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Commoning mobility: Towards a new politics of mobility transitions

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Scholars have argued that transitions to more sustainable and just mobilities require moving beyond technocentrism to rethink the very meaning of mobility in cities, communities, and societies. This paper demonstrates that such rethinking is inherently political. In particular, we focus on recent theorisations of commoning practices that have gained traction in geographic literatures. Drawing on our global comparative research of low-carbon mobility transitions, we argue that critical mobilities scholars can rethink and expand the understanding of mobility through engagement with commons–enclosure thinking. We present a new concept, "commoning mobility," a theorisation that both envisions and shapes practices that develop fairer and greener mobilities and more inclusive, collaboratively governed societies. Our analysis introduces three "logics" of mobility transition projects. First, the paper discusses how a logic of scarcity has been a driver for mobility planning as the scarcity of oil, finance, space, and time are invoked across the world as stimuli for aspiring to greener, "smarter," and cheaper mobilities. The paper then identifies two responses to the logic of scarcity: the logics of austerity and the logics of commoning. Austere mobilities are examined to problematise the distribution of responsibility for emissions and ensuing injustices and exclusion in low-carbon transitions. The logics of commoning shows a potential to reassess mobility not only as an individual freedom but also as a collective good, paving the way for fairer mobility transitions and a collaborative tackling of sustainable mobility challenges.

KEYWORDS
Amsterdam, austerity, commons, mobilities, Santiago, transition

> Like any true commons, the street itself was the result of people living there and making that space liveable … streets are no more for people. They are now roadways for automobiles, for buses, for taxis, cars, and trucks. People are barely tolerated on the streets unless they are on their way to a bus stop. If people now sat down or stopped on the street, they would become obstacles for traffic, and traffic would be dangerous to them. The road has been degraded from a commons to a simple resource for the circulation of vehicles. People can circulate no more on their own. Traffic has displaced their mobility. They can circulate only when they are strapped down and are moved. (Illich, 1983, n.p.)

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Unbounded freedom ruled the wandering scene
Nor fence of ownership crept in between
To hide the prospect of the following eye
Its only bondage was the circling sky
One mighty flat undwarfed by bush and tree
Spread its faint shadow of immensity
And lost itself, which seemed to eke its bounds
In the blue mist the horizon's edge surrounds
(John Clare, *The Moores* c.1812)

1 | AT THE SPEED OF A BICYCLE

In what ways can mobility be reconceptualised in order to necessitate a shift in actions towards low-carbon transition when the movement of people and things continues to be a major contributor to greenhouse emissions? Scholars have long argued that any meaningful climate change policy should offer "cleaner" alternatives to high-carbon mobilities, yet the reluctance to question the value of high-carbon mobility is sustained by the dominant belief in the priority of (national) economic growth and the dependence of that growth on the mobility of people and things (Cohen & Gössling, 2015; Cowen, 2014; Givoni & Banister, 2013; Hickman & Banister, 2014; Low, 2013). This narrative is supported by a cultural apparatus linking individual freedom, progress, and modernity with physical mobility (Cresswell, 2006a). We argue that the infrastructural and cultural "lock-in" (Urry, 2009) supporting high-carbon mobilities cannot be separated from wider debates on cultural political economies of transitions to sustainability, questioning what ideologies and corresponding forms of political and economic organisation are supporting current high-carbon living (cf. Gössling & Cohen, 2014; Schwanen et al., 2011). These questions, however, have not been addressed within the thus far dominant approach to low-carbon transitions – socio-technical transition studies (Chatterton, 2016).

We make three contributions to this field. The first is to bring the discussion of low-carbon transitions into conversation with other theorisations of mobility transition – ones that focus on "mobility justice" (Sheller, 2015) in order to explore how access to mobility (and the access that mobility provides) can be more equitable across race, gender, class, age, and a range of other social markers. Such discussion has started in the transition debate, broadly understood (Chatterton, 2016), addressing long-standing critiques of socio-technical transition theories as downplaying ideology, power, and justice in favour of technologically determined innovations (Shove & Walker, 2007; Smith & Stirling, 2010).

Second, we root our discussion of mobility justice in longer intellectual histories of mobility and environmental and mobility and racial justice. Pre-dating the theorisation of transitions to low-carbon mobility futures has been work on mobility justice. Illich (1974), for example, argued that high energy use in all its forms corrodes social relations and degrades landscapes. "Participatory democracy," he argued, "demands low-energy technology, and free people must travel the road to productive social relations at the speed of a bicycle" (1974, p. 8). Travelling at the speed of a bicycle signified that a radical structural shift away from modernist's obsession with speed was necessary to address environmental crisis. Critical race scholars have also focused on mobility equity primarily, though not exclusively, in the United States. Theorists of "just transportation" have explored the long history of connections between unequal access to mobility and racism, linking contemporary arguments about such things as the provision of public transit and the racial profiling of black drivers to deep historical trajectories connecting race to mobility, including Jim Crow Laws and activism around bus boycotts (Bullard et al., 2004; Bullard & Johnson, 1997). In addition to connecting race and class in discussions of transit, Bullard (2007) frequently linked issues of social justice to environmental issues through an analysis of environmental racism. Similar convictions drive the work of scholars working on "just sustainability" and equitable forms of "sharing economies" (Agyeman et al., 2016; McLaren & Agyeman, 2015; Swilling & Annecke, 2012).

Third, we draw on these two approaches to mobility transitions – focusing on low-carbon transitions and on just transitions – in order to highlight a radical politics of mobility informed by recent mobilities research. The strength of the mobilities literature on transitions has been articulating how high-carbon mobilities are part and parcel of contemporary ways of living (Sheller & Urry, 2016). The theorisation of a "politics of mobility" (Cresswell, 2010, 2006a; see also Massey, 1993) offers a critique of the cultural political economies that shape high-carbon mobile living while offering new possibilities of conceptualising mobility transitions. Our discussion of transitions is rooted in mobilities scholarship, incorporating insights from both socio-technical transitions literature and work on just transitions.

