The narrative change of sustainable practices: the implementation of bicycle lanes

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Abstract

The successful implementation of sustainable practices becomes more important with the passing of time. Sustainable transport practices such as the implementation of bicycle lanes provide economic and health benefits. Nevertheless, the implementation of this process varies in different cities and jurisdictions. This paper argues that a policy perspective of the process is needed to appreciate why the understanding of a specific implementation process differs by location. In this study we use the Narrative Policy Framework (NPF) to explore how the narrative of bicycle lanes implementation changes over time and to explain the implications of this changing narrative. We show that the narratives of the implementation of bicycle lanes are not fixed over time, or by location and that after implementation they tend to become part of the identity of the cities. Our results imply — from a policy perspective — that using the NPF opens doors to address implementation processes as a political strategy and not just as a reflection of a system of belief.

KEY WORDS: sustainable narrative; cycle lanes; best practices; cultural change; implementation; policy strategy.

1. Introduction

The implementation of sustainable practices is an ongoing major focus in transportation research (Banister, 2008), and several studies have tried to address the process of its implementation (Mulley et al., 2012, Van Wee, 2002). To understand the implementation of sustainable practices we need to recognise the context of cities. This is an important challenge and demands a different approach (Levinson and King, 2019). To address this challenge, this research offers a public policy perspective.

A recent development in policy studies is the Narrative Policy Framework (NPF) (Shanahan et al., 2018b). Using the NPF allows us to recognize the implementation process as a policy process. To approach a policy process the NPF establishes the use of narratives.

A relevant case of sustainable practices policymaking is the implementation of bicycle lanes. The implementation of bicycle lanes provides health, economic and social benefits (Fishman, 2016, Garrard et al., 2012). Despite well-documented benefits, bicycle lanes have a differing rate of implementation in cities that would benefit from them. Using the NPF this study addresses the questions: "Do narratives change once the bicycle lanes have been implemented?"; and "What are the implications of this change/no change?".

We conducted semi-structured interviews with stakeholders (academics, policymakers and advocates) in three cities with different contexts and distinct levels of bicycle lanes implementation: Amsterdam, London and Sydney. For the interviews, we used the NPF to determine the narrative of the implementation of bicycle lanes. We triangulated their narratives with scientific and other publications to validate them. We then conducted a reflexive thematic analysis to find patterns that help us answer our research questions. We found that the narratives of London and Sydney can be compared, and the results show

similarities in the understanding of this process. In Amsterdam, by contrast, the narrative must be understood as part of their local identity, because they don't consider the implementation of bicycle lanes an actual problem. Using the NPF to address the implication of the change in the narrative we can approach this change as a strategic political decision and not just a cultural difference.

This paper is structured in the following way. We start by describing the Methodology explaining our approach to narratives and an explanation of how the NPF works (2.1). This is followed by explanation of the rationale behind the selection of case study cities and stakeholders, and how the study was conducted (2.2). We then move to the Results and discussion (section 3) where we explore the results of our analysis looking at: the time perspective of the stakeholders' narratives (3.1), the main narratives analyzed in the different cities (3.2), and a comparison of the narrative form and the narrative content (subsections 3.3 and 3.4). We conclude the paper with a discussion of the implications of the findings (3.5) and acknowledgment of the limitations (4).

2. Methodology

2.1 Research Context

To understand the NPF and the use of narratives we need to make a distinction between "narratives" and "policy narratives". Narrative is a story with a temporal sequence of events (McComas and Shanahan, 1999, Nelson et al., 2022, Loyola et al., 2021); while policy narratives are the way relevant players make sense of the policymaking process; in other words, how they understand their policy reality (Jones et al., 2014). Or as addressed by Stone (1997), "definitions of policy problems usually have narrative structure; that is, they are stories with a beginning, middle, and an end, involving some change or transformation". The way the NPF approaches narratives is through interrelated narrative components (see Figure 1). The narrative components state that we can understand narratives in two ways; by its *form,* and its *content*. By its *form* assumes that narratives have specific and identifiable elements: Setting (space and time), Characters (victim, villain, hero), Plot (how actions develop), Moral of the story (policy solution). By its *content*, refers to what the story is about, the content can be explained by a) belief system theories; or b) political strategy. In other words, the narrative content gives meaning to the narratives.

