1971) and later *Tools for Conviviality* (1973) and *Energy and Equity*. What distinguished Illich’s approach, Zaid elaborates, is both the placement of convivial social relations at the heart of environmental transitions as well as the strong critique of institutional power relations, evoking an “egalitarian, free and festive spirit of conviviality in the face of hierarchical, formal and coercive institutions” (2011: 20, my translation).

Zaid’s (1975) *Como leer en bicicleta* was both a treatise on the bicycle and a provocation of political and intellectual power. It begins with excerpts from the Spanish Encyclopedia’s entry on the bicycle, which includes prolonged instructions of “how to ride,” how to “avoid irritations” as well as notes on “the uses of this form of locomotive in war” and the “creation of infantry regiments mounted on bicycle” (1, my translation). Zaid questions the practicality of such instructions, noting, “What is not clear is how to follow these lengthy instructions: if they need to be memorized, or read by a friend galloping with the heavy volume... or if it needs to be placed on the handlebars to be read while riding” (ibid: my translation). These ironies serve as a point of departure to “*ensayar con el ensayo mismo*” (to essay with the essay itself). While some aspects

of this book were controversial,⁹⁹ it provided potent reflections the student massacres of 1968 and 1971 as well as on political and intellectual contradictions. For Zaid, the bicycle is at once a powerful symbol of everyday life as well as a vehicle for rethinking institutional paradoxes.

Although cycling is a fleeting theme in this and future writing (e.g., Zaid, 2020), Zaid's self-reflective and open-ended poetics provide a frame for mobilizing critical thought as a profoundly open and inclusive process (Ruiz-Pérez, 2008). As Ignacio Ruiz-Pérez explains, Zaid's work was integral to the transformation of intellectual culture across Mexico in the 1960s and 1970s, shifting from an elite space to more popular, embodied and unrestricted *meeting places* (ibid). Zaid's bicycle is thus radically fluid, dialectical and multi-dimensional.

These themes continued in future popular and academic expressions, as citizens worked to challenge forms of political, cultural and transportation exclusion. Federico Fernández Christlieb traces an upsurge in critical thinking on mobility politics across the country in the 1980s and 1990s, including notable work from neighbourhood associations, cycling movements as well as pedestrian and public-transit rights groups advocating for a humanization and democratization of the city (1991). Fernández Christlieb's *Las modernas ruedas de destrucción* ("modern wheels of destruction," ibid.) was an ardent critique of the ways that political, economic and military power conjoined through automobility. Through a detailed analysis of NAFTA, subsidies and tax breaks afforded to the automotive industry, anti-union repression and other forms of infrastructural violence, the author considers automobility's "antidemocratic vocation." Fernández Christlieb posits that this process—now endemic to cities across the

⁹⁹For example, Zaid made some controversial and factually questionable claims about 'fanatical' atheism, and Mario Vargas Llosa described the book as containing "*momentos soberbiamente irresponsables*" (superbly irresponsible moments) in his review.

country—was the result of a development regime that made it increasingly difficult to navigate the city without a car (ibid). However, even in Mexico City, where the urban landscape was already characterized by a dramatic system of axial thoroughfares, the majority of residents continued to depend on a variety of public transport options (ranging from the metro to taxis, combis, peseros and micros) (Freeman and Soto, 2018), in addition to walking and cycling. Fernández Christlieb explains that continued necessity of cycling for many low-income residents of Mexico City, requiring the formulation of careful strategies: “Physically and legally unprotected, today’s cyclists have to reclaim spaces for their own safety” (1991: 183, my translation).

While recognizing the ways that the bicycle eventually led to the development of the modern motor vehicle, Fernández Christlieb explains some notable particularities of cycling technologies, including their ability to facilitate non-polluting and efficient mobility, while never losing visceral “contact with the rider and (open) dialogue with the street” (1991: 172: my translation). This argument would be devised two decades later by popular American biketivist Zack Furness in *One Less Car* (2010).¹⁰⁰ Although Fernández Christlieb’s work is rarely cited in the anglophone literature, his judicious critique of automobility provided valuable insights, and was published before many leading international mobility texts. The author analyzed the automobile “as both a status symbol and means of transport, asserting itself in a position of superiority on public roads and punctually *marking differences between property owners and non-owners*” (1991: 22, my translation, emphasis added). The author’s emphasis on property

¹⁰⁰In Furness’ words, “while bicycling fostered an auto-mobile disposition benefiting an eventual car culture, it also created new opportunities for people to experience the pleasures of a radically efficient, non-polluting form of personal transportation that would not be duplicated in the car itself” (2010: 46).

relations was a significant (albeit rarely acknowledged) contribution to the discussion of mobility politics, echoing critical thinking in Mexico going at least as far back as José Guadalupe Posada's critique of elite mobilities and land relations during the porfiriato. For Fernández Christlieb, the glorification of automobility and the more recent depreciation of cycling was not simply about political and class relations, but also about a symbolic differentiation between rural and urban Mexico, and between propertied and non-propertied bodies. The development of more equitable social, economic and land relations, the author notes, would be necessary for efforts aimed at building more liveable and less contamination cities in which bicycle and tricycle mobilities can thrive.

These points make cycling a necessary component in urban environmental transitions, “*not as a panacea on two wheels...but as a highly undervalued component*” (Fernández Christlieb, 1991: 168, my translation, emphasis added). Fernández Christlieb predicted that many of Mexico City's pollution-mitigation tactics would fail, including *Hoy no Circula* (or “no drive days”), policies that continue to be critiqued in the news media and environmental literature for their lack of effectiveness.¹⁰¹ Instead, Fernández Christlieb elaborated a series of more drastic modifications to transportation regimes across the country, including widespread traffic-calming measures, a radical rethinking of social and political exclusions as well as learning from other Latin America cities (such as Curitiba Brazil and smaller cities such as El Progreso, Honduras) that have worked to recuperate cycling and pedestrian spaces. This process would inescapably involve better recognition of local social movements advocating for systemic political changes

¹⁰¹For example, the *Hoy no Circula* policy consists of prohibiting the circulation of a percentage of vehicles from Monday to Friday, depending on the last digit of their license plates, but does not prohibit drivers from buying and using alternate vehicles, thus avoiding driving restrictions.

and a reevaluation of “hundreds and hundreds of pueblos bicicleteros” across Mexico, from Chetumal, Quintana Roo to Tikul, Yucatán (ibid.).

These discussions accentuate the liveliness of local movements for social, environmental and mobility justice. They also point to particular historical dynamics that complexify struggles for cycling equity. What does it mean to be a cyclist, a ‘bicycle town,’ or a bicycle movement in the wake of these histories?

2.7 Pieces at the repair shop



Figure 34. Pieces of repair. Photo by author

This chapter has provided a preliminary tracing of heterogenous cycling practices, objects, mobilities and meanings in what is now known as postrevolutionary Mexico, with an emphasis on the city of Aguascalientes. Rather than representing a universal narrative, these stories attest to a diversity of ongoing movements and struggles, making bicycle and tricycle biographies an

important topic for future study. While these histories have rarely been documented in the literature, they can be found across collective memories, hand-me-downs, popular media, critical crossovers and the bits and pieces at Don Salvador's repair shop.



Figure 35. Don Salvador. Photo by author

These historical vibrancies are gaining new meaning in the face of a global upsurge in pro-cycling urban initiatives aimed at revaluing cycling, bicycle towns and pro-cycling cities. Ulises Zarazúa (2012) posits that while the term *pueblo bicicletero* has served as a historical imaginary in Mexico to privilege motorized transportation options, these processes are changing with the rise of a global sustainable-transportation movement prioritizing bicycle travel. For recent authors such as Ivan de la Lanza (2021), bicycle towns signify companionable and covivial localities: “*Un pueblo bicicletero es un pueblo feliz, cercano, conexo y conectado, de distancias cortas y de personas conocidas y vinculadas con el lugar en donde viven.* [A bicycle

town is a happy, close and connected town, of short distances, with people familiar and linked to the place where they live]” (bracketed text my translation).

As a part of these understandings, I suggest that the historical tensions underlying this term—and cycling politics more generally—merit greater attention. Bicycle scholars such as Rogelio Garza have lamented the lack of documented cycling histories from Mexico, and have instead relied on bicycle histories from North America and Europe to frame their analysis and pro-cycling advocacy (2009; 2012). While these accounts provide noteworthy insights through international overviews, there is also a danger in oversimplification and universal generalization.

One of the risks of relying on global bicycle histories is that it limits an understanding of particular political, social, material and technological forces that shape and reshape cycling practices and meanings across time and space (Cox, 2015; Vivanco, 2013a; Castañeda, 2021b; Torres Barragán, 2015). As Sociologist Nicolas Scott explains, many conventional studies recognize that cycling practices “reflect the larger socio-spatial contexts of which they are constitutive... but rely heavily on a traditional, deterministic, and positivistic approach that views cycling through a monolithic lens as something that can be explained through one objective model of reality” (2020: 8). Relying on a universal bicycle historicity can further reinforce a developmentalist narrative through which the European experience is positioned as the ‘centre’ around which all other histories are seen as peripheral (Cox, 2015: 51) or belated emulations. In terms of mobility trajectories in different Mexican contexts, there is also a risk of disregarding or minimizing some of the more troubling and contested aspects of cycling histories.

In addition to the challenges in finding and interpreting distant archival data, one of the difficulties of engaging with early cycling histories in Mexico relates to issues of dictatorial control and extreme forms of social exploitation. From the early introduction of wooden velocipede wheels, to the thousands of safety bicycles circulating in Mexico's largest cities during the porfiriato, the bicycle was not an innocent bystander in the formation of uneven mobilities and social exclusions (as I will explore in greater detail in chapter four). In some ways, these processes reveal parallels to cycling histories of the global north, in which the bicycle emerged largely as an "elite plaything" (Cox, 2015) and a signifier of "modernity" (Norcliffe, 2016). Yet, questions surrounding mobility politics, urban development and social exclusions during the porfiriato were also in many ways unique, both in terms of the extent of dictatorial control, foreign neocolonization, land dispossessions and labour exploitation as well as resistance to these forms of authoritarianism. While this resistance was exercised in manifold ways, José Guadalupe Posada's artwork provided potent reflections on elite cycling as a metaphor for social repression and a refusal of porfirian positivism's vision of 'order and progress.'

These reflections and refusals do not imply that the bicycle is somehow imbued with a repressive 'essence,' nor do they deny the liberatory potential of bicycle and tricycle technologies. If anything, an understanding on these processes makes the revolutionary reappropriation of the bicycle and wider transportation systems even more powerful. Nonetheless, these reflections do compel continued careful and critical analysis, as Carlos Fuentes elaborates through his reading of Posada's legacy:

Through a loud, animated and satirical vision of death, Posada's art not only offers society... a deformed mirror, but also an unveiled vision of history as ruin. Posada helps us to unite cultural continuity to a constant critical exigency. We have paid dearly for the

mistaken belief that history and happiness can coincide beatifically. *Posada reminds us that we must always be critical.* All happiness is relative because there are no absolutes. History is only historical if it does not deceive us with a promise of absolute success or perfect fulfillment. Life is only livable if our tragic consciousness is not forgotten, including, as Posada does, through the vision of death. (1992: 318 my translation, emphasis added)

How, then, can we provide continuity to this critical exigency in analyzing the post-revolutionary decades? ¹⁰²

The series of immense social uprisings and armed conflicts that are now understood as the Mexican Revolution have been widely analyzed. While understood as one of the greatest revolutionary upheavals of the twentieth century, the revolution's outcomes have been highly debated (Knight, 1980; Villegas, 2019; Hale and Orensanz, 1997; Lomnitz, 2005). This dissertation does not attempt to resolve these debates or to diminish the significant socio-political achievements of the Revolution (including, but not limited to agrarian reform, education, the nationalization of industries, labour rights, limitations on church power, etc.), but rather to contribute to critical understandings beyond persistent promises of 'perfect fulfillment.' Historians such as Michael Bess have provided insightful analyses of the complex progress narratives, socio-political struggles and disputes entrenched in postrevolutionary transportation development:

It is indicative of economic and social tensions rooted in the very idea of Mexico itself, dating not just to the causes of the Revolution but also to national independence and the legacy of colonialism. Road building will remain deeply contested, as it is a political and technical project that reaches into the heart of communities and regions, weaving them into a national fabric marked by deep social divisions and economic inequality. (2017: 152)

¹⁰²Also see: Paz O (1998) *El laberinto de la soledad*. México, DF: Fondo de Cultura Económica.

An analysis of cycling histories, while largely invisible in transportation studies, adds layers to these understandings. In addition to the use of bicycles by revolutionary forces, a tracing of sparse archives and popular histories reveals growing working-class appropriations of cycling technologies across post-revolutionary towns and cities, from bicycle parades and races, to work cycles, deliveries, street vending, family transport and other forms of everyday travel. Even as postrevolutionary leaders increasingly mobilized motorways and the automotive industry to stimulate economic development and ideas of national ‘unity,’ car travel remained out of reach of the vast majority, while bicycles and tricycles became an increasingly vital means of everyday travel and work. While cycling was, and continues to be, an economic necessity for many families in cities such as Aguascalientes, this chapter shows how cycling has been a highly meaningful practice that expresses a variety of sentiments towards the rhythms of urban and political life. Of course, these sentiments are palpably diverse and multilayered. At once a form of enjoyment, a decorative celebration, an urban menace, a source of pride, a mechanism of work, an emblem of the mundane, a steel-horse hybrid, a treasured family member, a *rascuache* attitude, an underdog mentality, a means of resistance, an environmental virtue, an artistic device, a paragon of equity or an undervalued component, the (bi)cycle’s meanings across postrevolutionary cityscapes are far from stationary or unilinear. Rather than carrying a unified sentiment or identity, these meanings reveal the complex socio-political tensions and contested discourses surrounding urban-development processes and everyday mobilities in post-revolutionary Mexico.

That cycling maintained a stronger foothold outside of Mexico’s largest cities, not just in rural areas, but also in intermediate cities such as Aguascalientes, is perhaps self-evident. Yet these dynamic also expose lasting affective ties to cycling and unique forms of bicycle and

tricycle innovation, ranging from cargo tricycle manufacturing, to rural-urban distribution networks, to intermodal transportation. They also reveal complex understandings of “road safety,” which reach beyond a current policy focus on cyclists as “vulnerable road users” who need to be careful, into a prior emphasis on car driving as a fundamentally dangerous activity in need of restraint. The latter focus, which encompasses a comprehensive consideration of safety in both the transitive and intransitive sense¹⁰³ (Davis, 1993), remains palpable for many cyclists in Aguascalientes, despite a the massive reorientation of local transportation systems and road-safety frameworks that accompanied the city’s neoliberal turn. These are not simply semantic or theoretical considerations, but rather a reflection of the changing understandings and policy frameworks through which particular road users are burdened with, or cleared of, the responsibility of being labelled as a problem or risk.¹⁰⁴

While in some ways a historical occurrence, the emergence of the term *pueblo bicicletero* as a synonym for underdevelopment in mainstream media and political discourse also requires continued reflection. In addition to the distinct car-centrism of this discourse, the idiom also contains more subdued territorial and rural/urban dichotomies that reach beyond the Revolution into earlier colonial power relations. With its pejorative characterization of “town” or rural life, the expression is indicative of longstanding land disputes and identity politics at the heart of a

¹⁰³Davis explains the different meanings of the word ‘safe’ in relation to transportation: “These meanings are *transitive* and *intransitive*: ‘safe’ as in not posing a threat or danger to others (transitive); or as in being in a situation or position not exposed to danger or threat from others (intransitive). Thus, the extent to which a form of transport is ‘dangerous’ can be understood as the extent to which the person using it is at risk from others, how hazardous it is (the intransitive sense); or as how much of a danger the person poses to others (transitive)” (1993: 23).

¹⁰⁴For greater discussion of these dynamics in the British context, see Aldred R (2012) Governing transport from welfare state to hollow state: The case of cycling in the UK. *Transport policy* 23: 95-102.

variety of revolutionary and postrevolutionary struggles. Cycling, after all, requires more than just a bicycle or tricycle and a cyclist, *but also land to ride on and access to it* (Cox, 2015). This makes the study of “Land with a capital L”¹⁰⁵ an important area for cycling research, compelling anti-colonial¹⁰⁶ analyses that moves beyond understandings of “colonialism as a monolithic structure with roots exclusively in historical bad action, rather than as a set of contemporary and evolving land relations” (Liboiron, 2021: 6).

Federico Fernández Christlieb’s more recent research demonstrates how the concepts of “urban” and “rural” were colonial constructs imported from Europe, with colonizers working to concentrate Indigenous communities across Mexico into grid-pattern towns: “That is one of the ways in which indigenous land also became ‘territory’ as Europeans understood it” (Fernández-Christlieb, 2015: 341). The emergence of a depreciatory discourse linking cycling to ideas of ‘rurality’ is thus connected to enduring colonial power relations (Fernández Christlieb, 1991) and territorial constructs.¹⁰⁷ Rather than operating simply as a language construct, however, this

¹⁰⁵Specifically, Liboiron defines Land as “the unique entity that is the combined living spirit of plants, animals, air, water, humans, histories, and events recognized by many Indigenous communities...Calling out proper nouns so they are also proper names is part of a tradition where using someone/thing’s name is to bring it out of the shadows and engage it—in power, in challenge, in recognition, in kinship” (2021:7).

¹⁰⁶In this dissertation, I draw from Latin American decolonial theorizing, which works to contest assumptions that colonialism has been left in the past, building on long histories of anti-colonial thinking. While having similarities to post-colonial studies, Latin American decolonial theorists stress the need to acknowledge different geo-genealogies (Icaza 2017). Understanding decoloniality as both an epistemic and political project, this theorizing, particularly as articulated by Walter D. Mignolo and Arturo Escobar, emphasizes *knowledges otherwise*—a movement to refuse dominant categories of thought as well as to refuse colonial land relations (Escobar 2020). I see this theorizing as complementary to recent anti-colonial thinking from scholars such as Max Liboiron, while recognizing some differences. Liboiron’s work, for example, foregrounds anti-colonial thinking as that which “requires critique but mostly it requires action” (2021:6).

¹⁰⁷As far as I can tell, Fernández-Christlieb’s recent (2015) work on colonial rural/urban landscape and his 1991 book on mobility politics remain thusfar disconnected (although

discourse can be understood more broadly as constellations of knowledge, power relations and development practices,¹⁰⁸ with ongoing implications for those who continue to confront social, political and economic exclusions, including (but not limited to) those who depend on bicycle and tricycle travel. These points underscore the need for broad-based initiatives aimed at cultivating more equitable social and Land relations as integral component of efforts aimed at building liveable and less contamination spaces in which (bi)cycle mobilities can thrive.

These understandings also bring counter discourses and forms of collective resistance to fore. As with other forms of discourse, the notion of bicycle towns has also frequently been contested, reappropriated and reconfigured. The contributions of social and labour movements, popular philosophers and mobility-rights advocates remind us to continually grapple with questions of power. Even as the renewed popularity of cycling gains traction in policy discourse, we are reminded to mobilize cycling histories, and critical thought more generally, as a radically inclusive and open-ended process.

neocolonialism was a key theme in his 1991 book, I couldn't find any cross-citations or mentions in his recent work). I am thus respectfully inferring a connection, while I certainly hope to hear more from the author on the topic.

¹⁰⁸The relatively recent processes through which cities have come to be viewed as a sustainability solution, rather than a sustainability problem, are also worth considering. As Hillary Angelo and David Wachsmuth observe: “‘Urban sustainability’ has quickly become a guiding concept of contemporary urban planning and policy, such that the notion of cities as sustainability solutions already appears commonsensical and even inevitable. However, in our telling of this story of cities saving the planet, we, as urbanists, have only told one side of a two-sided story. The city–environment conjuncture, in other words, is not simply a matter of urbanists turning to the environment but also of environmentalists turning to the city... This parallelism in urban and environmental movements deserves to be explored in greater detail. So, too, do the broader parallels between material and representational transformations and dispossessions currently taking place in rural or agrarian spaces in tandem with the celebration of urban sustainability” (2020: 2216-2217).

For popular mechanics such as Don Salvador, cycling is more than just a catch word that the city should adopt in the hope of building a more sustainable future. Cycling practices are layered into city's vast groundwork, and "these histories need to be acknowledged" and reclaimed. He carefully pieces these histories back together, patches their tires, greases their chains and sends them back out on their way.



