Learning from the grassroots: a resourcefulness-based worldview for transport planning

Abstract

For decades sustainability has been proposed as a framework for a necessary paradigm shift in transport planning. However, critical scholars have shown how this concept, presented with a strong emphasis on economic growth, has limited capacity to truly challenge the current transport-related environmental and social crises or to constitute an ecological worldview.

This paper explores resourcefulness as a complementary concept to inform transport planning and practice. A resourcefulness-based worldview, informed by critical theory and challenging the current distribution of material, intellectual and civic resources, aims to constitute a political shift towards guaranteeing the conditions for challenging crises and for just deliberations concerning ecological futures.

The idea of resourcefulness is not proposed as a blueprint for transport planning, nor as a top-down theoretical framework. Rather, with a research approach inspired by Participatory Action Research, it is explored in dialogue with the practices of two grassroots movements: the Urban Mobility Forum and the Move Your City project. These movements have been proposing alternative transport planning views and practices in Rio de Janeiro (Brazil) and L'Aquila (Italy).

1. Introduction

The impacts generated by human activities and their model of development have reached a critical level. As a consequence, sharpening social and environmental crises are increasingly and unevenly affecting global populations (IPCC, 2018). Transport systems and mobilities[1], being deeply interlinked with societal processes, are directly contributing to these crises. They generate environmental as well as spatial, temporal and socio-demographic distributional impacts. These are unevenly distributed among the population and are increasingly assuming extreme negative implications (Jones and Lucas, 2012; Khreis et al., 2016). We can indeed speak of a *mobility crisis* as the transport-related part of the aforementioned social and environmental crises. A mobility in crisis is an unjust mobility with unevenly distributed negative environmental and social impacts. Solving this crisis is the current major challenge for transport planning.

The IPCC reports have repeatedly suggested that tackling the environmental crisis requires technological, economic, social and institutional changes (Pachauri et al., 2015; IPCC, 2018). In transport studies several authors have similarly spoken about the need for a *paradigmatic shift* in the face of the mobility crisis. For them, transport systems and mobilities should be transformed

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[1] I embrace elements from both the classical transport studies tradition and the mobilities turn (Sheller and Urry, 2006, 2016). I acknowledge that in approaching transport planning it is important to account for all of the embodied, emotional, spatial, physical and governance elements of the transport system and mobilities.

following principles of sustainability, health, justice, prosperity and wellbeing (Lucas, 2012; Schwanen et al., 2012; Hickman and Banister, 2014; Legacy, 2016).

Sustainable transportation has become the core concept to guide this transformation[2]. With a triple effort to build social, environmental and economic transformation, the sustainability agenda for transport has framed the development of new technologies, policy instruments, and institutional arrangements (Banister, 2008; Gudmundsson et al., 2015). It has aimed at protecting the environment and promoting active travel, as well as supporting smart technologies, integrated transport and land-use planning, and participatory planning (Willson, 2001).

However, 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 (Beaten, 2000; Griessler and Littig, 2005; Kębłowski and Bassens, 2018). The sustainability agenda has been predominantly translated into discourses concerning emissions reduction, technological fixes and economic growth that have only limitedly targeted transport-related social impacts (Hickman and Banister, 2014). It has also been used to support green growth projects that have had the unintended consequence of sharply increasing urban inequalities (Cucca, 2012; Anguelovski et al., 2018). Moreover, it has often replicated the epistemic problem of reducing mobility needs to an individualized choice of different travel patterns, slipping into a form of 'libertarian paternalism' (Schwanen et al., 2012), neglecting the relational and collective dimension of the mobility crisis and reinforcing the preconditions for automobility (Paterson, 2007; Nikolaeva et al., 2019). Similarly, despite the call for participatory governance, planning practices are predominantly still being designed as top-down policy implementation (Legacy, 2016).

For most authors this is because the sustainable transport agenda remains premised on principles of technocracy, econometrism and modernisation (Hickman and Banister, 2014; Gössling and Cohen, 2014), reinforcing the belief that "economic growth and ecological problems can be reconciled" (Schwanen et al., 2011 p.999). Reflecting a neoliberal framework, the sustainable transport agenda has remained based on "the economic imperatives of growth, competitiveness and profit seeking" (Baeten, 2000 p.79), embracing an often narrow, purely macroeconomic approach to the variety of impacts that transport generates (Næss, 2006).

Concentrated on encouraging individual solutions and reducing emissions, the agenda may have failed to question the nature of the crisis and to consider the fact that "deep cuts in carbon use in transport are inextricably linked to such issues as the organisation of contemporary societies, the role of transport therein, justice and ethics" (Schwanen et al., 2011 p. 1004). As such, it has not fully accounted for the contested aspects of mobilities and the challenges inherent in transforming them (Blanco et al., 2018). As a consequence, the measures adopted have confronted the current patterns of car-dependency and the related mobility crisis only at a minimal level. They have also failed to transform the powerful interests behind the persistent global spread of this model (Gössling and Cohen, 2014; Khreis et al., 2016; Schwanen, 2016).

This mismatch between the proposal in the literature for a paradigmatic shift and the measures which have been effectively implemented is therefore "an ideological one, rooted in fundamentally different value systems and worldviews (Wheeler, 2012) – and this is where the intractability of the problem remains" (Hickman and Banister, 2014 p.348). The social and environmental crises we are

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[2] A similar argument can be developed regarding the most common use of the idea of resilience in planning (see for example Davoudi, 2012; Derickson, 2018).

facing require not just a paradigm shift, but a shift in value systems and the affirmation of new worldviews (Schiefelbusch, 2010).

Worldviews are systems of beliefs that give society an overall perspective from which to interpret the world[3]. Introducing new worldviews can give us new tools to challenge crises, encompassing "not only ecological concerns but also socio-political dimensions such as inequality, hierarchy, citizen participation, and decentralization" (Dunlap, 2008 p. 8). Worldviews go to the very core of the socio-political organization of urban life, and the very genesis of the crises.

The sole concept of sustainability, for the reasons highlighted previously, has not been able to provide this fundamental shift, remaining embedded in the dominant neoliberal worldview, between myths of sustainable growth (Essebo and Baeten, 2012) and unchallenged transport taboos (Gössling and Cohen, 2014). As critical theorists have highlighted, fully tackling global crises instead requires challenging the current model of growth and development itself, as well as urban and social relations (Bookchin 1977; Heynen et al., 2006; Klein, 2014).

One concept that could help in this direction is the idea of transport and mobility justice, around which there is a growing debate both in academia and practice. For example, in his recent book 'Transport Justice', Martens (2017) has shown how theories of social justice such as the ones developed by Rawls, Dworkin and Sen could inform a different approach to transport planning which might more carefully tackle the inequity issue generated by current transport systems. Cook and Butz (2018) and Sheller (2018) have adopted a more encompassing approach that combines the discussion around social justice and transport with the mobilities literature; this offers a novel approach to justice grounded in a mobile ontology.

