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Understanding bicycle highways as a policy innovation

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In many European countries, cycling has become an important mode/alternative for medium distance commuting, mainly as a result of new technological opportunities (e-bike, smart communication). Consequently, many cities and regions are expanding cycling networks, through the introduction of bicycle highways. Local governments consider bicycle highways as an innovative and sustainable alternative in commuter transport. In this paper, we will explore whether bicycle highways can be actually considered a policy innovation. In doing so, we will peel the layers of innovation through the process of diffusion in order to bring about change. We focus on two distinct, but as we will show, strongly related processes that have been shown to be vital to policy innovation (see e.g. Jordan & Huitema, 2014). The first process concerns the adoption of policy innovations and the way they diffuse from one site to another. The second process relates to the effects that innovations produces on reality, centring on the extent to which they promote substantial or radical change.

We draw on insights developed in science, technology and society (STS) to understand the movement of technological innovations (Akrich et al., 2002a, 2002b; De Laet & Mol, 2000; Law & Mol, 2001) and apply these to the field of policy making. These perspectives distinguish three forms in which (technological) innovations might appear: as an object that holds its (physical) shape while it diffuses to other locations, as an object that adapts to local circumstances and finally as an object that helps to bring into being novel realities or reinforces existing ones. We present results from interviews with professionals involved in the planning and implementation of bicycle highways in four different countries (Netherlands, Belgium, Germany, UK). This material has been supplemented with a review of relevant policy of documents.

The first form in which an innovation might appear is that of an object that is relatively stable and inflexible over time and across place. Viewed from this perspective, the speed of the innovation's diffusion can be explained by its intrinsic qualities, which have the same meaning and persuasion everywhere. In this respect, Akrich et al. (2002a, 2002b) compare innovations to viruses that spread as more users are persuaded by their infectious qualities. In the field of public policy as well, this virus analogy is well rehearsed (see e.g. Richardson, 2000). For this to happen, the qualities of the innovation have to become fixed and standardized. Only so, can potential adopters successfully evaluate the advantages it offers compared to other goods or services. The question is whether bicycle highways have gone through such a process. We will show which specific textual – even mathematical in Germany - and material devices have been used to describe bicycle highways both in abstract and in more concrete terms.

In the second form an technological innovation is object which is adaptable, flexible and responsive. In this account, the presumed advantages of an innovation do not have the same meaning and power of persuasion for all and in all places. Instead, successful adoption depends on the extent to which an innovation can be adapted to the particular contexts in which it is to be inserted. As a result specific alliances might be formed and particular interests mobilized in these sites, which can then act as powerful spokespersons. We explore several alliances that were sought after and how in each of these alliances bicycle highways were framed in different ways. This exploration will show that bicycle highways are different objects depending on its context. In some sites, they become a car highway but for bicycles, especially due to efforts to insert them in the ‘system of automobility’ (see e.g. Bruno, 2018). In other sites, they are transformed into an infrastructure improvement that generates all kinds of economic costs and benefits. Yet, in other sites, bicycle highways are investments that help to improve safety and quality of neighbourhoods. Bicycle highways are, thus, characterized by fluidity, shape changing, and indeed name changing (as exemplified by the range of terms that have been used to designate bicycle highways in the Netherlands). Crucially, difference does not exist in the rhetorics or narratives used to describe bicycle highways alone, but in the practices in which bicycle highways are enacted. These practices entail both discursive and material elements such as traffic models and cycling data.

However, to explore whether bicycle highways can actually be considered an innovation – and to evaluate their potential role in sustainability transitions – we may need to resort to yet another version of what an object, and therefore an innovation, might be. Here we follow Law and Mol (2001) that argue that any representation of an object depends on realities that are necessarily absent. For instance, all the efforts needed to generate an estimate of modal shift or a cost-benefit ratio normally become obscured in the process of producing them. And so are the realities built into the models used to produce these figures. Travel time, for example, is conceived as a ‘bad’ and they also bring forward a reality in which all transport modes, including public transport and cycling, should be solely judged against efficiency criteria.

One might argue here that such absences demonstrate that bicycle highways have been ‘captured’ or even co-opted by the system to which it sought to offer an alternative. This is undoubtedly true, but STS studies have forcefully shown that it is not only objects that have to change in order for them to be adopted, but also the contexts in which they are to be inserted. So, objects might also be transformative and generative of new but absent realities. One way of looking at this, is by investigating the trajectories through which objects acquire political capacities. In this respect, we will show that bicycle highways follow different political trajectories in different sites. In some places they help to bring about new

concerned and unsettled 'publics' as they start to make use of bicycle highways. In other localities we have seen how bicycle highways become part of more traditional forms of politics in which partisans endorse the concept as part of broader strategies to make (inner) cities more cycling friendly. And then there are sites, where bicycle highways have become implicated in a type of politics, often associated with Foucault's notion of governmentality, in which practices of government have become ever more technical. The alliance with the transport system and the practice of cost-benefit analysis can be regarded as particular modes of governmentality. Bicycle highways are no longer seen to be ostensibly political but as a form of routine administration to 'solve' particular problems. Simultaneously, we came across sites in which bicycle highways actually helped to break down particular routine practices: for example by making it more readily accepted to discuss priority for cyclists in traffic control.

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