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Participatory visioning in transport backcasting studies: Methodological lessons from Andalusia (Spain)

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ABSTRACT

The backcasting approach is being increasingly used in the field of transport to address issues of climate change. While it acknowledges that a structured involvement of stakeholders should become central in transport backcasting studies, there are very few policy relevant papers that pay special attention to stakeholder participation in the visioning phase of backcasting. This paper aims at showing the findings of a participatory visioning study as a starting point of a wider backcasting analysis for the transport sector (2050) in Andalusia (Spain). It presents a methodological approach that involves a total of 40 stakeholders and combines two participatory techniques: (i) Delphi survey; (ii) semi-structured interviews. The main outcomes show how stakeholders were engaged in the participation process through each technique. It then identifies five relevant methodological issues for a more detailed discussion: (i) the selection of participants; (ii) the means to visualise long-term futures; (iii) the visualisation of desired futures; (iv) the generation of multiple future visions; (v) the combination of multiple participatory techniques. In parallel, the study also presents the means by which the use of both participatory techniques can provide a narrative of a future vision for the transport sector in Andalusia. That vision focuses largely on lower carbon emissions, technological innovation, and urban compactness.

1. Introduction

Scenario building provides a family of methods that can be used for studying the likely response of the transport sector to climate change (Aggarwal and Jain, 2014; Hickman and Banister, 2014). These scenarios can be of a prescriptive, or an exploratory or a normative nature. This means that they can be assembled from a forecasting, an exploratory, or a backcasting point of view (Vergragt and Quist, 2011). In particular, the backcasting approach has been commonly used in the field of transport and climate policy. Its distinctiveness lies in taking a normative view of desirable endpoints in the future, and then examining the means and pathways by which those futures can be reached. A considerable literature on the methodology and technical issues has been published (Banister et al., 2000; Hickman et al., 2011; Geurs and Van Wee, 2000; Mattila and Antikainen, 2011; Olsson et al., 2015; Tuominen et al., 2014).

Significant changes are taking place in the context of transport planning, resulting in the emergence of new communicative approaches based on stakeholders' participation and interaction (Bertolini, 2007; Curtis, 2011; Habermas, 2007; Innes and Booher, 2010). A communicative approach in transport planning consists of interactive processes rather than the deliberative process of a single actor or group of actors, emphasizing the design of planning processes, participation and learning, and a reconciliation of different ways of understanding planning opportunities. It re-orients planning from a form of scientific, instrumental rationality to a form of reasoning, based on consensus seeking discussion (Willson, 2001 p. 2). Given this context, an important consideration here is the range of the different actors involved, as well as the role that they play in helping to define the different visions that form part of the backcasting analysis.

A number of different stages during the backcasting process can be identified (Banister and Hickman, 2013). The first is the "visioning phase", that establishes a baseline reflecting the business-as-usual projection, together with the construction of a series of images of future for desirable alternatives in the longer term (25–30 years). According to Wangel (2011), a wide variety of actors should be involved to draw a normative view of desirable endpoints in the future (these are the "normative actors": members from the public, practitioners and experts, scholars). The second stage focuses on elaborating a series of policy

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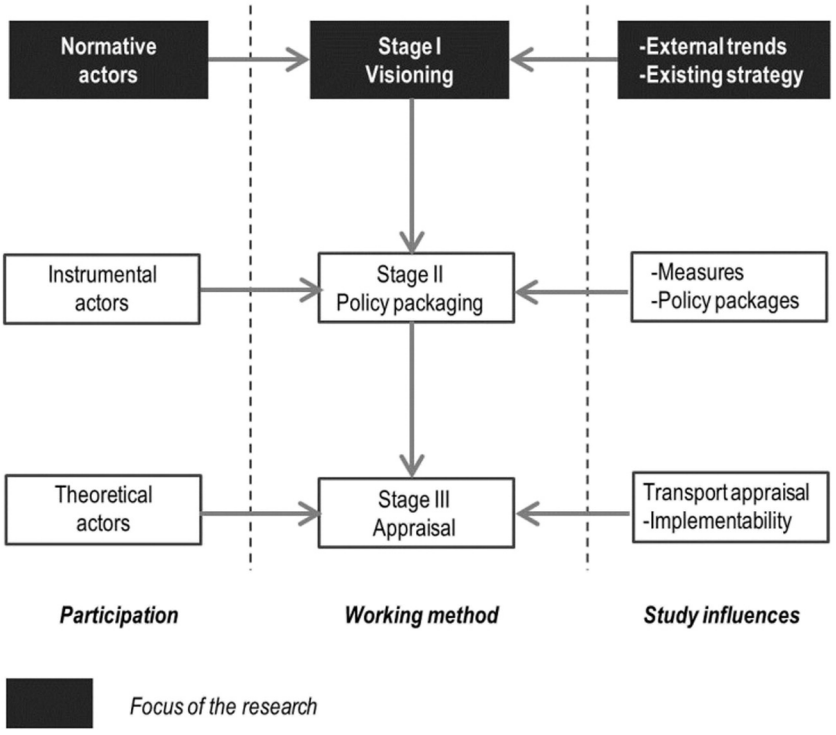

