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von Schönfeld, K.C.; Bertolini, L.

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Urban streets: Epitomes of planning challenges and opportunities at the interface of public space and mobility



Kim Carlotta von Schönfeld^{a,*}, Luca Bertolini^b

^a Wageningen University and Research, Droevendaalsesteeg 3, 6708 PB Wageningen, Netherlands

^b University of Amsterdam, Nieuwe Achtergracht 166, 1018 WV Amsterdam, Netherlands

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ABSTRACT

Today's urban streets are usually planned for purposes of mobility: pedestrians, as well as a variety of vehicles such as cars, trucks, and sometimes bicycles, are usually factored into an urban street plan. However, urban streets are also increasingly recognized as public spaces, accommodating street vending, food trucks, markets, artistic interventions, political expressions, comfortable benches, green spaces. Although these are mostly not *new* activities to appear on streets, they are now given particular attention in public discourses, urban planning, media and academia, as public space in cities has become a more contested resource among different uses and ownership-constellations. Growing and diversifying urban populations are generating a particular strain on urban streets worldwide. In short, urban streets epitomize the challenges and opportunities that accompany the negotiations of space and uses attributed to mobility and public space in cities. They necessarily unite stationary and mobile functions – though this is not usually given room for in planning. Moreover, these functions are rarely studied from more than one perspective at once, which limits the analytical and creative thinking that inspiration is drawn from. In order to address these limitations, in this article we rely on insights from three theoretical fields - namely planning regulation, transitions and governance - and illustrations from concrete examples, to explore what urban planning might have to focus on to address the tensions in linking stationary and mobile functions in urban streets.

1. Introduction

Mobility and public space are key elements determining the vitality of cities (Agyeman & Zavetovski, 2015; Hickman & Banister, 2013; Moriarty & Honnery, 2008). As the area and population size of cities increase, pressure on transportation systems and public spaces also grows. Transportation systems need to cover increasingly large distances and sustain more people, making it more difficult but also more crucial to facilitate access while at the same time restricting mobility due to pollution and congestion problems (Hickman & Banister, 2013; Moriarty & Honnery, 2008; Sheller, 2008; Tranter, 2010). Simultaneously, growing cities struggle with the various, competing roles public space needs to fulfil: as meeting space, as public domain, as political and liveable space, and as space for commerce (Agyeman & Zavetovski, 2015; Brenner, Marcuse, & Mayer, 2012; Hajer & Reijndorp, 2001). Changes in mobility patterns and the use of public space are intimately related, as increased mobility and more intensive use of public space both feed each other and directly compete for ever scarcer urban space (idem; Tranter, 2010). So, can functions of mobility and public space, stationary and mobile uses of urban streets, co-exist and simultaneously increase the

liveability of cities? This question points to challenges and opportunities, which researchers, planning and policy practitioners and even businesses and civil society groups urgently need to address in today's cities around the globe (idem; UNHABITAT, 2013a; Dalkmann, 2014; Zottis, 2015; HABITAT III, 2015).

Urban streets embody the relation between mobility and public space and the resulting tensions particularly well. They epitomize the struggle to accommodate functions of 'efficient' and 'fast' but also 'sustainable' mobility, as well as public space functions that include lingering and social interaction (Agyeman & Zavetovski, 2015; Mehta, 2013). Already in 1961, Jane Jacobs pointed at the ensuing challenge: "How to accommodate city transportation without destroying the related intricate and concentrated land use? – this is the question. Or, going the other way, how to accommodate intricate and concentrated city land use without destroying the related transportation?" (Jacobs, 1961: 341). Mehta (2013) brings together a wealth of literature to argue that streets are the quintessential social public spaces of cities. But while the multiplicity of functions of streets, including a variety of social functions, have been researched thoroughly (see also Gehl, 2010), urban planning still struggles with incorporating such elements.

* Corresponding author.

E-mail addresses: kim.vonschonfeld@wur.nl (K.C. von Schönfeld), L.Bertolini@uva.nl (L. Bertolini).

At the same time, pressure from bottom-up initiatives, small-scale entrepreneurs and citizen movements is increasing around the world and begins to force a different approach to planning streets (Lydon & Garcia, 2015). For these reasons, urban streets and the (need for) changes in their planning, are the central object of study in this article.