We do so in three ways. First, this paper expands spatial understandings of the politics of mobility by arguing for a reconceptualisation of *mobility as commons*. We argue that the commons lens can lead to conceptualising transitions that are truly transformative, that aim to reconfigure the very relationship of humans with mobility and with each other. The enclosure of space has troubled scholars and poets since at least the Enclosure Acts beginning in the 17th century. This relationship between enclosure, mobility, and transition, which the opening epigraphs demonstrate, has put us in literal and conceptual gridlock and therefore needs to be theoretically and materially rethought.

Second, we argue that a new politics of mobility transitions based on a logic of the commons can critically interrogate mobility-related scarcities on national and local political agendas and scrutinise the politics of production of "austere mobilities" – mobilities that require fewer resources – as a response to scarcities.

Third, a commons perspective enables nuanced criticism of emerging "sharing" practices, whereby a narrative of community and participation disguises the highly uneven effects of new forms of organising movement, which is particularly prevalent in urban agglomerations through smart city policies and debates over ride-share and bike-share businesses (McLaren & Agyeman, 2015).

Our argument is based on a global comparative study analysing key national mobility transition policies and a selected number of local projects in 14 countries: Brazil, Canada, Chile, Kazakhstan, the Netherlands, New Zealand, Norway, Portugal, Singapore, South Africa, South Korea, Turkey, the United Arab Emirates, and the United Kingdom. A separate "case" covered international policy-making in the sphere of mobility transitions and included a study of the European Union policies and projects initiated by the United Nations and associated bodies. Policy analysis was complemented by 216 stakeholder interviews including representatives of transport companies, national, regional and local authorities, NGOs, think tanks, international organisations, activist groups, and knowledge institutes.

Examining the logics behind mobility transition projects as well as that of the policies, initiatives, and projects they are entangled with, we have analysed the broader context of mobility transition policies and projects, including policies in the spheres of transport, health, work, environment, trade, economy, and urban and regional development. We have identified three interrelated "logics" of mobility transition – logics being a cohering, structuring, and even a coalition of rationalities, rhetorics, ideologies, and discourses that underpin the policy and practice of mobility transition (in the same way that in his writing Foucault identified the logic of "normalisation" as an "inner functional coherence" within biopolitics; Collier, 2009; Eagleton, 1991). Two dominant logics emerged in the 14 countries, all of which operate under an increasingly neoliberal, capitalist global economy. These are: *scarcity* underlying mobility transition planning and *austerity* as a response to scarcity. The third logic, *commoning*, is one that is emergent, often quiet, and defiant against the predominant logics of scarcity and austerity. However, it is a logic that demonstrates that spaces of alternatives and potential transformations are alive and well across the Global North and Global South. Commoning was not a dominant logic and did not appear in the majority of our case studies. Indeed instances of commoning were small scale and often incomplete, exhibiting tensions with current governance structures. Drawing on literatures on commoning and Cresswell's notion of mobility as movement, meaning, and practice, highlights the possibility of alternative politics, programs, and policies, demonstrating how the logic of commoning can transform spaces of governance and practices of mobility and challenge the dominant narratives on the meaning of mobility in society. In Cresswell's terms, they point towards an emergent "constellation of mobility."

The paper unfolds as follows. In the next section we outline current mobility transition research and discuss the potential of a "politics of mobility" to address issues of meaning, power, and justice that have received less attention in dominant approaches to mobility transitions. Second, we outline the logics of scarcity and austerity in mobility transition projects. Next, we draw on recent work in geography and mobilities research on commoning practices in order to argue for "transitions worth making" (Chatterton, 2016, p. 406). We go on to illustrate our argument to rethink mobility as commons through an analysis of two cases drawn from our work to demonstrate the logics at play in the current mobility transition landscape and the transformative potential behind them. In the conclusion we outline ways to bring this new politics of mobility transitions forward and discuss how the conceptual toolkit of commoning mobility can advance the scholarship on the geographies of mobilities and mobility transitions.

2 | TOWARDS A POLITICS OF MOBILITY TRANSITIONS

The Fifth Assessment Report (AR5) of the Intergovernmental Panel for Climate Change (IPCC) estimates that greenhouse emissions from transportation "have more than doubled since 1970 … 80% of this increase coming from road vehicles" (IPCC 2014, p. 606). The demand for mobility is currently projected to increase and if no mitigation measures are taken

"the current transport sector's GHG emissions could increase by up to 50% by 2035 … and almost double by 2050" (2014, p. 648). Facts such as these have led to the rise of socio-technical transition studies. The examination of socio-technical transformations to low-carbon forms of energy, mobility, and lifestyles has emerged as a dominant subfield addressing sustainable transport solutions to climate change in geography and beyond (Geels, 2002, 2014; Schwanen, 2017; Temenos et al., 2017). Geographers have primarily engaged transition studies by drawing on analyses that use the multi-level perspective (MLP) – a framework seeking to account for complex socio-economic and political processes that mediate sustainability innovation.

Multi-level perspective approaches start from the premise that the transition in question is singularly focused on reducing carbon emissions and has a largely techno-social solution. Justice is not at the centre of MLP approaches, which largely fail to account for existing power dynamics and politics (Affolderbach & Schulz, 2016; Geels, 2014; Sheller, 2012). While some studies have considered the politics of sustainability transitions in general (Avelino et al., 2016; Chatterton, 2016), research on mobility transitions more often than not focuses on technological change as a starting point of inquiry. Yet, while technology-powered sustainable mobility solutions (from electric bicycles to drones used for deliveries) are abundant, transport scholars agree that focusing on technology is insufficient and can be counter-productive (Banister et al., 2013; Ferreira et al., 2017; Temenos et al., 2017). Little, if any, attention has been paid to parallel theorisations of mobility transitions originating from a concern for social justice. As scholars of environmental justice and just sustainability have long argued, a singular focus on carbon emissions may lead to a new world of mobility that fails to address structural asymmetries of power (Chatterton, 2016; Swilling & Annecke, 2012). Chatterton observes that "there remains a reluctance to name and advocate for the more radical nature of transitions that society needs to embark on to address the huge challenges it faces" (2016, p. 403). While thinking through the political implications of low-carbon transitions has begun in areas such as building standards (Affolderbach & Schulz, 2016) and energy (Bouzarovski & Simcock, 2017; Petrova, 2018), fundamental questions surrounding the politics of *mobility* transitions have yet to be explored to account for mobility as a key site and crucial process of consideration.

