

The differential performativity of academic knowledges in urban transport and mobility policy and practice: A view from Brussels

Keblowski, Wojciech; Bassens, David

Publication date:
2015

[Link to publication](#)

Citation for published version (APA):

Keblowski, W., & Bassens, D. (2015). *The differential performativity of academic knowledges in urban transport and mobility policy and practice: A view from Brussels*. (pp. 2-40). Cosmopolis.

Copyright

No part of this publication may be reproduced or transmitted in any form, without the prior written permission of the author(s) or other rights holders to whom publication rights have been transferred, unless permitted by a license attached to the publication (a Creative Commons license or other), or unless exceptions to copyright law apply.

Take down policy

If you believe that this document infringes your copyright or other rights, please contact openaccess@vub.be, with details of the nature of the infringement. We will investigate the claim and if justified, we will take the appropriate steps.



The differential performativity
of academic knowledges in urban transport
and mobility policy and practice:
A view from Brussels

Wojciech Kębłowski

PhD Researcher, Université libre de Bruxelles (IGEAT)
Vrije Universiteit Brussel (COSMOPOLIS)

David Bassens

Assistant Professor, Vrije Universiteit Brussel (COSMOPOLIS)

Mathieu Van Criekingen

Assistant Professor, Université libre de Bruxelles (IGEAT)

This work was supported by Innoviris, the Brussels Institute for Research and Innovation,
under the Prospective Research for Brussels grant number 2014 PRFB 16.

Abstract: This paper presents an inquiry into the differential performativity of academic knowledges on transport and mobility in policy and practice. Drawing on an extensive literature review, it sets out to identify various paradigms of academic knowledge in the field. Focusing on the particular case of Brussels, which is confronted with acute transport and mobility issues, the paper consequently traces how academic knowledges are picked up in various circuits of knowledge aiding in agenda-setting processes and ultimately materializing (or not) in actual policies, plans, and projects. The analysis shows that the three paradigms emerging from the literature—respectively the orthodox, sustainable, and critical paradigms—have a very differential impact in the Brussels policy field. In practice, the debate is centred around a rather secondary opposition between an essentially neoclassical, growth-oriented agenda on the one hand, and a largely depoliticized sustainable paradigm on the other. The critical paradigm, which highlights more structural inequalities underpinning transport and mobility issues, does not translate into an official political agenda. This may indicate that the impact of critical knowledges in contemporary urban regimes is quite limited, and consequently raises the salience of grasping the intricate mobilities of potentially critical policy alternatives.

Keywords: circuits of knowledge, mobile urbanism, policy transfer, entrepreneurialism, transport policy

1. Introduction.

While urban policies gestate within particular territories that require place-based visions and solutions, they are to an ever-increasing degree developed, implemented and legitimized in relation to policies and practices developed elsewhere. Emphasizing the growing importance of the interplay between territorial fixity and relational flows (Massey, 2011; E. McCann & Ward, 2010), numerous studies into policy 'circulation', 'transfer', and 'mobility' (Bunnell & Diganta, 2009; Cook & Ward, 2012; Dolowitz & Marsh, 2000; E. McCann, 2013; E. McCann & Ward, 2011; Swanson, 2013) have revealed variegated geographies of diffusion of ideas through various policy circles, notably in the field of urban transport (De Jong & Edelenbos, 2007; Ison, Marsden, & May, 2011; Wood, 2014). However, an issue that has received comparatively less attention is the specific role of academics and academic knowledges in the engendering and circulation of these mobile policies (Healey, 2013). This relative absence is notable in the particular case of urban transport and mobility studies, which do very often have an 'applied' character in their orientation to speak to practitioners, planners, and policy makers. This issue is all the more pressing since many contemporary urban concepts—e.g. the "smart city" and "compact city"—are built implicitly or explicitly around a transport and mobility dimension (Cameron, Kenworthy, & Lyons, 2003; Dieleman, Dijst, & Spit, 1999; Neirotti, De Marco, Cagliano, Mangano, & Scorrano, 2014).

The purpose of this paper is therefore twofold. First, we intend to identify the contemporary knowledges that come out of the scholarly literature on transport and mobility. Second, once identified, we wish to research to what extent these knowledges have been 'received' in policy fields in the particular setting of Brussels. By this two-pronged approach, we aim to reconstruct different 'circuits of knowledge' (Featherstone & Venn, 2006; Healey, 2013; E. J. McCann, 2008) in the field of urban transport and mobility. With this type of conceptualization, we wish to stress that practitioners and academics alike are inserted in social networks that stretch beyond the particular territory, granting those participating

access to intellectual resources — i.e. 'knowledge' or 'expertise' — but also the authority (not) to act on the basis of their positionality. Importantly, 'traditional' assumptions about the directionality of knowledge flows - i.e. from the academy to the wider society - need to be revised. Knowledge production in 'applied fields' like transport and mobility' often hinge on bilateral exchanges with non-academic actors. As circuits of knowledge *de facto* embrace a wide range of non-academic actors including (but not limited to) politicians, technocrats, civil servants, consultants and urban planning 'gurus', civil society groups, and private companies, the usual vector of 'evidence-based' decision-making is more often than not contested by an opposite one of "decision-based evidence-making" (Slater, 2008, p. 219). Nevertheless, academics have shown their ability to provide an 'intellectual fix' that may help secure a political consensus ('political fix') and produce particular infrastructural and spatial typologies ('infrastructural fix' (Healey, 2008) and 'spatial fix' [(Harvey, 2001)]).

The paper broaches this problematic by studying how such triple fixes (may) come about in the particular setting of Brussels. Brussels constitutes a salient case for at least two reasons. First, as the city is hosting various European Union institutions, we can hypothesize that metropolitan actors in Brussels lay within physical and networked proximity to trans-national policy circles. Second, turning to the types of knowledges that are circulating, from the onset we should note a long territorial tradition vested on functionalist, car-oriented planning, which path-dependencies are likely to give rise to primarily technical conceptualizations of Brussels' mobility problems. These traditions may prevent practitioners and policy makers to engage in other types of policy circuits, which resultantly may disconnect them from alternative agendas that embed urban transport and mobility in wider political and economic debates. Earlier research has indeed illustrated that the long-lasting relationship between the elaboration of technical knowledge, political consensus and infrastructural development in Brussels for specific transport projects, for instance the construction of the underground metro network (Zitouni & Tellier, 2013). Here, we wish to elaborate on the more

systemic relationship between academic knowledges and territorially defined policy agendas within the urban regime of Brussels.

The paper is structured as follows. The next section will motivate our choice of concepts and how these aid in laying-out the paper's methodology. The third section reports on three distinct 'paradigms' of academic knowledge identified in the extant literature on urban transport and mobility – namely the 'orthodox', the 'sustainable' and the 'critical' paradigms. Sections four and five then trace how these knowledges dovetail with how transport and mobility issues are framed by practitioners and policy-makers in Brussels. This analysis shows that the degree to which various academic knowledges about transport and mobility are performative in policy fields is in fact very differential. It appears that the Brussels policy field has been extremely receptive of 'orthodox', and recently also 'sustainable' transport and mobility paradigms, whereas more 'critical' academic knowledge has so far been unable to stretch successfully beyond the borders of academia and towards established policy-making circles. The paper concludes with a plea for further research on the geographies of critical policy mobility.

2. Methodology: Transport and mobility 'paradigms' and their performativity

Two epistemological vantage points predicate our research. First, we assert the situatedness of (academic) knowledge, and therefore posit that concrete sociologies and geographies underpin the processes of distribution of academic knowledge. Many academic fields harbor various academic traditions or 'paradigms' which are imbued with particular ontological, epistemological, and methodological predispositions, typical of how academic communities evolve (Kuhn, 1962). This implies that distinct subfields in the literature can be identified around specific but dynamic 'cores,' although they may share several common points across their generally porous boundaries. Second, as academics working within thusly defined paradigms stretch out to engage with practitioners and policy makers, they can be understood to have potentially varying degrees of performativity (Callon, 2007; MacKenzie, 2006). As 'applied' scientists, scholars of urban transport and mobility have the power to make and shape urban realities, beyond merely analyzing and describing them as assume neutral observers. At this stage, academic paradigms may become mobilized in policy fields such as transport and mobility, hence starting to 'perform' reality in particular ways. Following a critical-realist position (Sayer, 2000), this performativity should be interpreted as 'weak' performativity (Christophers, 2014), as ultimately social change equally depends on particular changes in material conditions and the associated urban regimes.

In order to bring together both elements, one can fruitfully draw on the notion of 'circuits of knowledge', which are conceptualized to assemble academic and non-academic knowledge and expertise that crosscuts various policy circles. Taking inspiration from media studies, we argue that, while being subject to both internal and external tensions, different circuits ultimately reflect a community of academics and non-academics, who share ways of 'framing' reality, which has implications for how political agendas are set and ultimately how agents act in the world (Goffmann, 1974; Scheufele, 2000). Relevant for our approach is that

we acknowledge the power of academics in influencing how policy agendas are set by practitioners and policy makers, including how problems are defined (or not), visions are designed (or not), and solutions are fabricated (or not). Potentially, academic knowledge may help dominant actors work towards stabilizing and reproducing their position by (re-)setting research and policy agendas along existing problem definitions. Thus forged knowledge hegemonies or 'intellectual fixes' often exclude 'alternative' visions and solutions from purposely narrowed-down debate that helps sustain the (post-)political order (Mouffe, 2005, 2013).