This article first builds up the argument that planning needs to (re) unite functions of public space and mobility in urban streets, by showing why and how mobile and stationary functions compete with each other and yet can also complement each other in these spaces (Agyeman & Zavetovski, 2015; Hajer & Reijndorp, 2001; Mehta, 2013). Subsequently, three fields of study are introduced, which are part of, or tightly intertwined with, the planning discipline, and try to address this subject. Each of these fields is centred on one concept: first on planning regulation, second on transitions, and third on governance. Studies on planning regulation focus on both the tensions and the need to find a balance between the opposing needs of certainty and flexibility of regulations. Applied to our object of study, studies on regulation help highlight how the multi-faceted and variable ‘purpose’ of streets as both public spaces and spaces for mobility (Agyeman & Zavetovski, 2015; Gilliam, 1967), require planning regulations to embrace, rather than try to reduce complexity and uncertainty. Transition studies are concerned with how transformative, systemic change away from a dominant socio-technical regime can occur, usually taking a normative stance for achieving sustainability by creating room for niches and experimentation to trigger change. In this study, change means moving away from a modernistic planning regime of identifying, separating and fixing functions in streets, and towards a more plural and fluid mixture of uses as identified in the discussion of regulation. Finally, the study of different forms of governance highlights the specifics of who needs to be involved for such a transition to occur and what power relations should be considered in the short and longer term to achieve change in urban streets. Governance studies suggest that more participatory, open processes are necessary to begin to address the questions and challenges mentioned above (Avelino & Wittmayer, 2015; Miazzo & Kee, 2014).

This article is structured as follows. The ensuing section is divided into two main parts; the first goes into more detail on the reasons why uniting functions of mobility and public space, of static and mobile functions in urban streets is essential for healthy, equitable and dynamic urbanities. The second part introduces each of the fields of study in which the planning challenges and opportunities this brings forth are discussed in more depth, and identifies core questions that emerge from those fields. Throughout the text, this section also presents concrete cases as illustrations of what these reasons, challenges and opportunities can look like in practice. Finally, the closing section goes into how the questions and discussion provide inspiration for a policy agenda aimed at integrating functions of mobility and public space in urban streets and for further research into how planners might address the challenges and opportunities this aim raises.

2. The stationary and mobile urban street

Urban public spaces are important, as they fulfil a variety of crucial functions in cities: they play a role in social inclusion, cultural diversity, environmental care, urban governance and economic strength (Madanipour, Knierbein, & Degros, 2014). They can function as public domain (Hajer & Reijndorp, 2001) and as civic space (Douglass, 2003). They play a crucial role in identity-formation and ownership of cities (for the ‘right to the city’ see Borja, 2011; Brenner et al., 2012). Public spaces can be defined as “crossroads, where different paths and trajectories meet, sometimes overlapping and at other times colliding; they are the meeting place of politics and culture, social and individual territories, and instrumental and expressive concerns” (Madanipour et al., 2014: 1). Crucially, they are places for exchange and interaction with the ‘other’ that is not in the same way possible in any other type of place (Bertolini, 2006; Bertolini & Dijst, 2003; Hajer & Reijndorp, 2001). They can also be spaces where conflicts and demonstrations

can play out (idem, Brenner et al., 2012; Borja, 2011), which may make them less attractive or inclusive at some points in time, and yet nonetheless vital in their function of reflecting city life and enabling discussion about its future. In this sense, urban public space is a crucial arena for social change.

Urban public space exists in a large variety of forms, such as parks, squares, markets, transport interchanges – and streets (Hajer & Reijndorp, 2001; Mehta, 2013). It is hard to imagine any of these spaces functioning without the possibility of people moving to and through them – by walking or perhaps skating, running, or cycling. But they also have the crucial function of allowing people to linger, interact with each other or ignore each other, read, sit, stand or even lie down (Gehl, 2010; Mehta, 2009). Urban public space is also a space of economic activity, for example through cafés, vending or food trucks (Kim, 2015; Mehta, 2009).

Urban streets are a very particular kind of public space. Next to a public space, they are also the main channels through which flows of people and goods that are essential for cities are facilitated, to the point that they are often *only* perceived in relation to this mobility function, despite also fulfilling multiple other functions as public spaces. The latter is just as essential. The street can in fact be called “a quintessential social public space” (Mehta, 2013). Agyeman and Zavetovski (2015: 7) argue streets are “not just [...] physical and material amenities that function to move people and goods, but [...] significant social and symbolic spaces where users are linked to intersecting economic, transportation, food, cultural, and governance systems, as well as personal, group, and community histories and experiences” (Agyeman & Zavetovski, 2015: 7).