The politics of mobility has long been at the heart of radical scholarship on transport and transit (Bullard & Johnson, 1997; Cresswell, 2006a). Work in the new mobilities paradigm, informed by earlier work on transit justice, has sought to provide a framework for thinking through the role of mobility in systematically asymmetrical power relations. This has been especially true in relation to questions of race and its intersection with environmental sustainability and low-carbon transitions (Cresswell, 2016; Nicholson & Sheller, 2016; Sheller, 2015). Mobility itself can be broken down into three interrelated elements: movement, meaning, and practice (Cresswell, 2006a, 2010). Movement, the physical act of getting from point A to point B, is the most basic element of mobility and is inherently embodied and spatialised. Meaning or representations of movement structure societal and individual perceptions of mobility that are relational, coding movement and its attendant mobile lives and resources within particular contexts. Finally, drawing on Bourdieu (1990), Cresswell defines mobility practices as encompassing "both the everyday sense of particular practices such as walking or driving and also the more theoretical sense of the social as it is embodied and habitualised" (2010, p. 20).

These elements of mobility – movement, meaning, and practice – are always circumscribed by existing governance structures, histories, power relations, and embodied experiences. Mobility is in and of itself relational. How and why mobility happens exerts its own force on the ways laws are constructed and politics plays out across spaces, affecting political and lived outcomes and spatial formations (Adey, 2009; Cresswell, 2006a; Temenos & McCann, 2012). Mobility, then, is always both spatial and political. We contend that any meaningful consideration of transition must also entail a consideration of the politics of mobility transitions, including questioning the relationship between an individualised "right to move" (Cresswell, 2006b) and how collective social needs are mediated through mobilities.

This approach is found in the connection between mobility and justice. For example, Sheller (2015) charts how Philadelphia's attempts to move its citizens to bike and car sharing schemes and active transportation are resisted, seen as projects of racialised gentrification. The historically embedded patterns of inequality, poverty, and segregation felt by poor and ethnic minorities also produce particularly strong desires for car ownership as a signal of security and status. In this instance, achieving mobility transition requires attending to the cultural logics of racial justice simultaneously. Cresswell (2006a) likewise charts how the Los Angeles Bus Riders Union fought for access to public transportation in an automobile-dominated city, drawing on a long history of urban activism for racial justice. In these instances, struggles over how to move and its representations are inextricably linked with struggles over urban space, the politics of distribution of resources, and the question of participation in decision-making. In this paper we propose a new politics of mobility transitions that ties these issues together through the notion of commoning. To foreground this conceptualisation, in

the next section we outline the dominant logics[1] of scarcity and austerity that largely frame contemporary public policy debates concerning mobility.

3 | FROM CONTESTED SCARCITIES TO AUSTERE MOBILITIES

The logics of scarcity and calls for some forms of austerity – for saving resources such as time, money, space, and oil – are ubiquitous in debates surrounding mobility and society in the 21st century. They have also been the mainstay for transport planners, geographers, and practitioners concerned with improving mobility or transport efficiencies for many decades – although we distinguish our identification of "austerity" from a concern for "efficiency."[2] Scarcity is consistently naturalised, generalised, and taken out of specific historical and geographic contexts. In our work, scarcity has been invoked as motivation to accelerate transition or as an excuse to hinder change in almost every case, from the national level (e.g., Chile, the Netherlands, Norway, Singapore) to the level of urban street space (e.g., São Paulo, Almaty, Santiago, Vancouver). In most contexts, scarcity and austerity logics, even when working in quite contradictory ways, borrow from the political-economic tendencies of neoliberalism as an economic logic based on Darwinian or neo-Malthusian imperatives of competition, efficiency, and individualism, severed, as Bourdieu puts it, from a "social logic […] subject to the rule of fairness" (1998, n.p.), and an arch-enemy of institutional and social collective structures.

While scarcity is often presented as a taken-for-granted "fact," it is more often the case that the resource that is defined as "scarce" exists in relation to other resources that are ignored or marginalised. The definition of something (space, time, energy, etc.) with a particular limit or finitude plays an active role in the definition of appropriate responses. As Denier (2007) suggests in the very different context of health care, economic rational and mechanistic approaches to scarcity tend to lead towards rationing mechanisms in order to divide up or limit access to a limited resource. In the Netherlands, for example, the scarcity of road space and the relatively small territorial footprint of the country was evoked by many Dutch policy experts in interviews: "We've got a lack of space in the city, we've got a lack of space on the road and we've got a lack of space … it's a strange metaphor, but a lack of space in the air" (Sustainable mobility expert,[3] personal communication, 24 July 2015).

In this sense, scarcity is evoked as a lack of space: a lack of room for pedestrians, cyclists, and cars; within cities for people and buildings to inhabit; and even within the air – imagined to be full of unwanted carbon and exhaust particulates. And so, despite its reputation as a leader in cycling policy, road congestion is presented as "the mobility problem" of the country (TFMM, n.d.). Through the national programme "Optimising Use" ("Beter Benutten"), behaviour change is encouraged via incentives to ration those scarce resources, by driving during alternate times, telecommuting or working at home occasionally, using e-bikes, or carpooling. In this instance, neither environmental impact nor the rationality of driving itself (during low-congestion periods) is questioned: high-carbon mobility has to be managed by minor adjustments to individual behaviour rather than through systemic change.

The attention to mechanistic notions of economics and human behaviour should perhaps not be surprising. While suggesting that scarcity is a "common feature of transportation systems," transport economist Jonathan L. Gifford (2011) argued that transport and mobility could be considered through several behavioural-economic approaches to scarcity: the capacity of transport systems; resources for improving and maintaining those systems; information about the systems and their reliability, and the attention of the traveller to optimising or improving their own decisions. Resource pricing is one other method for managing demand. In Singapore, scarcity is an explicit policy rationale for its introduction of time-based electronic road pricing (ERP) and the Vehicle Quota System (VQS; Government of Singapore, 2013). Neither policy is new, with the first version of ERP beginning in 1975 and the VQS established in 1990, nor is the discursive emphasis on individual behaviour change. ERP and VQS policies have been successful in stemming road congestion from individual vehicles, yet neither questions the assumed "right to mobility" (Cresswell, 2006b).