This paper contributes to this growing debate on transport and mobility justice, explicitly returning it to discussions around worldviews[4], informing the politics of transport at the intersection of social and environmental justice and creating an explicit link with critical theory. Specifically, it proposes a novel operative concept (*resourcefulness*) and an alternative worldview for transport planning complementary to the idea of transport and mobility justice (*a resourcefulness-based worldview*). To do so, it proposes a theoretical approach that aims to provide an analytical perspective on the nature of the mobility crisis as well as regarding its interaction between society and the environment. At the same time, it considers whether future socio-political and economic relationships could sustain a form of development that avoids the reproduction of this crisis.

In the following sections, I approach these issues in the following way: Firstly, building on the work of MacKinnon and Derickson (2012), I introduce *resourcefulness* as a concept that complements sustainability. I then propose a *resourcefulness-based worldview* grounded in social ecology (SE) and political ecology (PE) and explore how the theoretical and practical elements proposed can improve the ability of transport planning to address the mobility crisis. I do so by critically analysing the practices and vision of two *resourcefulness-aligned actors* working towards improving transport planning processes in the cities of Rio de Janeiro and L'Aquila. The results of the paper are based on a PhD research project designed using a Participatory Action Research (PAR) approach (Verlinghieri, 2016).

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[3] They are broader than paradigms: they do not focus on single aspects of knowledge, but on the whole functioning of reality (Olsen, 1991).

[4] In this the paper resonates with Sheller's (2018) commitment to develop an approach to mobility justice informed by relational and indigenous ontologies, and her reference to the work of Arturo Escobar.

2. What is resourcefulness?

The idea of resourcefulness has been introduced by MacKinnon and Derickson[5] (2013) as a constructive critique to the neoliberalisation of resilience, a concept that has progressively complemented or replaced sustainability. For these authors, the focus should shift from increasing resilience to building resourcefulness as a political and relational process concerned with the capacity of disadvantaged groups to deal with current crises. This capacity is a function of *resources, skills, folk knowledge and recognition*. Resources include both material and "organizing capacity, availability of spare time, social capital and investments" (MacKinnon and Derickson, 2013 p.264). Skills include technical knowledge and local expertise. Folk knowledge refers to the means for interpreting reality and building new cultural forms. Recognition is the "sense of confidence, self-worth and self- and community-affirmation" (ibid p.265).

Building on this original definition, in this paper I consider the following as core resources that constitute resourcefulness: *Material resources* such as financial resources, housing, health, food, infrastructures, tools and environmental conditions; *Intellectual resources*, including time, social networks and capital, access to education, culture, scientific, popular and ecological knowledge; and *Civic resources* that mobilize the idea of citizenship as ability to meaningfully participate in the public domain and of recognition.

Building resourcefulness means ensuring just distribution and access to all these resources. This requires a relational approach to patterns of resource production, distribution and use that critically accounts for planetary boundaries and social justice (O'Neill et al., 2018). This resourcefulness-based approach goes beyond traditional resources-based discourses on justice, as in Rawls' (1999) theory. It includes a broader spectrum of social, natural, economic and political elements. As such, it can be considered in open dialogue with the capabilities approach and theories of human needs (Sen, 2010; Holden et al., 2017)[6], but complements these with a more-than-just-individual outlook[7]. Similarly to what is proposed by the capabilities approach, the resourcefulness-based approach acknowledges that building justice and wellbeing goes beyond a discourse on ownership of material assets toward accounting for the effects of power and knowledge over the expression of potentialities and freedom. It aims to achieve the production of novel social relations and shared knowledges as preconditions for climate, environmental and social justice (Derickson and MacKinnon, 2015). Resourcefulness inspires a political approach that does not seek to produce a crystallized understanding about how the future ought to be. Instead, it aims to ensure that present societal conditions, including the decision-making processes in place, are conducive to social justice whilst also dealing with social and environmental crises. In this way, and as I will explore further in the paper, the idea of resourcefulness strongly dialogues with the project of building mobility justice as proposed by Sheller (2018).

The idea of resourcefulness introduces a relational debate over equity, distribution of resources and environmental impacts, decision-making and self-determination that, as shown, is only partially addressed by the classical use of sustainability. With these characteristics, it appears to be a

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[5] This has subsequently been expanded in Derickson and MacKinnon (2015); Derickson and Routledge (2015); Derickson (2016).
[6] A few authors have recently suggested opening up Sen's work to develop novel approaches to transport planning, especially for its ability to broaden the discussion from an activity-based focus towards a more holistic understanding of mobilities and justice (see for example Kronlid (2008), Beyazit (2011), Nordbakke and Schwanen 2014, Hickman et al. (2017), Pereira et al. (2017), Martens (2018)).
[7] This is in line with an increasing number of contributions that propose a relational ontology for the capabilities approach (see for example Robeyns (2017); Israel and Frankel (2018)).

particularly useful concept in the transport planning context where questions around access to resources and planetary boundaries are crucial.

As presented so far, resourcefulness is a concept that signals where to intervene to tackle crises and it is easy to use in the translation between policy-making, academia and the public sector. However, it has limited explanatory power and it can easily fall back onto the shortcomings that sustainability experiences. Therefore, it is important to link the idea of building resourcefulness to theories that can expand it to constitute an analytical and methodological framework. These can help identify the processes, relations and distribution patterns that ought to be approached to uncover injustice[8] . This nuanced interpretation of the crises, together with a dynamic approach to transformation that includes justice, democracy and participation, can 're-politicise' (Swyngedouw, 2014) the discourses on nature, society and access to resources. A critical theoretical grounding might result in a loss of fluidity of meaning that has perhaps been the key in the universal success of sustainability. Resourcefulness might not have the same ability to travel far and convince many different actors, but this may be the price to pay when trying to establish a discussion on politics and justice in planning.

3. Theoretically grounding a resourcefulness-based worldview

Developing resourcefulness means ensuring fair access to material, civic and intellectual resources whilst also accounting for planetary boundaries and social and environmental justice issues. It is therefore important to carefully consider the causes of the current unjust distribution of resources and potential patterns to change.

Several explanatory frameworks are available that can help in this direction, especially as part of critical theory. Among those, I explore insights from SE and PE that resonate strongly with the aim of building a worldview[9]. They offer an explicitly political interpretation of past and present crises, give specific attention to the question of environmental justice linked to social justice, and propose a strategic political vision with regard to the construction of ecological futures.