Although they are now often seen as such, streets were not always planned for automobiles or traffic (Mehta, 2013, 2015; Norton, 2015; Reid, 2015). It was not long ago that streets – in their entirety, without segregation of space for specific transport modes or commercial services – served as public space (idem). In some places this never changed (e.g. in much of the developing world; Mehta, 2015). The relatively short history since the inclusion of the private automobile in streets has had an enormous impact on the previous dynamics of streets (Norton, 2015; Reid, 2015). In the United States for instance, walking at ease and at random through streets was strategically denominated *jaywalking*, a word that rapidly functioned as an insult, if it was not actually punishable by law (idem). In the name of ‘progress’, streets were widened and more extensively paved (before, paving had served for making riding easier for cyclists and carriages but was equally accessible for and used by pedestrians) (Reid, 2015). By now, the number of paved streets is used as a measurement of the level of development of a country (e.g. World Bank, 2010). Several streets around the world have minimized or even completely disregarded any need for pedestrian space, or when this is not the case, have used safety reasoning to segregate modes as much as possible so accidents between modes would not rely on care of users but purely on street design (Agyeman & Zavetovski, 2015; Dinh, 2011; UNHABITAT, 2013b). Some of this is being reversed or more widely discussed, for instance in debates on ‘shared space’, ‘complete streets’ and ‘incomplete streets’ (e.g. Agyeman & Zavetovski, 2015; Hamilton-Baillie, 2008). It has for instance been made clear that fast traffic and speeding cause dangerous spaces of mobility for automobiles as well as other, smaller or less shielded modes, such as walking or cycling (Appleyard, 1983; Moriarty & Honnery, 2008; Tranter, 2010). Generally, traffic is seen as a problematic element in public space (Appleyard, 1981, 1983; Williams & Green, 2001). Nevertheless, private cars have claimed much of urban street space today, although this is increasingly contested. Claims to make streets more liveable and accessible as public space are increasing, often including a reduction or ban of motorized traffic.

The Minhocão in São Paulo, Brazil, serves as an extreme case to illustrate these dynamics (see Box 1). It was built for the sole purpose of channelling traffic, but has since gradually opened to other uses. Although as a highway it might not immediately seem to fit the description of a ‘street’, the illustration makes clear why it does: the

Box 1

Minhocão, São Paulo, Brazil



Photo: Gabriel Cabral

The Via *Elevada Presidente Artur da Costa e Silva* in São Paulo is called *Minhocão* by the city's inhabitants due to its worm-like winding form through the city centre. It is an elevated highway, reserved for cars from Monday through Friday from 6 am to 9 pm, but closed for cars and open for any non-motorized access from 9 pm to 6 am on week days, on Saturdays from 3 pm, and all of Sunday.

This space emerged almost as an 'accident': the highway was planned originally purely for car-use. However, it quickly became clear that it was necessary to close it for motorized vehicles at certain times, because it was built so close to housing. This has been going on since the 1970s and gradually the area has become a form of public space during car-free hours. Residents of the surrounding neighbourhoods as well as some coming from all over the city, use the space for walking, cycling, picnicking, selling home-made foods, reading a book, skating, walking their dogs, and more. People of all ages can be found here, especially on Sundays with good weather.

As the city tries to improve its image in terms of sustainable and equitable action, a more permanent solution for the space is being sought. Some argue it should be torn down, others are fighting to keep it as a High-Line-like park. With time the dynamics of the space and surrounding area are bound to change, but the experimental character of its use so far has marked the city and the spaces' users already. (432, 2015; minhocao.org, 2017)

variety of uses that almost instantaneously and without any planning emerge when no motorized vehicles move through this space make it a particularly inclusive space uniting functions of non-motorized mobility and public space. By always returning to functioning as a highway during certain times of the week, the space always remains free enough of street furniture and accessories that mobility such as by bicycle or skateboard remains possible at least on one side of the street. The other side sometimes holds market stands or an improvised football field. The space is continuously negotiated, but also inclusive by being accessible and used by groups from all over the city. This also gives it a special relation to the city ownership aspect of public space. The *Minhocão* poignantly shows the always present latent demand for the use of urban streets for more than (motorized) traffic.