Scarcities, so prominent in Dutch and Singaporean policy goals, are relative, as both countries' road networks are among the densest in the world (Trading Economics, n.d.). These scarcities, usually framed within discussions on saving time in the daily commute, are not a consequence of lacking infrastructure, but of presumptions about the value of particular mobilities above others and their apparent right to particular proportions of those scarcities. Contradictions come to the fore even more prominently in our case, covering the protests against new cycling lanes in São Paulo in 2015, where the redistribution of "scarce" road space was seen as a "theft" by taxi drivers and automobilists, despite cyclists using a significantly smaller share of urban space than drivers.

These brief examples demonstrate the constructed and contested nature of scarcities in mobility policy debates. Furthermore, discourses on scarcity continue to shape thinking on mobility and imaginations of fairer and cleaner mobile futures.

Most national and supranational policies we examined demonstrate that, despite the perceived pressures of scarcity, the role of mobility has not been critically reassessed at a societal level: reducing mobility of goods and people remains a "taboo" subject within neoliberal growth paradigms and ecological modernisation approaches (Gössling & Cohen, 2014; Schwanen et al., 2011). In the context of scarcity, mobility is expressed in square metres of road space, kilometres of motorway network, millions of Euros, limits of pollution, or minutes of saved travel time. Such logics, we have observed in our study, most often lead to advocating some form of saving those resources, either through top–down state and local policies or through bottom–up community projects.

For example, in several cases, the response of policy-makers and politicians to managing the dual pressures of moving people and goods while also addressing environmental concerns has been to pare back state services rather than increase interventions to encourage sustainable mobile futures. The result is the creation of what we call *austere mobilities* – mobilities that require fewer resources: they are, for instance, cheaper (for the state) or occupy less space. In an age of financial austerity, austere mobilities may involve the creation of spaces where only the most basic level of infrastructure is provided, and previously existing services such as public transportation are increasingly contracted out to private companies. This was the case in Portugal during the 2008 socio-economic crisis. Instead of upgrading public transportation or incentivising state-driven sustainable solutions, the Portuguese government, pressed by a co-joint supervision committee between the IMF and EU authorities (the *troika*), adopted a series of neoliberal policies based on a strict economic rationale aimed at reducing state spending. This meant supplying mobility through the efforts of private companies, further liberalising the transport sector – examples include attempts to privatise public companies and rewritten laws to accommodate emerging privatised flexible transport services like Uber. Illustrating an entanglement of financial austerity policies and austere mobilities leading to low-carbon mobility projects that delegate responsibility for transition to its citizens, in Amsterdam the removal of a bus line in a public-transportation-dependent community was followed by a pilot of an electric-cab-on-demand that was not perceived by the inhabitants as an adequate substitution and was discontinued (see also Moran Figueroa, 2015).

Austere mobilities are underpinned by logics of austerity broadly understood as limiting consumption. The argument for austerity is necessarily linked to dominant or established definitions of what has been defined as "scarce." Thus, they are not always linked to financial austerity policies, which are but a recent articulation of an ancient and ever-changing set of ideas (see Schui, 2014) and may also result in immobilities. A good example of this is our case Telework New Zealand, a company promoting the reduction of traffic congestion and emissions by encouraging people to avoid commuting altogether. They respond to the logics of scarcity by proposing ways that companies can save money, space on the road, and travel time through immobility, and operationalise this austerity logic through using a "Benefit Calculator" to calculate the savings for their clients (Bevis England, personal communication, 11 March 2015). A similar logic and toolkit is offered by the "Low Car Diet," a campaign by a Dutch environmental foundation Urgenda, whereby they help participating companies try a "low car diet" for a limited period of time and explore the results together with participants. By transforming an environmental argument into an economic one, they encourage people to cycle, work from home or dedicated places closer to home, and demonstrate the benefits of transition to the employer: "[T]he companies say, hey … it's not about CO_2, I'm saving money" (Urgenda, personal communication, 24 July 2015). While they also emphasise health and well-being benefits of driving less, the appeal to economics, in their view, is the most powerful one.

Another player in the austere mobilities field is the transition town movement focusing on small-scale practices within defined areas (Jarvis, 2015; Mason & Whitehead, 2012). While mobility is not foremost among their concerns, their general philosophical orientation is towards localisation. Practically, this means emphasising local, organic agriculture and diet, construction using local materials, practising local consensual forms of democracy, developing Local Economic Transfer Schemes (LETS), and generally acting against the incorporation of place into wider global networks. The movement is oriented towards dramatically reduced mobilities of food, energy, capital, materials, and people. The agents for transition are communities. Governments, advocates argue, will be too late and individuals too ineffective (Hopkins, 2011). Transition towns draw on and reflect larger public understandings of alternative mobility transitions that celebrate localism and discursively work in opposition to dominant policy agendas that favour development, speed, and technological fixes. Yet, their low uptake and upper-middle-class support base (Aiken, 2012) indicate that, rather than usher in a vastly different mobility transition, they may remain niche initiatives.

These examples focus on curbing individual behaviour in response to large-scale societal crises. Even though they are not coupled with the politics of financial austerity, they may nevertheless follow dominant logics of neoliberalisation that focus on reducing dependence on state services and relying on individual momentum and ingenuity to provide solutions within current socio-economic systems. Thinking about mobilities in the context of austerity directs attention to certain problems and paradoxes that these discourses and projects may entail. Like financial austerity, logics of austere mobilities

are deeply ideological, driven by "moral and political considerations" (Schui, 2014, p. 6) and are fraught with contradictions. While economic austerity policies could be associated with anti-consumerist ideology, and historically have been, contemporary financial austerity policies do not target individual consumption, which is seen as the primary driver of the economy (Bramall, 2013; Schui, 2014). Instead, they are focused on government expenditure, most prominently on consumable services such as healthcare or public transportation, and the reduction of labour costs. The logics of austere mobilities are often also based on a paradox that reflects a similar ideological choice to propose that some mobile subjects take care of themselves while subsidising the mobilities of others. Thus, globally, people are encouraged to take up healthier lifestyles through walking and cycling (costing the government nothing when not supported by investment in infrastructure), while national governments implement policies maintaining and promoting (auto)mobility consumption through road building, economic incentives for corporate policies stimulating car use by employees, exporting oil, etc. (Spinney, 2016).