3.1 A critical view on social and environmental crises

Amongst the wide range of theories that debate the origin of injustice, SE and PE make a strong connection between its social and environmental aspects. In contrast to what commonly happens in sustainability, they postulate that all environmental problems have a human origin and are connected, not to specific technological designs, but to the way humans relate with nature.

This position is linked to a twofold critique of the dominant environmental ontology that strongly departs from positivism and gets closer to non-western views. Firstly, in SE and PE nature is understood as a resource fundamental to human flourishing that ought to be preserved in its complexity and diversity. The option included in weak sustainability of trading natural capital is rejected: nature has an intrinsic value that cannot be traded or translated in other forms of capital (Shiva, 2016). Secondly, SE and PE both consider humans and the environment as fundamentally interrelated. Humans are a central part of nature and the way they perceive and relate to it shapes societies, cultures and politics (Price, 2012; Robbins, 2012)[10]. Social and ecological systems are inter-linked and in continuous exchange. Urban processes themselves are socio-environmental processes.

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[8] As, for example, suggested by Görg et al. (2017), who use SE and PE to ground sustainability.
[9] This is far from constituting a comprehensive account of these theories. The below should be considered as a suggestion for further theoretical developments linking transport studies and various aspects of critical theory under the overarching idea of resourcefulness.
[10] For a more detailed analysis of the way different political ecologies elaborate on this see Escobar (2010).

The way cities develop and change is strongly linked to their physical and ecological metabolisms and their interaction with nature. Here, the development of societal power relations is connected to conflictual processes surrounding the appropriation of nature (Heynen et al., 2006).

It follows that social and environmental crises are strongly interlinked and need to be analysed and challenged together (Paulson et al., 2003). Specifically, SE asserts that tackling social domination (and the domination of humans by other humans) is the necessary precondition for the solving of environmental issues: pollution problems cannot be solved without addressing their deeper social causes and effects (Bookchin, 1977, 2005). Similarly, the preservation of nature cannot prescind from challenging discourses on growth (Shiva, 2016).

Therefore, the same patterns of inequality in access to resources are the effect of specific 'urban ecologies' that should be approached by looking at power and nature together. For SE, historical systems of social domination have progressively induced a scarcity of resources that builds social inequalities. This is now aggravated by the growth imperative and neoliberal forms of production and reproduction. Challenging crises is strictly connected to questioning these systems and their politics of resource distribution, as well as of distribution of environmental damages and impacts (Price, 2012). For PE, this requires a political-economic view that highlights how narratives around scarcities of resources are often connected to precise political choices, social metabolisms and power formations (Heynen et al., 2006).

3.2 Patterns to change

Together with their analysis of the origin of the crises, SE and PE propose a philosophy of change which reflects on the actors and processes that can produce different futures. Specifically, for SE and PE change is a scalar, dynamic and relational process that involves both society and nature, and the power relations therein. For SE social change starts from the individual and local scale and builds over higher and higher levels (Price, 2012). In PE various approaches share an emphasis of the coexistence of micro-macro levels of transformation. They stress the importance of involving the individual, but always conceived in relation with others, the environment and macro-political processes (Low and Gleeson, 1998; Escobar, 2010). PE places a very strong emphasis on the role of power, discourses and knowledge in the formation of political subjects (Robbins, 2012; Behrsin and Benner, 2017). Individual subjectivities internalise and are shaped by power forces and institutions at higher scale, but can also mobilise new political and grassroots initiatives, and as such should be nourished.

This emphasis on the individual and local scale is not, however, posed in terms of celebrating self-sufficiency in a de-regulated society, as has happened in the case of resilience (MacKinnon and Derickson, 2012), nor in terms of exacerbating competition for resources. As SE recognises, the individual scale is the place where the domination of man over man started and has to be fundamentally challenged to build more egalitarian relationships (Bookchin, 2005). As such, the invitation to an ethics of individual responsibility towards social change (Massey, 2004) is highly relational and accompanied by a commitment to uncover the broad political dynamics that shape social and environmental injustice. In this, SE also recognizes an important role for visions and utopias in shaping transformation (Chodorkoff, 2014).

3.3 A resourcefulness-based worldview

Following the SE and PE view on the crises, building resourcefulness requires critically approaching patterns of unjust material, intellectual, and civic resource distribution as *induced scarcities.* This

means questioning the way scarcity is produced and reproduced with specific power formations. Enhancing resourcefulness means addressing unjust distribution of material resources, as well as building the conditions for "resource self-determination" (Derickson, 2016 p. 164). It implies challenging the social and institutional conditions that allow some groups rather than others to shape urban futures. This involves questioning what is conceived as resource or need, and how certain explanatory frameworks for the crisis are produced and justified. This is a perspective that is certainly lacking in sustainability and only recently brought up in transport theory (Mattioli, 2016; Sheller, 2018).

Specifically, a resourcefulness-based worldview directs attention towards scalar processes of change in which the individual and local scale play a key role. This is the scale in which deep engagement and several transformations are possible as well as the scale in which micro-power interactions shape subjectivities, wellbeing and inequalities. This focus at the individual and local scale is not emphasising self-reliance (MacKinnon and Derickson, 2013). At the same time, it departs from the 'ontological individualism' typical of neoliberalism. Here individual freedom is the priority and the individual is conceived of as an isolated actor and 'the best to judge their own interests'. Society is created as a sum of individuals in competition with each other. The focus on the individual included in the resourcefulness-based worldview is instead based on an 'ethical individualism' where 'each individual matters' and 'each individual is co-responsible' for change, but can only realistically act through relations and co-production which forms society[11].

This focus does not deny the importance of higher scales and problematizes the effects of macro-political processes on the local, avoiding falling in a 'local trap' (Purcell, 2006). A resourcefulness-based worldview acknowledges that political powers are relationally formed by a number of actors at all levels. It embraces an idea of politics as a contested public terrain in which different discourses over possible futures coexist and debate. Adopting a critical understanding of the crises, it supports a pervasive concept of 'the political' (as proposed for example by Swyngedouw, 2014 and further elaborated as part of the idea of mobility justice by Sheller (2018)). This opens up to the establishment of new pluralistic spaces of deliberation that can account for the controversial and complex nature of transport planning. As shown by various authors, this requires reinventing the role of planners and seriously engaging local communities as political actors, giving them the recognition and resources required to be able to intervene as such (Purcell, 2009; Inch, 2015; Legacy 2016).

