Using co-creation methods to solve mobility problems in Brussels

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1 ABSTRACT

In recent years, urban problems such as congestion and traffic safety have jumped to the top of the political agenda in many European cities. At the same time, governments are increasingly shying away from formal consultation methods to using more participatory methods to find solutions to urban problems. In the Brussels LOOPER Living Lab, bottom-up co-creation methods are tested in a full planning cycle, from problem identification to co-design and evaluation of alternative solutions to implementation and monitoring of these solutions. The research takes place within LOOPER (Learning Loops in the Public Realm), a JPI Europe funded research project with Living Labs running in Brussels, Manchester and Verona. The LOOPER project seeks to improve co-creation processes in urban governance and planning by building a participatory co-creation methodology and platform to demonstrate 'learning loops' i.e. new ways of decision-making, which bring together citizens, stakeholders, researchers and policy-makers to address urban challenges. In Brussels, offline and online co-creation methods have been used to define a problem (traffic safety), collect data on this problem, co-design solutions that solve this problem, evaluate the stakeholder support for these solutions, and implement a solution. This paper discusses how a combination of co-creation tools was used to contribute to a better understanding of traffic safety issues, led to co-designed alternatives and finally implementation overarching the full planning cycle in Brussels. Furthermore, the paper discusses how online and offline tools have been combined in the Living Lab.

Keywords: co-creation; public participation; collaborative planning; mobility; traffic safety

2 INTRODUCTION

Global population growth is putting pressure on cities. The United Nations (United Nations, 2018a, 2018b) forecasts the global population to grow with 2.1 billion to 9.7 billion between 2018 and 2050 and the percentage of people living in urban areas to increase from 55 to 68 percent. Although urbanisation has a positive impact on economic development, it will also negatively impact the three pillars of sustainable development: economy; environment; and society (WCED, 1987). These negative impacts include traffic congestion, reduction of green spaces, and poverty, to name but a few (Zhang, 2016).

Mobility is a necessity for people living in cities, and the demand for mobility will only increase as urbanisation continues. Nevertheless, also in countries that have almost completely urbanised, mobility remains a cause of many problems. In Belgium, the percentage of the population living in urban areas has been over 90% since the 1950s and reached 98% in 2017 (United Nations, 2018c). Despite having been urbanised for a very long time, the country continues to have mobility related problems such as traffic jams and air pollution.

Mobility problems are urban problems as well as sustainability problems. Cities function as economic, social, and cultural centres that attract people for work, living, and leisure. People need to be mobile in order to reach destinations within a city. Mobility problems include traffic jams, accidents, poor connectivity, and bad air quality. Moreover, transport planning is a complex policy domain in which involving the public is far from straightforward (Booth & Richardson, 2001). Sustainability problems are complex and cannot be solved by a single actor or organisation (Trencher, Yarime, & Kharrazi, 2013). Traffic engineers and transport planners are trained to find solutions to these problems by focussing on the physical dimensions of mobility such as urban form and traffic, and less on the social dimensions such as people and proximity (Banister, 2008). These solutions do not seem to be sufficient, however, and citizens have become increasingly vocal and assertive. Governments are therefore increasingly looking to alternative forms of governance to find solutions (Menny, Voytenko Palgan, & McCormick, 2018; Puerari et al., 2018).

The shift towards alternative forms of governance was already identified by Arnstein (1969), who saw how governments involved citizens in decision-making and suggested a ladder of citizen participation to illustrate the degree of influence the public can have on decision-making. The shift away from traditional top-down

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planning by governments to more bottom-up modes of planning has resulted in an increase in the number and use of 'magical concepts' such as public participation, co-creation, and living labs. These concepts, although ill-defined, are in fashion, carry a positive normative charge; imply consensus; and are globally present in academic and practitioner communities (Pollitt & Hupe, 2011).