Furthermore, like financial austerity measures that are infamous for distributing the responsibility of bearing the consequences of debt through saving on spending (Blyth, 2015), austere mobilities do not adequately reflect the parties primarily responsible for creating the debt itself. For example, the UN discourse on "leapfrogging" – the hope that countries in the Global South will transition to low-carbon mobility regimes by skipping the stage of political carelessness about carbon emissions that characterised many OECD countries' development – illustrates the disjunction between the origins of the emissions and the sites where austerity logics may be applied. Guilt-free unlimited private car usage is envisaged as a thing of the past; however, with 10% of the world population accounting for 80% of car travel, mobility is still a scarce and restricted resource for many (IPCC, 2014, p. 606).

Mobility thus remains a desired and legitimate act and calls for curbing it are not embedded in national policy. Yet, understanding mobility through a lens of austerity allows us to identify problematic distributions of responsibility for producing the negative consequences of high-carbon mobility and existing inequalities in accessibility. Austere mobilities are a *response* to scarcity discourses. We argue that both scarcity discourses and attendant responses can and should be challenged, and in the next section we point to an alternative possibility for rethinking mobility as a transformative set of practices enabling fairer sustainable futures.

4 | COMMONING MOBILITY

Apart from the logics of austerity as a response to scarcity and climate change, we have observed some initiatives underpinned by a politics that questions not only the sheer quantity of movement, emitted CO_2, or investment, but also challenges the very logics of scarcity and pushes for rethinking the value of mobility and possible forms of mobility governance. Connecting our findings with geographic debates on commons, we demonstrate how these initiatives are instances of *commoning mobility* and argue for the need to theorise *mobility as commons*, articulating a new politics of mobility transitions.

Common property and commonwealth have been of interest to economists and philosophers from Hobbes (1651/1960) to Marx (1867/1977). In the 20th century, Hardin's (1968) understanding of the "tragedy of the commons," which argued that commonly held resources are subject to overuse and destruction (and can be seen in the logic of austere mobilities set out above), has been a flashpoint for these debates. While this thesis has had considerable impact on debates surrounding state ownership vs privatisation, Ostrom (1990) convincingly argued for the regulation of the common pool resources (CPR) by self-governing institutions as an alternative mode of governance. Our argument focuses not only on common spaces themselves, but also on the processes of commoning, of changing logics and perceptions as well as practices of governance and management of access to mobility.

The notion of *commoning*, rather than commons, highlights active and collective processes of making commons (Bresnihan, 2013; Linebaugh, 2008). Within geography, the notion of commoning is primarily engaged through two debates: the discussion of the management of CPR beyond the state and the market, and the interrogation of the notions of commons and commoning as tools to envision and enact alternative post-capitalist politics (Huron, 2015). While often still focusing on the actual physical properties of commons, geographers have been pushing towards understanding commons as "complex social and political ecologies which articulate particular socio-spatial practices, social relationships and forms of governance that underpin them to produce and reproduce them" (Chatterton, 2010, p. 626; see also Brown, 2007). As such the processual, the spatial, and the relational dimensions of commons come forward as the focus shifts towards *commoning* (Chatterton, 2010; Williams, 2017) and to strategies and practices that can work to "assemble more inclusive, just and sustainable spaces" (Jeffrey et al., 2012, p. 2) and, as we argue, mobilities.

Moreover, if commoning describes a set of processual relations through which something becomes common, it should be understood in relation to the processes of enclosure that wrestle something from the commons. As Jeffrey et al. write, "the seizure of the commons is actively assembled through porous, socio-material and distanciated forms of enclosure – through relations of stability and flux, fixity and movement" (2012, p. 2). Such practices are also dialectically related to practices of commoning, which might seek to subvert, undermine, or reuse those enclosures through different spatialities, at different scales, and even through the production of different forms of subjectivity.

The acts of enclosure are literally and figuratively connected to questions of (in)justice. The spatial act of enclosure enacts a redistribution of resources – removing them from many and allocating them to some. One such resource is mobility. From the beginning of the 17th century in the United Kingdom, the Enclosure Acts were experienced by many (as poet John Clare writes in the epigraph) as a limit on their "right to roam." This included both people and livestock that people wished to graze on common land. This right was explicitly recognised in the Countryside and Rights of Way Act of 2000, affirming the right to roam on all common land as well as routes through private land along so-called "rights of way," in England and Wales. For Blomley (2007, p. 5), the hedge marked one of the key materialities of enclosure in Britain, concretising "a new set of controversial discourses around land and property rights" aiming "to prevent the forms of physical movement associated with the commoning economy" As well as immobilising, enclosing practices were also inherently displacing, causing desperate mobilities resulting from dispossession and eviction as labourers and peasant farmers sought subsistence elsewhere. More recently, car-centric planning has been theorised as enclosure of public space and as a scarcity-producing regime (Illich, 1983; Hoeschele, 2010).

Given this history, it is surprising that the literature on commoning and mobility is absent. There are few engagements with the notion of the commons as it relates to transport. While Verlinghieri and Venturini (2018) mention a possibility of thinking of mobility as a common in the context of discussing the right to mobility, they do not elaborate what that might entail. Road infrastructure has been repeatedly framed as commons, with congestion being seen as the "tragedy of the commons" (Iaione, 2010; Frischmann, 2012). A broader approach is taken by O'Boyle, who views mobility as a "form of infrastructure commons" and defines "mobility commons" as "the availability of means to move safely and freely about the community with minimal impediment or inconvenience" (2010, p. 59). Yet, this discussion remains focused on infrastructure management rather than the meaning of mobility and particular politics of mobility that produce existing inequalities in access to infrastructure and the detrimental environmental footprint, for which particular mobile "classes" are responsible.