Figure 1 Core NPF narrative components (adapted from Jones et al., 2014a)
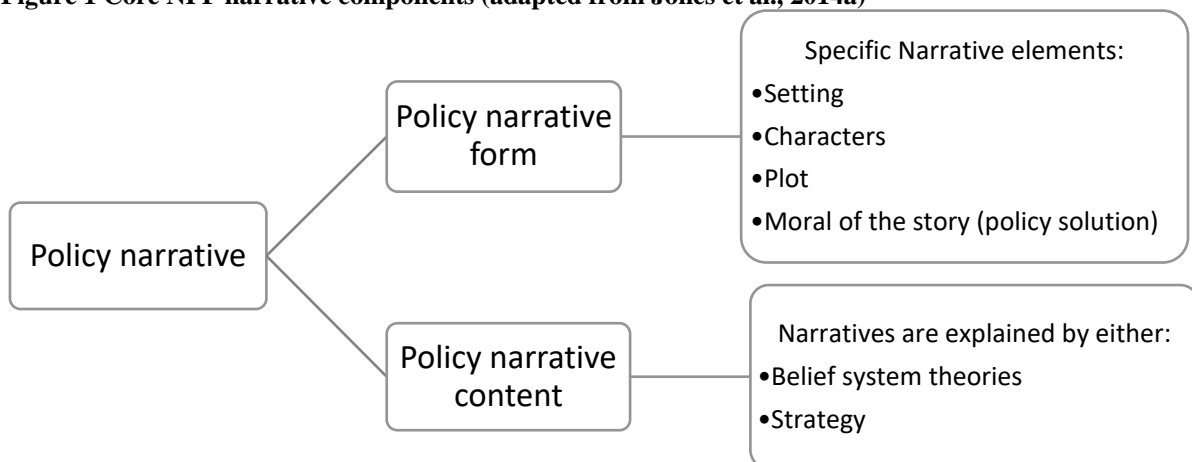
The NPF research approach recommends asking structured questions on a specific level (Shanahan et al., 2018a). The NPF assumes three levels of analysis: micro (individual), meso (group), and macro (cultural and institutional). In this study we use the micro level because we are interested in understanding the policy narratives of individuals. This is important because stakeholders are involved in the decision making process and therefore their experiences represent well-founded evidence of the process under investigation (Kua, 2016).

The individual structured questions allow the investigator to determine the narrative elements which can be summarized: *Settings* (time and place); *Characters* (victims, villain, and heroes); *Plot* (how characters interrelate); and, *Conclusion* (policy solution).

2.2 Case studies

The city selection in this study reflects cities with different levels (amount) of bicycle lanes implemented. Comparing cities with different levels of cycling infrastructure allow us to find similarities and differences in their narratives. Nevertheless, previous research shows that comparable cities should have similar levels of economic advancement and a significant cultural comparability (Kenworthy and Inbakaran, 2011).

The selected cities are representative case studies involving important contextual conditions (Yin, 2017). They are all modern cities who shared a western-oriented culture (Henrich, 2020) and are modern developed countries (United Nations, 2021). The cities included in this study are Amsterdam, with an extensive bicycle lane network, 27% of home-work trips made by bicycle (Harms and Kansen, 2018), and 25% of all trips (KiM, 2015); London, with fewer bicycle lanes implemented but with an increasing number of bike lanes in recent years, with 0.7% of trips by bicycle (TfL, 2019); and Sydney, a city with a bicycle lane network in its infancy that "has no reliable data on non-work cycling trips" (City of Sydney, 2018).

Thirty-five stakeholders that have relevant experience with cycle lanes, and live or work in the three cities were selected with the help of academic partners in the UK and the Netherlands. Stakeholders in this study comprise 22 academics[1], 9 policymakers (including representatives of transport authorities), and 4 community advocates who have been involved in the bicycle lanes implementation process —we accept the Lipsky (2010) suggestion to consider "street-level bureaucrats" as policymakers.