Figure 36. Photo by author

Chapter 3:

Divergent Infrastructure: Exploring alternative pathways in urban cycling

3.1 Introduction

The Mayor of Aguascalientes inaugurated 10 kilometers of cycling infrastructure in 2018, adding to the roughly 50 kilometers of bicycle facilities that encompass the city. The inaugural celebration of *Ciclovía*¹⁰⁹ *Tecnológico* was packed with a full crowd of bicycle enthusiasts, reporters as well as a complete team of municipal planners waving flags over the freshly tinted pavement (Figure 37). Surrounded by gifts of balloons and backpacks for audience members, the Mayor spoke about the benefits of cycling, while discussing the city's plan to expand cycling facilities as a part of a sustainable-mobility strategy.



¹⁰⁹In Mexico (and in this paper), the term *ciclovía* is used to refer broadly to a variety of bicycle infrastructure, including cycling lanes, bicycle-pedestrian paths and shareways. This term is used differently in other areas of Latin America, such as Colombia, where a *ciclovía* refers more specifically to a car-free day (which is generally called a *paseo dominical* in Mexico).

Figure 37. Photo from the inaugural celebration of *Ciclovía Tecnológico*, a bike path at the edge of Aguascalientes' city center. Photo by author

In the midst of an ongoing fuel crisis in Mexico, in a state where most people do not have access to a motorized vehicle (INEGI, 2016b), the choice of augmenting cycling infrastructure seems like a sound choice for enhancing travel options for diverse commuters. From an equity perspective, however, the underlying assumptions behind these proposals also require careful consideration. Theorists of social and mobility justice have highlighted how inequalities relating to income level, gender and racialization can restrict access to adequate transportation (Bullard et al., 2004; Fainstein, 2010), while forms of institutional domination reinforce vulnerabilities (Cook and Butz, 2016; Sheller, 2018a). Aaron Golub and colleagues' (2016) book on *bicycle justice* underscores these issues, explaining that pro-bicycle investments and planning intersect with uneven development processes. Karel Martens and colleagues elaborate, "although interventions to promote cycling can indeed serve as a tool of empowerment among marginalized communities, they can also serve to reinforce injustice and perpetuate systems of privilege if the fundamental assumptions upon which they are justified are not critically examined" (2016: 87).

This paper contributes to critical thinking on urban development through an ethnographic study of cycling practices in the state of Aguascalientes. While much of this analysis will focus on a specific Mexican context, it intends to raise critical questions regarding inequalities and exclusions in transportation systems, particularly in locations where adequate physical infrastructure is lacking for cyclists. In these contexts, I posit that a focus on the experience of everyday cyclists is needed to account for both the planned and inadvertent strategies that they assemble to bypass transportation barriers.

Drawing from ethnographic approaches to the study of Science, Technology and Society (Fortun, 2012; Jensen and Morita, 2015), I conceptualize urban infrastructure as more than concrete material structures and fixed transportation networks. From this perspective, infrastructure is understood as *relational* (Star, 1999), existing in tandem with a multiplicity of organized practices, socio-material relationships and everyday struggles (Puig de la Bellacasa, 2016; Summerton, 2016). As elucidated through several North American cases (Barajas, 2018; Lugo, 2013; Scott, 2020), cycling can constitute a form of *human infrastructure*¹¹⁰—a concept that extends notions of urban infrastructure to include people’s mobilities in cities. That is, where proper facilities for cycling are absent, cyclists work to articulate different resources, experiences, stories and locations into possibilities for everyday travel. Understanding these processes, I suggest, also requires attention to the complexities of life in low-income localities and across the so-called ‘Global South.’ The implementation of cycling facilities in Aguascalientes exemplifies the need for a nuanced focus to attend not only to the promise of infrastructural development, but also to the particularities of (bi)cycle mobility where transportation networks are precarious and hybrid.

Specifically, I propose the concept of *divergent infrastructure* to account for the temporary bridges, improvised technologies and alternative pathways that cyclists configure when transportation systems fail to meet their present needs. I refer to these configurations as *divergent* based on a literal translation of the adjective: *that which tends to be different or develop in different directions*. Although infrastructure is commonly understood in terms of

¹¹⁰For more information, also see: Simone A (2004) People as infrastructure: intersecting fragments in Johannesburg. *Public Culture* 16(3): 407-429.

solid material forms, an understanding of divergent infrastructure is needed to better grasp the porous shapes, patterns and challenges of everyday mobilities.

This chapter begins by examining the importance of bringing the critical insights of anthropology into recent discussions on cycling. Based on the case of Aguascalientes, I next review the municipal and state government's plans to develop cycling facilities—a process that intersects with competing goals to reduce carbon emissions and to expand motor-vehicle expressways. To surface alternative perspectives, I further detail the divergent infrastructure that cyclists configure at the margins of motor-vehicle roadways, exploring how everyday cycling practices, technical arrangements and power relations affect how cities are experienced. Lastly, I discuss the fragmented temporalities and spatialities of official cycling infrastructure, the global and particular aspects of these issues and the importance of contextualizing cyclists' divergent strategies. While this research carries critical analysis of sustainable-transportation policies, it is also grounded in the concerns of local cyclists, calling for greater sensitivity to particular contexts and attention to systemic mobility injustices.

3.2 The ethnography of infrastructure

Although research on cycling has been increasing in disciplines such as Public Health (Fraser and Lock, 2011; Pucher and Dijkstra, 2003), Geography (Norcliffe, 2015; Spinney, 2009), Communication Studies (Furness, 2010; Hoffmann, 2016) and Sociology (Aldred, 2010; Horton et al., 2012). anthropologists remained outside of the debates on cycling infrastructure until fairly recently (Lugo, 2013; Meador, 2016; Vivanco, 2013b). In his book *Reconsidering the bicycle: An anthropological perspective on a new (old) thing*, Luis Vivanco discusses the importance of bringing anthropology into the discussions on cycling as a means of attending to the unique

conditions through which bicycling happens in different contexts: “bicycles are heterogeneous, multidimensional, and contextual objects, enmeshed in specific technological conditions, practices of life, social relations, cultural meanings, and political-economic dynamics (2013a: xxi). Through engaged ethnographies, a number of anthropologists have helped to challenge the apparent neutrality of infrastructure, revealing forms of exclusion and governmentality in the implementation of development projects (Anand, 2015; Barry, 2013; Von Schnitzler, 2008). Ethnographers have further stressed the fluidity of infrastructure by highlighting practices of *infrastructuring* (Calkins and Rottenburg, 2017). Conceptualizing infrastructure in this way—as a verb rather than a noun—illustrates how urban landscapes are continuity in the making. By attending to these processes, ethnographies can help to unpack the universal assumptions that often underline development thinking (Hetherington, 2018) while revealing forms of invisible trouble that disrupt infrastructural plans and expectations (Lampland and Star, 2009; Harvey and Knox, 2015). Given that much of the literature on cycling tends to understand cycling infrastructure as universally beneficial, there is a need for more ethnographic studies to critically examine the implementation of cycling facilities, to account for variations across socio-spatial conditions and to move beyond standard metrics in transportation studies.

As critical mobility scholars have argued, a narrow focus on transportation systems creates a number of conceptual limitations given that transportation tends to be understood as a “black box” or a neutral set of technological arrangements involved in moving people (Sheller and Urry, 2006). Mobilities, by contrast, refer to more than transportation through infrastructural space: they also convey politically mediated and culturally meaningful movements (Cresswell, 2010; Jensen, 2009; Sheller, 2014), with important changes across time, space and social condition (Hannam et al., 2006). Bringing greater attention to mobilities allows us to take

seriously what people do with transportation technologies such as bicycles and tricycles, not just what technologies do for people (Vivanco, 2013), as well as any divergences from standardized transportation norms.

Accordingly, this paper moves beyond a focus on standardized transportation infrastructure and how cyclists are integrated within them. My goal is not only to critically examine the politics behind official cycling infrastructure, but also to better understand cyclists' unique lived experiences and ways of infrastructuring.¹¹¹ I consider this approach as a type of *methods' assemblage* (Law, 2004; Suchman, 2012), understood here as configurations that help bring into view what is present at the surface of an infrastructure (including materials, policies and promises) as well as what is silenced, excluded or a part of the former's 'hinterland.'

3.3 Cycling infrastructure and the promise of sustainable urban development

The 2040 Urban-Development Program for the City of Aguascalientes is a community effort that, for the first time, attempts to break the urban paradigms that the city has been immersed in. In general, it puts people first in the planning process. [...] In addition, it renews a commitment to privileging non-motorized mobility as the most efficient and sustainable means of transportation for its inhabitants. (IMPLAN, 2015: 20)¹¹²

The municipality of Aguascalientes is known as 'the heart of Mexico,' sitting at the center of both the state boundaries and the country as a whole. Having grown from 181,277 residents in 1970 to 745,519 in 2010 (INEGI 2010), it more than quadrupled its population in only forty years. Estimates vary on the exact modal share of cyclists (Medina Martínez, 2018; Hernández

¹¹¹This approach is based on situational-analysis, which encourages researchers to compare issues of "discourse and agency, action and structure, figure, text and context" with the aim of enhancing the capacity of research to make sense of "highly complex situations of action and positionality" (Clarke, 2005: xxii-xxiii).

¹¹²All of the quotations from the Municipal and State governments as well as from the Municipal Planning Institute (IMPLAN by its Spanish acronym) have been translated by the author.

Alvarado, 2017); however, cycling advocates in Aguascalientes explain that up to 20% of households still rely on bicycle or tricycle transportation in some form—representing the state with the fourth highest proportion of bicycles per household in the country (INEGI, 2018). It is estimated that cyclists in Aguascalientes are predominately working class, tend to have long commutes (averaging roughly 41 minutes each way¹¹³) and ride around 5.7 days per week (Medina Martínez, 2018). In a recent publication, the Mayor of Aguascalientes acknowledges the city’s cycling history “with great honor,” while ascertaining that it still “remains a bicycle city” (Jiménez, as cited in IMPLAN, 2018: 1).

The municipal government also recognizes that the city has “unfortunately prioritized spaces for motor vehicles” over cyclists and pedestrians, a process that led to cars “taking control and dominating us” (IMPLAN, 2018a: 48). By 2017, the state of Aguascalientes registered 560,000 vehicles, amounting to almost one vehicle for every two people (INEGI 2017). These issues are also reflected in the city’s road structure, which orients traffic through three main rings of circulation and connects several state and inter-state highways. These roadways are transited daily by thousands of cyclists from both Aguascalientes and a number of surrounding towns, although functional cycling lanes have yet to be developed along most of these main traffic channels (see figure 38).

¹¹³Commutes ranged as high at 90 minutes in each direction for some of the cyclists interviewed in this study.

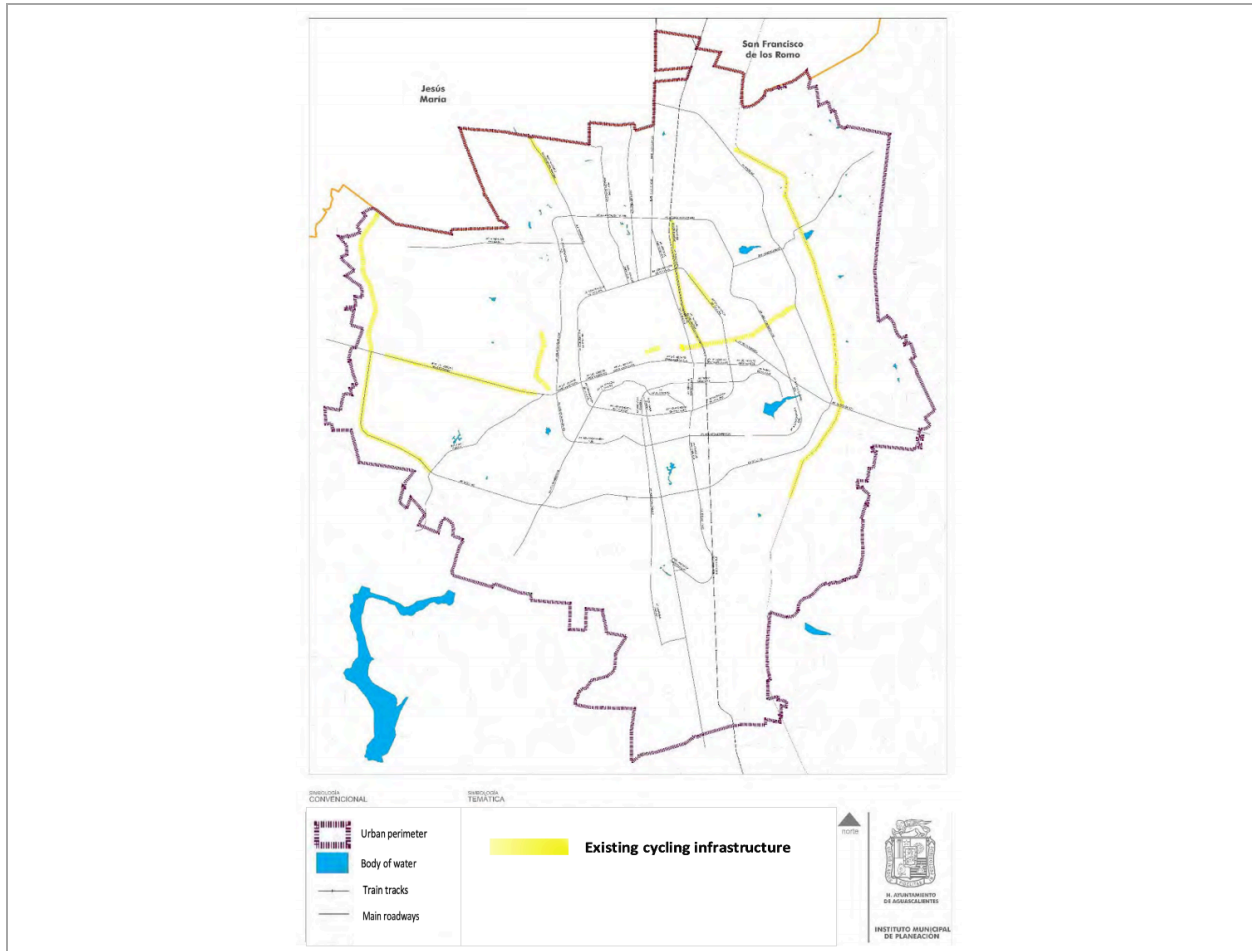


Figure 38. Map of the municipality of Aguascalientes, showing the three rings of circulation and other major traffic channels. The city’s existing cycling facilities as of 2018 are highlighted in yellow. (Map provided by IMPLAN, 2018b: 142, translated by the author).¹¹⁴

With pledges to construct over 200 kilometers of additional cycling facilities over the next 20 years (as shown in figure 39), the government of Aguascalientes is hoping to overcome a number of persistent transportation issues. The 2040 Municipal Urban-Development Program identifies the following problems to be addressed in the coming decades: “re-current road collisions;” “worsening travel conditions for non-motorized mobility in the city;” “the stigmatization and lack of respect for cyclists and pedestrians;” and “limited mobility options for

¹¹⁴For an updated visualization of the official cycling network as of 2021, see chapter five.

at least 30 percent of residents” (IMPLAN, 2015: 130). The recent implementation of a state-wide new mobility law aims to address these problems head on, placing pedestrians and cyclists at the top of a new mobility pyramid, being given “*first priority and preference in the utilization of road space and in the distribution of budgetary resources*” (Estado de Aguascalientes, 2018: 4). Within this framework, the municipal government has introduced a number of traffic-calming proposals, cycling and pedestrian facilities as well as a bicycle-sharing system (Jiménez, 2018).¹¹⁵ These initiatives are linked to national and international climate-action plans in which cycling interventions are framed as a win-win situation for reducing CO2 emissions and contributing positively to resident lifestyles (Ballesteros and Dworak, 2015; ITDP, 2011).

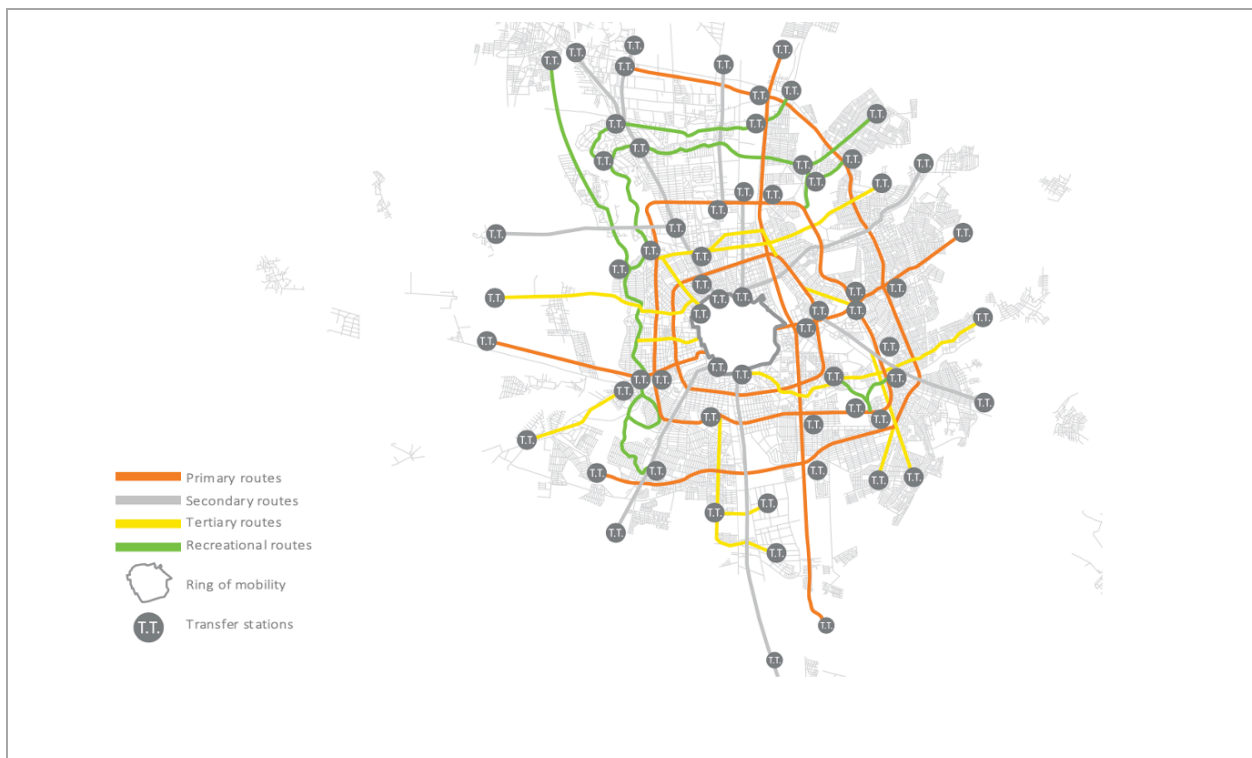


Figure 39. Aguascalientes’ proposed cycling network is highlighted by the Institute for Transportation and Development Policy as an example of bicycle-inclusive planning,

¹¹⁵Within less than 2 years, the ‘mo-bike’ sharing network was in fact removed from Aguascalientes: <https://www.heraldo.mx/incumplio-mobike-con-pagos-y-dejo-de-brindar-el-servicio/>.

elaborated through a logic of urban connectivity, with city-wide bicycle parking and bicycle-sharing options (Graph provided by ITDP, 2011: 22, translated by the author).

However, a number of issues have called into question the viability of these projects. When asked for details on when the new cycling network will be constructed throughout the city, local planning officials are at times hesitant, and sometimes even skeptical. As one municipal planner notes, “*our original intention was to implement 20 new kilometers of cycling lanes each year, but we are falling behind on this goal.*”¹¹⁶ Aguascalientes has also joined other cities (including Puebla and Monterrey) in paving over certain sections of cycling infrastructure, often only a few years after their construction. These measures are often framed as a temporary way to create additional space for motor-vehicle traffic and to appease business owners; however, they also call into question the new mobility law (Rodríguez Loera, 2018). These issues have also been linked to ongoing transportation inequities, given that pedestrians and cyclists are still identified as the most vulnerable road users, accounting together for over half of traffic fatalities in the state of Aguascalientes (STCONAPRA, 2017; 2018).