A more thorough engagement with the concept of "mobility commons" approaches small-scale, localised endeavours, such as community-owned transport or social enterprises running transportation services, as common infrastructure that can potentially be integrated into larger transport systems (Glover, 2016). Developing insights on transport services and transport infrastructure as a common pool resource, Glover (2016) puts forward an approach that is broader than traditional notions of the commons as a bordered territory, urging a reconsideration of the use of material infrastructures and focusing on questions of participation in mobility governance. This vision, however, still relies on scarcity discourses, neglecting to engage with the potential of curbing movement or reconsidering its value.

Hardt and Negri (2009) push beyond the notion of property as commons and think through other intellectual and cultural resources. They define the notion of cultural commons as "dynamic, involving both the product of labor and the means of future production. This common is not only the earth we share but also the languages we create, the social practices we establish, the modes of sociality that define our relationships, and so forth" (2009, p. 350). Our theorisation of *mobility as commons* follows this broader definition, embracing forms of thinking about and organising mobility that draw on the logics of commoning such as communal decision-making practices, openness to new forms of perceiving the right to mobility as well as the right to immobility (the right not to be displaced), the awareness of the social production of mobility and the power relations inherent in it, as well as a commitment to creating equity and working in the interest of the public good, contested as it may be. This notion of commoning has continuities with work on just sustainabilities and just transitions that have social justice at its heart. While the precise meaning of the commons may not have been widely interrogated, it is the case that transport justice advocates have asked us to focus on mobility as a key factor in ongoing tools of exclusion and, more hopefully, as a broad citizenship right and a resource at the heart of establishing an equitable common good (Bullard & Johnson, 1997; Browne, 2015; Sharpe, 2016).

Commoning mobility can therefore be understood as a process that encompasses governance shifts to more communal and democratic forms while also seeking to move beyond small-scale, niche interventions and projects. It is important to remember that "the commons" are always contested, as is the ideology behind it (Harvey 2011). Furthermore, while Glover (2016) describes mobility commons as a regime of ownership and Iaione (2010) and Frischmann (2012) focus on infrastructures, our emphasis is on rethinking the value, meaning, and practice of mobility as a step towards reconfiguring societal mobility regimes in more equitable and environmentally sustainable ways: a new politics of mobility transitions.

5 | TOWARDS A NEW POLITICS OF MOBILITY TRANSITIONS

In this section, we illustrate ways to think about commoning mobility by drawing out the three essential elements of a politics of mobility: movement, meaning, and practice. Using two examples from our research, we illustrate what a new politics of mobility transitions might look like by focusing on commoning movement, commoning meaning, and commoning practice. Commoning movement refers to collective engagement with the amount of movement across space; commoning meaning is defined here as collective reconsidering of the societal value of mobility; and commoning practice as collective rethinking of ways in which mobility is performed and governed, with a particular emphasis on the latter. These elements of mobility are entangled with each other; so too are the elements of *commoning* mobility. As physical movement is "the raw material for the production of mobility" (Cresswell, 2010, p. 19), commoning movement more often than not takes place in conjunction with commoning meaning and practice, which are entangled elements of mobility that unfold across spatial scales and levels of governance. Elements of commoning meaning, movement, and practice are present in the transition town movement and telework initiatives, yet they are manifested stronger in bottom–up movements challenging the enclosure of public space through car-centric planning and emphasising the collective nature of producing mobility and mobility transitions, such as a youth-led initiative "Generation Zero" in New Zealand or a smaller pro-cycling community group "Velo-Almaty" in Kazakhstan. The latter emphasises that being involved in cycling advocacy means engaging with others, also drivers and pedestrians whom they see as "closest allies"; it means creating a community and fostering "urban culture" (Velo-Almaty, personal communication, 3 December 2015).

In the two brief vignettes below, we illustrate how commoning movement, meaning, and practice can be found across two diverse sites – one in the Global North, the other in the Global South – creating openings for transformative politics of mobility transitions. As we noted above, we highlight these cases as exceptions to hegemonic neoliberal practices. Commoning mobility in both cases is not a totalising or discrete process, rather it is a process that exhibits governance and practice-based transformations that set the stage to redirect and restructure radical democratic engagement within existing material circumstances. Both cases produce "renegade cartographies" (Katz, 1996) of commoning, showing that alternative mobility practices are possible.

5.1 | Mobilising mobility: Fostering community connections through cycling

Commoning the meaning of mobility happens when a social actor or actors actively push to rethink the social impacts of movement, its representations, or the meaning of relationships on the move. In the IJburg area in Amsterdam for example, a bottom–up neighbourhood civic initiative began in 2011 that aimed to increase cycling through community connections and activism. Ring-Ring® uses a smartphone application to encourage more people to cycle, but it works differently from other nudging applications of such type. Cycling kilometres – "fietskilometers" in Dutch, or Fkm – are recorded and can be "exchanged" for discounts in local shops. The core distinguishing feature of this application is, however, its focus on changing and politicising the meaning of mobility, where it provides a possibility to "mobilise mobility"[4] for a social goal. A public authority, a private company, or a group of citizens can start a "group" in the application, set a cycling target (e.g., to achieve 1,000 Fkm per month), allocate an amount of money, and announce that it will be spent on a particular social goal if the target is achieved. Ring-Ring® collects the money from the donor and mediates the exchange, transferring the money to a particular local initiative chosen by the group. Projects such as a local library, art installations on a local cycling route, a monument in the neighbourhood, trips to a pony farm for children with disabilities, purchasing bikes for handicapped people, and planting trees were co-financed in this way.

A non-market based intervention, Ring-Ring® attempts to shift the meaning of mobility to rethink its potential as a *common* contribution to society. The rationale behind the programme is that cycling contributes to neighbourhoods and cities not only as an environment-friendly mobility mode, but also as activity which – when undertaken collectively – supports liveability, sociality, and prosperity of places, since cyclists are encouraged to frequent small businesses in the local economy, and to be more deeply engaged in the community and place around them due to their slower speeds and openness. Thus, cycling, according to the founder of Ring-Ring®, is a "gift" to oneself and to society: by being mobile, you are enacting change and reconfiguring your relationship with the community (personal communication, 30 August 2017). The interface of the application mediates commoning movement and meaning by showing the number of Fkm cycled by an individual user, the total amount of Fkm cycled by all users, and the amount of Fkm cycled by particular groups working towards a common social goal.