The objective of this paper is to share the experiences and results of an urban living lab in which co-creation was used to find solutions to mobility problems. Urban living labs (ULLs) are living labs that exisit in urban contexts. According to De Koning et al. (2016), urban living labs are vehicles for co-creation. Urban living labs often have three stages: design; implementation; and evaluation. In the first stage, the context and problems are defined. Then, solutions are devised and implemented. Last, the solutions as well as the living lab are evaluated (Friedrich, Karlsson, & Federley, 2013).

The research described in this paper was done as part of the LOOPER project, a JPI Urban Europe funded project that aims to build a participatory co-creation methodology and platform to demonstrate 'learning loops' i.e. new ways of decision-making which bring together citizens, stakeholders and policy-makers to iteratively learn how to address urban challenges. The project aims to solve problems in the project realm, such as traffic congestions, safety and pollution. These problems are difficult to tackle as they involve multiple stakeholders.

3 METHODOLOGY

Planning and implementation to improve public space can be enhanced through co-creation. In the three LOOPER Living Labs in Brussels, Manchester, and Verona, co-creation has been used in the full planning cycle. A loop starts with collective debate on topical issues, then frames the problem and collects data. The platform visualizes the data, and enables the co-design and evaluation of solutions. The selected solutions are then implemented, and the results are monitored with a second loop learning from the first. The LOOPER prototype platform integrates online and offline tools to facilitate learning in each stage of the co-creation process. The LOOPER methodology is illutrated in figure 1.

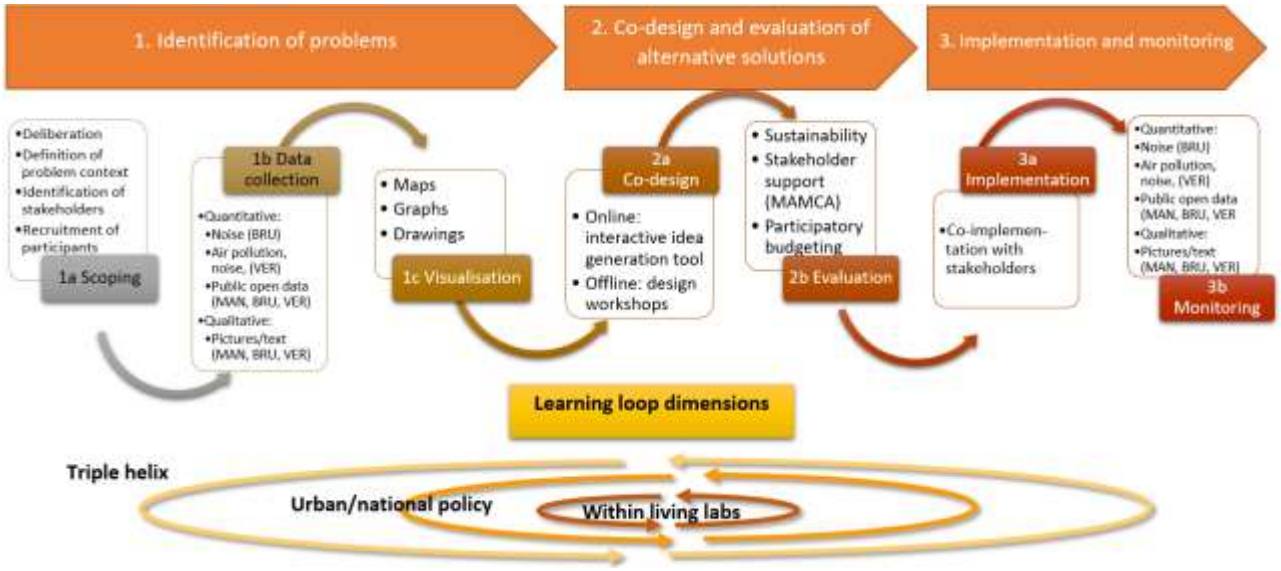

Figure 1 The LOOPER methodology

The Brussels LOOPER Living Lab is situated in Helmet, a neighbourhood with many traffic safety problems within the municipality of Schaerbeek in the north of the Brussels Capital Region. Its location was selected after consulting local and regional governments as well as NGOs in the area. The living lab was set up in February 2018 and will run until June 2020, allowing for two 'learning loops' to take place. The lab is run by the Mobility, Logistics and Automotive Technology Research Centre (MOBI) at the Vrije Universiteit Brussel and BRAL, a Brussels citizen NGO.