Practically, our methodology revolved around (i) a mapping of contemporary scholarly paradigms about urban transport and mobility in the academic literature, and (ii) an analysis of how and to what extent these paradigms have become performative by becoming involved (or not) in circuits of knowledge in the particular setting of Brussels. For the first part, we have run several queries applying keywords such as "urban transport," "urban mobility," "transport policy," "transport planning," and—to detect critical perspectives—"commons", "critical," "alternative," and "the right to the city" in Google Scholar, ScienceDirect, and Web of Science. We have retrieved in this way close to 600 articles from the wide literature on urban transport and planning from the past 50 years, of which 150 have been selected for an in-depth review on the basis of their citation statistics. The review intended to detect the varying paradigmatic orientations of the authors as evidenced from their ontological, epistemological and methodological markers, and therefore allowed us to build-up inductively a map of communities of scholars in the field. In the analysis, we took note of tensions and debates within these categories, as well as underlining several common points and concepts shared by multiple circuits, stretching beyond their fuzzy borders. Although we recognize the social networks behind these circuits, we were mainly interested in tracing the end-result of what had been produced in their underlying scholarly communities.

Second, we examined the relationship between the identified academic paradigms and transport and mobility policies in the case of Brussels. To capture the different knowledges and perspectives on transport and mobility present in Brussels, 19 semi-structured interviews have been conducted with high-rank officials representing and (due to their strategic position) actively defining key stakes and strategies within the field. Interviewees included mobility authorities at the municipal, regional, and federal level, public transport operators, members of the civil society, and local academics. The interviewees have been asked about their broad transport policy as well as particular transport projects currently developed or discussed in Brussels. The interviews have then been coded to allow for an effective narrative analysis to trace how interviewees frame and make sense of the complex Brussels transport and mobility reality. This has been accompanied by a review of academic and grey literature produced by the interviewees' institutions, including the project of Regional Sustainable Development Plan (Brussels-Capital Region, 2014), the Regional Mobility Plan (Bruxelles Mobilité, 2011, p. 2), policy reports, political party programmes, bulletins and magazines published by citizen groups, academic articles specifically dealing with the Brussels' case, and a variety of newspaper and blog articles.

In the end, we infer the performativity of a particular academic paradigm from the degree to which this paradigm is mirrored in the salience of a particular agenda around which urban transport stakeholders gather in Brussels. We simultaneously infer that the non-presence of certain issues may suggest the failure of a particular type of knowledge to emerge and consolidate to form a fully-fledged circuit of knowledge with potential agenda-setting and ultimately material properties.

3. Three paradigms of academic knowledge about urban transport

3.1. The 'orthodox' paradigm

Our discussion on three distinct 'paradigms' of academic knowledge about urban transport and mobility (see *Table 1* for a synthesis) opens with the identification of the 'orthodox' paradigm as the most prevalent one emerging from our review, for it has been embraced and reproduced by an overwhelming amount academic articles in transport-focused journals.¹ This body of work appears to build on two basic but largely unquestioned principles. First, it approaches transport as an essentially neo-classical discipline that hinges almost exclusively on rational decisions. On the individual level, this implies a largely liberal perspective in which drivers and passengers are assumed to be making 'pragmatic,' 'utility-based,' 'rational' and 'free' choices in order to maximise their utility when opting for particular travel patterns, which have further impacts on decisions concerning housing and employment location (as criticised by (Dobruszkes & Duquenne, 2004). On the systemic level, orthodox transport policy and planning appear under continuous influence of positivism, according to which scientific knowledge about transport is acquired primarily from empirical data, rather than from theoretical conceptualisations. As "positivism in transport modelling is typically accompanied by the predictive approach of naïve instrumentalism, by which the validity of any model is solely determined by the numerical accuracy of its predictions" (Timms, 2008, p. 400), "the theory gives rise to the model" (Bell, 1997, p. 36 qtd. in (Timms, 2008, p. 400). At the same time, orthodox transport planners mathematically compute traffic management strategies and models that in frequent analogy to *natural physical laws*—such as the "gravity model" alluding to Newtonian physics— give transport an aura of an almost uniformly 'expert'-led, highly technical and essentially 'rational,' scientific discipline.

¹ Most significant examples include *European Transport Research Review*, *International Journal of Intelligent Transportation Systems Research*, *International Journal of Technology Intelligence and Planning*, *Journal of Advanced Transportation*, *Journal of Modern Transportation*, *International Journal of Urban Planning and Transportation*, *Public Transport*, *Research in Transportation Business & Management*, *Transportation*, *Transportation Planning and Technology*.

Second, the 'orthodox' paradigm envisions transport planning as major contributor to economic growth. As better transport infrastructure supposedly leads to increased overall speeds, smoother traffic flows, and consequently to decreased travel times that are monetised and deemed "unproductive" (as criticised by (Jain & Lyons, 2008, p. 81), it is meant to reduce costs in inter-urban, regional and national trade. To achieve this, transport engineers have developed traffic forecasting and demand models that to a large extent follow the four stage transport model of (i) trip generation, (ii) distribution, (iii) mode choice and (iv) assignment (McNally, Hensher, & Button, 2007). They have been widely applied alongside econometric analyses, computable general equilibrium (CGE) models (Bröcker, Korzhenevych, & Schürmann, 2010; Buckley, 1992; de Almeida, Haddad, & Hewings, 2010; Koglin & Rye, 2014; Venables, 2007), and the cost-benefit analysis (CBA) (Girnau & Blennemann, 1989; Litman, 1997; Prest & Turvey, 1965), which over years have become particularly frequently applied and therefore the most representative instrument within the neo-classical toolbox.

Despite recent critiques of the orthodox paradigm, in particular what concerns its emphasis on the car as primary transport technology, and the resultant mono-functionalism and physical separation of people and traffic, its continuous importance is evident. CBA remains popular among transport academics and practitioners alike (Eliasson, 2009; Rotaris, Danielis, Marcucci, & Massiani, 2010), having been widely embraced by the "intelligent" and "smart" transport systems that rely on "big data" collection and processing (Velaga, Beecroft, Nelson, Corsar, & Edwards, 2012). The prevalence of the orthodox thought is further discernible in the persistence of close ties between transport policy-making and civic engineering and economics, leading public institutions to de-politicise their objectives. Thus, instead of questioning and reshaping the technical, 'expert'-derived 'rationality,' the orthodox circuit continues to embrace it uncritically (Dobruszkes & Duquenne, 2004).

3.2. The 'sustainable' paradigm

The orthodox preoccupation with predominantly neo-classical and economic motivations behind transport has been particularly criticised by scholars forming part of what we identify as the "sustainable" paradigm. The self-proclaimed "sustainable mobility paradigm" (Banister, 2008, 2011a, 2011b; Banister & Hickman, 2013; Tight et al., 2011) appears as the main conceptualisation aspiring to outline a series of guidelines for establishing an "alternative" to orthodox urban transport planning, and in particular to car-oriented mono-functional planning. Unlike the orthodox paradigm primarily preoccupied with transport infrastructure, the sustainable paradigm offers a more actor-centred perspective. It vigorously supports designing large, dense ('proximity-based'), and 'mixed-use' cities by establishing stronger links between land-use and transport policy helping reduce the number, scale and length of journeys through limiting distances between activities and functions. The sustainable circuit therefore promotes a shift from car towards 'soft' transport modes and public transport. It further breaks with purely economic perspectives on mobility. It embraces a wider spectrum of environmental and social challenges, pays more attention to individual behaviours and lifestyles, and calls for more participative ways of generating transport policies and practices to include a wider range of urban stakeholders. 'Sustainable' transport is thus envisioned as "an essential element in city viability, vibrancy and vitality (Banister, 2011b, p. 953) that is both "attractive and affordable" (Banister, 2008, p. 75). It constitutes the key component of the "good city" (Jacobs, 2011) not only economically performing in the neo-classical terms, but also socially cohesive and diverse, environmentally-friendly, healthy and participative.