While the government’s setbacks in implementing cycling networks are often attributed to a simple lack of political will (Caro González, 2017), there are other complex reasons behind these instabilities. State transportation authorities claim that there is a “*need to expand both cycling and motor-vehicle infrastructure,*”¹¹⁷ while urban planners at the municipal level express that cycling and pedestrian infrastructure should be given first priority. The day

¹¹⁶Comments based on discussion at the inauguration of *Ciclovia Tecnológico*, recorded in fieldnotes.

¹¹⁷Comments from a meeting between representatives from the state government’s Public Works Agency and the association *Aguas con la Bici*, recorded in fieldnotes.

following the inauguration of Ciclovía Tecnológico, a city planner explained to me her frustration after receiving a phone call from the state government: “*They told us that we have to pause construction of the cycling lane, and now we’ve had to change the design, and it will be shorter than we had hoped.*”¹¹⁸ As a result, Ciclovía Tecnológico now ends abruptly before the entrance of a multi-level expressway, thus continuing to prioritize motor-vehicle infrastructure. Although the use of the private automobile in Aguascalientes still falls behind other forms of transportation, this usage is expected to rise rapidly in the coming years, particularly with the implementation of neoliberal economic policies favoring transnational automobile manufacturing in the region (Sánchez Rodríguez, 2019). Urban planning priorities both reflect and reinforce this process, often despite the best intentions of local planners.

Given these factors, cycling interventions tend to operate in what Kregg Hetherington refers to as *the future-perfect tense of infrastructure*, “an anticipatory state around which different subjects gather their promises and aspirations” (2016: 40).¹¹⁹ That is, in a context of rising automobility and political tension, cycling infrastructure represent a promissory ideal of urban sustainability and inclusive growth. In the present tense, however, the practice of sustainable-transportation development tends to unfold in highly uneven ways.

3.4 Encountering divergent infrastructure

This paper posits that greater attention is needed to the lived experiences and socio-technical strategies of peri-urban cyclists in the analysis of transportation systems. Despite significant

¹¹⁸Excerpt from recorded interview with representatives from the Municipal Planning Institute.

¹¹⁹Harvey and Knox further explain how the narrative force of developmental promises are amplified by “material engagements that reinforce the desire for infrastructural forms to contain unruly forces (human and non-human)” (2021: 534).

policy reforms favouring non-motorized transport in the state of Aguascalientes, local cyclists continue to experience enduring forms of transportation precarity. The following section offers a detailed examination of the travel conditions faced by these cyclists and the divergent strategies or infrastructure that they configure at the margins of roadways developed for motor vehicles.

Although I conducted over sixty interviews with local cyclists, I will focus on just three stories to illustrate how divergent infrastructure—be it in the form of bridges, technologies or pathways—play a significant role in daily struggles for transportation space. These interviews were selected as typical, rather than exceptional cases. These stories reflect a broad spectrum of concerns expressed by other cyclists interviewed as a part of this study. Rather than providing a simplistic overview of cycling trajectories, my intention is to show how these riders’ experiences are situated in complex, multilayered landscapes.

3.4.1 Temporary bridges

The first time I met Luis, a local cycling activist, we were blocking a mayor roadway with our bikes as thousands of cyclists rode past during a *rodada nocturna* (night ride or ‘critical mass’). As dozens of car drivers were forced to idle at a mayor intersection, one of them honking loudly, Luis reasoned with them calmly: “Thank you for your patience: we will just be a few minutes.” Later, as we sat down for an interview, he explained the importance of the weekly *rodada* organized by the association *Aguas con la Bici* for cycling advocacy in Aguascalientes: “when we first started, we were just a small group of cyclists ... Now there are sometimes thousands of cyclists each week.” He explained how the associations’ activities have helped to push local authorities to develop a clear plan for the new cycling network, one which better meets cyclists’ needs (as shown in figure 39).

As cyclists await the expansion of this network, however, they also face a number of ongoing obstacles in their everyday mobility. Luis, like many activists in the city, have pointed to issues with both the spatial distribution and design of the city's existing cycling facilities. For one, the fragmented character of the existing cycling network in Aguascalientes leaves cyclists vulnerable across numerous areas of the city and its periphery. Luis also described how many of the cycling lanes in the city center have become problematic, given that they are used continually for car parking (see figures 40 and 41), forcing cyclists to continuously veer into the line of traffic. Activists explain that that implementation of unprotected cycling lanes (instead of bike paths that are separated from traffic with physical barriers) can become problematic in certain areas of Aguascalientes for a variety of reasons including the reluctance of transportation authorities to impose sanctions for parking infractions in cycling lanes as well as a public transit system controlled by private concessioners (making it difficult for local authorities to control the speed of buses that often invade these lanes).

The state government's ongoing construction of several *pasos a desnivel* (multilevel, motor-vehicle expressways) represents another key concern for activists such as Luis. He described how the construction of *pasos a desnivel* has become a key safety issue, given the increased motor-vehicle traffic and speeds that these projects contribute to, and also because they “depend on the construction of pedestrian bridges [also referred to as anti-pedestrian bridges], which are not accessible to cyclists,” given that they require the use of high flights of stairs (figure 42). Luis explains how these projects are often advertised on city billboards with cycling lanes highlighted in bright green (see figure 43); however, riders have found that cycling facilities are still lacking in many of the completed projects.



Figure 40. A cyclist is forced to veer into the line of traffic as cars idle in the cycling lane on Avenida Madero in Aguascalientes' city center. Photo by author



Figure 41. Cars parking in cycling lane on Avenida 28 de Agosto in Aguascalientes' city centre. Photo by author



Figure 42. One of many so-called pedestrian bridges in Aguascalientes. With the exception of four new overpasses with elevators, the vast majority of these bridges in Aguascalientes are accessible only via concrete stairways, posing major accessibility challenges for cyclists and many pedestrians. In light of these issues, the term “anti-pedestrian bridge” was coined by Mexico’s Liga Peatonal (Pedestrian League) to refer to overpasses that privilege rapid motor-vehicle traffic while creating an uninviting and often unsafe space for active travelers¹²⁰ Photo by author

¹²⁰For more information, see: Pérez-López R (2015) De la flânerie al tránsito peatonal: la negación del derecho a la ciudad. *Cybergeo: European Journal of Geography* 10.4000/cybergeo.26991: 1-19, Capron G, Monnet J and Pérez-López R (2018) Infraestructura peatonal: el papel de la banqueta (acera). *Ciudades*.(119): 33-46, Andrade Ochoa S and Mancera Gutiérrez MÁ (2018) La seguridad vial y los puentes (anti) peatonales en México y América Latina. *ANTROPOLOGÍA* 2(4): 32-42, Andrade-Ochoa S, Chaparro-Gómez VI, Martínez-García EE, et al. (2020) Evaluación de puentes peatonales de la ciudad de Chihuahua, México. *Planeo*.(90): 1-13, Vergel-Tovar C, Lopez S, Lleras N, et al. (2020) Examining the relationship between road safety outcomes and the built environment in Bogotá, Colombia. *Journal of road safety* 31(3): 33-47, Soliz A and Pérez López R (2022) ‘Footbridges’: Pedestrian infrastructure or urban barrier? *Current Opinion in Environmental Sustainability* 55(DOI: 10.1016/j.cosust.2022.101161).



Figure 43. Advertisement for a new motor-vehicle expressway costing 115,000,000 pesos. A sign was taped over the advertisement, reading “the great majority of neighbors and citizens are opposed to this construction [...]. There are other investment priorities such as health and education.” Photo by author

I was interested in how these transportation issues impacted Luis’ own everyday mobility. Over the months that we worked together through the association, I had the chance to ride along on several of his commutes, including a thirty-minute route from his workplace close to the second ring to his home at the city’s third ring. “*It may take years for proper cycling lanes to be developed on my commute,*” he explained, so “*I’ve found ways to get by,*” including riding for about five minutes against the flow of traffic along a busy roadway to avoid a potentially fatal crossing. “*I’ve had to come up with a lot of strategies like this*” he elaborated, reflecting on the mobility issues he experienced after having been assaulted, robbed and seriously injured one night while riding:

At first after the collision, I couldn’t take the bus, because I was wearing a chest brace and the constant jolting really hurt. I tried taking taxis to get around to medical

appointments, but this got really expensive, so I had to ask friends for rides [...]. As soon as I felt better, I got back on my bike, but I don't ride home late at night anymore because it's too dangerous [due to frequent robberies in the areas beyond the city's second ring]. Now if I want to stay out late or participate in the associations' rodadas, every time I have to figure out a different way to get home with my bike: I'll ask for a ride or ask around to see if anyone who lives nearby can store my bike for the night, and then I'll take the bus. Sometimes I ask if the taxi drivers are willing to take me with my bike, but usually they say no. If I have no other option, I will ride home at night, but I take a really round-about route to avoid dark areas. Once I save up enough money, I will buy another folding bike and it will be easier to take it on the bus or in taxis at night.

For Luis, this type of impromptu thinking has become a vital aspect of his everyday mobility. For example, when he was not able to ride a bike or take the bus for medical reasons, he devised a series of plans to meet his transportation needs, depending on the availability of friends and funds. And once he was physically able, he improvised a different set of strategies to continue riding his bicycle daily while getting home safely at night, serving as temporary bridges until he could afford a folding bike (and thus a more stable travel routine). Despite the challenges that he has faced, Luis was forthcoming about his privilege in having access to medical insurance and money for the occasional taxi fare, which represent “*luxuries that most cyclists in this city don't have.*”

While far from ideal, many cyclists are forced to assemble a variety of these temporary bridges as a part of their daily mobility struggles, ranging from throwing boards over potholes to intermittent carpooling with bikes. Luis' experience highlights both the importance of these impromptu strategies within a rising crisis of urban violence as well as their inconsistency depending on a variety of individual factors, including cyclists' economic status and social networks.

Beyond these strategies, Luis added that addressing the city's transportation issues requires a variety of crosscutting initiatives ranging from bettering road-education campaigns, to divesting from motor-vehicle expressways and reinvesting in public transit. Above all, “we need

more opportunities for public participation in transportation design and management.” To adhere to the new mobility law, the state needs to “put cyclists and pedestrians first” he added. Despite the numerous challenges he faces in his mobility and activism, Luis seemed optimistic about the potential for local cyclists, activists, government officials and planners to work together and resolve the city’s transportation issues. This enthusiasm, however, was not always shared by the other riders that I interviewed, as exemplified through the following accounts.

3.4.2 Improvised technologies

At 8am on a Thursday morning, I ride along with Alberto from beyond the city’s third ring to his workplace at a restaurant within the city center. At this hour, the edges of Aguascalientes’ roadways are flooded with cyclists rushing to schools, agricultural fields, factories, markets and a variety of other workplaces. Recycling collectors and can be seen circulating their early rounds, while food vendors station their carts to replenish hungry commuters along the way. As we ride past the city’s second ring, we can still feel a buoyant chill in the air, one that we dread will soon disappear with temperatures rising to over 35C in the afternoon.

“Why do I ride a bicycle?” Alberto explains: “because it takes me 35-40 minutes to get to work by bike, and it could take almost 2 hours by bus if I include the wait time at different stops.” For Alberto, bicycling is the only viable and affordable option available for getting to and from work in a timely manner and for other essential tasks such as getting house supplies, picking his son up from school and accessing essential services. To complete these tasks, he shows me several adjustments that he made to his bike, including the insertion of a plastic crate to the front to carry supplies.

As we make our way to the city center, we see dozens of cyclists who have fastened carrying crates to the front or back of their bicycles (as shown in figure 44), many of them holding a number of construction and landscaping tools. We also pass several recycling collectors who have reassembled their bikes for multiple purposes (as shown in figure 45). “*We have to carry a lot on our bikes,*” Alberto explains. “*Most of us can’t lift our bikes up there*” he notes, pointing at a pedestrian bridge as we prepare for a difficult road crossing.



Figure 44. Cyclist carrying work materials on bike in a makeshift crate. Photo by author

I ask him to elaborate on these strategies. “*I make sure I’m prepared for anything*” he responds, including carrying equipment for emergency tire changes (a necessity given the presence of broken glass on the sides of many roadways). “*I’ve also added diablos [pegs] to the back of my bike, which my son likes to stand on as he holds my shoulders.*” “*This is the best way*

to get him home from school,” he adds. Although Alberto assembled the pegs himself using scrap metal, he affirms that they are “*very sturdy.*”



Figure 45. Recycling collector. Photo by author

Apart from a small section of his route through the urban center, I reflect back that there were almost no cycling facilities on Alberto’s daily commute. “*I don’t think these [infrastructure] are useful*” he contends, “*because here it’s always the car drivers who control the road,*” reflecting on how many cycling lanes are overtaken by motor-vehicle traffic. “*I’d like to buy a motorcycle when I have enough money*” he adds, acknowledging that he would prefer to stop bicycling as his main form of transportation. I’m curious if he would consider using public transit if there were better, faster options available to him? “*That would be good,*” he remarks, “*but it’s already too expensive ... I don’t think we could afford it.*”

3.4.3 Alternative pathways

On a Saturday afternoon, I meet up with Sofia in downtown Aguascalientes after she finishes a day of work cleaning houses. She tells me about some of her experiences bicycling from a young age, including being brought to school on her parents' bikes. She explains how these early experiences have helped her to gain confidence on the road and overcome several obstacles: *"I ride my bike to some of the houses I work at because it feels safer than having to take several buses and walk on the edge of busy streets [that have no sidewalks]."* Given that her monthly earnings amount to roughly the minimum wage, she notes that cycling is the best and most affordable option. However (unlike the previous account), she elaborates that cycling generally brings back *"good memories,"* adding that bicycling is her preferred means of transportation.

Before we ride together to her home in *Jesus Maria* (a small, neighbouring municipality), I ask her to describe her usual travel route, a question that proves difficult to address. For one, Sofia works at multiple locations throughout the week, meaning that she takes several different routes. *"For some of these trips, I also take a different route home,"* she recounts, depending on the need to avoid rush hour or the dangers of darker areas in the evening. *"Most of the time I'm pretty tired after a day of work, so I just take the most direct route,"* she adds, like the roughly 40-minute route we will be taking today. However, she explains that there are always adjustments that she has to make along the way. On both established urban highways and beaten rural paths, unpredictable road conditions often mean that she has to zigzag or dismount to sidestep unexpected obstacles such as fallen rocks, litter and broken shards of glass.

As we set out from downtown Aguascalientes, we are immediately confronted with these obstacles, including several potholes, and the unevenness of roadside pavement (as shown in figure 46), which forces us to swerve precariously into the line of traffic on several occasions.

Sofía comments that on weekdays, when there is much more car traffic, she often has to take the sidewalk for several intervals, particularly to avoid speeding buses and the huge billows of smog that they emit. We also encounter several difficult intersections with no signals available for cyclist or pedestrians (as shown in figure 47), leading to delays as we wait for several minutes to find a window to cross through traffic. In addition to adding time to her travel routes, these adjustments also require an enormous amount of concentration.



Figure 46. Between a bus and jagged place. Most cyclists ride to the left of this road to avoid speeding buses in the right lane; however, they have to remain in the middle of this lane of traffic for several stretches to avoid the uneven roadside pavement. Photo by author



Figure 47. Cyclists struggle to cross Avenida Lopez Mateos in Aguascalientes' city centre given the absence of bicycle or pedestrian signals, and with oncoming car traffic turning rapidly to the left and right, as well as zooming straight through the intersection. The left turn signal at this intersection remains constant with the green light, making it incredibly difficult for cyclists and pedestrians to find a window to cross through traffic (a problem with numerous intersections throughout the city). The yellow lines on the road that once indicated a pedestrian crossing are almost completely faded. Photo by author

As we ride along highway 95 nearing Jesus Maria, we find our way to one of the first cycling facilities developed in the area: a multi-use path for cyclists and pedestrians along the road's median strip (see figure 48). After waiting for about a minute, Sofia reasons that we can cross safely through traffic to access the path, since there is less traffic on the highway on Saturdays. Sofia comments that, in theory, this pathway would be used more if there were established crossings with signals available for cyclists and pedestrians. However, *“on weekdays no one rides here because it's too dangerous to cross,”* due to the velocity of car traffic and the absence of a single established crossing. Along the way, we see several recreational cyclists who

have opted to continue riding on the side of the road (despite the lack of dedicated cycling lanes or paths), which is where Sofia rides on most days instead of crossing through traffic to use the bicycle-pedestrian path.



Figure 48. Multi-use path designed for cyclists and pedestrians, stretching between the municipality of Jesus Maria and Aguascalientes. Photo by author

Observing this path along the median strip, Sofia comments that the infrastructure was clearly “*designed by someone who is not a cyclist,*” nor a pedestrian. Had this infrastructure been developed by a cyclist, there would be designated cycling lanes on the sides of the road, or (as a minimum) cyclists would be able to find established crossings to safely access and exit the multi-use path. The current absence of a single established crossings to this facility demonstrates what she called “*a total lack of consideration for cyclists.*” Given these factors, Sofia (like the other

cyclists she rides next to) is often forced to find alternative pathways, however variable and precarious.

3.5 Discussion: Cycling facilities, hypermobility and the spaces between

In Aguascalientes, plans to expand cycling infrastructure intersect with complex socio-political processes. While many local policy makers and planners express a strong commitment to expanding the reach of cycling facilities, these efforts overlap with a significant rise in automobility. In this context, I have suggested that official cycling infrastructure operate in the future perfect tense—as a promissory ideal rather than a stable reality. Although recent policies claim to prioritize non-motorized transport and to place cyclists and pedestrians at the top of the urban-mobility pyramid, automobility continues to be privileged in recent developments, leading to fragmented and short-lived cycling facilities.

To some extent, these processes reflect global trends, including what many authors discuss as a *system or regime of automobility*, referring not only to a mass system of individualized hypermobility (Urry, 2004; Urry, 2016), but also to the political-economic and ideological processes that incessantly privilege automobiles over other forms of transport (Böhm et al., 2006). Rather than representing the simple aggregation of consumer preferences, the global system of automobility is fueled through a massive *industrial complex* through which car manufacturers and oil industries are heavily subsidized, automobility is prioritized in transportation developments and other institutional measures ensure the furtherance of these practices (Furness, 2010; Gopakumar, 2020). Thus efforts to phase-out carbon-intensive transportation require deep structural changes (Geels, 2012; Turnheim et al., 2015), raising questions on the extent to which comprehensive facilities for non-motorized transport can be

implemented when they threaten a global system of hypermobility and the most powerful world industries (Lucas, 2012).

At the same time, the case of Aguascalientes also demonstrates the importance of considering local particularities in research on cycling, including the consequences of neoliberal restructuring in the region and its implications on patterns of mobility. In Mexico, the implementation of neoliberal economic policies over the past three decades (including processes of structural adjustment with market liberalization and privatization) have led to a downward trend in the real minimum wage and a high degree of economic inequalities (Laurell, 2015; Munoz Martinez, 2016). Combined with the state's divestment from public-transit and the growing control of private concessioners over transit services, low-income residents are left with few transportation options, making the bicycle a necessary form of mobility for many cyclists such as Alberto and Sofía. A recent master's thesis estimates that 60% of cyclists in Aguascalientes earn the minimum wage or less (roughly 88 Mexican pesos per day in 2018 or \$4 USD) (Medina, 2018). With transit fares costing 7.5 pesos per trip, cycling is clearly a necessity for many low-income families. This is particularly the case for those residing near the city's third ring or beyond, in which public transit is slow, unpredictable and often unsafe. Notwithstanding the considerable efforts of many planners to change the status quo, there is a great need to better acknowledge the work of local cyclists who continue to be marginalized from mainstream transportation systems.

Through attention to the particularities of cyclists' experiences, I have suggested that critical ethnography offers important perspectives for bringing the discussions on cycling interventions from the future perfect into the present tense. Conceptualizing infrastructure as relational—as a dynamic, interactive process rather than a static noun—allows us to see how “reality is an active verb” (Haraway, 2003: 6). Such a perspective shows how, even in contexts

of widespread infrastructural fragmentation, people “moving and interacting together have an effect on place—the land, the buildings, the air”. (Simone, 2012: 213). It demonstrates that cities contain multiple screens, or ‘shells of operation,’ which are differentially visible and accessible (ibid.). It uncovers the improvised tracks and traces left by bicycle wheels and footprints that serve as fractional maps for others to side-step road impediments or to carve out new routes (as displayed in Figure 49).