All semi-structured interviews were conducted by the same person (interviewer; the lead author) in a conversational way. The interviews — following the appropriate institutional ethics approval — were anonymous in order to protect the identity of the respondents who may share sensitive information for third parties. The interviews were conducted, face to face (23), via video-call via Skype or Zoom (8), and phone call (4). All interviews were recorded. Interviewee socio-demographic information was also collected[2].

After conducting the interviews, the recordings were transcribed, and scientific and other publications were used to triangulate the narratives[3] using a textual analysis. The purpose of the triangulation process is to confirm the narratives by considering other perspectives. In this study we accept that "Triangulation is a process of verification that increases validity by incorporating several viewpoints and methods" (Yeasmin and Rahman, 2012). The triangulation corroborated the testimony of experiences and adds validity to the narratives described. If a narrative cannot be triangulated/corroborated with other sources (unrestricted to the location of the interviewee), it was taken out.

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[1] The larger number of academics is explained by the nature of our selection approach (suggested by academic partners).

[2] The country, occupation and type of interview from the respondents are not detailed in this abridged paper but will be included in the version of the study written up for publication.

[3] Examples from the triangulation will be provided in the final version.

After triangulating the data from the interviews, a reflexive thematic analysis was conducted. The purpose of the analysis was to find patterns of meaning that will help us to answer our research questions. The justification for a reflexive thematic analysis is that some narrative responses were given in a different pattern. By different patterns, we refer to respondents' narratives as they understand them. A reflexive thematic analysis suits well with the NPF because it is theoretically based on the construction of meaning (Tuckett, 2005) and relates to people's experiences and perceptions.

This study followed the process of a thematic analysis recommended by Braun and Clarke (2006). After the transcription, themes were established, and patterns were discovered for its analysis. The patterns in the transcripts were easily identifiable: e.g. respondents who referred to the process of bicycle lanes implementation as a "cultural issue" and not a problem, while other respondents clearly explained their views on the barriers (obstacles) and potential solutions to overcome them.

3. Results and discussion

3.1 Temporalapproach

The way stakeholders approached the cycle implementation process separates the three groups of stakeholders (by city) and allows us to classify them into two groups: 1) the UK and Australian stakeholders, and 2) the Dutch stakeholders. The Dutch stakeholders consider the implementation of bicycle lanes as not a problem but a norm; and refer to the narrative form as a process that already happened (past). By contrast the stakeholders in UK and Australia consider this process an on-going problem (current).

3.2 Main narrative

We classify our respondents according to their main narrative and the results support our classification into two groups. The responses were open to not restrict the stakeholders' views and opinions. Most of the respondents mentioned that it is both a cultural problem and that there are obstacles and solutions for it. An explicative figure of the obtained main narratives is presented in Figure 2.

Figure 2: Understanding of bicycle lanes implementation according to current main narratives
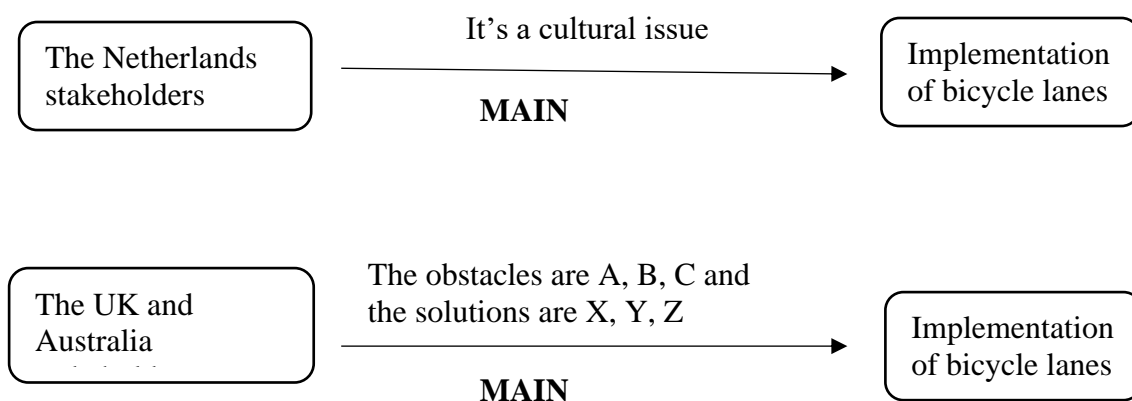
The quantification of the responses confirms our classification. The results in Table 1 demonstrate the main narratives of the stakeholders. The outcomes are shown in percentages to protect the anonymity of the respondents. These results enable us to group stakeholders in the UK and Australia together because they both consider that the solutions and the obstacles

are their main narrative. For stakeholders in the Netherlands the main narrative is the cultural aspect of the bicycle lanes implementation.