In practical terms, one way in which sustainable transport scholars have attempted to transcending the orthodox approach has been by improving its main instrument: the cost-benefit analysis. Thus conceived multi-criteria analysis (Tudela, Akiki, & Cisternas, 2006), social cost-benefit analysis (Saitua, 2007) multi-actor multi-criteria analysis (Macharis, De Witte, & Turcksin, 2010), socially- and

Wee, 2009; Jones & Lucas, 2012) and studies on transport equity and equality (Ahmed, Lu, & Ye, 2008; Lucas, 2012) have led public authorities and planning offices to develop traffic models incorporating a variety of social and environmental factors.

orthodox	<ul style="list-style-type: none"> • transport as a neo-classical discipline <ul style="list-style-type: none"> - on the individual level: users/passengers as rational actors maximising their profits via 'utility-based' choices - on the systemic level: an 'expert'-led, technical and rational discipline building on empirical data rather than theory • transport as motor of economic growth <ul style="list-style-type: none"> - insufficiently smooth traffic leading to "unproductive" travel time → use of mathematical/econometric computation and forecasting; cost-benefit analysis as principal measurement tool → mono-functional, car-oriented neo-classical planning
sustainable	<ul style="list-style-type: none"> • breaking with a purely economic perspective on transport: embracing a wider spectrum of environmental and social aspects • transport as key component of a "good city": economically performant, socially cohesive and diverse, dense and 'mixed' use, environmentally-friendly, healthy and participative → shift towards public transport and soft transport modes → stronger links between land-use and transport → more attention paid to individual behaviours and lifestyle → more participative ways of generating transport policies and practices
critical	<ul style="list-style-type: none"> • a critique of 'neo-classical' and 'sustainable' paradigms as technical, quantitative, descriptive and de-politicised: <ul style="list-style-type: none"> - offering technological and behavioural fixes to address social and political problems underpinning transport - non-utopian: focused primarily on physical or environmental issues instead of proposing broad social or political visions - failing to confront systemic reasons behind un-sustainability - euphemizing and individualizing structural causes for mobility-related problems → explicit focus on social, political, and economic relations and regulatory frameworks underpinning transport → recognition of issues of gender, race, ethnicity, class, disability and age → recognition of mobility as discriminatory norm and form of capital producing socio-spatial inequalities → critique of entrepreneurial and splintering practices in transport

Table 1. Paradigms of academic knowledge about urban transport.

3.3. Towards a 'critical' circuit?

Both the orthodox and sustainable paradigms constitute useful assets in tackling transport and mobility questions: while the former allows to distinguish common mobility patterns and relations, the latter attempts to balance mathematical models and tools by becoming more attentive to social and environmental aspects. In defence of their respective contributions to the advancement of transport theory and methodology, scholars and practitioners from both sides have been engaged in a vigorous debate that has acquired a hegemonic dimension. It tends to exclude views and issues defined in alternative terms to those furthered by orthodox or sustainable circuits, and therefore offers a perspective on urban transport that may be significantly incomplete.

The first important critique of the orthodox circuit concerns its predominantly technical, quantitative, and descriptive character, which enables to frame transport research as a politically neutral and objective activity. The resultant concern with “‘law’ seeking, model building, and the articulation of ‘theory,’” which has long been identified as a significant limitation (Hurst, 1973, p. 168), prevails in contemporary efforts to improve or update orthodox methods such as the cost-benefit analysis. The sustainable circuit thus introduces the issues of governance, environmental damage and social inequality, and identifies not only technological, also legal and institutional challenges related to transport practices. Nonetheless, it also repeatedly refers to a plethora of technological innovations and fixes — i.a. electric and low emission vehicles, biofuels, shared and automated vehicles sharing, urban trams and light rail, bus rapid transit, high-speed rail, tele-work, tele-shopping — for their potential to “regenerate” urban areas (Hickman, Hall, & Banister, 2013). Permeated by technological determinism (Offner, 1993), sustainable future-thinking scenarios thus help escape discussions on contemporary problems (Baeten, 2000) by setting primarily quantitative objectives that while relating to physical or environmental

issues (e.g. CO₂ emissions, energy use) pay much less attention to political or social innovations available (Timms, Tight, & Watling, 2014).

This limitation allows both the orthodox and sustainable vision to individualize and euphemize more structural causes for mobility-related problems. Emphasizing the social dimension of the sustainable paradigm, numerous studies have identified accessibility to transport networks (i.a. to a variety of urban functions, services, and spaces) as a key factor of social inclusion (Bonsall & Kelly, 2005; Casas & Delmelle, 2014; Church, Frost, & Sullivan, 2000; Hine, 2003; Kenyon, Lyons, & Rafferty, 2002; Lucas & Jones, 2012; Preston & Rajé, 2007). However, this body of work tends to equate inclusion with extending one's individual, 'rational' choice (i.a. among different housing locations, employment opportunities, transport modes) (Farrington and Farrington, 2005). Moreover, it fails to "explor[e] the broader implication of a comprehensive transport policy" (Beyazit, 2011, p. 130), and to "address issues of power or social position of individual travellers" (Levy, 2013, p. 4). The notion of 'rational' individual choice thus structures an essentially normative, moral geography. By praising particular behaviours, lifestyles and modes (e.g. cycling, walking) while condemning others (e.g. commuting by car, flying), it juxtaposes 'good' citizens (e.g. public transport users, carpoolers) with 'bad' ones. The car driver is an exemplary member of the latter category, "accused of being an individualist, polluting consumer of space, responsible for congestion" and urban sprawl (Reigner, Hernandez, & Brenac, 2009, p. 60). The individualistic and moralising approach also encourages a belief that the transition towards a 'sustainable' society is attainable primarily via behavioural means and may address a socially diverse audience by uniformly embracing all social strata — from the highly-mobile urbanites to the urban precariat — and is unlikely to produce significant social costs.

This indicates the profoundly post-political character of *both* orthodox and sustainable circuits, against which a plethora of critical readings attempt to form

a counter-hegemonic circuit, in an attempt to construct an alternative, re-politicized perspective on transport. As the first two circuits euphemize social relations underpinning transport policy and practice, the latter makes an explicit reference to a wide range of socio-political issues including (but not limited to) class, gender, race, ethnicity, disability and age (Clark & Wenfei, 2013; Golub, Marcantonio, & Sanchez, 2013; Hall, 2004; Kaplan, 1996; Law, 1999; Levy, 2013; Sanchez & Brenman, 2010; Sheller, 2014; Sultana, 2005). While orthodox and sustainable scholars rarely refer to political causes behind socio-spatial exclusion, inequality and poverty related to transport, the critical ones share a fundamental recognition of socio-political processes and regulatory frameworks that condition mobility (Aldred, 2012; Dobruszkes & Lanneaux, 2010; Dobruszkes & Marissal, 2002; Hall, 2010; Henderson, 2004; Hurst, 1973; Martens, Golub, & Robinson, 2012; Martens & Van Weelden, 2014; Røe, 2000; Schwanen, Banister, & Anable, 2011; Yago, 1983) and expose the link between depoliticization of transport agendas and “empowerment of an undemocratic and technocratic international environmental elite and the disempowerment of those operating at lower scalar levels” (Baeten, 2000, p. 75).

Whereas the critical literature understands power relations and norms as inherent components of mobility (Butcher, 2011; Hall, 2004; Levy, 2013; Timms et al., 2014), the orthodox and sustainable paradigms attempt to obfuscate them. The orthodox approach explicitly relies on a “framing device of scientification” (Skillington, 1998, p. 460) that reproduces the domination of authoritative figures, primarily engineers, whose ‘expert’ knowledge helps legitimise existing power relations (Flyvbjerg, 1998), while labelling ‘non-expert’, alternative knowledges and perspectives as irrelevant and unwelcome. In a somewhat more conspicuous manner, the proponents of sustainable transport and “good transport planning” (Tight et al., 2011, p. 1584) call for generating policies and practices in a more participative manner (Banister, 2008, 2011a; Banister & Hickman, 2013). This entails embracing a wider spectrum of

for various (informal/bottom-up) urban movements to partake in transport-related formal decision-making (Batterbury, 2003). However, participation is envisioned here as assuming a consensus-building role and building legitimacy and acceptability for the sustainable agenda (Isaksson & Richardson, 2009), rather than providing room for a genuinely political debate in which a variety of mobility scenarios may be considered. “Participatory engineering” (Kaufmann, Jemelin, Pflieger, & Pattaroni, 2008) is thereby further demonstrated to accentuate the privileged position of the dominant actors (e.g. transport and planning authorities) vis-à-vis the dominated ones (e.g. trade unions, civic associations, bottom-up movements) (Epprecht, von Wirth, Stünzi, & Blumer, 2014). “The harmonious and conflict-avoiding —vocabulary” employed by the sustainable paradigm “ignores and silences the deeply contested ways through which the transport system is continuously shaped and transformed, and which inevitably results in a variety of winning and losing interest groups” (Baeten, 2000, pp. 70–71). In other words, unlike the orthodox and sustainable circuits that focus on regulating and altering individual mobility-related behaviours, the critical circuit strives to understand and challenge the social, political, economic and cultural structures that stand behind the ‘unsustainable’ ways in which contemporary transport policy and practice is produced. This allows the critical perspective to raise the question about whose stake and interests are addressed by particular transport policies and practices. It further helps reveal a number of “transport taboos” — concerning *inter alia* the highly unequal environmental contributions between highly-mobile rich and less-mobile poor, unwillingness of the highly-mobile to reduce their level of mobility, inefficiency of market-based or technology-based solutions in terms of facilitating such a reduction, etc. — the breaking of which “would require transcending neoliberal forms of governance to initiate fundamental sociocultural change” (Gössling & Cohen, 2014, p. 198).