A resourcefulness-based worldview, as already stressed by MacKinnon and Derickson (2013), is underpinned by a vision in which local communities have the possibility of developing alternative agendas and challenge existing power relations, while maintaining ownership of the decision taken through constant participation. In that sense, the discussion on intellectual and civic resources dialogues openly with the idea of 'the right to the city' as the capability for marginalised groups to shape urban politics (Purcell, 2002). Different authors have already stressed the importance of this concept, and of the 'right to mobility', for transport planning (Kębłowski et al., 2016; Verlinghieri and Venturini, 2017). Within a resourcefulness-based worldview these rights are not considered as individual freedoms which inevitably clash with other societal needs (Sager, 2006), but in terms of broader societal requirements and impacts (as for example suggested by McAndrews and Marcus, 2015). Specific attention is also paid to their relation with the environmental impacts of urban development, as suggested by Souza (2012). Social learning, socio-ecological knowledge and ecological consciousness, as well as recognition and high degrees of participation are fundamental processes in preparing this change. Similarly, resourcefulness grounds an ethical approach to

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[11] On the debate between ethical and ontological individualism, see, for example, Robeyns (2017).

scholarly research grounded in participatory and emancipatory methodologies, which I will explore in Section 6.

As I will show in more detail in the case studies, these guidelines for change have obviously been problematized. We must recognise the context-specific needs and potential for change of each locality, and the limited extent to which planners or citizens on their own can effectively change transport planning as a whole.

4. A resourcefulness-based worldview for transport planning

There is a long history of cross-contamination between critical and planning theory (Friedmann, 1987; Sandercock and Lyssiotis, 2003; Sager, 2013) from which, however, transport planning theory seems to have remained largely excluded. Wilkinson (2012) has proposed three guiding principles for planning linked to resilience: human-nature interconnection, complexity and 'adaptive co-management'[12]. These principles suggest a holistic view of human-nature relations that allows for interdisciplinarity, mixed and dynamic methodologies. They also pose important environmental-ethical questions and a critical approach to society and power. They conceive of planning as a process in which blueprints are substituted by social learning and adaptive planning. A resourcefulness outlook adds to these elements a sharper focus on environmental and distributional issues, and scalar change, in light of the theoretical standpoints presented earlier.

In considering the importance of just access to intellectual and civic resources, the resourcefulness-based worldview strongly favours participatory methodologies and approaches to planning (Derickson and Routledge, 2015). In this, it goes beyond the communicative rationality paradigm proposed for transport planning, which aims to use democratic dialogue to build consensus on planning means and ends (Willson, 2001). The resourcefulness-based worldview assumes a critical and transformative commitment to just distribution of resources as a fundamental precondition for just decision-making and for emancipation overall. This accounts for the power imbalances and complexities that effectively hinder the reaching of co-produced decisions (Gunder, 2003; Purcell, 2009), or, if formally reached, translating them into actual interventions (Legacy et al., 2017). With its attention to intellectual and civic resources, the resourcefulness-based worldview also prevents the high costs that citizens often pay within traditional participation (Inch, 2015). As such, the worldview can inspire transformed planning practices that link to the idea of radical or counter-hegemonic planning (Friedmann, 1987; Purcell, 2009; Albrechts, 2015): planning is a project that goes beyond the simple deontology of the planner or a specific technique; it becomes an adaptive, pluralist and emancipatory mode of dynamic decision-making. In this, the planner becomes an actor proactively involved in facilitating just decision-making processes.

This project is far from easy to implement. Current planning regimes and institutions give very few opportunities to planners to effectively challenge assumptions, worldviews and practices or to find spaces for different knowledge to emerge. Statutory and legal requirements and the dependence on electoral choices further bind what types of action and knowledges are allowed in planning (Tewdwr-Jones 2002). Moreover, often planners lack the skills required to appropriately facilitate participatory processes. This is particularly true in the context of transport planning, which is often very impermeable to critical thinking and in which actors interact with often contrasting views and agendas (Legacy et al., 2017).

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[12] For more on this topic see, for example, Hasselman (2017).

However, as I will show in the context of the case studies, new planning practices can emerge when planning is redefined as an activity that goes beyond the institutional realm, building coalitions and learning from 'resourcefulness-aligned-actors'. These practices can also inspire the implementation of new planning institutions and frameworks that can help solidify alternatives (as I will show with the example of the Mobility Panel). Similarly, critical thinking, a clear focus on power relations and constant questioning of who benefits from transport interventions, as well as building up skills and knowledges that challenge current planning paradigms, can support planners in opening up alternative pathways to change and preparing a transition to overall very different transport governance practices, as also stressed in the transition management literature (see for example Loorbach (2010)). At the same time, it can prevent resourcefulness-based planning from being 'co-opted' by neoliberalism, as has happened with more 'communicative' approaches to planning (Purcell, 2009; Sager, 2013; Roy, 2015).

To sum up, the resourcefulness-based worldview requires deep cultural and economic transformations in society's approach to the distribution of resources, access, freedoms and impacts. It challenges the imperative of growth and neoliberal modes of production that make societies unable to cope with crises when they come. All of these principles can be used to inform a different approach to transport planning, which, despite being very difficult to implement, might be one of the few ways to go if the current mobility crisis has to be truly challenged.

4.1 Tackling the mobility crisis

Transport systems and mobilities are fundamental in providing access to resources (Vasconcellos, 2001). When not justly distributed, they produce unequal access, freedoms and impacts. These are connected to the phenomena of spatial and environmental injustice, exclusion, and the denial of the right to the city. Unjust transport systems and mobilities result in induced scarcity of resources for mobility and poor land-use choices. These produce inadequate access for certain groups and excess mobility for others, as well as an unjust distribution of transport impacts (Cook and Butz, 2018). The health and social impacts of a minority using private transportation are suffered the most by the majority using public transport or walking and cycling (Vasconcellos 2017; Rowangould et al., 2016; Lucas et al., 2016).

A resourcefulness-based transport planning approach would aim to transform these transport systems in their mobilities and physical and governance structures to face the current mobility crisis, stopping it and avoiding its reproduction, aiming at a just distribution of resources, accesses, freedoms and impacts. Specifically, it aims at preserving nature and approaching the social and ecological aspects of the mobility crisis together. This corresponds to an effort to produce more ecological transport systems that goes beyond reducing emissions. It accounts for biodiversity loss, land consumption, soil erosion, and waste production at a planetary level, as well as impacts on human health caused by emissions, noise levels, and sedentary lifestyles (Khreis et al., 2016). This means planning for a drastic reduction not only of fossil fuels, but also of private mobility, as well as challenging current ideas around development and growth and their damaging potential when globally exported.

Furthermore, a resourcefulness-based worldview requires a political approach to transport planning that goes beyond technologies or policy proposals. It means including in the discussion a 'political ecology' in which environmental and social factors are considered as interacting and discussions about possible 'futures' occur (Timms et al., 2014). Transport politics and decision-making processes are focal points in intervening to address the mobility crisis.