The question that both the literature and the illustration highlight is what kind of space streets are, and what functions they (should) fulfil as such. Based on different strands of literature on public space, mobility and streets, we contend that urban streets should be reconceptualised and planned as places for *both* mobility *and* public space, enabling movement by different transport modes *as well as* interaction, lingering, demonstrating, picnicking, and more – in short, urban streets should “balanc[e] mobilities and immobilities” (Nikolaeva, 2012: 546; see also Bertolini, 2000, 2006 and Bertolini & Dijst, 2003). They should allow for diversity in general: of transport modes, of uses, of people accessing the space (idem). Although we take a normative stance here, the specific way in which this would unfold in any particular context will vary. Identifying the specifics is, in fact, at the heart of the challenge, as well as the opportunity. Therefore, the foundational question we need to ask when planning urban streets is: how can planning enable conditions for urban streets to allow people and goods to move through the city *but also* for people to linger and interact and provide liveable environments? The remainder of this section reflects on how different academic discussions might help further articulate this question and at

the same time shape the search for answers. First, the field of study that addresses planning regulations shows how planners struggle to find consensus about how much needs to be fixed, and what, conversely, the role of disruption and experimentation should be. Next, transition theories show how change towards a more flexible planning of urban streets could be achieved. Finally, the field of governance shows who might need to be involved to make this possible.

2.1. Planning regulation: balancing certainty and flexibility

Planning is in many ways studied, perceived and implemented as if it were a rather linear process (Salet, Bertolini, & Giezen, 2012). For instance, a demand might be identified, a solution thought through and that solution implemented – a process that sounds sensible if it were not for the long period of time it takes and the little amount of flexibility it leaves for the result of the plan to adapt to new, and largely unpredictable circumstances (idem). In order to give certainty to developers and users of space, planning tends to fix rules and regulations and segregate functions of spaces for specific purposes, and with an indefinite time horizon (idem; Gilliam, 1967; Savini, Salet, & Majoor, 2014). However, these practices are increasingly debated as problematic even within planning, with many arguing that (more) flexibility is necessary (idem; Bertolini, 2007). Studies of various time periods show that strongly predetermined, single-purpose planning often does not work out as intended, or that its intended effect is so focused on a single aspect that detrimental liveability and environmental side-effects tend to emerge alongside such projects (Gilliam, 1967; Jacobs, 1961; Savini et al., 2014).

However, embracing complexity and uncertainty – and flexibility in view of this – is an often-ignored practice in urban planning despite its importance (Bertolini, 2007; Salet et al., 2012; Savini et al., 2014). Salet et al. (2012) show how complexity and uncertainty can, instead, be

Box 2

Parklets, San Francisco, USA

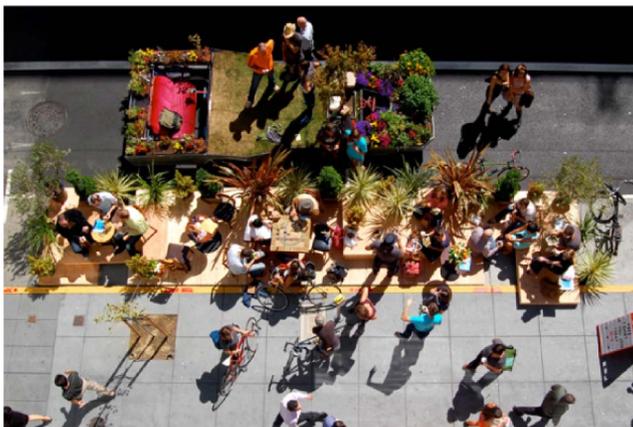


Photo: <http://curatingcities.org/about-us/>

Parklets emerged in San Francisco in 2010 as a small-scale business idea, but open to the public and supported by the city government (originally linked to the arts collective Rebar and Gehl Architects, who began with Park(ing) day). Parklets take up temporarily one or a few parking spaces, in San Francisco often in front of businesses, which are levelled to the sidewalk by moveable wooden stages, and topped with plants, seats, cycle parking and more, depending on the choices made by those placing it. Parklets may attract customers for businesses, but they are also usually open for non-commercial uses.

Parklets have proven a fruitful experiment, attracting various users and consumers, while remaining surprisingly unproblematic in terms of the parking space no longer available for private cars. Thus, the Parklet turned into a city-wide initiative. About 50 Parklets exist in San Francisco. Around the world, other cities such as Mexico City, Auckland, Chicago and São Paulo have also set up Parklets, sometimes with slightly different governmental rules.