Figure 49. Alternative pathways. Photo by author

Specifically, I have proposed the concept of divergent infrastructure to account for the alternative strategies, technologies and pathways that are constituted through cycling practices. For cyclists such as Luis, Alberto and Sofia, these strategies require the formation of multiple modes of infrastructuring. I argue that is important to understand and contextualize these formations for several reasons.

Firstly, given that urban infrastructure is often conceptualized as a part of progress narratives, an understanding of divergent infrastructure helps to underscore hidden barriers within existing transportation systems. For local cyclists, these issues include both a widespread lack of official bicycle infrastructure as well as problems with established facilities for non-motorized transport. These barriers to cycling range from the incessant construction of multi-level expressways, to the unevenness of roadside pavement, to speeding buses that emit massive billows of smog. They also include issues of cars parking in cycling lanes as well as the inaccessibility of so-called pedestrian bridges and other facilities for active transportation.

As Sofia explained, the current constitution of many cycling facilities demonstrates an apparent *disregard* or *disconnect* between infrastructural design and the actual needs of local riders. In many ways, this disconnect can be seen as a case in which an infrastructure's body and soul never merge (Latour and Porter, 1996). That is, the development of certain cycling facilities does not properly meld with the complexities of the existing landscape.

On a more profound level, these concerns point to systemic issues of mobility injustice in which enduring forms of institutional domination, such as non-inclusive decision making and design processes, are central.¹²¹ The personal-safety concerns expressed by both Sofia and Luis also point to the need to address other systemic issues—including a widespread crisis of violence—as an integral part of bicycle planning.

Alberto's discontent with cycling—a feeling that was shared by other cyclists in this study—further underscores the need to develop better transportation alternatives, such as a more

¹²¹Nancy Cook and David Butz explain: “The concept of domination challenges the conventional notion that distribution is the sole basis for just relations by focusing attention on the role institutional actions and decision-making processes can play in precluding people from participating in procedures that establish possibilities and conditions for action” (2015: 3).

affordable, efficient and non-polluting public-transit system. These issues also problematize generalizations in some the literature on cycling in which cycling facilities are framed as universally beneficial or where cycling is seen as “simultaneously and inseparably a form of utility and leisure” (Spinney, 2011: 171).

An understanding of divergent infrastructure further highlights the considerable amount of skill, concentration and effort involved in confronting daily barriers to cycling, particularly for those of limited means. For the utilitarian cyclists interviewed in this study, these efforts are added to an already challenging day of paid labour. Riding along transportation channels that were not designed for cyclists requires what Susan Leigh Star refers to as *articulation work* (Star, 1999), referring to the hidden labour that individuals and groups must undertake in their everyday/everynight practices to adapt to standardized orderings. That is, although transportation infrastructure appear as concrete physical forms, it is also important to understand infrastructure as representing *work processes* (however hidden or embedded), which provide the foundation for other movements, flows and frictions (Star and Bowker, 1995).

Instead of seeing divergent mobilities as immaterial, I argue that they need to be understood as infrastructure: as very real and meaningful configurations that are networked by cyclists to contend with multiple risks. When cyclists ride against the direction of traffic, swerve away from smog, take detours on sidewalks, avoid anti-pedestrian bridges or reassemble their bikes with scrap metal for taking their children to school, they are not being “reckless” or “haphazard.” Rather, they are working carefully to maneuver their way through the countless obstacles posed by official transportation systems. It is also crucial to understand the ways that many urban-development projects work to ‘pave over’ divergent infrastructure (such as those

shown in figure 49), often with little recognition of residents who depend on these alternative shells of operation.

This chapter has questioned the spatial, temporal and technical dimensions of sustainable-transportation policies and the implications of these dynamics for cyclists in confronting transportation exclusions. These issues are particularly prevalent in Latin American cities, where rapid motorization processes intersect with significant socio-economic inequalities (Vecchio et al., 2020; Avellaneda and Lazo, 2011). Aguascalientes has emerged as a highly unequal city, and mobilities are both a cause and effect of these structural imbalances. In this context, the implementation of new mobility laws privileging cycling and pedestrian infrastructure has not been enough to challenge considerable mobility-related inequalities.

This study has contributed to discussions on sustainable transportation and mobility justice through a critical ethnographic focus. In addition to underscoring issues in the distribution of bicycle infrastructure, this study accentuates the need for additional traffic calming measures, a well-connected network for cycling as well as meaningful consultation processes with local cyclists to address a variety other particular mobility constraints.

Given the widespread obstacles to everyday cycling practices, I have proposed the concept of divergent infrastructure to account for the temporary bridges, improvised technologies and alternative pathways that cyclists configure when transportation systems fail to meet their present needs. An understanding of these divergences helps to contextualize the planned and inadvertent strategies that commuters assemble to contend with transportation systems that are largely unwelcoming and unsafe for cyclists. The concept of divergent infrastructure thus offers a space of dialogue between studies of mobility-related inequalities (Hernandez and Titheridge, 2016; Jirón, 2007), ethnographic conceptualizations of infrastructure as work processes (Bowker

et al., 2016) as well as Latin American theorizing on porous in-between spaces (Mignolo and Nouzeilles, 2003).

Future research on divergent infrastructure would certainly be useful for rethinking urban-planning approaches aimed at developing facilities for cyclists and other forms of mobility. This research should, however, be cautious about reproducing the promissory focus of mainstream development thinking. While divergent infrastructure can represent forms of resistance to the transportation status quo, for many cyclists they function as a laborious form of adaptation to urban environments marked by growing inequalities. In these contexts, the expansion of official cycling facilities cannot serve as an environmental or social panacea. Many of the cyclists that I interviewed expressed a strong preference for developing a more accessible, publicly funded transit system (among other options), while others maintained their desire to continue cycling under safer conditions. Cycling intervention should thus be conceived of as a part of wider strategies—including safer pedestrian infrastructure, public transit, ridesharing and other options—with the goal of creating more equitable and locally appropriate transportation systems.

Although cycling infrastructure offer a number of speculative promises for urban sustainability and inclusive mobility, it is essential to consider in the consequences of existing transportation systems for those who are insiders and/or outsiders, as well as for those at the margins. Rather than doing away with the goals of sustainable mobility, this focus is about broadening our perspectives and attending carefully to particular contexts and uncertainties. By extension, this perspective can also help us to consider the ways that forms of transportation exclusion are navigated, sidestepped and contested.

Chapter 4:

Gender and cycling: Reconsidering the links through a reconstructive approach to Mexican history

4.1 Introduction



Figure 50. Photo by author

The road leading to Rosario's house is full of turns marked by faded bicycle tracks and stories with intricate edges. Along a scenic unpaved path in Aguascalientes, Rosario shows me the spots where she enjoys riding and picnicking with friends on the weekend. Crossing the highway nearing her home at the city's periphery, we encounter stories with apprehensive interludes: the intersection where she was hit by a car, speeding traffic and paralyzing fear, the spot where she

was mugged several months ago while waiting for the bus. “*I like riding my bike most of the time*” Rosario¹ explains, but “*sometimes I wish I could just take the bus without having to worry about waiting alone at the bus stop.*”

Like Rosario, many of the women that I interviewed in Aguascalientes during my fieldwork expressed mixed feelings about cycling. For many, cycling allows for a sense of independence and enjoyment. At other times, experiences of cycling are inundated with fear, precarity, street harassment and issues relating to inadequate public transit. These contrasting accounts serve as a point of departure for this paper, investigating the gendered dimensions of cycling across a variety of contexts. How can a critical ethnographic perspective contribute to our understanding of gendered mobilities, providing space for diverse and multilayered histories to come into view? How might decolonial and intersectional feminist theorizing further add to a nuanced analysis of cycling without relying on universalizing translations?

Understanding the intersections between *gender* and *mobilities* is a complicated task given that both concepts are immersed in shifting meanings and power relations (Uteng and Cresswell, 2016). Rather than comprising fixed binary opposites, gender categories such as ‘masculinity’ and ‘femininity’ are socially and historically constructed (Massey, 2013; Scott, 1999). The growing feminist literature on transportation reveals significant mobility-related inequalities for women, stemming from a variety of issues ranging from the feminization of household labour to issues of unequal pay and differential access to private transport. Intersectional and decolonial theorizing has brought much needed attention to the ways that uneven mobilities operate across different scales and axes of inequality (Collins and Bilge, 2020), including those relating to gender, social class, racialization, coloniality, urban violence and policing. These understandings

reveal how gender inequities traverse broader histories and regimes of (im)mobility (Sheller, 2018a) as well as particular contours of resistance (Simpson, 2014).

Socio-cultural approaches to bicycle research have helped to connect a broad continuum of cycling practices and meanings with complex societal processes (Vivanco, 2013a; Horton et al., 2012). Yet the study of gender as it relates to cycling requires greater critical reflection. On the one hand, historical studies on gender and cycling have frequently focused on a select group of white liberal feminists,² a tendency that is being questioned through critical and decolonial perspectives (for example, see: Hoffmann, 2016; Lugo, 2018; Finison, 2014; McCullough et al., 2019). On the other hand, much of the contemporary research on women and cycling has placed an emphasis on quantitative measures, which often lack a thorough analysis of gender *processes* (as shown through a recent systematic review conducted by Ravensbergen et al., 2019). The emphasis of most of these studies on Europe and the United States (ibid.) may also prove insufficient for analyzing Latin American contexts, where rapid urbanization processes continue to be compounded by significant socio-economic inequalities (Oviedo et al., 2020; Torres-Barragan et al., 2020).

As bicycle-justice theorists have explained, for many people, “the bicycle is not an emancipatory tool—it is not a statement about style or politics – but an outcome of oppression, leaving the bicycle as the only reasonable travel option” (Golub et al., 2016: 2). These issues problematize campaigns aimed narrowly at augmenting women’s ridership without deeply questioning gendered power relations, particularly as they intersect with other inequalities. The convivial and joyful aspects of bicycling, along with cycling’s public-health benefits, also warrant continued discussion, but do not provide an all-encompassing understanding. Situating cycling as an area of research in Latin American contexts implies greater awareness of a

diversity of perspectives as a means of divesting from analytical models based largely on the experience of iconic cities in the Global North (Castañeda, 2021b).

This paper contributes to a small but growing field of qualitative research on gender and cycling in Latin America (Gamble, 2019; Coyotecatl Contreras and Díaz Alba, 2018; Díaz Vásquez, 2017; Sagaris and Tiznado-Aitken, 2020; Kohler Harkot et al., 2018). Based on a reconstructive approach to feminist ethnography, I emphasize a socially and historically nuanced perspective to bring greater attention to contested pasts and their ongoing entanglements in the present. Mexican feminists such as Nellie Campobello¹²² (1931) have provided unconventional frameworks for historical reconstruction, allowing alterative histories to emerge through contrasting fragments and sketches of everyday life, in ways that are not necessarily linear (Hurley, 2003). In recent decades, scholars have expanded on a reconstructive approach, underscoring the potential for feminist methods (such as disparate archives and oral history interviews) to provoke alternative forms of narrativity (Bartra, 2002). Frida Gorbach (2008) brings poststructuralist feminist historiography (Scott, 1992) into conversation with decolonial theory (Quijano, 2000), examining how gender is a social reality that must always be framed with particular contexts, as well as the ways that “the local” can serve as a strategy for pluralizing the production of knowledge. These approaches are resonant with *Anthropology as Cultural Critique*, which seeks to destabilize meta-theories by focusing carefully on “the details

¹²²Campobello was the first woman in Mexico to publish semi-autobiographical narrations about the revolution. Her novel *Cartucho* (1931) is widely acclaimed for portraying revolutionary leaders such as Pancho Villa in a favorable light at a time when most literature was demonizing them. However, gender relations were also an important undercurrent of Campobello’s work. Told from Nellie’s perspective as a young girl immersed in the revolution in Northern Mexico, *Cartucho* brought greater attention to women as pragmatic characteristics, while providing counternarratives to masculinized stereotypes.

of social life ...*to reconstruct fields from the bottom up*, from the problem of description (or really of representation) back to the general theory which has grown out of touch with the world on which it seeks to comment” (Marcus and Fischer, 2014: 118, emphasis added).

Building on these approaches, this chapter examines the changing roles and meanings of cycling across a variety of multilayered timeframes. It aims to resituate diverse women’s experiences in both local cycling histories and current planning agendas. This chapter posits that greater attention is needed to the complex social processes that enable and restrict cycling, engendering multiple and at times conflicting meanings. Rather than doing away with aspirations for building pro-cycling cities, this focus encourages a shift to participatory and gender-transformative decision-making processes that better address diverse concerns on cycling and other aspects of urban mobility.

4.3 A global history of gender and cycling?

In July 2018, Patricia and I wander the hallways of Aguascalientes’ convention centre, looking for a place to park our bikes. As members of a local mobility rights organization, we have been invited to a two-day workshop entitled “the politics of active transportation in the city of Aguascalientes,” co-hosted by the state government and the World Resource Institute. After an intimidating run-in with a security guard (who seems displeased that we brought our bikes indoors), we finally find a welcoming wall to lean our bikes on in the conference room. “We like to have them on display,” the organizers mention, assuring us that the event is bicycle friendly. As a part of the workshop, we are presented with a number of statistics in which women are

poorly represented as cyclists in the region, comprising 1% of cyclists in the city by some counts, and 8.2% in other counts (Medina Martínez, 2018). We are also shown the following quote:

“I think [the bicycle] has done more to emancipate women than any one thing in the world. I rejoice every time I see a woman ride by on a bike. It gives her a feeling of self-reliance and independence the moment she takes her seat; and away she goes, the picture of untrammelled womanhood” (Susan B. Anthony, 1896).

As we consider various opportunities for the development of active-transportation systems, the question of how to increase women’s bicycling becomes an important topic for discussion. The relationship between these discussions and the writings of Susan Anthony from the nineteenth century, however, was not completely clear.

Far from representing an isolated incident, Anthony’s proposition about the relationship between bicycling and emancipation has become a popular adage over the past 125 years. Not only do Anthony’s quotes appear (often uncritically) in historical reflections about cycling and feminism in the Global North (for example, see: Macy, 2017; Herlihy, 2004; Fleming, 2015; Furness, 2005),¹²³ they are also mobilized in some policy and planning circuits (for example, see: Pinto, 2016; UN, 2007). A number of recent materials on cycling have drawn on the experience of first-wave liberal feminists such as Anthony, Elizabeth Cady Stanton and Frances Willard, including articles on the gendered dimensions of sustainable transport (Hanson, 2010; Bopp et al., 2018) and the benefits of cycling for women riders in the new millennium (Garrard et al., 2012). Scholars and policy makers often focus intently on the health benefits of cycling for women, including “improved physical performance” and reduced weight gain (Lusk et al.,

¹²³Zach Furness, for example, has elevated the work of early liberal (mainly American) feminists, positing that “the strongest political effects of bicycle appropriation became evident when women appropriated such technologies for the purposes of mobility, pleasure, and empowerment” (2005: 406). For Furness, the writings of Susan Anthony stand “as a testament of how technologies can be radically appropriated by people who understand the relationships between technology, social norms, mobility, and liberation” (2005: 408).

2010). The Netherlands and Denmark are frequently cited as noteworthy examples, where the provision of extensive cycling infrastructure has coincided with a statistical increase women's levels of ridership to similar levels as men's (Pucher and Buehler, 2008). In light of these analyses, several authors concur: "the notion that the bicycle helps women gain independence and equality is still relevant today..." (Garrard et al., 2012: 214). Although these accounts provide insights into the work of certain feminists in championing women's rights alongside bicycle ridership, they also run the risk of producing a simplistic narrative.

Melody Hoffman observes that "rhetoric... from Anthony and other prominent white feminists is continually republished with excitement by bicycle scholars without critical insights as to how these women's class and race allowed them to push for bicycle mobility" (2016:12). Susan Anthony's participation in movements aligned with white supremacy is rarely acknowledged in the bicycle literature (ibid). As Kimberlé Crenshaw (2010: 27) explains:

feminist leaders such as Susan B. Anthony and Elizabeth Cady Stanton opted to abandon their abolitionist roots... In pursuit of their goals, they campaigned to block the passage of the 15th Amendment, re-aligned their allegiance from abolitionism to white supremacy, shed their radical critiques of patriarchy, and affirmed the basic tenets of American imperialism.

Not only do these issues call into question the universal claims of liberal feminism in U.S. history (ibid.), they also become concerning when considering the application of these ideas to contexts across the globe. Who exactly is included and excluded from Anthony's "picture of untrammelled womanhood"? What types of bicycle histories are propelled forward in this narrative, and which particular (im)mobilities are ignored or invisibilized?

Decolonial theorizing posits that simply expanding the geographical range of urban research is not sufficient, but rather requires a deeper commitment to decentring knowledge (Mignolo and Escobar, 2013; Icaza, 2017). Decolonial research thus entails unsettling understandings of transportation in terms of mathematical modelling and universal historicity

(Wood et al., 2020). These understandings, as Dipesh Chakrabarty explains, do not “obviate the need for engagement with the universal” but rather allow us to produce readings in which categories such as *women* and *gender*¹²⁴ become sites where global history “and the politics of human belonging are allowed to interrupt each other’s narrative” (2000: 676). Building on this theorizing, this paper proposes an alternative approach to the study of gender and cycling, directing greater attention towards heterogenous histories.

4.4 Reassembling local cycling histories

During a break from the active-transportation workshop in 2018, Patricia and I eat lunch outside with a few other participants. As we admire the remnants of Aguascalientes’ historic train facilities, we are also reminded of the city’s abundant cycling history, one that brings back strong memories for some participants. “But these cyclists were not just men,” Patricia clarifies, explaining that women also played, and continue to play, important roles in local transportation histories, despite the near “statistical insignificance” of women’s cycling practices (as recounted during the workshop). As the president of the organization *Aguas con la Bici*—a movement dedicated to increasing civil-society participation in active transportation initiatives—Patricia explains that these hidden histories deserve greater recognition.

Following these discussions, gender became a key focus in much of my archival research on local cycling practices. Yet, even with a broad set of archives from across Mexico, information on cycling could only be found in fragments and splintered snapshots. The following pages, which provide a window into these processes, by no means represent a complete national

¹²⁴Chakrabarty is referring specifically to the category ‘capital’ in this statement; however, the study of gender and mobility is also relevant to this analysis.

history of women's cycling. My goal is to help raise new questions and intersectional interpretations on diverse mobility struggles with the hope that more will be written on the topic.

4.4.1 Cycling and social exclusion during the porfirian dictatorship



At the crossroad between *Paseo de la Reforma* and *Paseo de Bucareli*, a woman is photographed riding a bicycle in downtown Mexico City sometime during the year 1896 (figure 51). Although

¹²⁵http://mediateca.inah.gob.mx/islandora_74/islandora/object/fotografia%3A368932.

the presence of the woman and other inhabitants in the photo may have been accidental, their mobilities appear as characteristic of the era, including travel by foot, bicycle and animal-drawn carriage. As shown through the hand-written note, it appears that the photographer's main objective was to capture the "Caballito," referring to the monument of Carlos IV: a statue with a conflictual history since its construction in 1796. After the War of Independence from 1808 to 1821, a strong movement grew to destroy the monument given its symbolism of Spanish colonization (Martínez, 2005). However, the statue was eventually protected by political leaders concerned with its "esthetic value"—a process that involved physically moving and covering the monument on several occasions as well as fortifying its perimeter with a giant fence (ibid). In its central and unrestricted home at the end of the nineteenth century (when the photograph was taken), the statue seems to enjoy a renewed sense of authority, signaling a repressive turn.¹²⁶ Below, the inhabitants appear to be separated through their physical distance and through markers of social class, including the bicycle.

As detailed in chapter two, cycling was introduced in Mexico to a wealthy urban minority in the mid-nineteenth century in the lead up to the porfiriato. While this period was marked by the expansion of European-inspired architecture and monuments, it was also accompanied by widespread assaults on political liberties and rights (Coatsworth, 1974). Admits these conditions, the bicycle was promoted as a form of sport and a diversion from business matters for the upper-class, politicians, foreigners and their families (Zamora Perusquía, 2011; Beezley, 2018).