Specifically, the attention to scalar processes within the resourcefulness-based worldview can directly influence transport governance, supporting interaction at all levels, at the same time guaranteeing autonomy, accountability and functioning. With increased integration and participation, it poses as the basis for meaningful local transport planning agendas aware of macro-political and economic processes, in a context in which cities are increasingly required to take control of their transport systems (KonSULT, n.d.). Moreover, a resourcefulness-based planning practice considers the complementary and integrated use of social, health, and environmental impact assessment tools as central to the decision-making process regarding what directions to undertake for future transport provisions (Jones and Lucas, 2012; Khreis et al., 2016).

A comprehensive attitude towards mobility justice, as suggested by Mullen and Marsden (2016) and Sheller (2018), can complement this discourse, recognizing the importance of ethics in shaping the politics of transport. Ethical judgments are necessary to discuss future mobilities, especially when establishing a specific transport system can have detrimental and irreversible impacts on certain groups and the environment. A reflection on ethics, participation and democracy can help develop a pluralistic debate on which activities and mobilities should be prioritized in a society in which space and time are limited. Again from a mobility perspective, the question of how resources are distributed and allocated ought to consider shared resources, accesses, freedoms and impacts, as well as their politics.

5. Empirically grounding a resourcefulness-based worldview for transport planning

In the previous section I proposed a theoretical worldview to inspire new transport planning practices. However, I do not aim at providing a top-down blueprint, using a methodology in strict contradiction with the worldview itself. Using the available literature, I proposed a reflection on the nature of transport planning that ought to be further discussed in the public domain. Qualitative research and more specifically PAR are participatory methodologies particularly adapted to opening up knowledge production to other voices (Fincham et al., 2009; Lucas, 2013). This is especially important when considering that new worldviews cannot be implemented from the top down, but require deep cultural changes in which different actors elaborate and test new knowledge, practices, power arrangements and tools (Vigar, 2000).

For this reason, the empirical part of this paper has been developed adopting a PAR approach. This is a research approach that grounds knowledge production into a participatory conversation and collaboratively designed actions (McIntyre, 2008). Theory to address a certain issue is developed by the researcher together with the people affected, reflecting together in a continuous feedback process with practice. Using a PAR approach, the proposed resourcefulness-based worldview has been refined and developed together with social actors that are searching for alternative worldviews in order to deal with the mobility crisis, e.g. *resourcefulness-aligned actors*.

Specifically, among the actors active in proposing transformation in transport planning, I approached urban social movements. In this I followed the literature that stresses their capacity to criticise the paradigmatic problems of transport planning and propose insightful pathways for transformation (Paterson, 2007; Sagaris, 2014; Legacy, 2016; Sheller, 2018). With their visions and practices and their commitment to environmental protection and social justice (Mayer, 2006; Souza, 2006), urban social movements resonate and align at different levels with resourcefulness. I approached and worked with those urban social movements that best aligned with the resourcefulness concepts and were working in a context of sharply evident mobility crisis.

Specifically, I focused on two cities, Rio de Janeiro, in Brazil, and L'Aquila, in Italy, that are facing deep mobility crises and processes of rapid urban transformation. Data have been collected with a variety of methods during repeated fieldwork visits in the forms of a grey literature review, participant observation, workshops and interviews with different stakeholders. Aware of the issues connected to being a white researcher from Europe approaching a case study in Brazil, I carefully used reflexivity and adopted a research ethics aimed at decolonising knowledge and at learning from the South (Robinson, 2016; Schwanen, 2018). I approached two very diverse case study contexts looking for differences, learning from those differences, and bridging between them, aiding a process of 'translation' between experiences (González, 2016). Therefore, I did not aim to generate either strong comparisons or generalizations, but to use different urban contexts to better understand urban processes "thinking through elsewhere", as suggested by Robinson (2016), searching for commonalities and "tracing connections" (p.6). The gesture of comparison has been possible only to the extent of highlighting what Mason (2002) calls "cross-contextual generalities" (p.1) that are, however, valuable insights into the politics of transport (Schwanen, 2018). In this section, having briefly presented the two actors I worked with and the context in which they operate, I present an analysis of the way their views can inform a resourcefulness-based worldview for transport planning.

5.1 The mobility crisis in Rio de Janeiro

Rio de Janeiro represents a fascinating case of rapid urban development coupled with increasing social and environmental crises. In the past years and in connection with various mega-events, the city has gone through rapid economic growth. This has not reduced the exceptional levels of social inequality and environmental impacts in a city already experiencing high levels of socio-spatial fragmentation (Ribeiro, 2016; Vasconcellos, 2017). The city is also suffering the increasing environmental impacts of its expanding industrial sector (Comissão de Defesa dos Direitos Humanos e Cidadania da Alerj, 2015).

This picture is replicated in the context of transport. The system suffers from endemic problems of congestion and public transport is relatively inaccessible, of low quality, and poor capacity. Car ownership is rising, together with pollution, congestion and health impacts. A broad mobility crisis is present (Costa et al., 2013; Ribeiro et al., 2014). This has not been reduced, despite the fact that, in preparation for the mega-events, the city has redesigned its major transport infrastructures (Zimbalist, 2017; Kassens-Noor et al., 2018).

The Fórum Permanente da Mobilidade Urbana na Região Metropolitana do Rio de Janeiro - Permanent Urban Mobility Forum of the Metropolitan Region of Rio de Janeiro (from now on indicated as 'Forum') works in this context and aims to tackle the mobility crisis by adopting a clearly resourcefulness-aligned attitude. It is a forum of engineers and civic associations that meet every week to discuss the mobility crisis and the future of their city, producing original research and planning proposals. Initiated by the local Professional Association of Engineers, it works at various levels of the planning system and with community groups, supporting their understanding of mobility issues and their visions and demands for improvements. The Forum, as a network of different actors, represents a variety of voices that contest transport planning choices and advocate for more and fairer participation. Fascinated by its work, between June 2013 and July 2014, I visited Brazil three times and spent a total of six months learning from the Forum, assisting its meetings and initiatives. I also interviewed ten of its members and co-organized with them a public debate on mobility justice in January 2014.

5.2 The mobility crisis in L'Aquila

L'Aquila is a medium-sized city in the South of Italy. Facing economic and social decay since the 1990s (Calafati, 2012), in 2009 it was hit by an earthquake that required a complete restructuring of the urban system. Specifically, with an important added phenomenon of urban sprawl, the government has financed the construction of 19 new towns to relocate the 67,500 people made homeless (Alexander, 2010). Since then, the process of reconstruction has been highly controversial and fragmentary (Puliafito, 2010), and at the time of writing the city is still under reconstruction. In this context, the city has experienced the fundamental phenomena of social fragmentation and segregation that have created a broad social crisis (Minardi and Salvatore, 2012).