Since the Parklet itself moves on wheels, the project has proven relatively easy to implement with the argument that if it does prove too problematic it can be removed. The costs can be (very) high, but businesses usually profit more than they pay, while city governments are seeing the larger benefits. (Martin, 2015; Merker, 2015; www.peoplepoweredmovement.org)

seen as assets in mega-infrastructure projects, especially in terms of learning how to better fit projects to the complex characteristics of the context. Similarly, Bertolini (2007) investigates how more exploratory planning is necessary to deal with uncertainty and unpredictability influencing planning outcomes. At the other extreme of a linear characterization of the planning process, crises and disruptions have been shown as especially fruitful for opening windows of opportunity for change (Bratzel, 1999; Marsden & Docherty, 2013).

In less abstract terms, enabling more flexibility would allow public spaces in general and urban streets in particular to better accommodate the various and changing roles that we have suggested they should. There are roles specific to the use of streets and public space, which can vary greatly. They can be categorized as stationary and mobile, or active or passive, and as accommodating necessary activities, optional activities and/or social activities (de Vasconcellos, 2004; Gehl, 2010). For instance, active users of streets are moving, at different paces and either with or without the aid of vehicles such as cars or bicycles. On the other hand, and simultaneously, other users of the same street may be standing, shopping, sitting on a bench, or playing with children (idem). The mix will vary depending on the time of day, week, and year (Bertolini & Dijst, 2003). As Nikolaeva (2012: 551, citing Asher, 2003) writes: “the agenda for policy-makers and architects who want to create high quality public spaces of mobility includes the challenge ‘to reconcile those near-opposites that constitute the richness of cities: hurry and dawdling, efficiency and unhurriedness, functionality and superfluity, the planned and the unexpected.’” When allowing for more flexibility, it is important not only to consider a single type of variety of roles either – for instance considering only a variety of transport modes (such as in ‘complete streets’ planning) or even only a variety of generic

mobility and public space roles such as described above (Agyeman & Zavetovski, 2015). The question of *who* gets to use the space, and *under what conditions* is also important. In addition, to be socially sustainable and create liveable streets in an inclusive way, questions of access and use also need to be asked in relation to gender and ethnic identities for example (idem).

An important strategy to find out what embracing complexity and uncertainty means in specific contexts is experimentation. Jane Jacobs (1961: 6) was early in observing that “cities are an immense laboratory of trial and error, failure and success, in city building and city design.” Experiments deal with complexity and uncertainty without trying to control them (too) much, and by emphasizing learning from the process (Evans, Karvonen, & Raven, 2016; Frantzeaskaki, Bach, Holscher, & Avelino, 2015; Sengers, 2016). They can thus use trial and error, failure and success – in Jacobs’ words – to explore possibilities for accommodating diverse and changeable uses in urban streets.

In order to illustrate this point, Box 2 presents the example of Parklets in San Francisco, an initiative playing with flexibility and experimentation in planning. It embraces flexibility by not only showing alternative uses of parking lots along streets, but also keeping the option open to temporarily remove the Parklet if this should be necessary or preferred. It can adapt to different demands and wishes very quickly, and can be given shape in a variety of ways depending on the choices of those setting it up and using it.

The key questions that these discussions on regulation, flexibility and experimentation raise for planning urban streets are the following: what kind of planning regulation is necessary in urban streets if they want to allow for more flexibility? What kind of experimentation could generate more mixed and changeable urban street uses?

Box 3

Leefstraat, Ghent, Belgium



Photo: courtesy of Leefstraat.be

The 'Leefstraat' (Living Street) in Ghent emerged as an initiative by the 'creative laboratory' *Lab van Troje* in Ghent, aiming to make their city more sustainable and liveable. Ghent's inhabitants can approach the lab or the city about the project for their own streets and work together with the lab and several city administrations to design and implement a temporary alternative use of their street, involving reduced car use. The first street design was implemented in 2013.

The design is temporary – usually 1–3 months and relatively easy to remove. The aim is to make the city's inhabitants less dependent on cars, by giving them positive experiences with other modes, such as cycling. Parking spaces are usually completely removed from the participating street, creating more space for plants and street furniture. The programme for each street is then decided based on the ideas of its inhabitants, who are helped with design and practicalities by the other participating organizations.