4 RESULTS

The LOOPER co-creation process was applied in the Brussels living lab in order to find solutions to traffic safety problems together with citizens. The problem identification phase took place from February 2018 until September 2018. During this first stage of the co-creation process, four citizen workshops took place as well as three so-called research pop-ups where citizens could participate in data collection on mobility. An online platform and survey were also launched in order to collect data from citizens that did not participate offline. The second stage of the co-creation process took place from September though November 2018, and included two citizen workshops. Again, citizens could also contribute to the co-creation process via a platform where they could view and submit ideas to improve traffic safety in the area. The third and final stage of the co-creation process will take place in May and June of 2019.This stage of the co-creation process will involve citizens in the implementation and monitoring of the co-created solution.

4.1 Problem identification

The problem identification phase started off with a blank page and citizens could suggest the problem(s) they perceived as most urgent. The first two workshops in February 2018 were dedicated to introducing the LOOPER project to citizens and defining the problem that would be the start of the co-creation process. These workshops also served as opportunies for citizens to debate traffic safety and learn about different perspectivs on traffic safety. Already in the first workshop the problems with traffic safety were identified as the biggest problem in the area. Before continuing the co-creation process the living lab organisers took time to better get to know the citizens and actors in the area in order to spread the word about the project. A third workshop was held in May 2018 in order to define which data citizens would like to (see) collect(ed) in order to prove there is a problem with traffic safety. A planning was made with citizens to collect data on traffic volume, traffic speed, and origin-destination of traffic. During three days in September 2018, this data was collected together with citizens, who were eager to actively participate by being in the streets instead of just talking about traffic safety. Again, a learning aspect was built in as citizens learned about traffic counts and speed measurements. The data collected by citizens showed that one-third of motorised vehicles drives over the speed limit of 30 km/h (see Figure 2) and that cars and pedestrians are seen most frequently in the streets.