The critical approach thereby demonstrates how capitalist relations underpin transport policy. Exposing the marriage between growth-based economy and

on “belief systems comprising elements of technological innovation, (limited) market-based measures, and (voluntary) behavioral change, [and] ultimately result[s] in ‘path dependency’ and social lock-in” (Gössling & Cohen, 2014, p. 198). Thereby advanced “ecological version of neo-liberalism” (Schwanen et al., 2011, p. 999) has been accused of conceptualizing transport as a territorial asset rather than public service, thus legitimizing socio-spatially divisive splintering (Graham & Marvin, 2001) and entrepreneurial (Harvey, 1989) practices.

4. Tracing academic paradigms in transport policy agendas in Brussels

In the following two sections we turn to the particular case of the Brussels-Capital Region (BCR) to expose how transport and mobility issues are framed by practitioners in this particular socio-spatial context. We begin by analysing how local academics, institutions and citizens’ groups make sense of transport and mobility issues in Brussels by detecting what key problems are defined, what broad visions behind transport are outlined, and what specific solutions are proposed. As shown in Table 2, the material brought out in our interviews enable us to trace the presence of the three above-mentioned *paradigms* of academic knowledge in three corresponding transport and mobility *agendas*.

	orthodox	sustainable	critical
<i>problems</i>	<ul style="list-style-type: none"> • “too many traffic jams”: traffic congestion due to insufficient road and parking infrastructure 	<ul style="list-style-type: none"> • “too many cars”: car-based mobility leading to diminished quality of PT service and urban environment 	<ul style="list-style-type: none"> • “too much inequality”: car-based mobility as contributor to socio-economic and spatial inequalities as well as to continuous urban sprawl and impoverishment of the BCR
<i>visions</i>	<ul style="list-style-type: none"> • transport = a rational, expert-led discipline • transport = a motor of economic growth • transport = a place-based asset for urban attractiveness and competitiveness 	<ul style="list-style-type: none"> • transport = a component of sustainable, attractive, and liveable city 	<ul style="list-style-type: none"> • transport = a common good rather than a market commodity • transport = an inherently political issue
<i>solutions</i>	<ul style="list-style-type: none"> • development of the underground metro as the most efficient and profitable public transport mode • development of car infrastructure • entrepreneurial financial solutions (e.g. PPPs) 	<ul style="list-style-type: none"> • a plethora of technological and behavioural solutions: from underground metro development to “mobility coaching” and urban drones 	<ul style="list-style-type: none"> • development of dense surface tram network • substantial reduction of car infrastructure • urban toll => reduction / <i>deletion</i> of PT fares

Table 2. Transport policy agendas in the BCR.

The orthodox paradigm is clearly identifiable in the dominant agenda that recognises traffic congestion as the fundamental mobility-related problem in the BCR, and continues to dub Brussels “the European capital of traffic jams” (Pop, 2010). Framed as a question of poor road and parking “capacity” and system “performance,” congestion is to be addressed by reviewing and rearranging the transport network in a more “intelligent” and “rational” manner. As one of

directors within the regional mobility authority (Bruxelles Mobilité) admits, “all transport problems are essentially mathematical problems.”² Transport engineers are envisioned as “experts” primarily responsible for this task, with no or very little involvement of “non-expert” inhabitants and passengers. For the proponents of the orthodox agenda, including the Flemish Transport Company (DeLijn) that operates within the BCR territory, “participatory procedures are too complicated; although participation is a question of common sense, and you have to include people from the beginning, but if you have to do it five times over and over again, it gets too complicated.”³ Further understanding of congestion as detrimental to Brussels’ economic growth leads to a legitimisation of increasingly entrepreneurial and socio-spatially selective conceptualisations of transport envisioned as a place-asset for urban attractiveness and competitiveness. This orthodox agenda thus involves a strong spatial focus on “key corridors and areas”⁴ (e.g. the European district, the high-speed-train Brussels South station, the railway link to the Brussels International Airport), while emphasising the necessity to increase mobility opportunities for specific social groups such as the “creative,” “visitor,” or “middle” class. Accordingly, extending the metro network—arguably the most “efficient,” “profitable” and “modern” mode—is identified as the ultimate solution for public transport (PT), at the expense of insufficiently “performant” surface trams and buses. According to the Brussels Intercommunal Transport Company (STIB), “the tram network is limited in terms of its capacity, and once its limits are reached, one must shift towards metro construction—it’s mathematical.”⁵ Furthering development of car infrastructure and continuously opposing to establishing car tolling or restrictive tax systems, this agenda rather aims at “liberating” urban space for a more fluid car circulation. High investment

² Interview with a departmental director of Bruxelles Mobilité.

³ Interview with a regional director of DeLijn.

⁴ *Ibid.*

⁵ Interview with a departmental director of STIB.

and maintenance costs of new metro and car infrastructure are expected to be balanced by entrepreneurial financing tools such as public-private partnerships (PPPs). The acceptance of the car-dominated *status quo* is summarised by the local branch of the liberal party (MR) contending that “in the current context, the car for a large number of people remains an indispensable instrument, irreplaceable for professional or personal reason, whether one lives in the city or the periphery” (MR, 2014, p. 7).

Similarly to the orthodox narrative, the sustainable agenda also identifies congestion as a major problem, yet perceives it not as a result of inefficient infrastructure, but a major consequence of the predominance of car-based mobility patterns in Belgium. The high share of car use in journeys to and from the BCR amounts to 60% (K. Lebrun, Hubert, Dobruszkes, & Huynen, 2012), the motorisation rate remains high and “the share of company cars in the Belgian fleet always fluctuates around 15%” (Beckx & Michiels, 2014). These factors have been held responsible for diminishing of the quality of PT service, and, as a result, having a negative impact on the broader urban environment. Interviews with local academics, representatives of the regional government, public transport operators and citizen groups reveal widespread reference to the vision of an “attractive,” “liveable” city in which transport policy incorporates notions of poly-centricity and proximity, prioritising the development of PT and “soft” modes of transportation (e.g. bicycles). This transition towards “a convivial, attractive [and] liveable city [...] for different people”⁶ is to be achieved primarily via “positive” behavioural changes rather than via a reorientation of social, economic and political agendas that are primarily responsible for rendering transport and mobility ‘unsustainable’. Disregard for socio-economic underpinnings of transport reality on the one hand leads to a post-political notion of transport-related policy-making as a fully consensual, conflict-less pathway to “win-win” projects lubricated by citizen participation. Moreover, it denies social costs

⁶ Interview with a member of Atelier de Recherche et d'Action Urbaines (ARAU).

potentially generated by improvement of transport infrastructure (e.g. gentrification):

"Even if beautification of public space through investment in transport may create real estate surplus value and may possibly be accompanied by a complete change of population as a result of rent increase, [one] cannot oppose the return to the city of the highly-educated and high-salaried population [or] accept the impoverishment of neighbourhoods which more and more resemble ghettos."⁷

"Sustainable" solutions proposed for the BCR are predominantly technological and display support for nearly all transport modes, including the development of the metro network paired with surface tram and bus infrastructure, pro-pedestrian planning, and improvements of bicycle facilities. An urban tolling system is discussed to limit the share of car usage, yet important questions about its potential audience, form and price are rarely raised and generally framed as technological challenges. Slightly more out-of-the-box proposals include an aerial metro, urban funicular, urban drones, motorbike taxis and auto rickshaws. Calls for infrastructural development are accompanied by ideas for 'soft' policies aiming at providing better information about mobility options (including creation of regional mobility info-points and "mobility coaching"), encouraging companies to outline "mobility plans" and distribute taxi cheques and bicycle premiums to discourage the use of company cars, and promoting tele-work and tele-shopping to reduce mobility needs. However, this plethora of solutions reflects a lack of genuine political will to favour any specific mobility patterns. Consequently, by focusing on the immediate results of car dominance, it fails to effectively question the socio-economic and political causes behind car-based mobility.

These causes are directly addressed by the critical transport agenda in the BCR, according to which car dominance structures socio-economic and spatial inequalities. The continuous political and infrastructural support for car-based

⁷ Interview with a mobility expert at Université libre de Bruxelles (ULB).

mobility — embodied by the orthodox agenda and ineffectively challenged by the sustainable one — appears to disregard 35,2% of the BCR households that do not own a car and 40,9% that do not have a bicycle (K. Lebrun, Hubert, Huynen, De Witte, & Macharis, 2013). For a large part of the BCR population, dependence on PT thus appears not as question of choice, but of necessity, thus rendering access to mobility socio-economically uneven, as “public transport in Brussels is very expensive and every year the fares are higher, increasing twice faster than inflation.”⁸ The orthodox pressure for a metro-based development of PT network is further demonstrated to produce spatial inequalities. Outside the metro corridors, access to PT remains low, inducing an ever-increasing amount of transfers, which in turn continue to encourage passengers to consider the car a viable mobility option.