The idea behind this temporary change in the use of streets is to learn about how well such use of space works, and how many people want it and use it. It shows what the impact for instance on traffic and parking facilities is in the surrounding areas once one street is shut down for both. All this with the option of turning back if problems arise – or inspire more long-term plans in case it functions and is perceived positively. (leefstraat.be; www.labvanroje.be)

2.2. Transitions: triggering transformative change through experimentation

Socio-technical transitions theory attempts to find and explain (potential for) transformative and long-term societal and technological change (see for a comprehensive overview of transitions theory [Frantzeaskaki et al., 2015](#) and [Schwanen, Banister, & Anable, 2011](#)). Transitions are "fundamental shifts in structures, cultures and practices in a societal (sub-) system" ([Roorda et al., 2014](#): 46). Key concepts are socio-technical regimes, which "[impose] a logic and direction for incremental socio-technical change along established pathways of development," and socio-technical niches, which provide space for radical innovation ([Markard, Raven, & Truffer, 2012](#): 957). Both regimes and niches are embedded within an exogenous socio-technical landscape, a third key concept, which includes broader economic, environmental and political trends, demographic tendencies and life-style changes ([Switzer, Bertolini, & Grin, 2013](#)). Different types of transitions usually have specific normative goals, such as environmental or social sustainability ([Sengers, 2016](#)).

When studying transitions, niches are often seen as the driving force behind innovations that bring about change (e.g. [Geels, 2011](#); [Schwanen et al., 2011](#)). However, more often than not, niches are found to have a limited influence and be incapable of changing or replacing existing regimes (idem, [Smith, 2007](#)). Research increasingly shows how particular combinations and translations between niches and regimes and influences from landscape factors can also further change (e.g. [Bratzel, 1999](#); [Geels, 2011](#); [Mäkinen, Kinimaa, & Helminen, 2015](#); [Roorda et al., 2014](#); [Schwanen et al., 2011](#); [Smith, 2007](#); [Smith & Raven, 2012](#); [von Schönfeld, 2015](#)). At the same time, incremental change through regimes alone seems too slow and/or marginal to achieve a sufficient and rapid enough change (idem).

[Mäkinen et al. \(2015\)](#) use the concepts of path dependency, path destabilization, and path creation to explain the difficulty of bringing about transitions and the necessity for policy to at the same time disrupt existing regimes and stimulate the exploration of alternatives. Several authors have turned to the study of experiments and disruptions that function through and affect both niches and regimes and require their cooperation ([Evans et al., 2016](#); [Frantzeaskaki et al., 2015](#); [Marsden- & Docherty, 2013](#); [Roorda et al., 2014](#); [Sengers, 2016](#)). Experiments provide a kind of tool or step in the process of enabling a transition, while leaving the exact outcome very open ([Sengers, 2016](#)). Transition studies are thus also linked in relevant ways to flexible planning: a more flexible, experimental approach to planning might indeed facilitate a transition. However, beyond providing good reason to experiment with flexibility, transition studies also show potential ways in which such an experiment might become normalised.

Box 3 describes an approach to trigger a transition to more liveable streets. It explicitly, albeit temporarily, embraces the variety of street roles that inhabitants would like to see, and allocates a large amount of street space to options for lingering, while at the same time stimulating alternative, sustainable forms of mobility. In this way, active as well as passive roles are encouraged, replacing a space that was originally planned with the single purpose of allowing motorized vehicles to move through the road space, perhaps also the occasional cyclist and pedestrian to move – but not linger. By adopting a temporary but attractive and community-linked approach, a latent demand is tapped into and shown to authorities and citizens who can encourage the movement to become part of the regime, a normal part of urban life.

The discussion on transitions shows ways in which normative, radical goals such as more mixed and changeable urban street uses can be moved forward in an incremental, explorative way in order to

Box 4**Occupy Central - Highway Occupation, Hong Kong 2014**

Photo: Luca Bertolini 2014

Occupy Central, also called the Umbrella Movement, was a movement emerging in September 2014 in Hong Kong as a response to election ruling disagreements between Hong Kong inhabitants and the Chinese government. Throughout the development of the protests, streets and a central highway were occupied, as the photo above shows. Although this highway was normally intensely used and it is unlikely any such big and central road would ever be closed under normal circumstances, the impact on traffic was surprisingly easily taken care of.