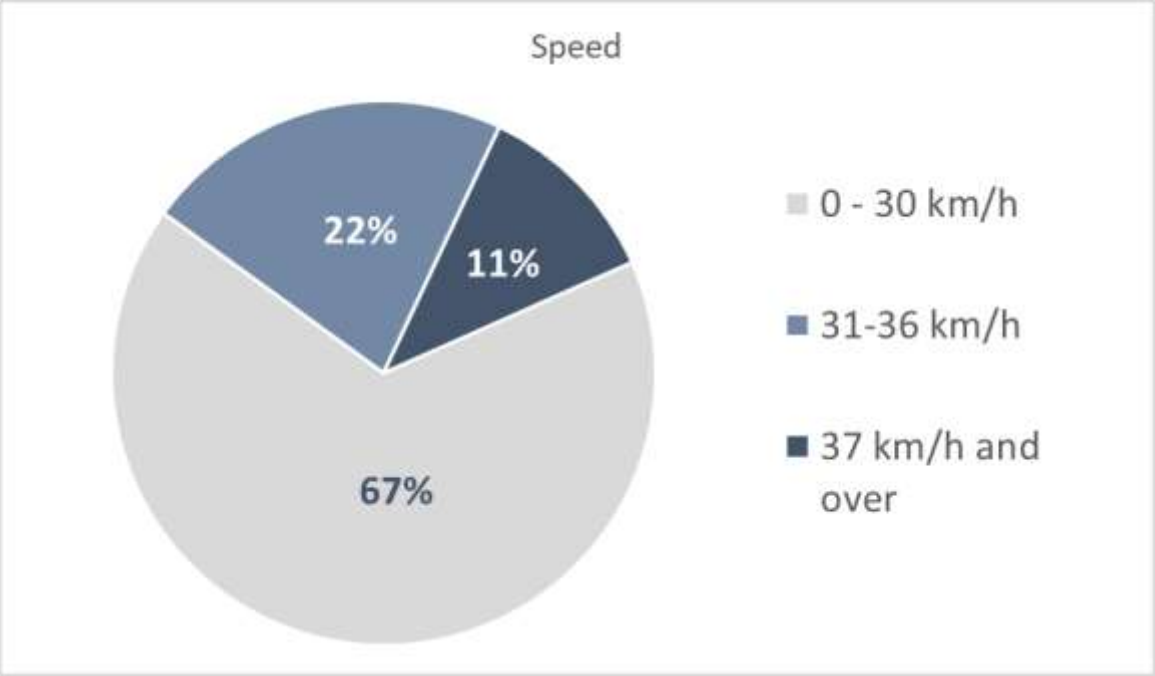

Figure 2 Results of speed measurements

The data collection phase also allowed citizens to participate online. An online survey about the mobility preferences of citizens was launched as well as the LOOPER platform geotagging tool (see Figure 3) to collect input on which places and streets in the area citizens perceive as most dangerous. In order to include the input of citizens without internet access, 1.000 copies of the survey were also distributed in the neighbourhood. Over 100 citizen filled in the survey, the majority of which did so online.

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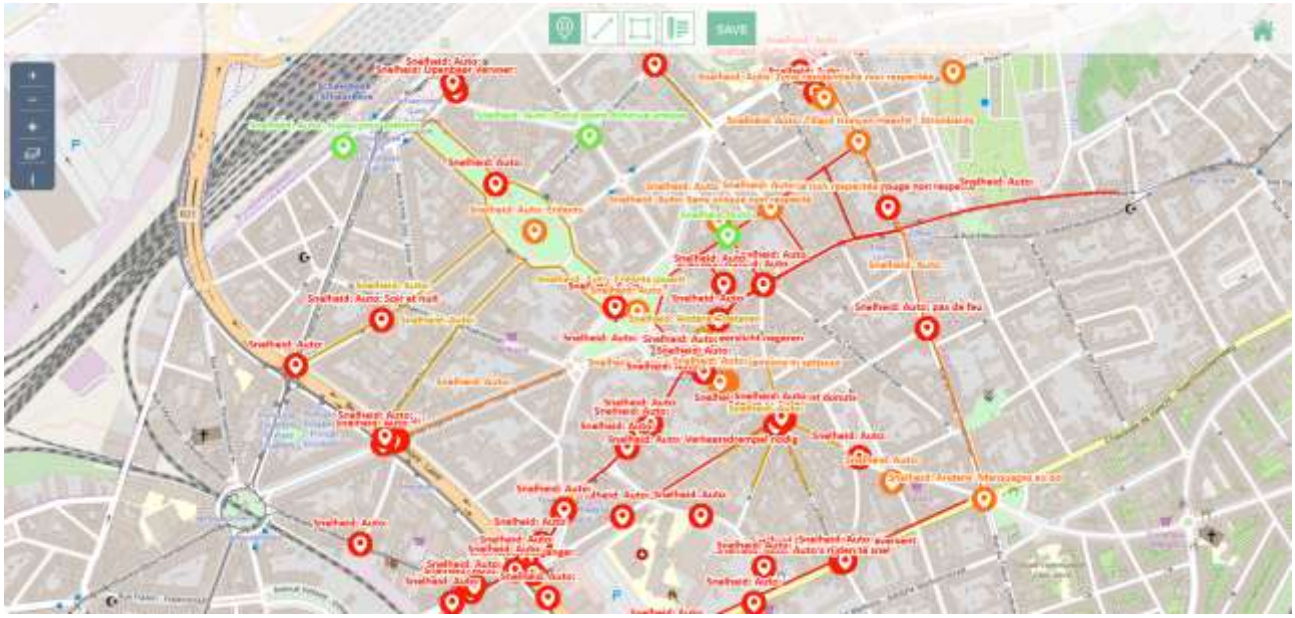

Figure 3 Geotagging tool of the LOOPER platform

4.2 Co-design and evaluation of alternative solutions

Using the collected data on traffic safety, citizens could submit ideas that would improve traffic safety via the online LOOPER platform (Figure 4). These ideas were used as input for the first co-design workshop in October 2018, where the 40 submitted ideas were discussed and five ideas were chosen by citizens to be evaluated on their sustainability impacts and expected stakeholder support. The five selected ideas were improvement of traffic signalisation on an intersection; alternative cycling routes to avoid a busy street; a traffic calming campaign near an after-school institute for children; narrowing the road by putting pop-up installations on parking spots; speed measurements with smileys indicating whether a vehicle is going over the speed limit.