During the years the mobility crisis, already evident in the increasing car ownership before the earthquake, has assumed an exceptional magnitude (Minardi and Salvatore, 2012). The unavailability of most of the transport system and the relocations have required strong reliance on private transport. Although all the public transport services have been redesigned, they remain inadequate to the increasing urban sprawl (Castellani, 2014; Falco et al., 2018). New road infrastructures have been also implemented to facilitate car mobility.

In this situation, several actors have mobilized to criticise the government's choices over the relocation, the lack of participation in the decisions over rebuilding the city and a general malfunctioning of the planning system (Verlinghieri and Venturini, 2014). They have challenged the lack of attention to the social needs of the affected population, demanding more spaces for socialization, more involvement of citizens and more transparency by the administration. Some have also mobilized to ask for the reduction of traffic, pollution and car dependency and better public transport.

Among those actors, I focused on the group Move Your City (MYC). Born in the aftermath of the earthquake, MYC has conducted an extensive work on mobility in the city. Composed of young people concerned with the malfunctioning of public transport, it has specifically concentrated on enhancing public participation in transport planning. It has collected data on youth mobility and used this as advocacy material to support a proposal for improving public transportation in the city (Castellani, 2014). Subsequently, it has put forward the constitution of a Mobility Panel, a participatory transport planning institution within the local council. As such, MYC has been an actor particularly appropriate for investigating the resourcefulness-based worldview. I spent more than a year collaborating with MYC: between August 2013 and January 2016, I participated in theirs and the Panel's meetings, and co-organised a series of four data-collection workshops with local high school students (total of 469 participants) and two dissemination workshops at the city level (total of 50 participants). I also interviewed members of MYC and other actors that have interacted with the project (for a total of eight interviews). In August 2014 I also run a focus group with MYC reflecting on their experience as planning actors.

5.3 Resourcefulness-aligned actors' view on the mobility crisis

After years of debates, activities and interaction with community groups and policy-makers, the members of the Forum have developed a nuanced analysis of the mobility crisis in Rio de Janeiro. This, for them, is caused by an artificially-induced scarcity of financial resources for public transportation connected to a lack of integrated planning structures and of coherence in planning implementation. In the language of resourcefulness, for the Forum scarcity is induced by the politics of resources in place and not by an actual lack of financial resources. The mobility crisis is caused by an interest-driven attitude on the part of the planning authorities. The Forum is not criticizing the

actual plans or the use of planning instruments such as the Transport Planning Masterplan, but rather the changes made at the implementation level. For example, it critiques the way the original plan for the Metro has been progressively changed, reducing the number of lines and prioritizing investments in the wealthier areas of the city. At the same time, it criticizes the lack of integration among the different planning authorities, claiming for the institution of a Metropolitan Authority for Planning and Development of Urban Mobility. For the Forum, the unjust mobilities in place are induced by active political choices and the willingness of elites to divert resources toward car-based mobility or other projects connected to neoliberal urbanism. These choices are the result of a market-oriented rationality (Friedmann, 1987; Harvey, 2007; Lovering and Türkmen, 2011) that ought to be challenged. This analysis resembles what Vasconcellos (2001) and Legroux (2016) depict as being the political economy of Brazilian transport: the elites, the bus-oligopoly, and middle class are able to shape the planning choices, controlling the finance and bureaucracy of the State system, reproducing unjust mobilities. Part of these choices is the implementation of an "irresponsible" governance model of public transportation (Vasconcellos, 2001 p.139) and the deregulation of public transport.

Similarly, MYC considers the mobility crisis in L'Aquila not as a consequence of the earthquake, but as the effect of post-disaster planning choices and resource allocation. For MYC, the crisis is linked to the ineffectiveness of the planning actors to design and finance a functioning public transport network in which the best use of available resources is made. This view is supported by a number of other actors, among which there are also some members of the Council that, when engaged in dialogue by MYC, discuss the mobility crisis as part of the Mobility Panel. They attribute the crisis to a land-use policy that has generated urban sprawl, a low level of services, and a lack of planning of the relocation of activities. This territorial fragmentation and dispersal has generated an endemic deficiency of public transport, aggravated by what can be described as a "corporate governance model"[13] of public transport services (Vasconcellos, 2001 p.140), which has become economically untenable. In the view of MYC, the mobility crisis is clearly part of a land-use planning crisis.

Similarly to the Forum, MYC does not criticize the planning instruments utilized, such as the Urban Mobility Plan, but the low institutional capacity in integrating these instruments with other land-use planning measures and of effectively implementing the interventions designed. Differently from the Forum, MYC does not link this to an interest-driven planning, but to a *lack of will, attitudes, and capabilities* by the planning authority to recognize the unfolding of a mobility crisis and to address it. For MYC, which repeatedly interacts with the local planning actors, this is evident in the way planning decisions rely on one-man visions, on manual programming, and, as I was told by a member of MYC, on a 'series of random gestures' by different uncoordinated actors. For MYC, the artificially-induced scarcity is the effect of the low capacity of the local authority to plan and support public transport. It is a governance, knowledge and political issue. This is coupled with a unvalued culture of public transport in a city where most of the citizens are able to afford private mobility. Similarly to the Forum, MYC asks the institutional actors to adopt 'rationality in planning', expecting the experts to plan using traditional instruments and go beyond subjective interpretations and chaotic actions. Moreover, similarly to the Forum, MYC advocates for the implementation of

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[13] Different to what is theorised by Vasconcellos (2001), however, the malfunctioning of the corporate model in L'Aquila has not led to the privatization of the public operator, but to its fusion into a broader state owned regional operator in 2015.

structures, such as the Mobility Panel, to allow mobility planning actors to coordinate and establish a permanent dialogue.

In both cases the actors consider the mobility crisis and specifically the malfunctioning of the public transport services not to be an effect of a lack of financial resources for transport, as in the narrative of the local authorities and the transport providers. The crisis is induced by the politics of mobility in place and the low institutional capacity to envision and implement transformation. This analysis does mirror the conclusions presented in the literature regarding the crisis of transport planning. In the complex, multi-actor-based reality of transportation planning, the instrumental rationality paradigm is only theoretically affirmed (Willson, 2001). It guides the setting up of the plans and the selection of planning tools, but is not established in the politics and decision-making that guide their implementation (Vigar, 2000).

5.4 What about the environmental crisis?

In the agendas of both the Forum and MYC, solving environmental issues comes second to solving the mobility needs of transport-disadvantaged groups. The two actors have given high priority to the social aspects of the mobility crisis. The Forum has concentrated on the quality and coverage of transport infrastructures and asked for their extension to the poorer areas. MYC has instead carefully selected young people as the group suffering more from a car-based mobility system and a poor public transportation network.