What emerged in the space instead was particularly creative and an outlet for critical thought. While images of violent encounters between protesters and the police were the main aspects broadcast about the space, this was not how the space felt and functioned most of the time. Instead, the occupied highway “previously filled with traffic, noise, air pollution, and human frenzy were now full of people quietly doing things or interacting with each other and passers-by” (Bertolini, 2015: 2). Basic facilities were provided in the space by users themselves, but also public libraries, study corners, places for worship and art could be found. It became a physical space necessary to allow for the expression of critical thinking and creativity that previously seemed lacking in Hong Kong. Taking away space from cars, in this case, created much-needed space for other outdoor uses, and showed that the necessary mobility function of the road could be fulfilled by other roads or other modes. (Bertolini, 2015; Rossen, 2014)

cope with deep-seated regime resistance to change. The study of different levels of influence for change (niche, regime, landscape) and transition-oriented planning may provide avenues for answering questions highlighted in the preceding sections. But this field of study also adds a new question for the planning of urban streets: how can we move from experiments with more mixed and changeable urban street uses to regime change? How can we learn from both failure and successes of experiments in this respect?

2.3. Governance: linking actors and resources

Governance is a mode of decision-making, in planning and more generally, in which multiple actors are involved, in addition to official government bodies. Within and beyond transition theory and management, governance is considered important in making a deeply rooted transition possible (Avelino & Wittmayer, 2015; Grin, 2010). There are several governance challenges to socio-technical transitions, such as for example “mobilizing the required resources and long-term financial and political commitments needed to address a societal challenge” (Sengers, 2016: 194) and including a variety of stakeholders and actors (idem: 193–195). Often, governance takes the shape of participation, where different stakeholders are involved in decision-making processes, usually through specific moments at which platforms for discussion and dissemination across actors are opened. Governance may also manifest itself as other forms of cooperation between governmental initiatives, relatively large market initiatives and community, activist or small entrepreneurial initiatives (see Avelino & Wittmayer, 2015; Miazzo & Kee, 2014; van den Dool, Hendriks, & Schaap, 2015). Among several planners, participatory processes of planning have become imperative, though the form this takes is not always implemented as well as first envisioned and needs to be treated with caution and

reflection (Beebeejaun, 2016; Birnbaum, 2015; Savini et al., 2014). While studied extensively, many arguments on what participation and governance in transitions entail – beyond a formal intention to include stakeholders beyond government – are not yet resolved, including the question what the role of government policy can and/or should be in fostering niche development (Sengers, 2016:195). Notwithstanding these varied interpretations, however, the involvement of a variety of actors rather than decision-making by government or politics alone seems to be an important element in enabling deeply-rooted transitions (see Avelino & Wittmayer, 2015; Geels, 2011; Miazzo & Kee, 2014; Pel, 2015; Rosa, 2011; Rydin, 2010; von Schönfeld, 2015).

Governance, then, aims to include the insights of a variety of actors, just as the idea of relatively flexible regulations proposed above also suggests. Governance is a mode of planning that would allow a more varied and inclusive decision-making process about who can use a space, which regulations are still necessary and which should be let go. Governance also encourages the involvement of ‘agents of change’ (Roorda et al., 2014), who might propose niche ideas or experimentations that divert from the current regime. This gives high importance to the translation of ideas, struggles, compromises and knowledge between different actors, and the consequences that different interpretations might have (Nikolaeva, 2012; Pel, 2015; Smith, 2007). It also highlights the importance of collaboration, and the acknowledgement rather than complete rejection of more traditional government. Attempts to integrate a variety of (translated) ideas and niches within (new) regimes can then lead to the incorporation of niche novelties into larger or even mainstream politics, discourses and actions – Pel (2015) calls this ‘capture’. Capture tends to result in changes to the original niche idea, which can lead to a wider dissemination of the core idea – thus arguably a positive effect (Pel, 2015). On the other hand, capture can also result in ‘hypocritical transitions’, which keep objectives vague

and state certain aims while pursuing them unrealistically within unchanged existing frameworks (Vogel, 2015).

As these scenario's make apparent, governance is closely intertwined with power politics, where the ability for a transition towards a more mixed and open use of urban streets may depend on how and with which force different actors encourage their initiatives. Avelino and Wittmayer (2015) show how different political, economic and individual roles can affect such processes. For the purpose of this paper it is also important to acknowledge that there are also roles specific to the use of urban streets. Recognizing the importance of acknowledging all the different roles and yet also the overwhelming complexity of even attempting to do so, points again to the necessity of flexibility and experimentation in planning – both in the process of planning and decision-making as well as in changing outcomes with more ease than is currently and traditionally the case (Bertolini, 2007; Salet et al., 2012; Savini et al., 2014). While some level of control might be necessary and desirable, it is also helpful and effective if self-organisation of citizens and relatively high levels of planning flexibility and experimentation are allowed or even encouraged (Savini et al., 2014).