Figure 4 Idea page of the LOOPER platform

The evaluation of the five ideas was executed by the VUB and traffic safety experts. Multi-Criteria Analysis (MCA) was used to evaluate the impact of the five chosen ideas on the sustainability of the neighbourhood and Multi-Actor Multi-Criteria Analysis (MAMCA) was used to evaluate the expected support of stakeholders such as the municipality, a cycling association, the regional mobility ministry, and the Brussels

public transport operator. The analyses showed that all five ideas would have a positive impact on the sustainability of the neighbourhood and that stakeholders are expected to support each of the five ideas. During the second co-design workshop in November 2018, based on the results of the MCA (Figure 5) and MAMCA (Figure 6) a final idea was chosen by the citizens present: a traffic calming campaign using semi-permanent drawings on the tarmac that will be co-implemented by citizens.

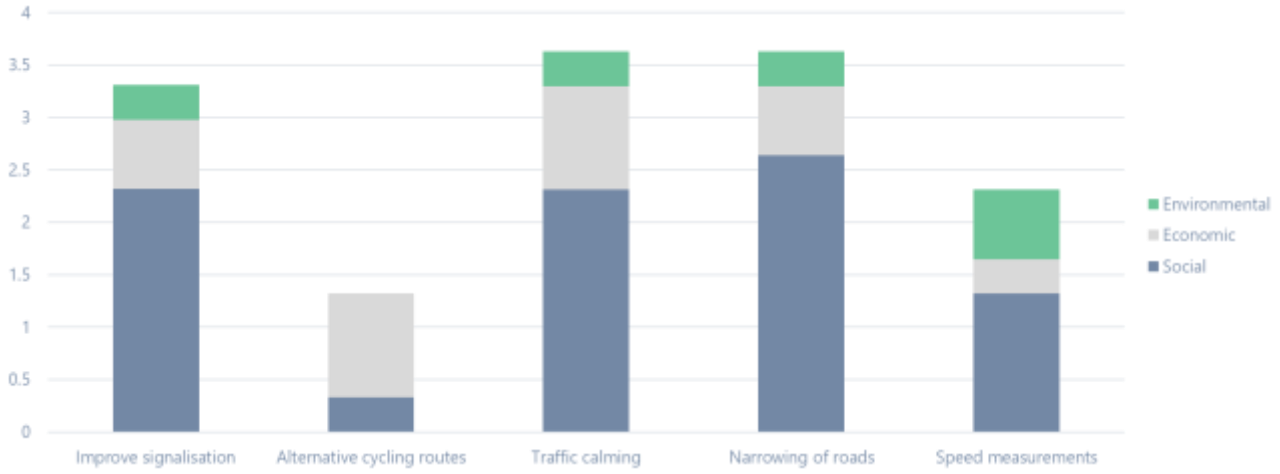

Figure 5 Results sustainability MCA

Figure 6 MAMCA results

4.3 Implementation and monitoring

The traffic calming campaign will be implemented in June 2019. The implementation will tie in with an existing event organised by a local NGO that blocks the road in front of their office for a day and uses the space for games and activities for children. On this day, an artist will draw outlines on the roads and children will colour the drawing. Citizens will also participate in the data collection to define the impact of the road drawings to find out if they reduce traffic speed.

The idea to improve the signalisation at an intersection was also supported by citizens and stakeholders, but implementation of this idea would be subject to a long bureaucratic process. Nevertheless, the municipality of Schaerbeek has further researched this idea and is in the process of making changes to the intersection in order to improve traffic safety.

