Cities xxx (xxxx) xxx–xxx

Contents lists available at ScienceDirect

Cities

journal homepage: www.elsevier.com/locate/cities

# Do-it-yourself (DIY) adaptation: Civic initiatives as drivers to address climate change at the urban scale

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ARTICLE INFO

*Keywords:*
Urban adaptation to climate change
Do-it-yourself urbanism
Experiments
Civic action
Urban governance
Neighbourhood

ABSTRACT

Greening projects lead by civic actors at the urban scale spur transformation through example and through gradual adjustment of processes. Questions remain on how such projects are put into action and on what make them work. How do civic experiments reflect the ongoing change in urban governance and practices? We focus on a qualitative study of two greening initiatives lead by civic groups in Quebec City (Quebec, Canada). The case studies are analysed through the lens of theories that approach civic action and climate experiments as new modes of urban governance. We conclude that civil society groups have the capacity to intervene directly on the urban environment in order to enhance its quality. Findings reveal that informal greening initiatives contribute to a civic narrative in favour of adaptation to climate change at the local scale.

## 1. Introduction

Largely recognized as having a major role to play in fighting climate change, particularly in terms of adaptation (Aylett, 2015; Broto, 2017; Heinrichs, Krellenberg, & Fragkias, 2013), cities increasingly pursue concrete and strategic action (Chu, Anguelovski, & Roberts, 2017). But the fight against climate change is a shared challenge that cannot be addressed by local governments alone (Anguelovski, Chu, & Carmin, 2014). On the one hand, the planning and funding of climate change adaptation is the responsibility of higher levels of government and supranational groups (Nalau, Preston, & Maloney, 2015). On the other hand, third parties—private stakeholders or representatives of groups or civil society—are the ones mostly responsible for taking action and best able to do so (Aylett, 2013; Bulkeley & Broto, 2012).

Indeed, taking adaptive action and making it part of regular practice is usually something that non-governmental players initiate. There is a growing volume of literature on cases where companies (Broto & Bulkeley, 2013; Kivimaa, Hildén, Huitema, Jordan, & Newig, 2017), households, or citizens groups (Semenza, March, & Bontempo, 2006; Wamsler, 2016) have gotten involved in the fight against climate change. These actions encourage a form of climate governance that recognizes the role and capacity of nongovernmental stakeholders in decision making and service delivery (Anguelovski & Carmin, 2011; Linnenluecke, Verreynne, de Villiers Scheepers, & Venterd, 2017; Sarzynski, 2015; Satterthwaite, 2007). Civic action can have significant collective impacts (Seyfang & Haxeltine, 2012; Tompkins & Eakin, 2012; Wamsler & Brink, 2014).

This article focuses on civic action in the field of urban greening. It seeks to understand how local actors contribute to climate change adaptation at the neighbourhood level. Based on two greening initiatives, the study seeks to enrich our thinking on how citizens can support climate change adaptation. It looks at local experiments as examples of how to develop and implement adaptation.

The two case studies involve special interest groups: *Bien Vivre à Saint-Roch* (or 'Living Well in St.Roch'), and *Verdir et Divertir* (or 'Greening and Animating'). Their ongoing initiatives were all launched between 2009 and 2012 with the aim of improving the quality of the urban built environment. They are modest initiatives with modest results, but they got residents working together and had an impact on neighbourhood landscapes. In that sense, they serve as examples of what can be accomplished at the local level with limited means and relatively simple actions. These citizen initiatives helped structure a civic "narrative" of support for the greening of downtown neighbourhoods.

From a theoretical perspective, examining local greening projects enriches our understanding of climate experiments as a framework for analysing current climate governance (Moss, Meehl, Lemos, et al., 2013; Swart, Biesbroek, & Lourenço, 2014). We postulate that through their ad hoc initiatives, experimenters take a collaborative rather than a confrontational approach to public action. They put an array of resources to work that diverge from the repertoire of performances traditionally associated with social movements, such as associations, street

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https://doi.org/10.1016/j.cities.2017.12.018
Received 18 August 2017; Received in revised form 22 December 2017; Accepted 22 December 2017

marches and public statements (Tilly, 2004). Through their self-producing and action-oriented strategy, civil society stakeholders create a momentum that drives the city's adaptation to climate change. Our case studies illustrate how local actors take visible action in the daily urban space and how these actions can be seen as local and civic tools to adapt the city to climate change.

Section 2 addresses the concept of experimentation and Do-It-Yourself (DIY) urban planning as ways in which civil society can get involved in developing public urban spaces. We then provide a brief overview of the social and climatic context in Quebec City, the impact of greening initiatives on climate change adaptation and the methodology used (Section 3). Section 4 presents the cases studies. Section 5 discusses our main findings on the impact of civil society stakeholders on the city's adaptation to climate change.

## 2. Theoretical framework: Different ways to have a direct impact on the urban landscape

Already in 2007, the Working Group II of the Intergovernmental Panel on Climate Change (IPCC) recognized the role of public participation in reinforcing the relevance and feasibility of adaptation measures (IPCC, 2007). Subsequent research has supported the idea that including local residents in planning and implementing adaptation is not only helpful but also necessary for good governance of the urban adaptation process (Linnenluecke et al., 2017; Measham et al., 2011; Tanner, Mitchell, Polack, & Guenther, 2009; Webb, McKellar, & Kay, 2013).