In magazines such as *Mexican Sportsman*, upper-class women became increasingly showcased as a part of bicycle clubs in the early twentieth century. In a feature on women's

¹²⁶Although the statue was eventually moved from this central intersection, it still lives to this day in Mexico City at a museum.

cycling apparel, the magazine emphasizes the importance of “high-quality fabric” and “shorter skirts so that all women who engage in sporting excursions can move with liberty” (1909, as cited in Zamora 2011, my translation). Historians observe that women’s outfits in these features seem to correspond to the summer-fashion trends set by the *Palacio del Hierro* (which continues to be one of the most expensive clothing retailers in Mexico) (ibid). In these accounts, although women’s “free movement” is promoted, this freedom does not imply departing from existing class expectations and gender roles (in this case, high-priced apparel, measured-skirt lengths and a range of other behavioural standards). Thus, even within the frame of elite mobility, movement is still encompassed by strong social norms, implying that cycling is being conceived of within a given set of boundaries regarding self-regulation. As Hagar Kotef explains, the understanding of movement as a right is “given within an array of limits of many kinds and the notion of regulation situates it within a matrix of (self) control” (2015: 86).

In early-twentieth-Century Mexico, ideas of elite mobility were assembled within a highly classed configuration of exclusions. In figure 52, for example, one can observe the relationship between the cyclists and the bystanders in the background, a contrast that marks differences in both access to travel technology and social class. The porfiriato put an immense emphasis on constructing Mexico City as an emblem on “order and progress,” a move that involved persistent efforts to remove signs of impoverishment from the “modern and hygienic” city core (Agostoni, 2006). Everyday life during the porfiriato was dominated by uneven mobilities (Beezley, 2018), even as elite women’s bicycle ridership expanded across growing urban centres (notably, Mexico City Guadalajara and Puebla).



Figure 52. “Ciclistas del club Centenario, retrato de grupo,” Ciudad de México, 1905. Photo provided by: SECRETARIA DE CULTURA.- INAH.-SINAFO F.N.-MEX (Image reproduction authorized by: Instituto Nacional de Antropología e Historia, México, Fototeca Nacional).¹²⁷

Segregation—both social and spatial—was a central feature in the development of Mexican cities (Pasteur, 2011), and upper-class women played a key role in upholding the highly classist division of urban space (Mraz, 2012). Meanwhile, violent land dispossessions continued and workers across Mexico faced extreme forms of exploitation (Coatsworth, 1974; Escalante Gonzalbo et al., 2010). Mexico city’s low-income residents (incorporating a growing number of economic migrants from rural areas) were subjected to strict laws and sanitary education campaigns, emphasizing “proper street etiquette” while discouraging “intermingling between

¹²⁷http://mediateca.inah.gob.mx/islandora_74/islandora/object/fotografia%3A133325.

social classes” (Agostoni, 2006). For example, there were laws governing interactions between classes in the urban centre: when people in campesino clothing would find themselves in front of someone wearing “elegant clothing,” they would be expected to step away, or they would be reported to the police (Piccato, 2001). These practices of course stemmed from longstanding colonial legacies (Stern, 1997), which surfaced in particularly repressive ways during the porfiriato. The bicycle appears to have served as a technology of class differentiation within this matrix of repression and exclusion.

Elite Mexican women were of course not immune to anti-bicycle sentiment and conservative moralism. On September 18th, 1910 the newspaper *El Imparcial* published an article entitled “Women and sport,” discouraging hunting and cycling for women, claiming that “a woman on a bicycle looks ugly and ridiculous” and that “her feminine beauty, grace and attractiveness and should not be sacrificed uselessly” (my translation).

In what ways was this censorship of women’s cycling linked to the socio-political tensions that characterized this moment in Mexico’s national history? While it may not be possible to find a definitive answer to this question, revolutionary histories provide notable clues.

Social historians confirm that the final years of the dictatorship were characterized by mounting civil unrest, and women workers played key roles in numerous strikes that were met with violent repression at the hands of the political and economic elite (González Navarro, 1994). The rise of broad-based efforts to topple the dictatorship was in many ways linked to a politicization of working-class feminist issues, with women such as Juana Bélem Gutiérrez de Mendoza, Dolores Jiménez y Muro, and Elisa Acuña Rossetti increasingly assuming leadership positions in these struggles (Jaiven, 1995). Women’s bodies became the site of dispute in this

context, as the governing class worked to suppress feminist and labor-rights activism, defining women's corporality as, above all, "a spiritual subject" (Gaitán, 2015).

4.4.2 Gendered mobilities in post-revolutionary Mexico



Figure 53. "Monumento a Hidalgo en Guanajuato." Photo provided by: SECRETARIA DE CULTURA.- INAH.-SINAFO F.N.-MEX (Image reproduction authorized by: Instituto Nacional de Antropología e Historia, México, Fototeca Nacional).¹²⁸

¹²⁸http://mediateca.inah.gob.mx/islandora_74/islandora/object/fotografia%3A101629.

In the city of Guanajuato in 1912, a woman can be seen holding a bicycle in front of a statue of Miguel Hidalgo (figure 53). Known as the father of Mexico's independence from Spain in 1821, Hidalgo's memory gained renewed prominence following the overthrow of the porfiriato. Having been a priest and hacienda owner, however, Hidalgo was a controversial figure. Although he was known as an egalitarian, influenced by enlightenment philosophy and questioning the absolute authority of the Spanish King, he continued to emphasize loyalty to the catholic religion and never condemned the notion of monarchy outright (Kirkwood, 2009). Such tensions were in many ways still present during the Mexican Revolution of 1910-1920, as revolutionary leaders worked to mobilize social equity on a broad scale while reconning with a country in turmoil.

Women's roles in the revolution have frequently been overlooked. Although the Mexican revolution has largely been attributed to men, feminist scholars have demonstrated that women contributed enormously, including participation as soldiers (referred to as *soldaderas* or *adelitas*) as well as through a variety of support and leadership positions (Vaughan et al., 2007). *Soldaderas* came from variety of backgrounds; however, most were likely working class, rural, Indigenous and mestiza women about whom little is known. While the figure of the *adelita* has at times been romanticized,¹²⁹ several authors have called attention to the extreme forms of oppression and coerced mobility that many women experienced as a part of these struggles, including issues of rape, forced recruitment and housing destruction (Jaiven, 1995; Salas, 1990). Everyday life during the revolution was constantly in flux, as soldiers, nurses, cooks and family

¹²⁹For example, see the films *Maria Pistolas* (1963) or *Juana Gallo* (1961)

members lived and died on moving trains, which were frequently subject to explosive attacks (Mraz 2012).

The decades following the revolution saw the development of a growing national feminist consciousness as well as some legal gains for women, including the right to divorce in 1914 (Vaughan et al., 2007). The Mexican constitution of 1917 contained many of the ideas discussed by feminists during this era, including free secular education, the preliminary steps to land reform as well as an expansion of divorce provisions (Camín and Meyer, 2010). Although the Constitution did not prohibit universal suffrage, the 1918 National Election Law limited voting rights to men until 1953.

In what ways did the bicycle figure in these feminist movements? Some archives show a celebration of women's cycling, particularly as a part of revolutionary parades (figure 54); however, feminist historiographies suggest the need to acknowledge the discordant aspects of Mexican *feminisms*, which complicate the possibility of finding a completely unified feminist perspective on cycling at either the national or international level. While some feminists in Mexico expressed differences of opinions surrounding issues of religion and women's suffrage (Macías, 2002), many worked to draw greater attention to fundamental issues of education and land rights (Jaiven 1995). In a feminist congress in 1923, Elvira Carrillo Puerto accused other Mexican delegates of being "bourgeois," and ignorant of the miserable conditions that the majority of women lived in (Macías, 2002). At the same time, anti-imperialist thinking found a strong voice in the feminist movement, with Mexican feminists speaking out against the American delegates' rhetoric on the supposed "friendship" between the two countries (ibid.). Meanwhile, post-revolutionary Mexican society continued to be strongly divided along class lines.

When and how were bicycles more widely appropriated by women in this context?

Historians explain that lasting socio-economic divisions were still very visible in the division of urban space in the decades following the Revolution (Escalante Gonzalbo et al., 2010), and these divisions may have extended to bicycling. Feminist historians comments that in the 1920s and 1930s elite Mexican women were busily engaged in sporting activities such as cycling—a pastime that did not seem to be extended to the majority of women (Vaughan et al., 2007: 61).



Figure 54. “Mujeres realizando acrobacias en bicicletas en un desfile deportivo el Día de la Revolución,” Ciudad de México, 1938. Photo provided by: SECRETARIA DE CULTURA.- INAH.-SINAFO F.N.-MEX (Image reproduction authorized by: Instituto Nacional de Antropología e Historia, México, Fototeca Nacional).¹³⁰

¹³⁰http://mediateca.inah.gob.mx/islandora_74/islandora/object/fotografia%3A68786.

At the same time, other historians (Zapata Bello, 2019) suggest that bicycles experienced a wider diffusion starting from around the 1930s or 1940s (and possibility earlier), becoming a broader means of utilitarian travel (e.g., figure 55). While oral-history accounts from this study are limited mainly to future decades, several interviewees commented that they vividly remember their parents' stories about cycling in the 30s and 40s, becoming an especially vital means of transport for working class families. In Aguascalientes, several 'veteran' cyclists recall that, "*road traffic was almost all bicycle traffic.*"



Figure 55. "*Señora posando con su patrimonio familiar,*" Puebla, 1942. Photo provided by: © Pedro Sardá Cué

Materials from health and physical-education programs provide some clues about the changing gender stereotypes during this timeframe, which may have impacted women's bicycling. Some historians note that, rather than changing the gender codes of conduct observed

in colonial and porfirian urbanism, the Mexican Revolution effectively worked to extend these teachings to rural sectors (López, 2010). A manual designed for campesina women, for example, cautions against torn and dirty clothing, which “robs beauty from the feminine body” and causes social disdain (Campillo, 1938: 9, my translation). As physical-education programs were extended throughout the country through the new system of public education, these teachings often enforced ideas that educators should be cautious not to “masculinize our women” (as cited in Rivera Gómez 2016).

To what extent were women’s cycling practices also affected by the wider dissemination of the motor car? Mid-century advertisements commonly depicted a prosperous life as one with women as car passengers and passive housewives (for example, see figure 56). The circulation of the phrase *pueblo ciclistero* as a synonym for underdevelopment may have also contributed to these processes, impelling a depreciation of the now humble bicycle, while at times carrying classist and anti-rural undertones.



Figure 56. Housing lot advertisement, 1956.¹³¹

¹³¹Source: El Sol del Centro, Aguascalientes, July 22, 1956.

There is, however, some evidence that women from a diversity of backgrounds continued cycling for the decades to come, despite some of the negative stereotypes. María del Carmen Muñiz, affectionately referred to by many as ‘La Popis,’ is one of the more well-known women cyclists in Mexican history, who was successful in numerous competitive cycling events starting in the late 1960s and continues to appear in news articles for defying gender and age expectations (Martínez, 2018). In addition to images of women engaged in sport, photo archives reveal the role of bicycles in women’s lives from a variety of rural and urban areas (see figures 57-59). While some veteran cyclists in the bajío have commented on a near absence of women cyclists in the region until quite recently, others hint at a more complex understanding. A cyclist and car salesperson who grew up in Irapuato, Guanajuato explained how he thought of the bicycle as being primarily a “*man’s vehicle,*” but then went on to describe how his parents first met in the 1950s: “*my father had seen my mom running errands around town on her bike... and one day he worked up the courage to talk to her.*” Other interviewees contested hyper-masculinized ideas about cycling, noting that “women have used the bicycle in all kinds of ways: *“for amusement, for getting the school, going to work, and as a form of work.”*”



Figure 57. Aguascalientes, 1964.¹³²

Lucinda, a domestic worker, tells me about the bicycle she learned to ride on in a small town outside of Aguascalientes where she grew up in the 1980s:

My dad used to take me on his lechera (double-barred frame). And I liked the feeling of the wind on my face, so I said: 'I want to learn to ride.' So, I used to grab my dad's giant bicycle.... My family is really conservative... My mom told me I shouldn't ride... She told me that I had to wear a skirt. But I would wear pants under my skirt and ride... I'd always use that bike to go back and forth from the farm... I remember a lot of other girls in my town rode bikes as well.

Lucinda's experience, along with many others, speak to the importance of bicycling in many women's lives, and also the need to reflect carefully on historical accounts in which these cycling practices have not been registered.

¹³²Source: El Sol del Centro, Aguascalientes, November 2, 1964.



Figure 58. *'Dama posando en su bicicleta,'* Puebla, 1966. Photo provided by: © Gobierno del Estado de Puebla / Secretaría de Cultura / OPD Museos Puebla / Fototeca Juan Crisóstomo Méndez.

An important mode of travel for many women has also been bicycle sharing. In many towns and cities across Mexico, many parents still frequently shuttle their children to school by bike. Clara, for example, explains how bicycling was the best way to move around Aguascalientes as a single mother when she had a second child in the 1990s:

When I moved to a new colonia, it was too far to run errands on foot. I had my eldest daughter who was a year and half and who had just started to walk, and the other in my arms, and I said, 'this isn't working well'... So I got a kangarooerera, and I took them both on the bike with me...I put the eldest on the back, and the little one in the kangarooerera, and we went everywhere like that.



Figure 59. “Retrato en la calle,” Fresnillo, Zacatecas, 1955. Photo provided by: SECRETARIA DE CULTURA.- INAH.-SINAFO F.N.-MEX (Image reproduction authorized by: Instituto Nacional de Antropología e Historia, México, Fototeca Nacional).¹³³

In addition to cycling as a mode of sport, diversion and everyday travel, the bicycle has also served as an important form of mobile work for many women. In Aguascalientes, many cyclists recall how a variety of household products (such as milk and cheese) were delivered primarily by bicycle throughout much of the twentieth century, including by women. Although the figures of the pedaling panadero (baker) and voceador (newspaper deliverer) are emblematically male, it is important to recognize that women have also participated in these professions, both through preparation and distribution (for example, see figure 60). Ethnographic

¹³³http://mediateca.inah.gob.mx/islandora_74/islandora/object/fotografia%3A387206.

studies on *biciflorios* (bicycle street vendors) help to confirm these accounts (Sarmiento-Casas, 2022), along with life-history accounts describing the importance of bicycling for domestic workers (Cueva Inda and Santamaría Gómez, 2019)



Figure 60. “Mujeres acomodan sus periódicos en un ayate,” Ciudad de México, 1955. Photo provided by: SECRETARIA DE CULTURA.- INAH.-SINAFO F.N.-MEX (Image reproduction authorized by: Instituto Nacional de Antropología e Historia, México, Fototeca Nacional).¹³⁴

An understanding of these hidden histories raises questions on working conditions and devalued labour. Although post-revolutionary history suggests a reappropriation and celebration of cycling by women and their families in some cases, the bicycle also became a mundane and at times devalued form of everyday travel and work. Particularly in times of economic crisis (such as the oil shocks of the 1970s and 1980s as well as the Mexican peso crisis of the 1990s), the

¹³⁴http://mediateca.inah.gob.mx/islandora_74/islandora/object/fotografia%3A330741.

bicycle has served as the only available transportation option for some families. These geographies of inequality continue to merit attention, even as cycling assumes new political meanings in the new millennium.

4.4.3 *Bicycle laws and movements in the new millennium*



Figure 61. Flag raising by bicycle police officers, Aguascalientes, 2018. Photo by author

On a morning bike ride in 2018, I stopped to watch the raising of Mexico's national flag in Aguascalientes' *Plaza de la Patria*. I had caught glimpses of this ceremony many times before, but sometimes of this particular day stood out. Perhaps it was the way the light reflected from the statue of the *águila* onto the ascending flag, magnifying symbols of national identity and independence. But this was also the first time I noticed that the people charged with this duty were *ciclopolicías* (bicycle police officers).

In Aguascalientes (and in a growing number of cities across Mexico) the implementation of bicycle policing is one of many strategies that fit within a series of new mobility laws aimed at promoting sustainable urban development by privileging cycling and pedestrian infrastructure. Notwithstanding some interest from policy makers in augmenting women's bicycle ridership, the incorporation of feminist perspectives in the discussions has been extremely limited (Díaz Vásquez, 2017). The integration of an intersectional feminist analysis into these discussions is quite new and seems to be limited mainly to social movements (Coyotecatl Contreras and Díaz Alba, 2018).

Recent studies from Mexico City and Guadalajara show a number of particular barriers for women's cycle usage, including inadequate cycling infrastructure, insufficient road lighting, an absence of intermodal transportation options as well as issues of harassment (Díaz Vásquez, 2017; Coyotecatl Contreras and Díaz Alba, 2018). As urban violence, and especially violence against women, continues to escalate, it also poses significant challenges to campaigns aimed at promoting bicycle ridership (ibid). It is estimated that 66% of Mexican women have experience some type of violence or abuse (INEGI, 2016a). My research in Aguascalientes corresponds with findings from other Mexican cities, with fear of violence becoming a strong deterrent from cycling for many women.

At the same time, other women that I interviewed expressed a preference for cycling over other forms of transportation within this context, providing the ability to move around the city while remaining somewhat "off the grid." Recent cases of missing and murdered women (including those perpetrated by uber and lift drivers) were frequently brought up by women during interviews. For example, Zoé, an office administrator in Aguascalientes who lives close to the city's periphery, explains her safety concerns and transportation strategies:

I often take public transport during the day, but I prefer not to at night... Sometimes an hour goes by, and there's no bus ...If I have to take an uber at night, I try to be extra careful. First, I check to make sure it's the right licence plate. I take a photo of the back of the car and text it to a friend. Then, once I'm in the car, I make sure to call someone so that the driver hears me saying that I've texted the details and that I'll be there soon... Sometimes it's easier and less expensive to just ride a bike at night. I try to wear a hood and an old backpack. And I go quickly so I can stay unnoticed.

For Zoé and many others, the bicycle's appeal is the ability to move more discretely around the city, avoiding the risks associated with using public transit and ridesharing applications.

However, in many cases, commuters expressed that they “*don't feel completely safe on a bike at night,*” making cycling at times “the least worst option.” These reflections reveal how fear of violence is not only a constraint for some women from cycling, but it can also be a hostile motivating factor.

While the response of local authorities to these issues has often been through law enforcement, the police and related criminal-justice institutions are a significant source of fear for many residents in cities such as Aguascalientes. In my interviews with cyclists from a variety of backgrounds, concerns relating to policing—including fear, discomfort distrust and avoidance of the police—became increasingly prevalent as my fieldwork progressed.

For example, Clara explains some of her hesitations around cycling. As a domestic worker moving between multiple homes throughout the week, she notes that cycling is an important means of transportation that allows her to move quickly between jobs. However, “*sometimes I prefer to walk or take the bus,*” she clarifies. Clara continues to describe a particularly frightening traffic collision she has experienced one day while riding on along the city's first ring of circulation:

I was riding along the side of the road, and suddenly a car driver opened his door, and I went flying over the handlebars. I did a full flip in the air and fell on the pavement on my back. The driver gets out and yells 'señora, why don't you watch where you're going.' A taxi driver ...stopped to defend me and puts his arms out, otherwise the other cars would have run right over me... The señor who doored me said 'you need to pay me for the

damage to my car door'... But the taxi driver defended me, telling the señor that it's his responsibility as a car driver to look before opening the door. He said, 'she doesn't need to pay you anything. Actually, you should pay her for her injuries.' He gave me his phone number and told me that I should call the police to report the collision and file a claim against that señor.

Clara continues to explain that her decision not to call the police or file a claim had to do with ongoing negative encounters with transportation authorities:

My back hurt after that, but what hurt me the most was the damage to my bike. It was completely bent up, and I had to pay a lot to fix it. When something happens to your bike, it's horrible... The taxi driver told me I should sue for compensation, but I don't trust the legal system... Like what happened to me before with a stolen bike... It was a few years ago: I wanted to file a claim against a neighbour who had sold me a stolen bike... When I found out that it was stolen, I gave it back to the person it belonged to, and I wanted my money back that I had paid to that neighbour, because I had no idea it was a stolen bike when I bought it from him. The police didn't want to help me, and they refused to investigate my neighbour. Instead I was investigated by the police... And then later, because I didn't have a bike anymore, a señora that I work for gave me this bike that I have now because she said that she didn't need it, and she knew that I needed a bike to get to her house... And on the third day I rode it, a police officer cuts me off in front, and another one from behind. They said, 'give me your backpack.' They begin to throw everything out in the street. They said, 'so this bike is also stolen?' I told them very clearly, 'look, the bike before, I had paid for it: I didn't know that it had been stolen... Let's go and talk to the person who stole it so you can investigate him, and not me.' I said, 'with this bike here, a friend that I work for just gave it to me.' They didn't believe me, saying 'since when do people just give out bicycles?' I said, let's go talk to my employer. She can be a witness that she gave it to me.' Instead they detained me... And it took a while to prove that this bicycle was a gift.