4.4 Second co-creation loop

The experiences from this first loop will serve as inspiration and guidance for the second loop. In the Brussels LOOPER Living Lab, the second loop will be about school streets: temporary road closures near schools when children are going to or leaving school. The number of school streets are increasing in

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Brussels, but the implementation as well as the effects of school streets have not yet been researched. The objective of the second loop is to implement a school street near a school in Schaerbeek together with all the involved stakeholders. The idea is that a co-creation process may increase the acceptability and the effectiveness of the school street. The second loop will commence in September 2019 and will run until June 2020.

5 DISCUSSION AND CONCLUSION

Citizens involved in the Brussels LOOPER Living Lab have followed a co-creation process to help solve mobility problems in the neighbourhood of Helmet. Participation included offline workshops and participatory research pop-ups to collect data as well as online tools and surveys to collect input from citizens. The co-creation process has not only led to more tangible results such as data on traffic safety and the implementation of a co-designed idea to improve traffic safety, but also in less tangible – and harder to prove – results such as the learning of citizens and stakeholders. These learning moments include increasing citizens' knowledge about traffic safety and knowledge about public participation of the municipality.

The LOOPER project fits within the increased engagement of universities in transdisciplinary research on sustainability issues in collaboration with non-academic stakeholders (Mauser et al., 2013). Although the results of the Brussels living lab give useful insights on how co-creation in living labs can help solve urban problems, generalisation is not always possible (Flyvbjerg, 2006). Nevertheless, the case study approach used in the LOOPER project will allow for future comparisons between the LOOPER Living Labs in different spatial, cultural and thematic contexts.

The organisers of the Brussels LOOPER Living Lab – the Vrije Universiteit Brussels and Brussels citizen NGO BRAL – also experienced learning moments. First, drawing citizens to workshops and wanting them to return to the following workshop is an art in itself. Whereas the first workshop – whose objective was to spread word about the project and to engage citizens – attracted 11 citizens, the second workshop drew only two. A possible explanations for this decrease are the frequency, timing and length of workshops, as frequent meetings throughout the year were planned and the second workshop took place on a Sunday and was supposed to last six hours. Furthermore, a lack of clarity of the goals of the workshops and/or project as well as the implementations of solutions may also have contributed to this decrease. This problem may have been caused by unclear communication on behalf of the Living Lab organisers, but was also rooted in the project as the living lab started from scratch without having a pre-defined problem. A lack of power regarding the implementation of a co-designed solution also played part, since the organisers could not guarantee that the efforts from citizens would result in concrete actions by the local government.

Second, combining online and offline tools seem to have a positive influence on the co-creation process. Online tools allowed citizens that were unable or not motivated to come to offline workshops to contribute to the co-creation process. More citizens participated online via a survey and the LOOPER platform than offline during workshops. Online tools need to be easy to use, however. The geotagging tool that was used to collect input from citizens on which places or streets in the neighbourhood have traffic safety problems was only used by a handful of citizens.

Third, other initiatives with similar goals and audiences may have reduced the impact of the LOOPER Living Lab. A few weeks before the Brussels Living Lab kicked off, a traffic safety initiative called 1030/0 was founded by local citizens that are concerned about traffic safety. The participants of the LOOPER Living Lab overlapped with the citizens involved in 1030/0, and citizens seemed to prefer to deal with the topic in their own organisation rather than in the external LOOPER project. Different mobility related citizen initiatives (e.g. on air quality) were established throughout 2018 in Brussels, thereby reducing the added value of the LOOPER Living Lab.

Despite the developments of public participation in the last decades – especially in the last decade due to digitalisation of society and the advance of ICT – with the emergence and advancement of co-creation and living labs, research on public participation has a long way to go. Involving citizens in decision-making may be seen as a noble cause, but effects of and the succesful use of public participation still need more research that goes beyond case study research. Perhaps Szyliowicz (2003) was right when he wrote that there may be as little progress in public participation in the next twenty years as there had been in the previous twenty.

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