More generally, governance has been shifting from the institutional model since the beginning of the 21st century: the urban political landscape is changing and is tending away from the conventional institutional framework (DePledge, 2006; Moss, 2009). New groups of people are using new methods of collaboration, structured by individual preferences and lifestyle rather than collective goals and interests (Bennett, 2012). Through the choices they make, individuals question public action and even agree to take its role in order to adjust and adapt this public space (Hay, 2007). In that sense, such modus operandi diverge from traditional social movements and from regular collective action.

We will take a look at these new interactions considering them first as a way to experiment with forms of climate governance (Broto & Bulkeley, 2013; Hoffmann, 2011) then as a way for individuals and groups from civil society to have a direct impact on their communities (Finn, 2014; Spataro, 2016).

### 2.1. Local greening experiments as a first step towards adaptation

The concept of experimentation is increasingly present in research on sociotechnical transition, sustainable socioenvironmental management, and climate governance (Betsill & Bulkeley, 2007; Evans, 2011; Geels, 2004, 2005). Some studies specifically focus on technical experimentation, which provides new products or services to support more sustainable practices (Berkhout et al., 2010; Kivimaa et al., 2017). These technical innovations—new roofing materials, for example—contribute to the shift to a form of sustainable development in line with conventional management and production systems (Broto & Bulkeley, 2013). However, they do not necessarily involve a change in standards or in the way we approach problems and their solutions (Farrelly & Brown, 2011).

In contrast, governance experiments are seen as having the potential for bringing about a more indepth transformation of our ways of addressing socioenvironmental issues (Bos & Brown, 2012; Chu, 2016). They bring together stakeholders from different backgrounds—private sector, public sector, civil society, and associations—and mobilize their resources (Moore & Hartley, 2010). Experimentation can be aimed at a material result, but it can also seek a cultural change to reduce greenhouse gas emissions and the climatic vulnerability of cities, for example.

Governance experiments do not result from national or international programs (Hoffmann, 2011). They are in fact ad hoc projects whose originators are not necessarily involved in climate risk management. These actors might be local elected officials, and community groups leaders are likely to be on the front line of catastrophic events. However, these are scarcely involved in the making of public policies and planning processes regarding climate change.

This situation is changing, with social acceptance, deliberative democracy and public participation now being recognized as legitimate part of the decision-making process (Healey, 2006). Moreover, local actors are reclaiming their voice and even directly taking action to adjust and adapt the local space and environment. By doing so, when organizing sandbagging of the streets to staunch an anticipated flood for example, they do not follow normal rules and institutional frames. While regular collective action produces stakeholders with a common goal and shared values who express their will and claims to the institutional authority, governance experiments build a new authority (Hoffmann, 2011). Since there is no best practice to refer to when it comes to complex problems, experimenters need to define new arrangements, inspired by frames and references from different scales, sectors of activity and knowledge (Anguelovski & Carmin, 2011; Nevens, Frantzeskaki, Gorissen, & Loorbach, 2013). Experiments offer the opportunity to explore and apply innovative practices (Karvonen & van Heur, 2014; Rosenzweig & Solecki, 2013).

Actors who experiment are motivated by the expectation of learning by doing. In that sense, they manage to take action without knowing with certainty if their initiative will be efficient or if it will be accepted and recognized by the bulk of the population (Camacho & Rodriguez, 2008; Bos & Brown, 2012; Moore & Hartley, 2010; Loorbach, 2010). Furthermore, with regard to adaptive action, those who engage in experimentation serve to drive adaptation to climate change, ahead of public action, although it is not necessarily their primary aim: Adaptation is sometimes a positive by-product of their actions.

Therefore, governance experiments promote adaptation to climate change because they spur transformation through example and through incremental adjustment of processes. However, some questions remain on how the experiments are carried out, how they are put into action and if they can gain legitimacy (de Bruijne, van de Riet, de Haan, & Koppenjan, 2010; Linnenluecke et al., 2017). The literature on Do-It-Yourself (DIY) urban planning is another, valuable resource for looking at experimentation at the local urban level.

### 2.2. Experiments as DIY urban planning: Individuals and small groups taking action on the public space

In all cities around the world, daily life is the stage on which new practices and habits emerge (Andres, 2013; Spencer, 2012). The neighbourhood is a place for challenging the dominant cultural authority, especially what the state authority has neglected to do (Finn, 2014). Behind citizen urban planning[1] is the desire to take action and spontaneously adapt the urban context (Sargin & Savas, 2012). Local DIY urban planners in developed cities target urban environments they deem to be neglected. In doing so, they initiate a learning and adjustment process, both for the urban space in question and themselves (MacFarlane, 2011; Mitchell, 2003; Sassen, 2012).

In this regard, DIY planning activities, which vary in time and space (Wasserman, 2007), are based on the idea that citizen stakeholders can create urban spaces or change and improve them. This “right to the city” (Lefebvre, 1968) exercised by users of the space lead stakeholders and observers to question for whom and for what the city is designed (Iveson, 2013).

[1] DIY is often associated, rightly or wrongly, with tactical urban planning (Spataro, 2016).