In Clara's experience, an already traumatic traffic collision intersected with prior issues of police intimidation, hindering her trust in transportation authorities and impeding her ability to seek justice and compensation for her physical and bicycle injuries. As we discussed this incident more, we also uncovered other underlying issues, including what appeared to be classist, and potentially racist, undertones in the police officers' selective targeting and treatment of Clara as a domestic worker.

These issues have become important topics of debate and reflection within mobility rights movements across the country. In Aguascalientes, women from diverse backgrounds and

professions (including beekeepers, food-industry workers, bicycle merchants and domestic workers) have moved to the forefront of the associations *Aguas con la bici* and *Aguas con las chicas*, led by local feminist activists Patricia Casteli and Glenda Moreno. With an emphasis on broad-based community participation, these organizations have allowed for an intersectional feminist perspective to emerge. While these organizations certainly celebrate cycling practices (for example, through a variety of weekly *rodadas*) they are also placing an increasing emphasis on issues of transportation safety and equity, while creating alliances with pedestrian and public-transit advocacy groups to support an intermodal focus (Sánchez Rodríguez, 2019).

These discussions contributed to a strong focus on *equidad en la movilidad* for the 10th National Urban Cycling Congress in Aguascalientes in November 2018 (Casteli et al., 2018). These conversations are leading to an increasing acknowledgement of intersectional issues of economic inequality, gender disparities, policing and violence against women as determinants of cycling injustice. Social movements from across Latin America have also been actively working to promote an intersectional-feminist cycling politics and to expand safe-space campaigns, including #CiclismoSinMachismo, #NiUnaMas, *Vivas y Libres Nos Queremos*, among other campaigns (Castañeda, 2021a).



Figure 62. Glenda Moreno, Jesús María, Aguascalientes, 2018. Photo by author

4.5 Discussion

Amidst growing interest on bicycling, this paper has explored an intersectional feminist understanding based on historical and ethnographic research from Mexico. This process has inevitably involved confronting global generalizations about gender and cycling that at times circulate in academic research and policy discourse. To some extent, the acknowledgement of women in transportation-planning agendas represents a shift in thinking. As authors such as Margaret Walsh (2009) have noted, men have traditionally dominated histories and research on transport and mobility. The push to increase women's bicycle ridership and to integrate a feminist analysis into urban-planning discussions on cycling, however, is often based

quantitative generalizations and liberal-feminist agendas. This process creates a type of gender tokenism. It also produces what Kim Fortun calls *discursive risks*, which “emerge because of a tendency to rely on established idioms and ways of thinking” (2012: 452).

Decolonial thinking exposes the contradictions of universal discursive logics and the need for more nuanced understandings of historical legacies (Mehta, 1999). An examination of the early introduction of cycling technology in Mexico during the porfiriato suggests that cycling played a strong role in processes of class differentiation and social exclusion, disrupting universal claims about the emancipatory politics of bicycling from prominent U.S. feminists during the same timeframe. With the wider dissemination of transportation technologies in post-revolutionary Mexico, the (bi)cycle has further engendered a diversity of experiences and meanings, ranging from defiance and celebration, to secrecy, single motherhood, tedium and work. Cycling continues to encompass a plurality of riders and experiences in the new millennium, even as the (bi)cycle is reframed through urban politics, immobilized through violence, driven by fear, obstructed by discrimination and controlled through policing. The (bi)cycle and its symbolisms have also been reappropriated by social movements, contested, debated and reimagined with the goal of fostering more socially equitable and inclusive cities. Within this milieu of particularities, women continue to resist gender stereotypes on and off of the (bi)cycle and pursue mobility despite the hostile conditions that often threaten to immobilize them.

As cycling ontologies are affected by local histories, politics and positionalities, they call into question the given boundaries of the taken-for-granted ‘woman.’ These processes demonstrate a need for an intersectional analysis to highlight social and historical dynamics instead of essentialized categories (Choo and Ferree, 2010). At the same time, these findings

show the need for a continued engagement with an analysis of gender as predominant social construction that has very real consequences.

Paula Soto explains that men tend to travel at a significantly faster pace (having greater access to motor vehicles) in comparison to women whose mobilities have often been constrained to slower speeds, especially when travelling with children (2016). As women are principally responsible for the planning and coordination of family tasks (Jirón, 2017), their mobilities tend to be much more complex, often involving a combination of different forms of transportation (Soto 2016).¹³⁵ The configuration of violence-avoidance strategies further complexifies these travel patterns.

As everyday mobilities become more difficult to measure in these contexts, they also call into question the widespread underrepresentation of women in cycling statistics. A frequent statistical comparison from Mexico City, for example, calculates that women represent 10 percent of cyclists in the city, but they account for 39 percent of ecobici (public bike share) users (López García, 2015). Generally, researchers seem to take these statistics at face value, assuming that women simply use the ecobici system in much higher numbers. If we take into account the complexity and intermodality of women's travel patterns, however, then an alternative explanation would be that the bicycle sharing statistics are a closer representation of women's actual share of bicycle trips, with their overall cycling patterns being vastly undercounted.

There are of course wider questions to consider beyond issues of precise statistical 'accuracy.' I wonder if part of the desire, and at times outright romanticism, around increasing

¹³⁵These conditions are of course not equal for all women, as factors relating to household composition, age, social class, (dis)ability and a variety of other personal circumstances complicate questions of everyday travel.

women's cycling statistics is that it individualizes the very complex structural challenges of building pro-cycling and sustainable cities? The question becomes "if only women could overcome their fear of cycling," rather than problematizing more systemic power relations. If we follow the work of Mexican feminists in reconstructing revolutionary history, we learn that efforts to highlight women's participation in particular histories should not be configured in ways that negate a diversity of experiences or that obscure issues of coercion and violence against women (Jaiven, 1995; Sevilla de Morelock, 2019; Macías, 2002; Vaughan et al., 2007).

I also question how a one-dimensional fixation women's cycling levels might work to alleviate responsibility from authorities in addressing a number of broad mobility issues, including the need for well-connected, well-illuminated and equitably distributed cycling networks; reinvestments in public transit (particularly in underserved areas); the dismantling of anti-pedestrian bridges; better intermodal transportation options; increased traffic-calming measures; reversing tax breaks and subsidies to automotive industries; and a number of additional concerns that require greater public deliberation. From an intersectional perspective, the push for enabling women to participate more fully in the building of pro-cycling cities requires greater attention to these concerns as well as related challenges of poverty, community health and safety (McCullough et al., 2019). This focus would also necessitate listening carefully to citizens' concerns about issues of harassment and violence against women, rising socio-economic inequalities, racism and police misconduct. It urges elected officials to open spaces for deliberation on a variety of proposals for addressing these issues. It also requires taking seriously proposals aimed at addressing issues of systemic oppression in law enforcement (Magaloni and Rodriguez, 2020) including movements to defund the police and develop socially just alternatives.

The promotion of safe and inclusive cycling facilities can certainly form a valuable part sustainable-transportation initiatives—a move that requires a shift away from top-down decision-making paradigms. As Lake Sagaris and Ignacio Tiznado-Aitken explain, “women’s participation in sustainable transport debates can help push more interdisciplinary approaches that in turn could help build stronger advocacy for a ‘sustainability trio’, in which an intermodal focus improves walk–bike–bus interactions (2020: 123). Sara Ortiz Escalante & Blanca Gutiérrez Valdivia elaborate that participatory processes need to be *gender-transformative* by “responding to women’s needs... without reproducing gender stereotypes; transformative in the sense of promoting women’s ability to challenge these roles and stereotypes” (2015: 116). Researchers, policy makers and urban planners have much to learn from social movements from across Latin America engaged in participatory discussions on active transportation and intersectional feminism. While many of these organizations work to promote cycling for women, these efforts are intimately connected to campaigns aimed at confronting intersectional issues of gender-based discrimination, racism, classism, precarious labour, heterosexism and violence against women (Gamble, 2019; Coyotecatl Contreras and Díaz Alba, 2018; Castañeda, 2021a).

If we are to take seriously propositions on the emancipatory power of cycling for women, then we also have to consider situations, historical legacies and power relations that configure cycling in ways that are partially or variably empowering as well as in ways that are exclusionary, repressive, disempowering and/or endangering. We also have to take seriously intersectional calls for mobility justice that challenge exclusionary political institutions and that move to amplify gender-transformative decision-making processes.

Research on gender and cycling can benefit from historical engagement with a broader array of sites to integrate a deeper understanding of contested pasts and their ongoing

entanglements with the present. Acknowledging the complexity of these issues, I argue, will be an important step, not only for the reconstruction of transportation histories, but also in formulating policies and planning processes that better address issues of gender inequity in the present moment and help to build more inclusive cities in the future.

Chapter 5:

Creating sustainable cities through cycling infrastructure? Learning from insurgent mobilities

5.1 Introduction

In March 2018, I joined a group of bicycle advocates in Aguascalientes, Mexico in an impromptu meeting regarding a series of lighting disappearances on one of the city's principal cycling facilities: *Ciclovía Gómez Morín* (figures 63-64)—a bicycle-pedestrian path on the outer-eastern edge of the city centre. We had just attended a celebration organized by the municipal government for the planned expansion of this path; however, ongoing blackouts raised new concerns for activists, ranging from visibility to personal security. I remember standing together under the streetlamp's darkness for some time, trying to make sense of how the lights' solar-chargers, and at times the entire poles, had been taken mysteriously at night. Rafael, a long-time bicyclist in the city, discussed a particularly devastating mugging that he experienced on this facility at night, which left him seriously injured and bikeless for several months. Araceli, a leader in the bicycle movement, reminded us that these issues have been particularly challenging for women riders amidst a rising crisis of gender-based violence: "*We have to worry about who might be lurking in the bushes,*" she explained, so "*sometimes I'd rather take the risk and ride out in the street with the cars instead of riding on the dark path.*" I also remember how fear crept around us as twilight loomed, leading our discussion to an abrupt end.



Figure 63. Missing solar charger for light, Ciclovía Gómez Morín. Photo by author

As we hurried away from the development that evening, questions about the infrastructure's sustainability lingered. While the path was developed as a primary route within the city's active-transportation network (figure 64), the ongoing raids of its solar-powered lighting as well as the muggings that many active travellers have experienced have contributed to a widespread avoidance of this facility at night. Yet for activists such as Araceli and Rafael, these problems extend far beyond a few broken lights, requiring attention to a broad spectrum of social justice concerns. How can these social-movement actors help to inform our understanding of sustainable-transportation development, including the more precarious aspects of active travel?

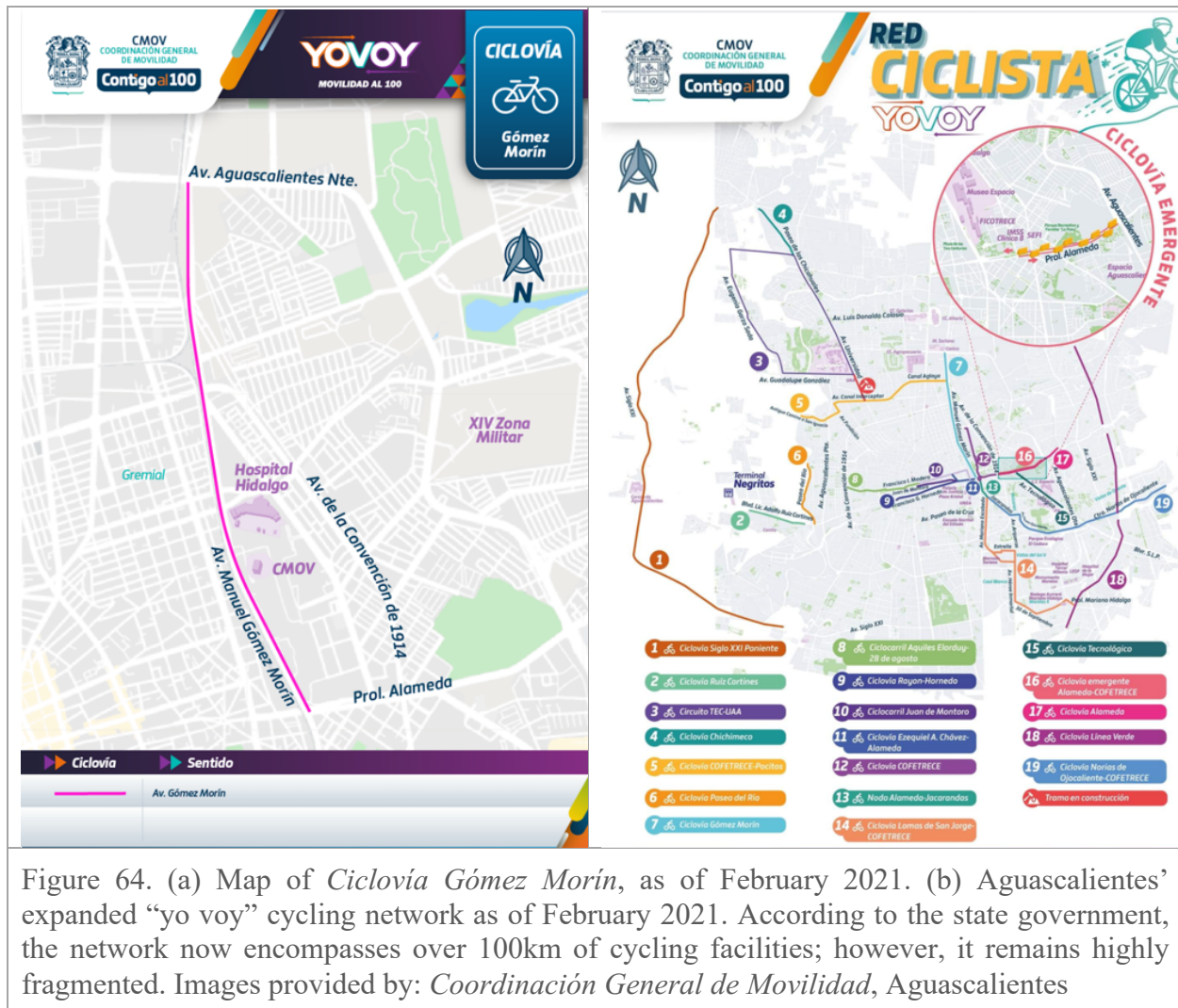


Figure 64. (a) Map of *Ciclovía Gómez Morín*, as of February 2021. (b) Aguascalientes’ expanded “yo voy” cycling network as of February 2021. According to the state government, the network now encompasses over 100km of cycling facilities; however, it remains highly fragmented. Images provided by: *Coordinación General de Movilidad, Aguascalientes*

Sustainable transportation is broadly understood as networks intended to support mobilities that are environmentally responsible, economically viable and socially just (Rau and Scheiner, 2020). Cycling has been defined as one—if not the most—sustainable urban transport mode given its feasibility for shorter and medium-distance trips that are too long to cover on foot (Pucher and Buehler, 2008; Pucher and Buehler, 2017). Building on speculative theorizing on post-car futures (Dennis and Urry, 2009), recent scholarship has emphasized the power of bicycle-utopian thinking in the transition to more sustainable urban futures (Popan, 2019; Psarikidou et al., 2020). Sustainable cycling infrastructure can thus be understood as both solid

material forms intended to facilitate bicycle travel and prominent imaginary constructs where expectations about environmental futures are played out. Yet beyond the immediate physical implementation of cycling infrastructure, and beyond the environmental imaginaries unfurled in this process, the case of Ciclovía Morín points to the need for a careful assessment of the uncertainties that can characterize cycling facilities and the work of local communities in contending with these instabilities.

Questions on infrastructural deficits have been gaining momentum in the social, public health and engineering sciences (Howe et al., 2016; Anand et al., 2020). Blackouts, breakages and other shortfalls have surfaced infrastructure in unexpected ways—highlighting socio-material arrangements that often remain submerged, un-noticed or neglected (Bowker et al., 2016; Star, 1991). Deterioration accentuates how social exclusions are refracted through uneven access to infrastructural provision and maintenance (Graham and Thrift, 2007; Schwenkel, 2015). In many Latin American cities, persistent infrastructural breakdown has become the norm as residents contend with constant deferrals and have to improvise in order to obtain the resources and transport necessary for daily life (Caldeira, 2017; Cobos, 2016; Janoschka and Arreortua, 2017). The pilfering of Ciclovía Morín’s lighting, and the frequent nocturnal robberies that have ensued, is one example of infrastructural violence—a concept that underscores the ways that broad social inequities become operational through urban infrastructure (Rodgers and O’neill, 2012). From this perspective, the crisis of urban violence currently threatening Aguascalientes’ cycling facilities does not occur in a vacuum; Rather, it needs to be understood in relation to longstanding mobility injustices, including those relating to police brutality and other forms of *systemic oppression*. Theorizing on transportation resourcefulness (Verlinghieri, 2020) and grassroots knowledge (Montoya, 2013) further help to

counter dystopic characterizations of infrastructural degradation in resource-poor settings, bringing greater attention to the creative advocacy and provisional strategies offered by everyday citizens in such contexts.

This chapter contributes to the transportation and mobility justice literature by focusing on the work of social movements in Aguascalientes in confronting a variety of challenges in the provision of active-transportation services. As discussed in previous chapters, the state and municipal governments of Aguascalientes have pursued a rapid neoliberal growth model in recent decades, including the vast expansion of motorways as well as an increase in direct foreign investment and automobile manufacturing in the city (Martínez Delgado, 2014; Camacho Sandoval, 2021). These changes have contributed to the expansion of the city's urban area, the growth of new urban peripheries, along with the swift development of new 'gated communities' (Camacho Sandoval, 2021; Ward, 2009). Critical thinking on the relationship between cycling infrastructure and urban gentrification (Hoffmann and Lugo, 2014; Stehlin, 2015; Flanagan et al., 2016) thus require some adjusting in this context. Although some large Latin-American municipalities such as Mexico City show degrees of gentrification (Delgadillo, 2016; Jones and Varley, 1999), there is reason to doubt that these processes will be replicated in small and intermediate cities, as often predicted. Latin American cities have not transformed into command-and-control centers of the global economy as in many gentrified cities but have instead retained many of their older functions (Betancur, 2014). That is, gentrification has not simply "lagged behind" in many Latin-American contexts (as commonly posited), but rather it seems to have assumed different forms. The recent development of sustainable-transport policies in Aguascalientes (including new mobility laws privileging active travel) thus need to be understood in terms of more disperse spatialities of social segregation outside of the urban center

(Camacho Sandoval, 2021) ongoing processes of political domination (Ruiz Lagier, 2019) as well as complex patterns of urban contestation.

While issues of infrastructural defacement, theft and conflict have undeniably emerged as a part of these processes, so have collective-citizenship mobilizations pursuing social and mobility justice. The city is home to a thriving network of bicycle movements and active-transportation advocates from a diversity of backgrounds, working not only to expand the scope of cycling facilities, but also to widen civil-society participation in transportation planning and to promote an intermodal focus that supports diverse accessibility needs. These movements include *Aguas con la Bici*, *Aguas con las Chicas*, *Bicicálidos*, *Colectivo Ciclista*, among several others (IMPLAN, 2018a).

After discussing theoretical and methodological underpinnings, this paper details how social movements express and negotiate sustainable-transportation and social justice concerns to government and planning authorities. Next, I discuss the ways these movements extend mobility-justice objectives through a variety of alternative-placemaking practices and collective care ethics. Lastly, I reflect on the opportunities and challenges of this work and on areas for future research.