The critical agenda further identifies car-based mobility as one major factors facilitating continuous urban sprawl and consequently impoverishing the BCR by narrowing its residential tax base. It moreover denounces the entrepreneurial agenda of combined focus on capacity and profitability that prompts calls for transport privatisation and liberalisation, and pressurises PT operators to exercise financial cuts and worsen working conditions. The essentially political character of transport practices is thus fully revealed, as “problems related to mobility do not simply call for technical responses concerning optimisation by this or that parameter [...], but equally for mediation and choice which require an essentially political decision” (Macharis, Dobruszkes, & Hubert, 2014, p. 10). This allows to observe the intricate relationship between transport policy and voting patterns, as “mass transport system carries many captive users, i.e., poor people without much political clout, immigrants, and young people, who do not vote [while] the people who drive cars belong to a broader and on average more elevated socio-economic spectrum, which doubtless means that they are guaranteed better “access” to their local elected officials” (Courtois & Dobruszkes, 2008, p. 18). Passengers and users are thus approached as citizens and political

⁸ Interview with a member of Brusselse Raad voor het Leefmilieu (BRAL).

agents that have the right to partake in a transparent process of creating transport policies and infrastructure “for instance by having passenger representatives joining STIB and SNCB bodies.”⁹ Mobility is therefore envisioned as an essential public service and fundamental common good conditioning one’s access to housing, education, employment, and leisure, rather than being conceived a market commodity. Therefore, instead of proposing socially or spatially selective singular solutions, the critical agenda has put forward a holistic, radical alternative to a car-based mobility mediated by metro-based PT network (L. Lebrun, Carton, & Hubert, 2009). For the proponents of the critical agenda,

“surface public transport should be the priority. In the city where poor people take public transport and richer people use the car, metro might encourage some car-users to use public transport, but it has a negative impact on public space. I’d rather have surface trams, instead of putting public transport underground and leaving the surface for the cars.”¹⁰

The critical agenda thus calls for a (i) densification of surface tram network providing direct and transversal inter-neighbourhood connectivity and maximising socio-spatial access for the great majority of BCR population; (ii) simultaneous substantial reduction of car infrastructure and introduction of socially-sensitive urban tolling system co-financing PT development (and possible reduction of *deletion* of fares).

5. From agendas to circuits of transport knowledge

While the three paradigms of academic of knowledge about urban transport appear to resonate into three distinct political agendas in the BCR, their respective performativity appears however uneven. That is to say, these agendas

⁹ Interview with a member of Inter-Environnement Bruxelles (IEB).

¹⁰ Interview with a member of BRAL.

are inserted into circuits of knowledge backed by actors and institutions controlling uneven resources. Henceforth, we look here at the typologies of stakeholders supporting each agenda, in order to identify specific circuits of knowledge. To do so, we refer to Healey's metaphor of a triple intellectual, political and infrastructural fix (Healey, 2013) as a means of delineating how stakeholders' positions and interests cluster around transport agendas in the Brussels' case. Our results are presented in Table 3.

	orthodox	sustainable	critical
<i>intellectual fix</i>		logistics and mobility experts	
	engineers economists	ethnographers sociologists political scientists geographers urban planners	
<i>political fix</i>	liberals (FDF, MR, NV-A, OpenVLD) christian democrats (cdH)		
	socialists (P.S, SP.A.)		
		greens (Ecolo, Groen!) communists (PTB-PVDA)	
	technology industry and employers' federation (Agoria), real estate developers		
	chamber of commerce (BECI)		
	public transport operators (DeLijn, STIB, SNCB)		
		citizen movements (i.a. ARAU, BRAL, IEB)	
		regional government regional mobility authorities (Bruxelles Mobilité) federal authorities	
<i>infra-structural fix</i>			

Table 3. Circuits of transport knowledge in the BCR.

Regarding the orthodox transport agenda, the intellectual fix is largely provided by engineers employed in public transport companies and mobility authorities. While having made virtually no contributions to academic discussions, engineers have acted as “experts” for successive governments since the 1960s, helping frame a political fix around metro-based PT network and thereby liberate surface for car infrastructure (Tellier, 2010). This consensus continues to shape contemporary transport policies in the BCR (Zitouni & Tellier, 2013), and is supported by official programmes of the liberal, christian democrat and socialist parties alike. They are joined by the technology industry and employers’ federation (Agoria), the regional chamber of commerce (BECI) and some real estate actors (e.g. Cofinimmo). While BECI claims that “in certain zones 30% of traffic is related to looking for a parking spot” (Willocox, 2013, p. 10), Agoria points out that mobility problems “make Brussels less attractive for business location and personnel recruitment [...] and are often cited by companies (70%) as possible reason to leave the BCR”¹¹. As reducing car infrastructure is thus considered detrimental to the Brussels’ “business climate”, Cofinimmo concludes that “good accessibility by public transport is not sufficient to guarantee that office spaces will easily find tenants in these places” (STIB, 2012). The regional government shares this perspective considering mobility as main factor behind economic growth. For an ex-Minister-President of the BCR, “mobility serves not only to travel, but to consume”¹² and therefore constitutes an instrument of urban competitiveness, therefore validating a socio-spatially selective mobility policy framed in the regional sustainable development plan (Brussels-Capital Region, 2014) and regional mobility plan (Bruxelles Mobilité, 2011). The latter document frames transport as a primarily technical, “expert-led”, de-politicised issue much in tune with the engineer-concocted orthodox intellectual fix, combined with entrepreneurial consent for risk-prone financing schemes and emphasis on international connectivity. Neither Bruxelles Mobilité, nor STIB

¹¹ <http://www.agoria.be/WWW.wsc/webextra/prg/izContentWeb?ENewsID=81089&sessionid=2>

¹² Own communication with former Minister-President of the BCR.

seem genuinely committed to including the passengers' perspective in transport-related decision-making, as no mobility plan or policy report envisions citizen groups as partners and co-creators of transport policies rather than mere passive clients of transport infrastructure:

“We have to be honest: while an effort has to be made to involve citizens [in transport projects], at some point authorities must assume their responsibility and say, well, we have heard all your points, we have made some decisions, and now we will act on them, so once [the project] is realised, and you're not satisfied, don't vote for me anymore. [...] But in Brussels citizen opposition is a national sport, and authorities start backpedalling once neighbourhood groups or shopkeepers organise themselves”¹³

This approach is reflected by public transport operators such as STIB and the National Railway Company of Belgium (SNCB) that to an increasing extent operate within the punctuality-oriented logics of “management contracts” signed with regional or federal authorities. Consequently, for STIB “the recipe is simple [as] the commercial speed [of the metro] is high and can reach up to 30 km/h, its regularity is not undermined by traffic congestion, [and] the frequency of its circulation is high” (STIB, 2009, p. 25). Metro development is thus enthusiastically hailed as “utopia that becomes reality.”¹⁴ The Flemish transport company (DeLijn) further admits that in the time of austerity “a switch from guaranteed access to basic mobility to a more demand-driven organisation of transport offer¹⁵” should be considered, legitimising the strategy of linking transport infrastructure to land speculation, in the hope of producing surplus value that could effectively replace public subsidies. The political consensus that upholds economy-driven support for metro as the corner stone of Brussels' PT network is mirrored by multi-level commitment to continue building infrastructure further cementing car-based

¹³ Interview with a departmental director of STIB.

¹⁴ *Ibid.*

¹⁵ Interview with a regional director of DeLijn.

mobility. The federal authorities subsidise the construction of road tunnels and a new metro line, the latter project having been jointly prioritised with the regional government. On the municipal level, the City of Brussels has recently considerably enlarged the pedestrian zone in the historic inner city, but while reducing the accessibility to the zone by surface PT and promoting the establishment of new privately-owned underground car parkings served by an inner-core ring road.

