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Policy tools for sustainable transport in three cities of the Americas: Seattle, Montreal and Curitiba

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ABSTRACT

Cities around the world are trying to implement transport policies to reduce the dramatic environmental impacts of motorized modes. There is no single method to determine the success of sustainable transport systems, but comparative studies can be illuminating despite inevitable data inconsistencies. This study brings to the forefront different styles of regulation and mix of policy tools used by cities that have been trying to implement sustainable transport systems. To this end, a classification scheme of policy instruments was developed based on asymmetries of information and legitimacy, generating four types of instruments: Self-regulative, Informative/Limited action, Proactive/Government and Interactive/Governance. Using 39 semi-structured interviews with key informants from different levels of government and stakeholders, this paper compares the instrument choice in terms of sustainable urban transport policy in Seattle, Montreal and Curitiba. The main conclusions drawn from our interviews is that the distinction between government/proactive instruments and governance/interactive instruments does not appear as dichotomous and clear as expected and that each city deploys somewhat different patterns of instrument choice, in accordance with its political and institutional context.

1. Introduction

Cities around the world are trying to implement transport policies to reduce the dramatic environmental impacts of motorized modes, which also involve social and economic negative externalities (Mayeres, 2000). Problems include mobility patterns favouring single-occupancy vehicles, sprawling metropolitan areas, and longer unproductive hours spent in traffic. Among the three large sectors of the economy producing greenhouse gases (GHG) – energy, industrial production and transport –, it is the transport sector where the progress in reducing emissions is generally considered the least successful (Monbiot, 2006). In fact, GHG caused by transport continues to increase unabated from year to year (United States Department of State, 2010; International Energy Agency 2013), nearly two decades after the adoption of the Kyoto protocol. In Seattle, road transport (passenger and freight) represented 64% of total CO_2 emissions in 2012, an increase of 9% since 1990 (Seattle Office of Sustainability and Environment, 2014). In Montreal, the transport sector (on and off-road) is also the largest source of GHG emissions, representing 39% of GHG emissions in 2009, an increase of 5% compared to 1990 (City of Montreal, 2013). Road transport is responsible for 61% of the annual GHG emissions for Curitiba, with 2.5Mt of CO_2eq (ICLEI-Brasil, Prefeitura de Curitiba, 2016).

There is no single method to determine the success of sustainable transport systems, and comparing results among cities in different countries is tricky due to their geographical, morphological, social, and economic characteristics. But comparative studies can be insightful despite inevitable data inconsistencies such as how metropolitan areas are defined in each case (Kenworthy, 2008), and the somewhat different dimensions of sustainable transport each city is in the process of improving.

The research presented here faces similar challenges, however its contribution to sustainable transport studies relies on bringing to the forefront different styles of regulation (in its larger meaning) and mix of policy tools used by cities that have been trying to implement sustainable transport systems. We have chosen three cities across the Americas that are doing better than most in their respective national contexts, using as a proxy single-occupancy vehicle use, and the use of public transit and non-motorized modes. Besides the modal split, we have also selected cities

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recognized in technical and scientific literature for their sustainable transport system, driven by strong and active transport policies. These cities are Seattle, in the United States, Montreal, in Canada, and Curitiba, in Brazil.

These cities have been praised for their transport systems. In the center city of Seattle, 45% of people commute to work by transit – a 2% increase from 2012 to 2014, whilst single-occupancy vehicle (SOV) modal share decreased 3% in the same period, to 31% (EMC Research, 2014). Use of public transport is Seattle is almost 10 fold the U.S. average (AASHTO, 2013). Seattle's mortgage loans linked to accessible location have been recognized as increasing the use of public transport (Cervero, 2005). Montreal has known an upsurge in transit use recently (Grimsrud and El-Geneidy, 2013). Within the island of Montreal, the use of transit and non-motorized modes is at about 47%, and 33% when including the metropolitan area (City of Montreal 2010). Montreal's bike-sharing system was implemented in 2009 and has over 5000 bicycles and is one of the largest in the Americas (Shaheen et al., 2010). Curitiba has pioneered the Bus Rapid Transit (BRT) system in the early 1970s, and has consistently improved bus service along the following decades (Lindau et al., 2010), which is reflected in the high use of public transport – although absolutely reliable data is not always available (Demery, 2004; Duarte and Rojas 2012).

However, despite their relative success in terms of transit, bike and pedestrian modal shares, all cities face challenges such as the rise in motorization and *metropolitanization*. The latter is frequently considered a dependent variable of the former and, moreover, still is a major issue for urban governance (Tremblay-Racicot and Mercier, 2014).