Table 1: Main narratives of stakeholders

	N	Main narrative	
	Number of respondents	Culture	Obstacles and solutions
The Netherlands	6	67%	33%
The UK	17	18%	82%
Australia	9	22%	78%

3.3 Narrative form comparison

The narrative elements (see Figure 1) are different in the two groups with one important similarity. Both groups give importance to the role of political leadership and the influence of public opinion.

There are more factors (narrative elements) in the group of stakeholders from the UK and Australia than in the group from the Netherlands. This makes sense since they have a different approach to this process; for the stakeholders in the UK and Australia, this is an on-going process while for the Dutch it's a process that already happened.

The elements that were repetitive highlights the need for political leadership because this process always (past and current) presents opposition from car drivers.

Another repetitive element is the influence of activist groups (community groups) and the importance that is given to health, like the road safety campaign in the Netherlands (Oldenziel and de la Bruhèze, 2011); pollution and road safety on the case of the UK and Australia.

3.4 Narrative content comparison

Despite both groups of stakeholders from Figure 2 (i.e. 1-the Netherlands, and 2-the UK and Australia) considering the implementation of bicycle lanes a cultural issue, their understanding of the process explains the difference. Stakeholders in The Netherlands understand this process used to be a problem. A problem that was solved and now it is considered a norm. The implementation of bicycle lanes is now part of their ideology, their belief system accepts that the bicycle lane is now a norm in their urban spatial development. While stakeholders in the UK and Australia consider this process an on-going problem, several stakeholders highlight the importance of integrated planning to deal with this problem.

3.5 Implications of findings

The use of the Narrative Policy Framework allows us to identify elements of comparison between locations with very different contexts, thus helping understand the approach given to sustainable practices.

Both groups of stakeholders (the Netherlands, and the UK and Australia) explained the narrative form on the bicycle lane implementation process. Both groups explain that the problem with this process should be understood as a cultural issue. Both groups asserted that part of the solution is to have strong political leadership and community activism. The difference with the stakeholders from The Netherlands is that they also explained how the process of bicycle lanes implementation is now a norm adopted by planning authorities. They don't understand the bicycle lanes implementation as a problem anymore. The group of researchers from The UK and Australia address the process as an on-going problem.

This study uses the stakeholder's narrative to find elements of comparison of sustainable practices in different locations. Different locations have a different context that can make the

implementation of transport practices very hard (Wang, 2010). We deal with this complication using the process of implementation of bicycle lanes as a case study. These results show that sustainable narratives are not fixed over time, the findings suggest that once bicycle lanes are implemented, they become part of the identity of the users.

This research aims to show that the narratives of sustainable practices may change after implementation. We are not assuming that a process will be replicated in the same way in different locations, the results from the different narrative form confirms it. We postulate that using the NPF can open doors to establish narratives that can be drivers of change; if we consider the narrative content of the NPF, we can create narratives as a strategy and not just part of a belief system.

The implications of using narratives as strategies and not solely as belief systems are useful for policymakers in cities where bicycle lanes implementation is a contested issue. These new narratives (created by policymakers as a strategy) can be beneficial to change the views people have of a specific sustainable practice. In addition, the implications are also relevant for other comparable cities where bicycle lanes have not been implemented yet. Our findings show that the public perception towards cycle lanes can be changed (as in the Netherlands) and therefore provides a goal (using a city as a role model) and a method (using narratives as strategies) to be used on the implementation of sustainable practices.

4. Limitations

This study has shown that by using a policy framework the narratives of a sustainable practice (in distinct cities) can be compared. Nevertheless, as in most social research there are limitations that should be acknowledged. For example, although these results might be generalizable for modern cities (see city selection in 2.1) and specifically for similar cities within the countries under analysis, other cities might have different cultural and contextual factors that should be considered before applying the NPF.

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