The three fixes structuring a circuit that reproduces the sustainable agenda in Brussels' transport policy is also clearly distinguishable. A variety of local academics — including sustainable mobility experts (Macharis et al., 2010) sociologists (Hubert, 2008) political scientists (Damay, 2014), geographers (Dobruszkes & Marissal, 2002) and urban planners have established an intellectual consensus around identifying car-based mobility as one of the main culprits behind the decrease of the quality of life in the BCR. The (post-)political banner of “sustainable mobility” is held high by the regional government pledging to reduce the share of individual car usage—that the regional mobility plan (Bruxelles Mobilité, 2011) commits to decrease by 20% by 2018 and the regional sustainable development plan hope to halven by 2040—through generating a modal shift to bicycles, public transport and walking. ‘Sustainable’ slogans have united *nearly* all political parties. Calls for transport policy aiming to improve the quality of public space, within the context of making the city more liveable have been voiced by citizen movements— *inter alia* (ARAU, 2008), (BRAL, 2014) and IEB—public transport operators (STIB, DeLijn), as well as business and commerce representatives (BECI; Willocx, 2013). They seem to agree that a “positive” behavioural shift towards different modes of transport should be stimulated to create a more “mixed,” “creative,” “attractive,” or “shared” urban space. The sustainable option is unanimously depicted as a consensual and conflict-less endeavour. As a regional government representative puts it, “an ‘ideological split’ between the left-wing supporters of investments in tram and bus [network], and right-wing supporters of investment in metro is ‘no longer

necessary.¹⁶ Realising “an ambitious project in which everyone is going to win”¹⁷ often involves instrumentalising citizen participation and silencing the opposition. The resultant lack of infrastructural fix reflects the tendency among the federal and regional authorities, as well as the whole spectrum of political parties, to prioritise a technological and infrastructural antidotes instead of social and political solutions. Their vague policy does not prioritise or privilege any particular mode, and by merely “responding to existing demand instead of reshaping it,”¹⁸ the car-dominated status quo is sustained if not reinforced. As a local academic puts it, “we don’t want to make any choice, and therefore so too much space is left for the car.”¹⁹

This challenge is taken up by critical intellectuals. Coming from disciplines as diverse as geography (Courtois & Dobruszkes, 2008; K. Lebrun & Dobruszkes, 2012), political sciences (Damay, 2014), sociology (Zitouni & Tellier, 2013), ethnography, and urban planning (Frenay, 2009), these academics have demonstrated that the current mobility paradigm in the BCR contribute to fundamental socio-economic and spatial inequalities, as “there are people that are very mobile, while for others there exist important physical, financial, social and cultural barriers.”²⁰ Academics have further recognised the inherently political character of transport strategies “which should not be reduced to the results of estimations made by transport experts” (K. Lebrun & Dobruszkes, 2012, p. 12). They have consequently exposed urban regimes promoting specific transport policies (Tellier, 2010) and called for a transport policy providing citizens with the right to access to a variety of transport modes (K. Lebrun et al.,

¹⁶ Interview with a cabinet member of the BCR Minister for Mobility and Public Works.

¹⁷ <http://www.be71.be/fr/>

¹⁸ Interview with a BRAL member.

¹⁹ Interview with a mobility expert at the Université libre de Bruxelles (ULB).

²⁰ *Ibid.*

2013), rather than a “right to mobility” largely interpreted as unconditional “free-for-all” liberty to own and use a car. They have denounced the link between car-based mobility and urban sprawl impoverishing the BCR. While generating 19% of national wealth, the tax the BCR receives amounts to only 8.5% of the national wealth (Frenay, 2009). At the same time, daily commuters from neighbouring Wallonia and Flanders, who perform 53% of all jobs offered in the BCR (K. Lebrun et al., 2012), contribute to 40% of car traffic in Brussels (Hubert, Lebrun, Huynen, & Dobruszkes, 2013). For a geographer and urban planner from at a local university,

this as an aberration [...] This means that the majority of those who inhabit neighbourhoods [close] to their the workplaces, make short journeys with public transport, but have to pay their travel cards in full. Meanwhile, those who live [...] outside the BCR and therefore don't pay their taxes to the BCR [...], often have their travel cards fully reimbursed. I find this profoundly unfair. [...] It's abnormal. This is also means that the BCR is under-financed, [and] has never been financially supported enough”²¹

Some intellectuals have therefore proposed to redistribute funds from (individual) car transport to public transport, for instance via an urban tolling system (Hubert, 2008). However, this conceptualised intellectual fix does not appear to translate to a political consensus. Citizen groups to a large extent agree with the critical vision of transport in the BCR (L. Lebrun et al., 2009), but political parties as well as the regional government refer to the critical agenda in very selective manner, usually contradicting their commitment to the orthodox and/or sustainable agenda. As a consequence, there is no infrastructural response to visions and solutions incorporated in the critical transport agenda.

²¹ Interview with a geographer and urban planner at the Université libre de Bruxelles (ULB).

6. Conclusion

In an attempt to identify different paradigms of knowledge that emerge from the scholarly literature on transport and mobility, we have revealed a dual hegemonic debate between what we label as “orthodox” and “sustainable” paradigms. This ongoing exchange between proponents of neoclassical and economy-driven approach to urban mobility, on the one hand, and advocates of more socially- and environmentally aware conceptualisations of transport as a key component of a ‘good’ city, on the other hand, appears to leave several key political issues out of academic discussions. “Critical” calls for revealing and analysing these issues in view of transforming a wider spectrum of forces that contextualise transport reality, operate on the fringe of this dual hegemonic debate. This leads to an essentially post-political/depoliticised current academic debate about urban transport, consequently sustaining discussions around ‘best practices’ attached to technical, environmental or governance issues.

These findings dovetail with empirical observations about transport agendas and institutional “circuits of knowledge” in Brussels, that is: local agendas and circuits reflect the dominance of “orthodox” and “sustainable” views, whereas no stable political and infrastructural fix supports the critical agenda. As in the academia, while various elements of the counter-hegemonic critical perspective on urban transport exist, they remain fragmented and unable to effectively circulate and crystallise into a field reshaping transport agendas and policies. The relatively low performativity of the critical paradigm, its frailty, fragmentation and fuzziness translate into the general weakness of critical transport agendas and circuits. It may be tempting to interpret this condition as raising a general questions about the nature of counter-hegemonic circuits of policy knowledge (Massey, 2011), in particular with regard to (non-)performativity of academic actors as agenda-setters in terms of re-formulating the political debate and influencing the process of transport-related policy-making. However, an important question to ask concerns the motivations and resultant (in)actions of actors—academics and

practitioners—engaged in the critical transport circuit. While their engagement in spinning and mobilising alternative policy solutions has been demonstrated—for instance under the label of ‘fast resistance transfer’ (Purcell, 2008)—it becomes evident that we urgently need to know more about the actual ethnographies, sociologies and geographies undergirding this process if we wish to see the critical agenda materialise in actual policy and practice.

7. References

- Ahmed, Q. I., Lu, H., & Ye, S. (2008). Urban transportation and equity: A case study of Beijing and Karachi. *Transportation Research Part A: Policy and Practice*, 42(1), 125–139.
- Aldred, R. (2012). Governing transport from welfare state to hollow state: The case of cycling in the UK. *Transport Policy*, 23, 95–102.
- ARAU. (2008). *Plan IRIS II vert : le gouvernement enfin sur la bonne voie ?* l'Atelier de Recherche et d'Action Urbaines. Retrieved from <http://www.arau.org/en/urban/detail/32/plan-iris-ii-vert>
- Baeten, G. (2000). The Tragedy of the Highway: Empowerment, Disempowerment and the Politics of Sustainability Discourses and Practices. *European Planning Studies*, 8(1), 69–86.
- Banister, D. (2008). The sustainable mobility paradigm. *Transport Policy*, 15(2), 73–80.
- Banister, D. (2011a). Cities, mobility and climate change. *Journal of Transport Geography*, 19(6), 1538–1546.
- Banister, D. (2011b). The trilogy of distance, speed and time. *Journal of Transport Geography*, 19(4), 950–959.
- Banister, D., & Hickman, R. (2013). Transport futures: Thinking the unthinkable. *Transport Policy*, 29, 283–293.
- Batterbury, S. (2003). Environmental Activism and Social Networks: Campaigning for Bicycles and Alternative Transport in West London. *The Annals of the American Academy of Political and Social Science*, 590(1), 150–169.
- Beckx, C., & Michiels, H. (2014). *Analysis of the Belgian Car Fleet 2013*. VITO. Retrieved from http://www.ecoscore.be/sites/default/files/Analysis_CarFleet2013_Final_1.pdf
- Beyazit, E. (2011). Evaluating Social Justice in Transport: Lessons to be Learned from the Capability Approach. *Transport Reviews*, 31(1), 117–134.
- Bonsall, P., & Kelly, C. (2005). Road user charging and social exclusion: The impact of congestion charges on at-risk groups. *Transport Policy*, 12(5), 406–418.
- BRAL. (2014). *Bral in en voor Brussel 2018 - meerjarenplan*. Brusselse raad voor het leefmilieu.