While the key objective of Ring-Ring® is to increase cycling rates, preferably encouraging people to switch from driving to cycling, its broader social goal is to reassess mobility beyond its utilitarian value and do it in a democratic fashion

facilitating bottom–up initiatives and investment in local communal projects. The idea seems to resonate with the current bikenomics thinking that monetises the effects of cycling in order to advocate for investment into cycling because of the multiple societal returns can be expected (Blue, 2013). Yet, according to the Ring-Ring® founder, the idea here is not so much about monetising cycling – which she finds a somewhat "sad" development. Rather it is an adaptation of cycling advocacy to "make their story heard," as it should ideally be about decentralising and democratising the process of ascribing value in society (personal communication, 30 August 2017).

The founder of the initiative is currently considering ways in which the use of data collected through the application could be "democratised," e.g., be shared with scholars or policy-makers on the basis of a subscription (if users agree to that, the data are anonymised, etc.). Thus, at the core of the Ring-Ring® mission is commoning the meaning of mobility. Yet it also advances commoning movement and commoning practice, aspiring for a bottom–up transition driven by reconsidering the value of mobility, raising awareness of its collective impact, and mobilising networks of local actors for a bottom–up social change.

There are some challenges to keeping the project consistent with this vision: for example, Ring-Ring® as a platform is decidedly open. This means that any organisation can join, including companies whose activities may clash with the environmentalist philosophy of the platform. Thus, in Antwerp, where the city started the collaboration with Ring-Ring®, employers such as Shell and Monsanto are involved. According to the founder, this does not have to conflict with the goal of Ring-Ring® to get more people to cycle and help the environment; above all, people using the application have freedom of choice of which initiatives and organisations to support. Also, the very set-up of the platform as a smartphone application led by one person's particular philosophy may create its own enclosures, as this way it is only partially decentralised and appeals to particular audiences.

5.2 | Transformative mobility governance in Santiago de Chile

Commoning mobility practices is a key step in transforming attitudes and expectations of how mobility is conceived and managed. In order to reconfigure societal mobility regimes in more equitable and environmentally sustainable ways, this needs to be done from the planning phase forward. While mobility practices are most commonly defined as instances of movement (Cresswell, 2010), such as driving a car, they also encompass practices of how mobility is governed. *Commoning* mobility practices are actions that can bring about a shift towards more participatory decision-making models whereby the impacts of mobility practices are collectively managed. The activism surrounding the construction of concession highways in Santiago, Chile's capital city, is an example of this kind of transformative politics. While not without contradictions and tensions (the campaign was successful in some areas, less so in others), it is possible to draw out the potential for radical democratic decision-making structures and activism that effected change in formal governance practices.

In 1996 the Chilean government announced the construction of concession highways in and around the country's capital, Santiago, to combat world-record levels of air pollution. The highways were the subject of sustained multi-stakeholder protests, which ultimately transformed the role of citizen participation in governance and planning, establishing a new set of mobility governance practices that have increased the role of participatory democracy within the country more broadly (Sagaris, 2012, 2014). The protests were specifically focused on issues of mobility justice, asking who is intended to move freely in the city, along highways, and who can and should be forced to move through the displacement of entire neighbourhoods. Intended to increase the speed and ease of people commuting into the city while maintaining current levels of traffic congestion, the highway plan included a road cutting through the largest metropolitan park and several historical neighbourhoods in the city centre. The highways were mobility infrastructures that hijacked once common space. Their building was an enclosure intended for the freedom of circulation of the car and its wealthier inhabitants.

In 1997, four socio-economically and culturally diverse neighbourhoods came together in opposition to form Coordinadora No a la Costanera Norte (Coalition against the Costanera Norte, hereafter Coordinadora), comprised of 25 organisations and a handful of individuals. Maintaining a strong focus on social as well as environmental sustainability, it was noted for its radically democratic governance structure that included consensus-based decision-making and a non-hierarchical organisational structure (Sagaris, 2012, 2014; Ducci, 2000, 2004). The coalition was successful in holding officials responsible for consulting with communities and worked to reframe how governments engaged civil society organisations and communities to have more equal footing with business lobbyists. The Coordinadora created enough oversight and opposition that, coupled with uncertain profit margins, the project was put on temporary hold between 1999 and 2003.

In 2003 the Coordinadora was again faced with opposing a pro-business government, fighting opaque and clientelistic planning decisions (Huerta, 2000; Posner, 2009; Sagaris, 2012). The Coordinadora persisted in demanding meetings with

government and businesses stakeholders. Their non-hierarchical structure also meant that the coalition defied expectations, sometimes bringing up to 30 members of the Coordinadora to government offices, and taking over public consultations while community members spoke in turn, lasting, according to our interviews, up to three hours before everyone had had their say (Sagaris, 2012, 2014; Activists, personal communication, 21 January 2015). This persistence shaped how citizens understood their role in the future of Santiago's mobility infrastructure.