However, despite not explicitly centring their discourses on environmental sustainability, both the Forum and MYC are advocating for mobility solutions based on public transportation that, if adopted, would dramatically improve urban environments. For example, the Forum supports rail public transport over road transportation as the most ecological, safe and comfortable solution, automatically aligning the fight for spatially just solutions with the fight for ecological ones (Verlinghieri and Venturini, 2017). MYC moves in a similar direction, launching a campaign for public transport, cyclability and walkability. Furthermore, it proposes urban aesthetics, liveability, and beauty as integrated in its vision for transport futures.

The positions of these actors are aligned with the theoretical foundation of a resourcefulness-based worldview under which environmental impacts need to be addressed in conjunction with social ones. Most importantly, they introduce further dimensions to the debate around equity and ecology: they underline how measures aimed at protecting common goods and providing collective solutions also tackle ecological problems. Public transportation is specifically seen as one of those. This position recalls a broad literature on the idea of the 'commons', as resources accessible to the whole society (Chatterton, 2017), that has been so far been only rarely explored in transport literature and in transport (Mullen and Marsden, 2016; Sheller, 2018; Nikolaeva et al., 2019). Focusing on the commons and on the impacts that individual mobility has on them demands a redistribution of resources via a different politics of mobility. The actors analysed make it clear that this redistribution needs to go beyond car-based solutions. These are seen as inevitably reproducing spatial and distributional inequalities that cannot be tackled simply by reducing emissions or improving driving efficiency and safety.

5.5 Resourcefulness-aligned actors' view on patterns to change

Despite the different contexts, the two resourcefulness-aligned actors propose similar solutions to the mobility crisis. For both actors what is required is a reshaping of the politics of mobility, more than single policy interventions or technological advancements. They propose to implement

institutional structures able to permanently maintain dialogue among different planning departments and with the local communities. These new institutions should ensure that mobility planning is integrated with land-use planning and performed as a long-term project. Moreover, they should allow for a continuous monitoring of the planning process, ensuring consistency of the implementation with the design principles, and accountability. Moreover, both the Forum and MYC aim at building political pressure on the planning authorities and capacity in the public domain, believing that knowledge and participation are crucial components of transformation, as I explore more in details below.

5.5.1 Knowledge

Specifically in terms of knowledge, both the Forum and MYC have a central mission in producing and circulating knowledge in the public domain. The Forum, as a group of experts and citizens, puts specific emphasis on developing and sharing technical knowledge, actively investigating impacts of past, current, and future transport projects, stressing the importance of historical memory and of supporting the production and circulation of local knowledge. In a similar manner, as a group of non-experts, MYC mobilized to gather and co-produce knowledge regarding the needs and desires of transport-disadvantaged groups. With a strong focus on accountability, it repeatedly required policy-makers to produce information on transport planning choices, share knowledge across departments and with the population.

For both actors it is important to avoid a dichotomy between expert and local knowledge. Knowledge needs to circulate and be produced in an exchange between the experts, the experts and the public, and within the public, creating practices increasingly based on co-production and pluralism (Jasanoff, 2006; Albrechts, 2015). These are fundamental to developing appropriate transport interventions as well as nurturing a culture of participation, increasing the possibility of just democratic dialogue. Knowledge that informs planning ought to be produced through participation at different levels and among different actors. At the same time, knowledge is necessary in order to feed participation in a cycle of constant learning.

In order to facilitate this process, both the Forum and MYC organized activities in which to share the results of their research with policy-makers and the public. They made sure that the public was informed; at the same time they worked towards forming a critical public consciousness, catalysing connections between other actors. For example, the Forum intervened in public hearings in support of slum residents; MYC facilitated the construction of a platform of local organization focused on sustainable mobility. This attitude aligns with the call for reflexive practices in planning (Schön, 1984; Albrechts, 2002) and that critical literature has also opened up space for in the transport realm (Mullen and Marsden, 2016). Reflexivity can help produce solutions tailored to the specific contexts that better adapt to local needs and account for equity.

5.5.2 Participation

For both the Forum and MYC, transport planning should happen in participatory and pluralist settings. To guarantee this, they work to increase the arenas and quality of participation in the planning process. These arenas need to be knowledge-based and spaces for social learning: participants need to access relevant information and be actively involved in co-producing knowledge.

For example, the Forum proactively set up participatory arenas in which the public could speak with officials and experts. In this, it stressed the importance of considering the question of who

participates, and of the danger of replicating participatory exercises in which already-empowered groups impose their points on others. The conventionally-used notion of a stakeholder needs to be expanded to include the citizens that, despite not having an economic or power stake, are impacted by interventions (as also stressed by Purcell (2009)). The design of participatory processes should account for the risk of co-optation by powerful economic interest groups that can manoeuvre the process to reproduce inequality. For this reason (as the Forum has directly achieved with its knowledge production practices), participants, especially those from marginalised groups, should be provided with sufficient logistical resources, information, and tools for analysis. It is guided by this idea that the Forum itself exists as a participatory arena that works to create a culture and a transition towards the right to ecological and just mobilities (Verlinghieri and Venturini, 2017).

Similarly, for MYC participation in planning should be based on a *culture of participation*. This should be built both at the level of institutions and in the public domain, using new cultural and educational strategies. As has emerged from analysis of the activities organised by MYC, participatory arenas can function as spaces for transformation and learning and are specifically effective when they have an explicit impact. Furthermore, when grounded in knowledge co-production, these arenas can build awareness towards environmental and social justice, based on a plural understanding of issues and an open debate on solutions. Functioning participatory arenas in which mutual learning takes place have direct effects on the wider community, moving consciousness, and enhancing social change.

Beyond being a decision-making strategy, participation, for both the Forum and MYC, is a process able to build long-term cultural change, changing the perspectives and attitudes of those who participate. As such it is a multidimensional process that can be hardly captured by Arnstein's (1969) ladder of participation and that requires new conceptualizations, including its ability to foster democracy (Gaventa, 1995) and social learning (Kesby, 2005).

To sum up, the Forum and MYC highlight three crucial aspects to fostering participation:

First, participatory arenas need to be set up under the criteria of inclusivity, representativeness, fairness, and impact on decision-making. They need to be able to guarantee to disadvantaged groups their right to the city. This is in accordance with Albrechts (2002) who has highlighted the need to overcome barriers to participation such as segregation, oppression, domination, marginalization, and exclusion to improve the outcome of the decision-making process.

Second, experts and expert knowledge are a necessary part of participatory planning. However, as MYC stresses, experts need to 'learn participation' and open up to different worldviews. This is a very important point when thinking about the type of training and knowledges to which transport planners have access.