Fig. 1. Backcasting process.
(Adapted from Banister and Hickman, 2013 p. 286)

packages that might help in reaching the images of desirable futures, with detailed pathways and timelines for implementation. This is called "policy packaging phase", and actors involved in the policy process happen should be specifically consulted in this stage (these are the "instrumental actors" such as: practitioners, policy-makers, decision-makers). The third stage is the "appraisal phase", where the effectiveness of policy packages is measured and assessed in terms of how and when they can be implemented. Here, a combination of "theoretical (e.g. scholars and theorists) and instrumental actors" should be included. Despite the growing recognition that a structured involvement of stakeholders should become central in the most effective policy relevant backcasting studies (Banister and Hickman, 2013 p. 284), a limited attention has been paid to understand the effectiveness of different participatory techniques during the visioning phase of transport backcasting studies. That is the main focus of this research (Fig. 1).

This paper aims at assessing the usefulness of two participatory techniques during the visioning phase of backcasting analysis for the transport sector: (i) Delphi survey; (ii) semi-structured interviews. The region of Andalusia (Spain) provides the empirical focus of the research. The paper presents an in-depth analysis of how participants were engaged through each participatory method, and it then discusses the key methodological issues that need to be considered during the participatory visioning processes. The main differences and similarities between the visions generated from each technique are also presented. This has formed the basis for a final future image (2050) for the Andalusian transport sector as a starting point of a wider backcasting analysis. This desirable future image is built upon three main pillars: lower carbon emissions, technological innovations, and urban compactness.

Section 2 details the theoretical framework and the background to the case study used, while Section 3 outlines the research design. Section 4 presents the main results. Section 5 discusses on the methodological questions that have to be considered during the visioning stage of backcasting analysis, when participation is seen as being an important component of thinking about normative futures. Section 6 points the way forward.

2. Background and context

2.1. Backcasting and participatory visioning[1]

There is a wide ranging literature that covers the methodologies for scenario planning, as indicated by Amer et al. (2013); Bishop et al. (2007); Chermack et al. (2001); Varho and Tapio (2013). To contextualize this study, two particular types of backcasting studies are seen to be of particular interest (Wangel, 2011 p.881): (i) result-orientated backcasting, where the resulting scenario is the main aim; (ii) participatory-orientated backcasting, where the procedural understandings of scenario development provide the focus, and these are prioritized over the main concern with outcomes.

A participatory visioning process can be further divided into bottom-up and top-down approaches. On the one hand, bottom-up approaches mean that the selected actors and the related discussions constitute different models of visioning (Geurs and van Wee, 2000; Schade and Schade, 2005; Tuominen et al., 2014). On the other hand, top-down approaches start with the visioning models and then let these decide which actors and related discussions to include in the scenario (Wangel, 2011; Zimmermann et al., 2012). In addition, there are a wider number of studies that cover a mixed approach between top-down and bottom-up schemes following a more iterative process (see Hickman et al., 2009; Olsson et al., 2015).

[1] To elaborate this section, relevant academic articles were systematically reviewed by conducting 3 searches of the Scopus database using keywords such as backcasting; transport; visioning; stakeholders; participatory methods; etc. A total of 158 scientific articles were found. The literature selection among those articles used four types of filters: (i) publications that addressed the specific subject of our research, the visioning stage in transport backcasting studies (specificity); (ii) special attention was paid to publications that had used different methods to conduct the backcasting process (methodological approaches); (iii) publications focused on long term emissions, on energy consumption or on mobility patterns (visioning content); (iv) publications that covered different visioning spatial scales (local; regional; national; supranational).