- Bröcker, J., Korzhenevych, A., & Schürmann, C. (2010). Assessing spatial equity and efficiency impacts of transport infrastructure projects. *Transportation Research Part B: Methodological*, 44(7), 795–811.
- Brussels-Capital Region. (2014). *Projet de Plan Régional de Développement Durable*. Brussels-Capital Region.
- Bruxelles Mobilité. (2011). IRIS 2. Plan de mobilité.
- Buckley, P. H. (1992). A transportation-oriented interregional computable general equilibrium model of the United States. *The Annals of Regional Science*, 26(4), 331–348.
- Bunnell, T., & Diganta, D. (2009). Urban Pulse—A Geography of Serial Seduction: Urban Policy Transfer from Kuala Lumpur to Hyderabad, 31(3), 277–284.
- Butcher, M. (2011). Cultures of Commuting: The Mobile Negotiation of Space and Subjectivity on Delhi's Metro. *Mobilities*, 6(2), 237–254.
- Callon, M. (2007). What does it mean to say that economics is performative? In D. MacKenzie, F. Muniesa, & L. Siu (Eds.), *Do Economists Make Markets? On the Performativity of Economics*. (pp. 311–357). Princeton; Oxford: Princeton University Press.
- Cameron, I., Kenworthy, J. R., & Lyons, T. J. (2003). Understanding and predicting private motorised urban mobility. *Transportation Research Part D: Transport and Environment*, 8(4), 267–283.
- Carse, A. (2011). Assessment of transport quality of life as an alternative transport appraisal technique. *Journal of Transport Geography*, 19(5), 1037–1045.
- Casas, I., & Delmelle, E. C. (2014). Identifying dimensions of exclusion from a BRT system in a developing country: a content analysis approach. *Journal of Transport Geography*, 39, 228–237.
- Christophers, B. (2014). From Marx to market and back again: Performing the economy. *Geoforum*, 57, 12–20.
- Church, A., Frost, M., & Sullivan, K. (2000). Transport and social exclusion in London. *Transport Policy*, (7), 195–205.
- Clark, W. A. V., & Wenfei, W. W. (2013). The Automobile, Immigrants, and Poverty: Implications for Immigrant Earnings and Job Access. *Urban Geography*, 31(4), 523–540.
- Cook, I. R., & Ward, K. (2012). Relational Comparisons: The Assembling of Cleveland's Waterfront Plan. *Urban Geography*, 33(6), 774–795.
- Courtois, X., & Dobruszkes, F. (2008). The (in) efficiency of trams and buses in Brussels: a fine geographical analysis. *Brussels Studies*, (27), 1–24.
- Damay, L. (2014). A RER in Brussels? A sociological history of rivalries and political regulations (1989-2013). *Brussels Studies*, (74), 1–14.
- de Almeida, E. S., Haddad, E. A., & Hewings, G. J. D. (2010). Transport–Regional Equity Issue Revisited. *Regional Studies*, 44(10), 1387–1400.
- De Jong, M., & Edelenbos, J. (2007). An Insider's Look into Policy Transfer in Transnational Expert Networks. *European Planning Studies*, 15(5).

- Dieleman, F. M., Dijst, M. J., & Spit, T. (1999). Planning the compact city: The randstad Holland experience. *European Planning Studies*, 7(5), 605–621.
- Dobruszkes, F., & Duquenne, T. (2004). Métro ou tramway? De l'effet des densités de population et des répartitions modales à Bruxelles. *Recherche Transports Sécurité*, 85, 221–240.
- Dobruszkes, F., & Lanneaux, M.-A. (2010). Conclusions: comme un reflet de la géographie des transports à la française. *Belgeo. Revue Belge de Géographie*, (1-2), 245–246.
- Dobruszkes, F., & Marissal, de P. (2002). Réflexions sur l'usage des modèles dans les études de transport et les sciences sociales. *Recherche-Transports-Sécurité*, 74, 2–25.
- Dolowitz, D. P., & Marsh, D. (2000). Learning from abroad: The role of policy transfer in contemporary policy-making. *Governance*, 13(1), 5–23.
- Eliasson, J. (2009). A cost-benefit analysis of the Stockholm congestion charging system. *Transportation Research Part A: Policy and Practice*, 43(4), 468–480.
- Epprecht, N., von Wirth, T., Stünzi, C., & Blumer, Y. B. (2014). Anticipating transitions beyond the current mobility regimes: How acceptability matters. *Futures*, 60, 30–40. <http://doi.org/10.1016/j.futures.2014.04.001>
- Featherstone, M., & Venn, C. (2006). Problematizing Global Knowledge and the New Encyclopaedia Project: An Introduction. *Theory, Culture & Society*, 23(2-3), 1–20.
- Flyvbjerg, B. (1998). *Rationality and Power. Democracy in Practice*. Chicago University Press.
- Frenay, P. (2009). A territorial development project associated with the Brussels RER. An analysis of the fundamental deciding factors. *Brussels Studies*, (31), 1–17.
- Geurs, K. T., Boon, W., & Van Wee, B. (2009). Social Impacts of Transport: Literature Review and the State of the Practice of Transport Appraisal in the Netherlands and the United Kingdom. *Transport Reviews*, 29(1), 69–90.
- Girnau, G., & Blennemann, F. (1989). Cost-benefits in underground urban public transportation. *Tunnelling and Underground Space Technology*, 4(1), 23–30.
- Goffmann, E. (1974). *Frame Analysis: An Essay on the Organization of Experience*. Boston: Northeastern University Press.
- Golub, Marcantonio, R. A., & Sanchez, T. W. (2013). Race, Space, and Struggles for Mobility: Transportation Impacts on African Americans in Oakland and the East Bay. *Urban Geography*, 34(5), 699–728.
- Gössling, S., & Cohen, S. (2014). Why sustainable transport policies will fail: EU climate policy in the light of transport taboos. *Journal of Transport Geography*, 39, 197–207.
- Graham, & Marvin. (2001). *Splintering Urbanism: Networked Infrastructures, Technological Mobilities and the Urban Condition*. London: Routledge.
- Hall, D. (2004). Towards a gendered transport geography. *Journal of Transport Geography*, 12(3), 245–247. <http://doi.org/10.1016/j.jtrangeo.2004.04.003>
- Hall, D. (2010). Transport geography and new European realities: a critique. *Journal of Transport Geography*, 18(1), 1–13.

- Harvey, D. (1989). From Managerialism to Entrepreneurialism: The Transformation in Urban Governance in Late Capitalism. *Geografiska Annaler. Series B, Human Geography*, 71(1), 3.
- Harvey, D. (2001). Globalization and the "Spatial Fix." *Zeitschrift Für Literatur Und Diskussion*, 3(2), 23–30.
- Healey, P. (2008). Knowledge flows, spatial strategy making, and the roles of academics. *Environment and Planning C: Government and Policy*, 26(5), 861–881.
- Healey, P. (2013). Circuits of Knowledge and Techniques: The Transnational Flow of Planning Ideas and Practices: The transnational flow of planning ideas and practices. *International Journal of Urban and Regional Research*, 37(5), 1510–1526.
- Henderson, J. (2004). The Politics of Mobility and Business Elites in Atlanta, Georgia. *Urban Geography*, 25(3), 193–216.
- Hickman, R., Hall, P., & Banister, D. (2013). Planning more for sustainable mobility. *Journal of Transport Geography*, 33, 210–219.
- Hine, J. (2003). Social exclusion and transport systems. *Transport Policy*, 10(4), 263.
- Hubert, M. (2008). Expo'58 and "the car as king" What future for Brussels's major urban road infrastructure? *Brussels Studies*, (22), 1–16.
- Hubert, M., Lebrun, K., Huynen, P., & Dobruszkes, F. (2013). BSI synopsis. Daily mobility in Brussels: challenges, tools and priority undertakings. *Brussels Studies*, (71), 1–27.
- Hurst, M. E. E. (1973). Transportation and the Societal Framework. *Economic Geography*, 49(2), 163.
- Isaksson, K., & Richardson, T. (2009). Building legitimacy for risky policies: The cost of avoiding conflict in Stockholm. *Transportation Research Part A: Policy and Practice*, 43(3), 251–257.
- Ison, S., Marsden, G., & May, A. D. (2011). Transferability of urban transport policy. *Transport Policy*, 18(3), 489–491. <http://doi.org/10.1016/j.tranpol.2010.10.003>
- Jacobs, A. (2011). *The Good City: Reflections and Imaginations*. London; New York: Routledge.
- Jain, J., & Lyons, G. (2008). The gift of travel time. *Journal of Transport Geography*, 16(2), 81–89.
- Jones, P., & Lucas, K. (2012). The social consequences of transport decision-making: clarifying concepts, synthesising knowledge and assessing implications. *Journal of Transport Geography*, 21, 4–16.
- Kaplan, C. (1996). *Questions of Travel: Postmodern Discourses of Displacement*. Durham, NC: Duke University Press.
- Kaufmann, V., Jemelin, C., Pflieger, G., & Pattaroni, L. (2008). Socio-political analysis of French transport policies: The state of the practices. *Transport Policy*, 15(1), 12–22.
- Kenyon, S., Lyons, G., & Rafferty, J. (2002). Transport and social exclusion: investigating the possibility of promoting inclusion through virtual mobility. *Journal of Transport Geography*, 10(3), 207–219.
- Koglin, T., & Rye, T. (2014). The marginalisation of bicycling in Modernist urban transport planning. *Journal of Transport & Health*, 1(4), 214–222.
- Kuhn, T. (1962). *The Structure of Scientific Revolutions*. Chicago; London: The University of Chicago.