Box 4 shows an unplanned, disruptive use of street space in Hong Kong in 2014, when protesters of the ‘umbrella-movement’ occupied a highway (among other locations) for more than two months to demand more democracy. The protest did not intend to make the occupation of the highway permanent, nor did it have an explicit goal to influence stationary or mobile uses of the highway. Those occupying the street were outsiders to any form of planning process. However, the occupation revealed – perhaps inadvertently – how flexibly cities can indeed react to change, and that the closure of such a street need not result in overall (traffic) chaos. It also showed that embracing the complexity and uncertainty that these protests brought with them could result in a diverse, inclusive use of space up to then solely reserved for fast motorized traffic. Furthermore, it showed how achieving mixed, spontaneous and flexible uses of an urban street will likely require the inclusion of a wide variety of actors in the governance of the space, and in its use, reaching far beyond the obvious.

The questions that this debate raises for the planning of urban streets are about who should be involved in decision-making, when and where, and what level of control and flexibility in the involvement of actors would be necessary and desirable in the creation and management of mobility and public space in cities. From the above it seems essential that those deciding on the use of the space should be as varied and changing as the uses and users of the space itself. In the same vein, another important question that must be asked is: *for whom* is a space designed and implemented when more open and flexible uses of urban streets are aimed at?

3. Discussion & conclusion

Based on recent and current debates, this article has identified one pressing, overarching question for the planning of urban streets: how can planning enable conditions for urban streets to allow people and goods to move through the city *but also* for people to linger and interact and provide liveable environments? Looking for ways to further articulate this question, and at the same time shape the search for answers, we explored three fields of study: planning regulation, transitions, and governance. This journey resulted in three more specific, agenda-setting questions:

- What kind of planning regulation is necessary in urban streets if they want to allow for more flexibility? What kind of experimentation could generate more mixed and changeable urban street uses?
- How can we move from experiments with more mixed and changeable urban street uses to regime change? How can we learn from both failure and successes of experiments in this respect?
- Who should be involved in decision-making, when and where, and what level of control and flexibility in the involvement of actors

would be necessary and desirable? Related to this, *for whom* should a space be designed and implemented when more open and flexible uses of urban streets are aimed at?

Taken together, these questions identify and articulate the challenges and opportunities of planning urban streets. To illustrate both these questions and, possibly, emergent ways of answering them, four cases have been introduced: the *Minhocão* in São Paulo, Parklets in San Francisco, the *Leefstraat* in Ghent and *Occupy Central* in Hong Kong. Each of them was discussed shortly in relation to one particular concept or topic, but each of them also holds aspects that would exemplify any of the other fields of discussion. The diversity in the locations, contexts and characteristics of the spaces shows the varied ways in which the questions above can be addressed. There is no blue-print. While more traditional streets as we know them today may also seek to answer the above questions in their own way, we deliberately chose extreme examples that better show the underlying dynamics, and the challenges and opportunities these present planners with.

The unconventional character of our examples highlights with particular strength the various tensions in possible answers to the above questions. Each of the examples addresses the challenge of uniting functions of moving through the city as well as lingering and interacting between users. All of them provide more inclusive spaces in which different ‘others’ may meet, but sometimes also highlight tensions that this can create. Struggles to redefine or claim these spaces also relate to challenges of keeping such new spaces inclusive despite pressure and claims from specific groups or financial incentives generated by this very use (making these and surrounding spaces potentially more expensive). The opportunities the presented streets create are not necessarily that the challenges will be overcome, but that the challenges are highlighted and constantly renegotiated based on current needs and desires of users. The flexibility of these spaces (as yet more emergent than planned) allows for this, and that may be a key element in making them possible. Further research needs to explore this in more depth and more breadth (how to more deliberately plan for such flexibility? What are the limits to flexibility?). Nevertheless, the discussion so far already hints that all questions are interlinked and one of them can only with difficulty, if at all, be addressed without also considering the others.

Further research should explore the questions raised here in more depth, and study how they relate, and how experimental spaces in urban streets epitomize these questions and the search for answers. The cases shortly explored above, as well as others, can provide the laboratories or ‘natural experiments’ in which to explore the questions further, in research but also in policy-making and experimental practices.

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