5.2 Ethnographic Engagements with Transportation Justice

Broadly, transportation justice refers to the fair distribution of transport harms and benefits across different members of society (Martens, 2016; Rowangould et al., 2016). As a theoretical lens, transportation justice underscores how transportation systems are co-constituted in relation to hierarchies of social class (Bullard and Johnson, 1997) gender (Miralles-Guasch et al., 2016),

racialization (Nicholson and Sheller, 2016) and (dis)ability (Goggin, 2016). With roots in social-justice movements, this theorizing brings much needed attention to the social aspects of sustainability. Ersilia Verlinghieri explains that “over time the general focus on environmental, economic and social sustainability has assumed more specific targets and, in most planning and policy arenas, the social sphere and the original commitment to justice have been progressively left aside” (2020: 365). Predominately reflecting a neoliberal model, sustainable-transport agendas have come to largely center on macroeconomic-growth objectives (Næss, 2006) as well as the principles of technocracy and modernization (Hickman and Banister, 2014; Gössling and Cohen, 2014; Swyngedouw, 2009; Lubitow and Miller, 2013). Lake Sagaris et al. observe that one of the principal reasons for the slow uptake and follow-through in sustainable transport infrastructure is precisely this lack of attention to the social-justice dimensions of sustainability: “This raises the question of whether environmental or economic sustainability are possible, without a strong social component” (2017: 721).

Recent theorizing on mobility justice further helps to connect the extended spatial and temporal dimensions of these discussions, including multi-scalar governmentalities and the legacies of colonial violence (Sheller, 2018a; Cook and Butz, 2018; Verlinghieri and Schwanen, 2020). Mimi Sheller discusses some of the limitations of sedentary theories of justice, arguing that the new mobilities paradigm “enables the development of a mobile ontology which not only tracks the effects of inequalities in mobility across various connected sites and scales, but also shows how justice itself is a mobile assemblage of contingent subjects, enacted contexts, and fleeting moments of practice and political engagement” (Sheller, 2018a: 98). These insights help animate emergent mobility struggles and interrelations, calling for “recognition, participation,

deliberation, and procedural fairness to be up for discussion, adjustment, and repair” (Sheller, 2018a: 122).

This paper builds on these understandings from an anthropological and social-movement perspective, bringing specific attention to local mobility struggles and forms of collective action. Following scholarship on critical, feminist ethnography (Davis and Craven, 2011; Tsing et al., 2019), this study engages with social-movement praxis as a way of “staying with the trouble” (Haraway, 2016), enabling the emergence of companion concepts (Ballesteros and Winthereik, 2021). Specifically, this research builds on the concept of insurgent citizenship (Holston, 2008) to highlight the processes through which residents contest ongoing injustices and formulate alternatives for building inclusive cities. From the creation of makeshift cycling lanes in underserved urban areas, to the search for socially just alternatives to policing, social movements are forging new pathways to re-envision sustainable transportation systems. These insurgent forms of citymaking—understood here as insurgent mobilities—underscore the creative role of citizens in producing the city as well as the enormous amount of care work involved in these processes.

5.3 Building Sustainable Cycling Cities? Towards a Mobility-Justice Approach

Over the time I spent working with social movements in Aguascalientes, problems on and surrounding Ciclovía Gomez Morín were a constant topic of discussion. The frequent blackouts and robberies (Heraldo, 2016; Página24, 2018) in many ways exemplified the state of insecurity and fear that many active travelers experience on a daily and nightly basis in the city—concern that evidently extended beyond Morín’s edges to include problems of inadequate and fragmented cycling lanes in other areas of the city; public-transit divestment and inaccessibility; difficult

road crossings; an increase in cycling and pedestrian fatalities; harassment and violence against women; police brutality and widespread distrust of police; as well as a variety of related issues. Perhaps questions on how to save Ciclovía Morín became so prevalent in this context because this infrastructure had, in contrast to other areas of the city, received an enormous amount of capital investment and expert know-how. As per conventional frameworks and metrics in transportation planning, this cycling facility should work. The paradox of Morín's fragile existence thus continually surfaced in discussions between activists and local authorities, although social-movement advocacy was certainly not limited to this cycling facility.

As a part of my research, I often tagged along with activists to a variety of formal and informal discussions with municipal and state authorities. We often reported issues such as missing lighting at *Miércoles Ciudadano* (citizenship Wednesday)—a weekly event in which municipal authorities open their halls to the public for discussions on a variety of issues of concern (figure 65a). We also frequently attended meetings with the Municipal Planning Institute (IMPLAN by its Spanish acronym) and with State-government officials. These meetings provided ongoing opportunities to contribute to revisions of the new the mobility laws at the state and municipal levels as well as to raise concerns how road space is allocated, the need for a more equitable distribution of public transit and active-transportation facilities as well as broader community access to transportation decision making.



Figure 65. (a) *Miércoles Ciudadano*; (b) Repaired solar-panel lighting on *Ciclovía Gómez-Morín* following report. Photos by author

Municipal administrators and planners were, for the most part, receptive and cooperative in their efforts to address many of these issues. Our reports of missing lighting on Ciclovía Gómez-Morín were, from what I could see, efficiency reported and expedited (e.g., figure 65b). The (2019) municipal mobility regulation, designed in consultation with civil-society associations and other residents, expresses a clear directive to give priority to sustainable transportation modes, especially walking and cycling. The regulation also strongly emphasizes sustainable transportation as that which supports residents’ “ability to move efficiently, safely, equitability and healthy,” including “appropriate participatory measure to preserve the ecological balance, protect the environment and the use of natural resources” (my translation). In an interview with IMPLAN, representatives strongly confirmed this commitment to collaborative planning.

IMPLAN’s (2019) creation of a municipal transportation-planning committee, including ongoing opportunities for community participation, further attest to these commitments. The city of Aguascalientes also provided strong financial and organizational support for the 10th National

Urban Cycling Congress in Aguascalientes in 2018 (organized by the organizations Aguas con la Bici and Aguas con las Chicas), with transportation equity serving as the key theme (figure 66). As social-movement activists such as Rafael often affirmed, “we have a great relationship with IMPLAN... They clearly want to work with us.” These conversations attest to dedication and hard work of many municipal planners to building more equitable transportation systems and in allowing local stakeholders to participate actively in decisions that impact their everyday lives and mobilities—a process that has led to a significant expansion of the city’s cycling network in recent years (as shown in figure 64).



Figure 66. (a & b) 10th National Urban Cycling Congress, Aguascalientes, Mexico, 2018. Photos provided by *Aguas con la bici*.

In theory, these commitments to equitable planning are also present at the state-government level, with the (2018) new mobility law explicitly calling for community participation. In practice, however, these commitments have been met with a series of ongoing blockades, including an unparalleled impetus to “resolve” traffic congestion issues through road-widening projects and the construction of multi-level expressways (e.g., figure 67a) as well as the continued reliance on anti-pedestrian/anti-cycling bridges that privilege efficient automobility over sustainable transport modes. In a meeting with social movements,

representatives from the state government affirmed their commitment to sustainable transportation, but then mentioned that “first we have to finish building the new elevated highways,” with the intention of managing the city’s growing traffic issues with increased investments in motor-vehicle infrastructure. For activists such as Araceli, this strategy is completely illogical: “that’s like saying you want to lose weight and then going out and buying bigger pants!” Although state-government advertisements depict these infrastructure projects in harmony with the local environment (figure 67a), these projects have tended to involve the removal of greenspace (e.g., figure 67b).



These issues are of course not limited to the case of Aguascalientes, as congestion-mitigation strategies continue to dominate transportation planning in many areas of the globe, while treating issues of traffic safety, environmental costs and the needs of underserved populations only marginally (Manaugh et al., 2015). However, they have been particularly inequitable in this case, where the expansion of motor-vehicle infrastructure has served to directly challenge and fragment the city’s carefully planned active-transportation network.

Although public involvement has been solicited to some extent by the state government as per the new mobility law, “participation” mechanisms have generally been pro forma. For example, when social-movements attempted to participate in the state government’s “collaborative” oversight committee on the new mobility law, they were told that did not qualify based on several last-minute restrictions such as number of years as a civil-society association. Given that the state government of Aguascalientes controls decision-making on major roadways, the municipal government’s sustainable-transportation plans and participatory initiatives have often been encumbered by the state.

These processes severely limit the potential of articles relating to “community participation” and “participatory governance” in the new mobility laws. For social-movement activists, interactions with the state government have been particularly disheartening and frustrating. Local activists have invested an extraordinary amount of time in active-travel initiatives, often taking time off of work and biking extensive distances to participate on a completely voluntary basis in efforts such as cyclist counts, multi-day design workshops and other planning meetings. In interviews, some activists noted that they felt “taken advantage of” by state authorities who have received pay and credit for social movement work.

These types of public-consultation measures with significant limits of community participation are generally unlikely to affect ultimate decisions and can thus impede transportation-equity objectives. Social movements in Aguascalientes continue to question and contest these forms of political exclusion. As one activist questioned: “Why do they always say, ‘we want to hear your concerns’ but never ‘we’ve heard your concerns and are making systemic changes,’ ...like tearing down the anti-pedestrian bridges and building safe street crossings.” Activists continue to write op-eds and collaborate in other new stories to contest the

transportation status quo, reporting issues such as the fragmentation of cycling facilities (Flores Nieves, 2021a; Aldaco Velázquez, 2021), cycling and pedestrian insecurities (Olvera Zurita, 2019) and car-centrism (Flores Nieves, 2021b; Granados, 2021). Given that sustainable transportation modes (including walking, cycling and public transit) are the majority modes of transportation in Aguascalientes (INEGI, 2016b), the continued privileging of motor-vehicle infrastructure is particularly inequitable in this context. Activists have also called for greater attention to the root causes of urban violence, stemming from rising socio-economic inequalities and a variety of other interconnected issues. These movements help to call into question the efficacy of top-down decision-making paradigms and the tokenization of community participation.

Studies increasingly demonstrate that transportation equity cannot be achieved if institutional procedures continue to reproduce domination (Cook and Butz, 2016; Blanco et al., 2018; Gamble, 2019). Recent theorizing has thus underscored the need to radically shift focus in urban planning from transportation equity to also include transportation and mobility justice (Cook and Butz, 2018; Rowangould et al., 2016; Sheller, 2018b; Karner et al., 2020). With a strong emphasis on feminist theory, this shift helps to disrupt political philosophy's top-down understanding of justice (Young, 2011), showing how institutional obstacles must be dismantled that prevent comprehensive participation in decision-making processes (Fraser, 2014). Based on these understandings, theories of mobility justice help to emphasize broader objectives in addition to transportation equity, including those related to procedure— “the nature of decision-making and governance, including the level of participation, inclusiveness, and influence participants can wield”—and recognition— “acknowledgment of and respect for the rights,

needs, values, understandings, and customs of groups involved in, or affected by, decision making and governance” (Verlinghieri and Schwanen, 2020: 3).

AC Davidson (2020) observes that many recent mobility studies share a clear message that radical change is needed in transportation structures to work towards more just and sustainable futures, yet greater elaboration is needed on what radical approaches to sustainable mobility might look like. Karner et al. (2020) discuss society-centric approaches to justice as those that consider a broader range of actors, practices and forms knowledge. Society-centric approaches can help to shift the focus outside of mainstream institutions to better understand the work of social movements and other residents in contesting ongoing mobility injustices (Enright, 2019; Verlinghieri and Venturini, 2018) and by and initiating alternative placemaking processes (Nixon and Schwanen, 2018). In the following section, I contribute to these discussions through an analysis of the agency of social movements in Aguascalientes in provoking counter-hegemonic and imaginative ways of enabling sustainable mobilities.

5.4 Learning from Insurgent Mobilities

Aguascalientes is home to an especially vibrant assortment of social movements promoting sustainable transportation, including at least six cycling associations, a number of public-transit activists and a newly formed pedestrian rights group. The Municipal Planning Institute has highlighted the city’s bicycle movements as a positive example of citizen participation, advocating for more inclusive cities, environmental justice and human rights (IMPLAN, 2018a). Aguascalientes’ first cycling facilities were made possible thanks to these social-movement activists, who I’m told initially pieced together their extra pesos to buy paint to create makeshift lanes in key areas of the city—a process that eventually led to greater buy-in from the municipal

and state authorities. How can these movements' ongoing strategies help inform a situated understanding of struggles for mobility justice?

5.4.1. Reclaiming the Streets

In Aguascalientes, a series of weekly rodadas are at the heart of sustainable-transportation activism (e.g., figure 68). Much has been written on critical mass and related activism in different parts of the world, including its different meanings as an expression of collective decision-making, celebration, participation, direct action and cyclists' right to the city (e.g., Furness, 2007; Parry, 2015; Castañeda, 2020; León, 2016; Rinaldi, 2014). From my experience working with social movements in Aguascalientes, I can say that there is something quite special about the rodadas in the city. The ride brings together thousands of participants from across the city and surrounding towns, including strong participation from families with children. Like the rodada, the organizers are also quite diverse, including participation from domestic workers and food-industry workers in leadership roles. In some cases, participants have been inspired to start critical-mass activities in their own towns, with smaller rodadas popping up in surrounding agricultural areas such as San Francisco de los Romo.

Participants from the city of Aguascalientes often expressed to me the importance of the rides, not only as spaces of enjoyment, play and community building, but also “as a way of reclaiming the streets” in the face of urban violence and insecurity. Riding next to Ciclovía Morín one night during a rodada, a volunteer once told me, “How cool is it to be out here at night and feel totally safe with all these people!” Organizers often mention that the reception from the wider community to the rides, including car drivers, has generally been quite positive—a

dynamic that organizers attribute to the city’s strong cycling history. The rodadas have also become spaces of lively artistic expression and creativity.



5.4.2 Remembering Cycling Fatalities and the Movement for Safe Streets

Amidst a rise in cycling fatalities (STCONAPRA, 2017; STCONAPRA, 2018), social movements have also been at the forefront of calling attention to systemic issues in road safety management. In Mexico, the management and reporting of traffic collisions, particularly those involving cyclists and pedestrians, has become quite controversial. Public health experts note that although Mexico’s mortality database is considered acceptable by the World Health

Organization, it possesses problems regarding the classification of deaths in certain codes, suggesting that the real magnitude of road-traffic injuries and fatalities is severely underestimated (Híjar et al., 2018). Researchers explain that the number of traffic fatalities is likely much higher than officially reported given that pedestrians and cyclists who die in ambulances and in hospitals in Mexico (rather than at the scene of the collision) often become “garbage data” in official reports and are not included in the statistics on traffic fatalities:

This study shows that the actual burden of road traffic mortality in Mexico as reported by nationally collected data is underestimated by 27 to 34 percent due to inappropriate and nonspecific ICD-10 coding of deaths. These differences have potential implications in terms of health planning and resource allocation for specific prevention strategies targeting the most vulnerable road user groups. (Híjar et al., 2012: 10)

The mortality and disability rates associated with traffic collisions have been devastating: “the Mexican response has focused on vehicle occupants while overlooking vulnerable road users and has prioritized strategies with limited effectiveness” (Pérez-Núñez et al., 2014: 911). Under the guidance of concerned paramedics and health workers, local organizations and social movements in Aguascalientes have been working to help planners to re-calculate and map these traffic fatalities, using local news reports and a WhatsApp messaging group. The open-source platform Repubikla (<http://repubikla.herokuapp.com/>) further offers new ways of reporting these issues using open street maps. By better mapping these issues, and the infrastructural problems at the sites of the collisions, advocates hope to systematically address road safety issues.

Social movements have elicited other insurgent practices around these issues (e.g., figure 69), such as memorializing cycling fatalities with ghost bicycles and building adjacent memorials at the scene of the collision with the victim’s families. For many families, building these small memorials—called *capillitas*—is a significant part of observing the passing of a

family member. According to popular belief, the abrupt and violent nature of death by road collision evokes a specific type of haunting and requires additional attention and care. The memorial-building events that I attended were times of connection between the families of victims and activists. The activists that I spoke to also discussed how these memorials can serve as a type of preventative measure by highlighting problematic road areas and reminding commuters to drive with caution. These memorials have at times been torn down (sometimes by authorities or local business owners), making their existence a matter of continuous negotiation and collective care.



Figure 69. Event during *rodada* on the day of the dead (2017), recognizing cycling fatalities. Photo by author

In at least one case, a memorial-building event led to important clues about a collision. As activists went to borrow a ladder from a local business for hanging the ghost bike, they were offered surveillance video footage of the collision by office workers, being told that the police

had not come to collect it, and they were worried that it would be automatically erased from the system at the end of the week. This encounter led to important evidence for the victim's family that might not have been made available otherwise.

5.4.3 Mobilizing Conflict Transformation and Safe Space

While these social movements are not free of disagreement and frictions (including conflicts between and within movements), they are working to find new ways to mediate and transform these conflicts. Organizers that I worked with often talked about some of the heated conflicts they have experience with activists from other cycling associations, including disagreements about some tactics being “too confrontational,” while other activists at times accusing certain movements as being “overly polite” or “too cooperative” with authorities to adequately address transportation injustices. However, most of the activists that I spoke to seemed to concur that, although they significantly disagree with other groups on some topics, each movement plays a unique role in mobility-justice advocacy, with some working alongside planners and others playing more adversarial roles.

Some of the most insightful types of insurgent organizing that I witnessed revolved around issues of safe space and conflicts within specific bicycle associations. During a retreat with the national cycling network, we had extensive talks about the importance of having ongoing discussions about safe space and what this means to different participants (e.g., figure 70). For many organizations, it has been important to reaffirm this commitment to inclusive and anti-oppressive practices by adding items such as “no one is the boss here: we are a cooperative” and “no one is more valuable because they have more money.” These discussions were helpful in the months to come, as a certain amount of conflict is to be expected in such diverse

organizations. In the movements I worked with, we sometimes spent an extensive amount of our meeting time to address interpersonal conflicts on issues ranging from salary differences between different organizing members at their respective jobs (although no activists receive pay for their work in the bicycle movement), or whether or not participants in the movement should have to pay a membership fee—debates that always seemed to return to a consensus that “participants should never be charged” but that provided important opportunities for people with dissenting opinions to be heard.

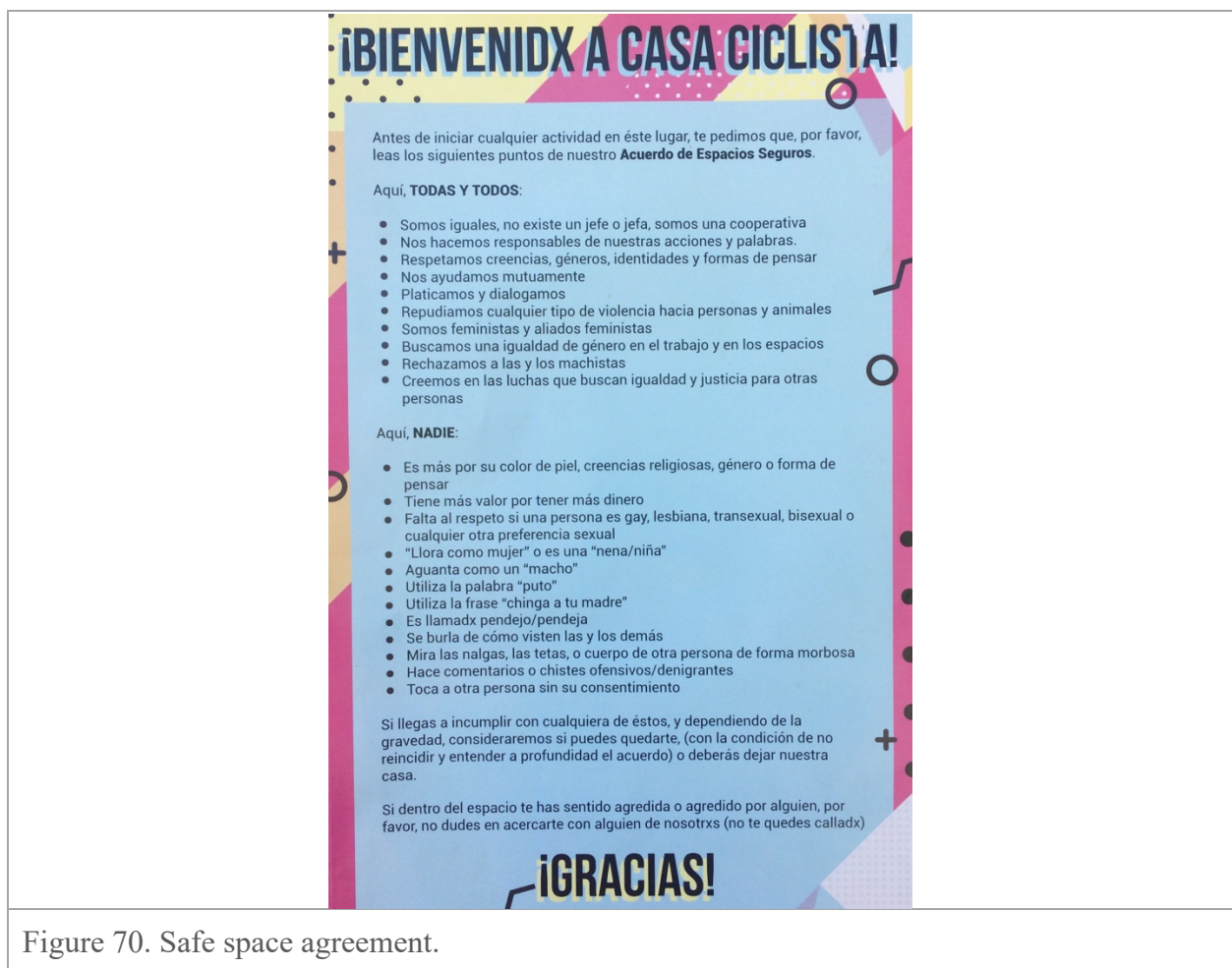
These debates also led to a series of conflict-transformation workshops organized by social workers in the bicycle movement. In contrast to dominant approaches to conflict “resolution,” a transformative approach acknowledges that conflicts happen for a reason, emphasizing nonviolence as way of life:

Conflict transformation is more than a set of specific techniques. It is about a way of looking and seeing, and it provides a set of lenses through which we make sense of social conflict. ... First, we need a lens to see the immediate situation. Second, we need a lens to see past the immediate problems and view the deeper relationship patterns that form the context of the conflict. This goes beyond finding a quick solution to the problem at hand, and seeks to address what is happening in human relationships at a deeper level. Third, we need a lens that helps us envision a framework that holds these together and creates a platform to address the content, the context, and the structure of the relationship. From this platform, parties can begin to find creative responses and solutions.”
(Lederach, 2015: 1-2)

These trainings proved invaluable in understanding a variety of conflicts in the months to come through a transformative lens.