- Law, R. (1999). Beyond “women and transport”: towards new geographies of gender and daily mobility. *Progress in Human Geography*, 23(4), 567–588.
- Lebrun, K., & Dobruszkes, F. (2012). New RER stations for Brussels? Challenges, methods and constraints. *Brussels Studies*, (56), 1–18.
- Lebrun, K., Hubert, M., Dobruszkes, F., & Huynen, P. (2012). *Cahiers de l’Observatoire de la mobilité de la Région de Bruxelles-Capitale. L’offre de transport à Bruxelles*. Bruxelles Mobilité.
- Lebrun, K., Hubert, M., Huynen, P., De Witte, A., & Macharis, C. (2013). *Cahiers de l’Observatoire de la mobilité de la Région de Bruxelles-Capitale. Les pratiques à Bruxelles*. (p. 112). Bruxelles Mobilité.
- Lebrun, L., Carton, V., & Hubert, M. (2009). *La « Cityvision ». Ou comment faire beaucoup mieux que la « Métrovision » avec moins de moyens*.
- Levy, C. (2013). Travel choice reframed: “deep distribution” and gender in urban transport. *Environment and Urbanization*, 25(1), 47–63.
- Litman, T. (1997). Full cost accounting of urban transportation: implications and tools. *Cities*, 14(3), 169–174.
- Lucas, K. (2012). Transport and social exclusion: Where are we now? *Transport Policy*, 20, 105–113.
- Lucas, K., & Jones, P. (2012). Social impacts and equity issues in transport: an introduction. *Journal of Transport Geography*, 21, 1–3.
- Macharis, C., De Witte, A., & Turcksin, L. (2010). The Multi-Actor Multi-Criteria Analysis (MAMCA) application in the Flemish long-term decision making process on mobility and logistics. *Transport Policy*, 17(5), 303–311.
- Macharis, C., Dobruszkes, F., & Hubert, M. (2014). Introduction : les mobilités à la croisée des chemins. In C. Macharis, F. Dobruszkes, & M. Hubert (Eds.), *Mobilité et logistique à Bruxelles* (pp. 9–12). Brussels: VUBPress Brussels University Press.
- MacKenzie, D. (2006). *An Engine, Not a Camera: How Financial Models shape Markets*. Boston: MIT Press.
- Martens, K., Golub, A., & Robinson, G. (2012). A justice-theoretic approach to the distribution of transportation benefits: Implications for transportation planning practice in the United States. *Transportation Research Part A: Policy and Practice*, 46(4), 684–695.
- Martens, K., & Van Weelden, P. (2014). Decision-Making on Transport Infrastructure and Contested Information: A Critical Analysis of Three Approaches. *European Planning Studies*, 22(3), 648–666.
- Massey, D. (2011). A counterhegemonic relationality of place. In E. McCann & K. Ward (Eds.), *Mobile Urbanism* (pp. 1–14). Minneapolis, London: University of Minnesota.
- McCann, E. (2013). Policy Boosterism, Policy Mobilities, and the Extrospective City. *Urban Geography*, 34(1), 5–29.
- McCann, E. J. (2008). Expertise, truth, and urban policy mobilities: global circuits of knowledge in the development of Vancouver, Canada’s “four pillar” drug strategy. *Environment and Planning A*, 40(4), 885–904.

- McCann, E., & Ward, K. (2010). Relationality/territoriality: Toward a conceptualization of cities in the world. *Geoforum*, 41(2), 175–184.
- McCann, E., & Ward, K. (Eds.). (2011). *Mobile Urbanism. Cities and Policymaking in the Global Age*. Minneapolis: University of Minnesota.
- McNally, M., Hensher, D. A., & Button, K. J. (2007). The Four Step Model. In *Handbook of Transport Modelling* (Emerald Group Publishing Limited). Kidlington, UK.
- Mouffe, C. (2005). *On the Political (Thinking in Action)*. London; New York: Routledge.
- Mouffe, C. (2013). *Agonistics: Thinking the World Politically*. London: Verso.
- MR. (2014). *BXL enfin capitale*.
- Neirotti, P., De Marco, A., Cagliano, A. C., Mangano, G., & Scorrano, F. (2014). Current trends in Smart City initiatives: Some stylised facts. *Cities*, 38, 25–36.
- Offner, J.-M. (1993). Les « effets structurants » du transport : mythe politique, mystification scientifique. *Espace géographique*, 22(3), 233–242.
- Pop, V. (2010, April 23). Brussels crowned European capital of traffic jams. *EUobserver*. Retrieved from <https://euobserver.com/transport/29927>
- Prest, A. R., & Turvey, R. (1965). Cost-Benefit Analysis: A Survey. *The Economic Journal*, 75(300), 683–735.
- Preston, J., & Rajé, F. (2007). Accessibility, mobility and transport-related social exclusion. *Journal of Transport Geography*, 15(3), 151–160.
- Purcell, M. (2008). *Recapturing democracy: neoliberalization and the struggle for alternative urban futures*. New York: Routledge.
- Reigner, H., Hernandez, F., & Brenac, T. (2009). Circuler dans la ville sûre et durable: des politiques publiques contemporaines ambiguës, consensuelles et insoutenables. *Métropoles*, (5).
- Røe, P. G. (2000). Qualitative research on intra-urban travel: an alternative approach. *Journal of Transport Geography*, 8(2), 99–106.
- Rotaris, L., Danielis, R., Marcucci, E., & Massiani, J. (2010). The urban road pricing scheme to curb pollution in Milan, Italy: Description, impacts and preliminary cost-benefit analysis assessment. *Transportation Research Part A: Policy and Practice*, 44(5), 359–375.
- Saitua, R. (2007). Some considerations on social cost-benefit analysis as a tool for decision making. In E. Haezendonck (Ed.), *Transport project evaluation: Extending the social cost-benefit approach*. Cheltenham, UK: Edward Elgar.
- Sanchez, T. W., & Brenman, M. (2010). Transportation and Civil Rights. *Poverty & Race*, 19(4).
- Sayer, A. (2000). *Realism and social science*. London: Sage.
- Scheufele, D. (2000). Agenda-Setting, Priming, and Framing Revisited: Another Look at Cognitive Effects of Political Communication. *Mass Communication & Society*, 3((2 & 3)), 297–316.
- Schwanen, T., Banister, D., & Anable, J. (2011). Scientific research about climate change mitigation in transport: A critical review. *Transportation Research Part A: Policy and Practice*, 45(10), 993–1006.

- Sheller, M. (2014). The new mobilities paradigm for a live sociology. *Current Sociology*, 62(6), 789–811.
- Skillington, T. (1998). The City as Text: Constructing Dublin's Identity Through Discourse on Transportation and Urban Re-Development in the Press. *The British Journal of Sociology*, 49(3), 456.
- Slater, T. (2008). "A Literal Necessity to be Re-Placed": A Rejoinder to the Gentrification Debate: Debates and Developments. *International Journal of Urban and Regional Research*, 32(1), 212–223.
- STIB. (2009). *Metrovision - 9e rendez-vous de progrès*. STIB.
- STIB. (2012). *Les stations de l'avenir. Lieux de vie et de développement urbain. 11e Rendez-vous de progrès*. Brussels Intercommunal Transport Company.
- Sultana, S. (2005). Racial Variations in Males' Commuting Times in Atlanta: What Does the Evidence Suggest? *The Professional Geographer*, 57(1), 66–82.
- Swanson, K. (2013). Zero Tolerance in Latin America: Punitive Paradox in Urban Policy Mobilities. *Urban Geography*, 34(7), 972–988.
- Tellier, C. (2010). Des controverses aux compromis. Les lignes de front du métro bruxellois. *Belgeo*, (1-2), 1–18.
- Tight, M., Timms, P., Banister, D., Bowmaker, J., Copas, J., Day, A., ... Watling, D. (2011). Visions for a walking and cycling focussed urban transport system. *Journal of Transport Geography*, 19(6), 1580–1589.
- Timms, P. (2008). Transport models, philosophy and language. *Transportation*, 35(3), 395–410. <http://doi.org/10.1007/s11116-007-9154-4>
- Timms, P., Tight, M., & Watling, D. (2014). Imagineering mobility: constructing utopias for future urban transport. *Environment and Planning A*, 46(1), 78–93.
- Tudela, A., Akiki, N., & Cisternas, R. (2006). Comparing the output of cost benefit and multi-criteria analysis. *Transportation Research Part A: Policy and Practice*, 40(5), 414–423.
- Velaga, N. R., Beecroft, M., Nelson, J. D., Corsar, D., & Edwards, P. (2012). Transport poverty meets the digital divide: accessibility and connectivity in rural communities. *Journal of Transport Geography*, 21, 102–112.
- Venables, A. J. (2007). Evaluating Urban Transport Improvements: Cost-Benefit Analysis in the Presence of Agglomeration and Income Taxation. *Journal of Transport Economics and Policy*, 41(2), 173–188.
- Willocx, O. (2013). *Le livre blanc de la mobilité. 50 idées pour faire bouger Bruxelles*. Brussels Enterprises, Commerce and Industry (BECI).
- Wood, A. (2014). Moving policy: global and local characters circulating bus rapid transit through South African cities. *Urban Geography*, 0(0), 1–17.
- Yago, G. (1983). The Sociology of Transportation. *Annual Review of Sociology*, (9), 171–190.
- Zitouni, B., & Tellier, C. (2013). How the technical bodies build the city. *Brussels Studies*, (64), 1–18.