In this article we have focused on which policies these three cities have pursued and, more specifically, which policy instruments and styles of regulation they have been using to implement their transport systems. Although different expressions are utilized, such as "policy tools" or implementation strategies, policy instruments refer to the means available to governments to influence or coerce business and citizens in a desirable direction.

In each of the three cities discussed here, we have interviewed twelve (fifteen in Curitiba) stakeholders and decision-makers at the different government levels directly involved in formulating and enforcing the use of policy instruments, including the federal, the state or provincial, the metropolitan, and the municipal level. The interview protocol was approved by a university ethics committee. Interviews were recorded, transcribed and each one of them was coded with Excel spreadsheets by three research assistants using a qualitative/quantitative coding framework. The assistants then compared their coding, agreed on a final coding for each interview, and this data set was analyzed using the quantitative analysis software SPSS.

The paper is structured as follow: the next two sections present the analysis of the policy context of the challenges to achieve a sustainable urban transport system, and the proposed framework for understanding the use of policy instruments for sustainable urban transport. After detailing the methodology, we present the findings based on the empirical elements drawn from the interviews conducted in Seattle, Montreal, and Curitiba. Drawing from the distinction between government and governance as two different policy configurations (Bache et al., 2015, p.68; Marsden et al., 2014), we discuss how each city uses a different mix of the two policy configurations in their respective choice of policy instruments for sustainable urban transport. Our discussion includes the effect of institutional and political factors influencing the choice of policy tools. We conclude on the specifics of the challenge of sustainable urban transport and on the merits of government and governance patterns to address this challenge.

2. The context of urban transport

Two challenges have been increasingly addressed in the literature on sustainable urban transport: (1) the formulation of multi-level public policies and (2) the presence of a larger array of different stakeholders with aspirations to participate in decision-making.

The multi-level policy environment brought upon by the increasing institutional fragmentation and the diffuse nature of authority, particularly in federal systems (the case for the cities discussed here) adds to the complex nature of urban problems (Brown, 2012), and this is particularly true in transport challenges. Part of the problem comes from the fact that the central (and original) city may be at odds, sometimes economically, with smaller cities demographically growing and geographically expanding within its metropolitan region.

The second element of the emerging urban context, tied to the first, is the wider variety of state and non-state actors, NGO's, private firms, interest groups or voluntary associations (Mayntz, 2006), pushed to the forefront of the scene both by the larger scale of policies and an increasing aspiration for participating in public decision-making. This particular combination "has weakened the ability of territorially based jurisdictions to control policy formulation and implementation in traditional ways" (Howlett et al., 2009, p. 384), and challenges the top-down processes of the centralized city government ruled by functional and technical rationalities (Frey, 2012).

In response to the contemporary challenges of fragmenting metropolitan areas and of increasing demands for participation in decision-making, urban scholars have drawn upon the concept of "multi-level governance" (Horak and Young, 2012). In such multi-layered and more horizontal process, "non-state actors play a role in the different phases of the policy process" (Salamon, 2002).

The notion of governance (as opposed to the notion of "government") is of particular interest for this research for two reasons. The first is that the general notion of governance "fits perfectly with the research agenda in urban politics (where) public-private partnerships and other forms of exchange between local authorities and their environment had long been in place (Pierre, 2011, 6). The second reason is that governance patterns, as opposed to government ones, require a somewhat different set of instruments for implementation (Howlett, 2014, p. 189; Torfing and Triantafillou, 2013, p. 10; Torfing et al., 2012). Indeed, in portions of the literature on public policy and policy instruments, there is the suggestion that governance challenges, often related to metropolitan policies, require policy tools which are less direct and more interactive (Jordan et al., 2003; Howlett, 2001; Kassim and Le Galès 2010; Salamon, 2002).

3. A conceptual framework for policy instruments in sustainable urban transport

In this article we are particularly interested in understanding the mix of policy instruments (Howlett, 2011) and styles of intervention aimed at attaining a more sustainable urban transport system. Because of the focus of our study, we wanted a classification of instruments which would discriminate between the more traditional "government" instruments, and the presumably more recent and contemporary "governance" policy instruments. In addition, and to compare our findings with those of other studies on the same subject, we wanted a classification scheme that would describe government and governance instruments in a comparable, if not universal, language.

Although there is no agreement upon a classification of policy instruments (sometimes called "tools") in general (Vedung, 1998;