Third, participation should entail a network of activities that builds a culture of participation within society. As also highlighted by Albrechts (2002), the lack of cultural codes of participation is a barrier that needs addressing. As MYC has stressed and as the Council of L'Aquila practices confirm, better participatory planning practices can be facilitated when several participatory arenas exist that progressively re-politicise planning. These can allow not only for a permanent knowledge exchange, but also for a solid culture favourable to pluralistic dialogue, possibly helped by the presence of 'active citizens'. In order to do so, flexibility, complexity, and diversification in the setting should be preferred to single recipe that fits all contexts, as also suggested by Purcell (2009) when considering the multiform strategies that counter-hegemonic planning should take.

5.6 Learning from the grassroots

The visions and practices of the Forum and MYC strongly resonate with was theorized as a resourcefulness-based worldview. The above reflection on their views and practices has complemented the theoretical account with nuanced views and more concrete information on a resourcefulness-based worldview for transport planning. Specifically, the Forum and MYC have proposed a sharper focus on the role of intellectual and civic resources in approaching the mobility crisis. They have stressed firmly that *the mobility crisis is a political crisis* that requires cultural and political changes more than precise investments, policies and technological improvements. Both knowledge-based participation and the construction of a culture of participation across society play a key role. Moreover, they have stressed the importance of diversifying and using a multiplicity of strategies in planning, increasing complexity and diversity.

Moreover, even if they do not concentrate strongly on environmental impacts, with their specific focus on ecological and just mobilities, they indirectly act to promote ecological solutions. Moved by social justice considerations, they advocate for better public transportation which also helps reduce environmental impacts. In this, a dialogue with the resourcefulness-based worldview could sharpen their understanding of the connection between social and environmental crises, building further awareness of the importance of the environmental impacts of transportation.

6. Conclusions

Transport planning is facing increasingly complex challenges posed by the current mobility crisis. These require a deep transformation in the way the crisis is conceptualised and approached, which goes back to the very essence of what transport planning is about (Henderson, 2013; Sheller, 2018). Sustainability has initially highlighted the importance of environmental protection, but has not been able to effectively shift dominant worldviews towards more ecological approaches. Critical theory has the ability to complement and enrich this concept with analytical tools, explanatory frameworks and approaches to change that can support necessary transformations towards building *mobility justice*.

In this paper I have specifically showed how key elements from SE and PE, framed by the operative concept of resourcefulness and empirically explored using a PAR approach, can be used to develop a novel worldview for transport planning. This worldview, built on learning from social actors committed to addressing the current mobility crisis, poses critical questions on the genesis of the crisis and re-politicizes the discussion on social and environmental impacts and on access to and distribution of resources. It problematizes the way social and environmental crises are considered separately and proposes an approach that, while aiming to address transport-related social impacts, contains at the same time tools to tackle environmental injustice.

Building resourcefulness becomes, then, one of the preconditions for embracing a path toward mobility justice, promoting a transport planning theory and practice focused on tackling the constitutive processes of unjust mobilities and their effects on social and environmental injustice. Specifically, the resourcefulness-based worldview resonates and complements the idea of mobility justice in all its aspects of distributive, deliberative, procedural, restorative and epistemic justice (Cook and Butz, 2018; Sheller, 2018). Tackling the unfair distribution of material resources means working towards distributive justice. At the same time, as shown in this paper, ensuring fair distribution of intellectual and civic resources constitutes a necessary precondition for the development of the deliberative and procedural aspects of mobility justice. Finally, embracing a worldview grounded in critical theory, one which fundamentally revisits the understanding of the relations between humans and nature and profoundly commits to participatory methodologies, can strongly contribute toward developing conditions for restorative and epistemic justice.

Like mobility justice, resourcefulness, from a different angle, highlights the need for transport planning and planners to embrace a clear discussion of the ontological foundation of their views and practices. At the same time, it stresses the importance of a multi-scalar, layered and intersectional approach to transport and mobilities that ought to account at the same time for individual and embodied experiences, urban development and global crises. In contrast to resilience, resourcefulness nurtures hope in the possibility of developing substantially different transport systems that can truly support human wellbeing in implementing visions and utopias that are dynamically and collaboratively developed, and which strongly account for the needs and views of the marginalised. In this, it acknowledges the importance of considering mobility as a common. In line with what is also suggested by Nikolaeva et al. (2019) and Sheller (2018), this opens up the possibility of supporting those prefigurative projects and practices that aim to protect the 'mobile commons' and allow us to explore potential different mobile futures.

In addition to those elements, resourcefulness constitutes an operative concept that is useful when bringing back such theoretical understandings to the daily practices of planners, consultants and policy-makers, showing them where to start looking and working from and what resources and spaces to focus on in building the preconditions for a fairer discussion about transport futures. In

this, a specific emphasis is also put on the type of skills and knowledges that they have access to. This is specifically clear in the way the resourcefulness-based worldview includes a planning practice in which knowledge is co-produced in a reflexive and pluralistic manner among experts and citizens; in which methods and techniques are based on participatory dynamics and processes, and which are developed whilst accounting for inclusivity, representativeness and fairness, impact on decision-making, and diversification of strategies; where planning choices are grounded in an ethically-bounded rationality and on a reflexive co-production of knowledges that complement communicative rationality whilst paying attention to power relations.

I am aware that more research is needed to develop effective ways to put in practice the proposed resourcefulness-based worldview in different contexts. This should account for the limited ability and capacities that institutional planning actors have to challenge existing worldviews and the way this can be tackled by being open to other knowledges and social actors. In this, more work is needed in further reflecting on the possibility of a broader and lasting exchange between transportation research, critical theory and the visions and practices of actors that produce and enact alternative approaches. At the same time, the idea of resourcefulness would definitely benefit from further development, both in terms of fully embracing a mobile ontology and a better-elaborated theory of power that can highlight the limits and potentials that different actors have to build resourcefulness once they have aligned with it.

For now, it remains clear that opening up to a novel worldview and the use of highly participatory settings is a necessary attitude for any successful transformation. This is with the understanding that shifting worldviews towards more relational and holistic approaches to human-nature relations as well as guaranteeing just access to knowledge, skills and resources to marginalised groups are preconditions for supporting the production of novel social relationships. This in turn would mean being able to generate different decisions over the future of transport systems and cities that are less focused on single individual needs or reproducing patterns of domination and more based on an ethics of care for others and the environment. The work of groups such as the Common Cause Foundation[14] as well as research in environmental psychology and social sciences (see for example Schultz, 2000; Hartsell, 2006; Kause et al., 2018) shows that whatever the assumptions are concerning human nature, we can create conditions in which more empathic forms of living can be nurtured.

To an extent this means that, perhaps also compatibly with what transition management and other recent and promising novel conceptualisations of governance theorise (see for example Loorbach (2008) or Lyons and Davidson (2016)), building resources and skills for marginalised groups and especially giving voice to unheard actors could actually be an encouraging start towards reshaping the direction of transport governance beyond the control of profit-seeking stakeholders.

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