Some of the more intense aspects of these discussions revolved around instances of sexual harassment and threats of physical violence against some women participants of the rodadas. As the victims of this harassment expressed that they did not feel comfortable or safe going to the police about these issues, the lead organizers of the movement were asked to step in.

From what I could see, organizers helped to manage such situations with great care, working with the affected parties to ensure that they could continue to feel safe while attending the group rides, meeting at length with the perpetrators to ensure that the threats would not continue and so that they could also obtain the mental-health support they needed, taking phone calls from participants regarding issues of harassment, at times in the middle of the night, in addition to a variety of other tasks engaging with conflict-transformation and intersectional feminism in meaningful ways.



Although I never witnessed these interventions being expressed in abolitionist terms, at least not explicitly, they do speak to the need to better acknowledge and address systemic issues

of policing—problems that have led to a situation in which residents widely distrust and feel unsafe around the police. Activists are well aware that recent conflict-transformation strategies do not come near to providing comprehensive community-safety solutions needed to fill the gaps left by repressive policing. During my fieldwork, activists discussed a number of concerns that stemmed from conflict-transformation interventions, including: “how can we get more training to deal with these issues?”; “we can’t keep doing this on our own”; “how [if asked] would it be possible respond to issues of domestic violence?”; and how would we deal with issues of violence or repression that directly involve the police? Social-movement efforts in mobilizing conflict transformation workshops and other forms of support are undeniably partial in this context. These strategies, nevertheless, attest to a strong ethics of mutual care in the face of these issues, based on recognition of diverse concerns and forms knowledge. Here, feminist notions of safe space have taken on a vital mobile relationality, inciting nascent transformations and constellations of care.

These initiatives, among many others, speak to the power and potential of insurgent forms of citymaking. As Holston explains, “insurgent citizenships confront the entrenched with alternative formulations of citizenship; in other words, that their conflicts are clashes of citizenship and not merely idiosyncratic or instrumental protest” (Holston, 2008: 246). The notion of insurgent citizenship also responds critically to the neoliberal agenda of dominance through tokenistic forms of inclusion, enlivening unconventional forms of placemaking that are counter-hegemonic, transgressive and imaginative (Miraftab, 2009).

I suggest the concept of insurgent mobilities to bring theorizing on insurgent citizenship and mobility justice into deeper conversation. Mobility rights organizing can give rise to a diverse set of sustainable design practices, creating more inclusive spaces for discussion on

issues of social and transportation justice. They reflect a type of prefigurative politics (Maeckelbergh, 2016; Yates, 2020)—a process through which social movements express the political ‘ends’ of their actions through their ‘means,’ or where they create alternative social arrangements. Such perspectives bring into view questions of social resistance to entrenched forms of political exclusion through a collective politics of outrage (Castells, 2015). Mobility rights movements—including their inherent conflicts and unconventional negotiations—provide an especially crucial site for reconsidering problems in sustainable-transportation development, moving past sedentary institutional politics towards transformative care practices and dialectics of mobility justice.

5. Discussion & Areas for Future Research

This dissertation has contributed to a small but growing field of situated inquiry on the role of socio-cultural life in fostering and discouraging sustainable urban mobilities. In the introduction, I discuss the literature that has informed my approach to cycling research, building on critical anthropology, feminist science and technology studies and Latin America theorizing. Rather than limiting the focus to cycling infrastructure, this discussion begins with analysis of (bi)cycle trajectories to advance situated, collaborative and subversive thinking that not only works to critically analyze prevailing development paradigms, but also to decentre them as a means of promoting a plurality of practices in the movement for epistemic and mobility justice.

In chapter two, I present a preliminary discussion of the changing role and symbolism of (bi)cycle travel in post-revolutionary Aguascalientes, moving beyond global historiographical generalizations and suggesting that a nuanced analysis of cycling history offers important insights into the socio-political tensions surrounding urban mobilities and development

processes. In addition to the use of (bi)cycles by revolutionary forces, a tracing of sparse archives and popular histories reveals growing working-class appropriations of cycling technologies across post-revolutionary towns and cities, with bicycles and tricycles becoming a vital means of everyday travel and work. While cycling was, and continues to be, an economic necessity for many families in cities such as Aguascalientes, this chapter shows how cycling has been a highly meaningful practice that expresses a variety of sentiments towards the rhythms of urban and political life. These dynamics also expose lasting affective ties to cycling and unique forms of bicycle and tricycle innovation, ranging from cargo tricycle manufacturing, to rural-urban distribution networks, to intermodal transportation. They also reveal complex understandings of “road safety,” which reach beyond a current policy focus on cyclists as “vulnerable road users” who need to be careful, into a prior emphasis on car driving as a fundamentally dangerous activity in need of restraint. These are not simply semantic considerations, but rather a reflection of the changing frameworks through which particular road users are burdened with, or cleared of, the responsibility of being labelled as a problem or risk.

These tensions carried into chapter three, investigating the current implementation of cycling infrastructure within Aguascalientes’ uneven urban-development landscape. In this context, the implementation of new mobility laws privileging cycling and pedestrian infrastructure has not been enough to challenge considerable mobility-related inequalities. In contexts of widespread spatial exclusions, this chapter suggests that a focus on diverse commuters’ mobilities is needed to account for the divergent infrastructure that they assemble to bypass transportation barriers. I have argued that is important to understand and contextualize divergent infrastructure to underscore hidden barriers within existing transportation systems as

well as to highlight the considerable amount of skill, concentration and invisible work involved in confronting these barriers.

Chapter four elaborates on these processes in relation to the literature on gender and cycling, moving the discussion past universalizing translations to resituate diverse women's experiences in local cycling histories and current planning agendas. This analysis demonstrates the need for an intersectional analysis to highlight social and historical dynamics instead of essentialized categories, including an analysis of issues of social and infrastructural inequity, gender-based discrimination, policing, racism, classism, precarious labour, heterosexism and violence against women as determinants of cycling injustice. While the promotion of cycling facilities can certainly form a valuable part sustainable-transportation initiatives, I posit that the movement for sustainable and equality cities requires a shift away from top-down decision-making paradigms towards participatory and gender-transformative approaches that allow women and other underrepresented groups to challenge oppressive roles, stereotypes and relations.

This final chapter brings these findings into discussion with theorizing on sustainable transportation development, mobility justice and insurgent social-movement praxis. Sustainability has been proposed as necessary shift for transport planning, stressing the importance of social, environmental and economic transformations (Cornet and Gudmundsson, 2015). However, critical scholarship is increasingly showing how this concept requires deep rethinking to better challenge the transportation status quo and the climate catastrophe (Hickman and Banister, 2014; Anguelovski et al., 2018; Sagaris et al., 2017; Verlinghieri and Schwanen, 2020). This chapter has elaborated on these debates, beginning with the paradoxical case of Ciclovía Gómez Morín—an infrastructure that has received a disproportionate amount of

investment at the same times as it has experienced an uneven level of deterioration and insecurity. This case helps to unsettle some of the universal theorizing around sustainable cycling infrastructure, contributing to discussions on the need for situated understandings of mobility practices, politics and exclusions (Castañeda, 2021b; Torres-Barragan et al., 2020; Alando and Scheiner, 2016; Coyotecatl Contreras and Díaz Alba, 2018; Anjaria, 2020; Golub et al., 2016; Sarmiento Casas, 2019; Jones et al., 2020; Mora et al., 2021; Morgan, 2020; Ghosh and Sharmeen, 2021; Spinney and Lin, 2018). Building on transportation-justice theorizing, it further highlights the work of social movements in pursuing transportation improvements through official political channels and underscores the need for a meaningful reorientation of planning practices around transportation-justice principals. Through the lens of mobility justice and insurgent citizenship, this case also brings together diverse social movement struggles and mobilities, pointing to insurgent visions for just mobility futures. The strength of insurgent mobilities, I argue, lies as much in what they prefigure through processual and transformative connections as it does in what they help to concretize in terms of urban policy and infrastructure.

Engaging with sustainable mobility struggles from an ethnographic standpoint exposes what some authors call ‘wicked’ or ‘messy’ problems (Rittel and Webber, 1973; Law, 2004), referring to complex dilemmas in which clear-cut solutions are missing and purely technical fixes have proven inadequate (Fischer and Gottweis, 2013). *Ciclovia Gómez Morín* is case in point, where a high-investment cycling enclave continues to be destabilized amidst a context of growing socio-economic inequality, urban violence, and a wider privileging of motor-vehicle infrastructure. This case also accentuates some of the limits of state-centric infrastructural thinking on issues ranging from blackouts to traffic congestion. It illustrates the need for greater attention to increasing accessibility for active travelers and public-transit users, particularly for

underserved population groups (Martens, 2016; Chavez-Rodriguez et al., 2020; Gamble, 2019; Anaya-Boig, 2021). The climate emergency, and now the COVID-19 pandemic, have raised the stakes for questioning the ongoing impetus to build car-centric transportation systems that perpetuate inequalities and exclusions (Verlinghieri and Schwanen, 2020). These issues indicate a need for new ways of thinking and engaging with participatory frameworks to make cities more accessible for active travelers, public-transit users and intermodal commuters.

As I have explored through this dissertation, analyzing (bi)cycle trajectories from a critical ethnographic standpoint can provide a unique vantagepoint for considering a variety of challenges relating to the past, present and future of cities. On a historical level, these trajectories not only reveal how cycling has long been a meaningful source of mobilization and contention in post-revolutionary Mexico, but they also speak to the need to continually grapple with questions of power, while mobilizing cycling histories, and critical thought more generally, as a radically inclusive and open-ended process. Within current transportation systems, this study underscores issues in the distribution of cycling infrastructure, while accentuating the need for additional traffic calming measures, well-connected network for cycling, walking and public transit as well as meaningful opportunities for participation in decision-making processes to address a variety other particular mobility constraints. These points further underscore the need for broad-based initiatives aimed at cultivating more equitable social and Land relations as an integral component of efforts aimed at building liveable and less contamination spaces in which (bi)cycle mobilities can thrive.

Recent theorizing on transport and mobility justice provides useful discussions on additional areas for future research. Karner et al., rightfully note that society-centric approaches to transportation justice also have limitations, such as “confrontational strategies can weaken

relationship with state” and in some cases “privileges the most militant voices” (Karner et al., 2020: 446). Despite these challenges, the authors note that “movements for transportation justice must envision solutions and strategies that move beyond those promulgated solely by the state” (Karner et al., 2020: 453). Surprisingly, the unpaid and underacknowledged work of local activists and other concerns citizens is not included in this discussion, including burdens in terms of time, resources and travel. Similarly, Verlinghieri and Schwanen call for greater research on caring justice, understood as “an ongoing and dialogical negotiation characterized by openness, responsiveness, and commitment to multiple voices and needs” (Verlinghieri and Schwanen, 2020). Yet, the authors only mention unpaid care work in passing reference to Gilow’s (2020) discussion on domestic mobility work. Further research is needed to better acknowledge the unpaid and devalued labor of other actors as determinates of mobility injustice, including in relation to community work in “collaborative” planning practices. As Maria Puig explains,

Caring... is a practice that most often involves asymmetry: some get paid (or not) for doing the care so that others can forget how much they need it. To represent matters of care is an aesthetic and political move in the way of re-presenting things that problematizes the neglect of caring relationalities in an assemblage. Here the meaning of care for knowledge producers might involve a modest attempt to share the burden of stratified worlds. This commitment is the political significance of representing matters of care. (2011: 94)

Sarah McCullough et al. provide some guidance on these concerns in cycling research, including the need for meaningful opportunities for engagement with underserved communities, the sharing of decision-making power, and notably the need to “*provide compensation for their expertise and time*” (McCullough et al., 2019: 11, emphasis added). These points merit much wider discussion and elaboration.

Recent theorizing on critical velomobilities has also pointed to the importance of de-centering whiteness in cycling research, explaining that transportation justice will not be possible

until the systemic dynamics of racism are more fully understood and addressed (Hylton, 2017; Mowatt, 2020; Lugo, 2018; Thomas, 2020; Ravensbergen et al., 2021). This scholarship shows the need to better respect the importance of learning from the lived-experiences and guidance of Black, Indigenous and People of Colour, while continuing to deeply reflect on “questions of unequal mobile power relations, and ultimately on how to plan for cycling in ways that support and represent everyone” (Ravensbergen et al., 2021: 3). Rachel Olzer elucidates that *representation matters* in discussions on cycling “because when Black, Indigenous and POC are included in imagery and stories, non-BIPOC people are able to see that we are more than just stereotypes that can be used to justify our non-existence in some spaces and our overwhelming existence in other spaces” (Olzer, 2020).

Research on abolitionism and movements to defund the police has been increasing in research years (Davis, 2011; McDowell and Fernandez, 2018; Medel, 2017; Maynard, 2020; Roy, 2019), bringing greater awareness to systemic issues of racism, classism and gender-based discrimination in policing (Maynard, 2017; Sewell, 2020; Dhillon, 2015), while challenging dominant ideas that traffic safety is impossible without the police (Woods, 2021). For example, a significant body of literature documents how police traffic stops enforce racial profiling and disproportionately target people of colour and low-income commuters (Epp et al., 2014; Carbado, 2017; Lundman and Kaufman, 2003; Davis, 2003), including cyclists (Barajas, 2020; Lubitow et al., 2019). Robyn Maynard explains that, in Canada and the United States, “policing emerged as and remains a form of racial, gendered and economic violence shaped by the logics of slavery and settler colonialism” (Maynard, 2020: 71-72). Maynard insightfully examines how this violence inherent to policing has been continually contested, grounded in calls to cultivate real safety:

Calls for defunding the police ... do not aim simply to combat a racist and violent institution, to cut it down to size on the way to complete elimination, though this is one core element of the struggle. The call to defund, in fact, emerges from the Black radical tradition, which has not only contested racial violence in all forms but has also been a form of world-building. Abolition, as Gilmore and Davis and Kaba continue to remind, is as much about building the conditions for safety as it is about dismantling institutions of harm and captivity, and ending racial violence in all of its forms.(Maynard, 2020: 71-72)

These discussions have begun to gain some traction in different areas of Mexico (Pérez Correa, 2020; Magaloni and Rodriguez, 2020; Calderón et al., 2015; Müller, 2016), yet they remain highly under-researched.

Mexico's political institutions have been characterized by distinct (and often secreted) forms of authoritarianism (Ruiz Lagier, 2019; Knight, 1992; Guzmán, 2016; Gillingham, 2021) as well as hostility and violence against critical voices (Cerva Cerna, 2020; Bartman, 2018; González-Macías and Reyna-García, 2019; Bizberg, 2015). These issues have generated fear for many citizens about expressing dissent. For example, Beatriz Magaloni and Luis Rodriguez found that police brutality has been maintained as generalized practices in Mexico due to “weak procedural protections and the militarization of policing, which introduces strategies, equipment and mentality that treats criminal suspects as if they were enemies in wartime” (2020: 1). In a comprehensive review of policing in Latin America, Yanilda González traces the persistence of coercive police practices well after periods of dictatorial rule, showing how meaningful police reforms have only happened sporadically (2019). Luz Cardona Acuña and Nelson Arteaga Botello (2020) examine feminist movements denouncing continued cases police sexual violence in Mexico, amplifying slogan such as “no nos cuidan, nos violan” (“they don't protect us, they rape us”), and “atacan a una y nos atacan a todas” (“an attack on one is an attack on us all”). Further research is greatly needed to understand issues of police brutality in Mexico, as well as movements to develop socially just alternatives. Such research requires sensitivity to particular

contexts, including acknowledgement of the legacies of colonial violence, political repression and the ways that dominant denials of racism perpetuate racial injustices (Moreno Figueroa, 2010; Moreno Figueroa and Saldívar Tanaka, 2016; Carlos Fregoso, 2016; Carrillo Trueba, 2009; Tejeda, 2013). The 2018 victory of the MORENA party (led by President Andrés Manuel López Obrador) in the national election and the 2019 constitutional amendment on universal mobility rights have generated hope for systemic changes; however ongoing concerns and documented cases of police brutality (e.g., Cerva Cerna, 2020; Ribas Admetlla, 2020; BBC, 2021; Vergara, 2021; Jornada, 2021) and other mobility injustices demonstrate the need for continued critical analysis.

In light of a number of recent discussions on marginalized communities in transport and mobility studies, much can be learned from Latin American scholarship on thinking with care about this type of terminology (Ramírez Kuri, 2013; Arqueros Mejica and Canestraro, 2017; Moreno González, 2014; Angelcos et al., 2020; González, 2020; Toro Barragán, 2020). Teresa Caldeira, for example, calls for greater attention to how residents in underserved localities articulate powerful expressions that counter dominant portrayals of marginality:

[They are] spaces inscribed with contradictory experiences of transformation, autoconstructed growth, class formation, status ambition, modern consumption, land conflict, residential illegality, violence, citizenship mobilization and constant recreation of their own representation. To reduce these complex processes to a condition of marginality is to miss the strength of their inventiveness and the signs of emergent articulations that take them (and us) beyond the entrapments of ‘advanced marginality. (2009: 852)

Sustainable-transportation scholarship and related democratic interventions will need to take these articulations seriously, including the political inventiveness they offer and the significant forms of unpaid labour that they often shoulder. Analyzing these urban claims should not obscure the persistence of political control apparatuses and social inequities, nor should it

preclude an acknowledgement of different logics, refusals and improvisational impulses at work (Simone, 2019; Tran, 2020). While such movements often appear unexpectedly, they can in turn embody significant expressions of creativity and collectives of insurgent citizenship.

Towards the end of my fieldwork, an activist from the organization Aguas con la Bici sent out a short video on Ciclovía Gómez Morín. The clip was based on a chance encounter he had with a local resident who had carried large jugs of water on his bike to feed some of Morín's trees during a dry spell—a task that he appeared to tend to on a regular basis. The resident, when asked by the activist for his motivation, simply replied: “the authorities aren't doing enough to keep this ciclovía alive, so we all have to do something.” This video became quite popular within social movements at the time, reminding us that, behind pervasive issues of inequity and apparent deterioration, intimate (and often hidden) acts of care and claim-making persist.

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