The effect of the Coordinadora's action was material, a significant rerouting of the highway saved three of the four neighbourhoods at risk, costing the companies 500 million Chilean pesos, including compensation for those displaced. This campaign also established public participation and consultation in planning processes as a democratic right throughout Chile. However, Chile faces challenges to achieving a sustainable mobility transition, especially if the visions of how it should look are at odds with capitalist logics. Such logics are particularly acute in Chile, an early experimental ground for neoliberalism, which was written into the country's constitution enacted under Pinochet's military dictatorship as an explicit turn away from the victory of Allende's social democratic movement in the 1970s. The success of the Coordinadora shows that even in the face of challenges, there is space for reimagining how commoning mobility practices can be structured through collective governance processes. In the post-dictatorship planning landscape, this victory was a watershed moment in participatory democracy that was able to be articulated into long-term change. Its success is in establishing a precedent for citizen involvement in urban planning and discussions about mobility futures. The shift to inclusive governance allowed previously marginalised voices of working-class and indigenous people to be provisionally included within governance processes while also establishing a wider political landscape in which activism, dissent, and debate could operate in a public sphere, creating a more just decision-making arena by widening who had access to powerful people and institutions. This case highlights the need to focus on democratic forms of politics from below when considering how commoning mobility practices can effect successful shifts in governance and practice. Commoning decision-making practices about key articulations of mobility – such as how to build new road infrastructure – were able to achieve a political stronghold in the decision-making process. There is a tension here: the Costanera was built, enclosing key mobility infrastructures and reinforcing key automobility patterns favoured under current neoliberal capitalist economies. However, several communities won the right to immobility, the right not to be displaced. The meanings and practices of commoning that we have identified thus far are not straightforward, nor are they complete transformations. It is important to remember that they can be sought within as well as beyond current political assemblages in order to think through future possibilities and applications.

6 | DISCUSSION AND CONCLUSION

Commoning mobility refers to projects that highlight the shared responsibility for what mobility does to societies and communities, whether in the form of schemes that may drive sustainability and accessibility agendas or projects that develop collective mobility governance arrangements driven by communities sharing a vision of sustainable living. The notion of commoning mobility captures the logics of a number of low-carbon transition initiatives as well as the dialectically related processes that enclose mobilities.

Commoning mobility proposes a reconsideration of the value of mobility and its collective repercussions in addition to the communal management of transport. This means rethinking the role of mobility as what keeps communities both connected and diverse. Mobilities may be the means through which we interact with each other and with the environment around us (Te Brömmelstroet et al., 2017), something we share and can collectively govern rather than something we value only as it is converted into financial equivalent, square kilometres, and minutes of commute – mobility as fetish. An emphasis on commoning – collectively rethinking – the meaning of mobility is missing from earlier scholarly engagements with the notion of commons as applied to mobility. It brings together the call for mobility transitions beyond technofixes and for the grounded prefigurative politics that commoning can help realise.

Second, a new politics of mobility transitions based on the logics of commons invites us to interrogate mobility-related scarcities and their enclosures, which prioritises particular scarcities over others, e.g., congestion over lack of space for pedestrians. Austere mobilities can then be critically scrutinised through the commons perspective as a set of enclosing mobilities, meanings, and practices. The alternative to a scarcity view of mobility is one in which pure metrics of overall mobility is replaced by a socially mediated assessment of contemporary mobility and any future mobility. In this case, it would not be simply austere mobilities which are imposed but mobilities in which the needs of different sectors of society and the power relations that operate between them are included in the calculation. So some kinds of austerity might be

imposed on the kinetic elite, while new opportunities for mobility (and immobility) might be provided to the kinetic underclass.

Finally, sharing practices – which Dowling et al. (2018) have recently articulated as socio-material entanglements in the context of car sharing – can be critically reassessed using "commoning" as a heuristic. Take bike-sharing. Although lauded as a harbinger of sustainable and equitable mobility, the politics of developing bikeshares have stirred controversy. Studies have shown that these services may strengthen rather than eliminating transport inequalities as docking stations are often built in more affluent areas (Clark & Curl, 2016; Gavin et al., 2016) and price and credit card eligibility may be another barrier to wider use (Goodman & Cheshire, 2014). The issue of participation has been equally important: from San Francisco to Amsterdam, bikeshare bikes have been vandalised by local inhabitants claiming their right not only to urban space but to decision-making. Furthermore, the idea of "the tragedy of the commons" has been evoked to interpret the use of public space by bikeshare companies (Rushe, 2017), yet we argue there is more than over-use of a shared space that is at stake. These debates point to the profoundly contested nature of mobility transitions and to the key role of the question of the "right to mobility" as much as a "right to the city" (Lefebvre, 1996; see also Verlinghieri & Venturini, 2018) in those transitions. Indeed, commoning mobility as commoning meaning, movement, and practice shifts attention from a narrow understanding of mobility commons as infrastructure towards exploring a range of possibilities of reconfiguring the political debate on planning fairer and more liveable cities. Such a shift necessarily brings various forms of "transition" together – particularly those focused on carbon reduction and those rooted in long-standing work on mobility justice. Future work on commoning mobility can help to elaborate the recent resurgence of interest in urban commons and enclosures (cf. Leitner, 2017). Those possibilities begin with questioning the decision-making processes behind urban mobility policies and embeddedness of those decisions in broader ideological regimes that allocate scarcities in ways that have produced detrimental societal and environmental effects across the globe.

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ENDNOTES

[1] Our use of the term "logics" rather than ideology, discourse, or narrative is deliberate as we are referring to the mode of reasoning within particular ideologies (cf. Lukacs, 1922/1971; Eagleton, 1991).

[2] It is important to note that "efficiency" is a common logic structuring academic and practitioner research and policy recommendations, which have tended to work within the assumption that mobility is a "critical and a scarce resource, less well functioning and ubiquitous than before" (Hall et al., 2006, p. 1405). We recognise this importance and do not seek to separate such a logic from austerity and rather seek to understand how they reinforce each other. However, we suggest that while bearing a similar relation to discourses of scarcity, austerity has a different shape to efficiency. In the examples we outline, "austerity" could be a named logic applied to policies which may well be characterised as "efficiency" measures, but with a different political import to efficiency measures which may appear more technical or bureaucratic. "Austerity" as a named policy gains different kinds of political traction within different contexts. Therefore austerity is more able to justify an overall decrease in mobility in relation to scarcity as opposed to efficiency, which tends to imply a rationalised or optimised delivery of mobility, even if economic growth is a derived external aim of austerity mobility measures. And finally, mobility austerity may not be related to financial austerity even if the logic is the same – we certainly see examples of mobility austerity in contexts where fiscal austerity measures have been prevalent.

[3] Hereinafter only names of those interviewees who did not choose to be anonymous are provided.

[4] The term is coined by Aradau et al. (2010) and originally means political mobilisation of mobile, usually marginalised groups (e.g., Roma, mobile sex workers) to demand rights and advance causes that no local or national authority raises.

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