



Re-claiming the responsivity gap: The co-creation of cycling policies in Berlin's mobility law



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ABSTRACT

Calls for more bicycle use have been heard from across the political spectrum in Germany for years. Nonetheless, policies that lead to a transition away from car use and toward the bicycle in urban mobility remain absent. Against this background, we explore a mode of citizen engagement in the policy process in which citizens take the initiative and claim a political space to include their user expertise in the policy process. The case is a recent development in the field of urban mobility in Berlin, Germany in which citizen activists directly integrated citizen knowledge into policy outcomes. This was enabled by claiming the political space and thereby determining the spectrum of possibility, ultimately leading to an unprecedented process of co-creative legislation that marked a unique shift in German mobility policy, with the result that Berlin became the first German state to pass a bicycle law in June of 2018. We argue that the political space these citizens claimed was a key factor for enabling policy change, as previous attempts in invited political spaces had not led to a departure from the status quo. In a first empirical step, we establish evidence of citizen knowledge in policy output by comparing the citizen-authored bill with the 2018 Mobility Law. In the second empirical step based on 13 semi-structured interviews with the citizens responsible for the law, we offer a closer look at the type of knowledge relevant for enabling direct integration of user knowledge into policy output. We end with a discussion on the broader importance of the interplay of citizen knowledge for their impact on transformative policymaking.

1. Introduction

Policy fields tend to favor a certain type of technocratic expertise, often coming from actors established in the policy field. This can lead to missing relevant inputs from actors whose knowledge is situated in practical user experience. In the present paper, we examine a recent case from the city of Berlin that demonstrates the potential of transforming mobility policy by integrating citizen knowledge into policy processes. An elaborate process of consulting citizens triggered fundamental changes in mobility policy by offering a spectrum of possibilities from outside of the established transport policy nexus. We identify a political space claimed by the citizens – in contrast to an invited space of participation provided by city authorities – as a key factor for overcoming the car-focused status quo in mobility policy.

We look into the factors that allowed citizen input to be included in the policy output of the bicycle-oriented part of Berlin's Mobility Law (Schneidmesser et al., 2018). We begin with a conceptual underpin-

ning of the case and its context. We focus on the civil society initiative called the *Volksentscheid Fahrrad* (VEF), meaning 'bicycle referendum,' which first publicly announced their demand for a bicycle law in December 2015 and has been successful in achieving a substantial policy change. In July 2018, the parliament of the State of Berlin passed a Mobility law with two main parts: one for public transit systems and one for bicycle transport (Land Berlin, 2018). The latter part was the result of the VEF pursuing a bicycle law, initiating the official process for a referendum and campaigning towards this end (Lüdemann and Strößenreuther, 2018). We illustrate the relevance of the political space in which policy input is formulated, contrasting the 'claimed space' (Gaventa, 2006; Mirafteb, 2004) of the VEF with a preceding 'invited space' that did not result in policy change even though the input collected in public consultation would have demanded it. To establish the relevance and impact of the case itself, the VEF's role and relevance in the policy process is shown through a comparative content analysis of the Berlin Bicycle Bill (written/drafted by the citi-

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zens' initiative) and the Mobility Law (passed by the Berlin Parliament) in a first empirical step. In a second empirical step we provide a qualitative analysis of semi-structured interviews carried out with members of the VEF. The interviews allow for a deeper look into the process and learning citizens' perspective on how they claimed a political space and asserted their knowledge into mobility policy, enabling policy change. We close with a discussion of the implications of our exploration with limits and recommendations for including citizens in policy processes for mobility transformations.

2. The responsivity gap in Berlin's mobility policy

There is wide recognition among German citizens that climate change urgently requires ambitious policies (Bundesministerium für Umwelt, Naturschutz und nukleare Sicherheit & Umweltbundesamt, 2019). Policy actors have thus far not responded with concrete measures that replace or at least complement high-emission means of transport with low-emission alternatives. The state of Berlin passed a law committing itself to a 40% reduction in CO₂ emissions over the 1990 levels by the year 2020 (Land Berlin, 2016), but it has not been followed by concrete implementation steps: Berlin's current trajectory will lead it to miss its self-imposed emissions goals by half by 2020 (Senatsverwaltung für Stadtentwicklung und Umwelt des Landes Berlin, 2014a). Increasing public pressure is pushing for environmentally friendly policies in the mobility sector, while corporatist networks and policy traditions prevent the translation into transformative policies (Herberg et al., 2020). We therefore speak of a responsivity gap in German climate and mobility policies. Participatory processes with citizen-led initiatives are a consequential response worthwhile of exploration from both a scholarly and a policy standpoint.

From a broader point of view, political theorist Pierre Rosanvallon has observed a responsivity gap that arguably corresponds to the lack of implementing citizens' priorities in climate policy. According to Rosanvallon, the formation, expression and implementation of such priorities fails due to a mutual lack of communication: That is, "An unwillingness to listen on the part of those who govern is [...] compounded by an atrophied capacity for expression on the part of the governed" (Rosanvallon, 2018: 190). This understanding of the responsivity gap sees political alienation as a self-enforcing communicative process: The increasing inability of citizens to feel connected or even activated by policy processes and policy makers is mutually amplified by the failure of democratic institutions and elections to consult, aggregate, and represent citizen preferences. Deliberative democratic theorists argue that the lack of responsivity can be tackled by strengthening the communicative proximity between policy makers and citizens. According to Claus Offe, deliberative formats such as mini-publics can improve the political literacy of citizens, can strengthen the 'soft power' of interactive processes between citizens and policy makers, can widen the diversity of included perspectives, and can finally multiply the spectrum of political positions (Offe, 2011). A focus on responsivity thus complements the quantitative focus on elections with a qualitative focus on principles such as collective will formation, conflict resolution, or accountability (Rosanvallon, 2018). Discussions have also highlighted the potential for citizens to be involved in the very formulation of policy problems and solutions in local democracies (Taylor and Nanz, 2020, see also Fischer, 2000; 2017). This more recent strand can be coined 'co-creative policy making' as it highlights the capacity of citizens to not only improve their democratic literacy, but also to actively intervene in law-making processes.

Against this background, the VEF can be discussed as a case of co-creative policy making. Citizens identified the need for change, created a policy response to address that need, and created the space and support needed to initiate and formally legitimize the policy through its becoming law via the Berlin parliament. Our guiding ques-

tion is whether VEF can be said to have contributed to a temporary closure of the responsivity gap in Berlin's mobility policy. More particularly, we look at the formation of "counterpublic knowledge" (Hess, 2010) in cycling policy. The epistemic aspect is crucial because the skills, experiences, and knowledges of citizens have so far received far less legitimacy than experts' and policy makers' in mobility, or other policy fields (Hess, 2016). Climate and transport policy in Germany have traditionally been fields strongly dominated by professional experts and technocratic elites (Hustedt, 2013; Schwedes, 2011). To productively challenge and analyze epistemic dimension of the responsivity gap, we follow Arancibia's (2016) understanding of expertise as a dynamic process developed collectively between actors, which is further illustrated below through our interviews. The focus on cycling represents a critical perspective because cycling is in itself exemplary for the lack of epistemic and social inclusion that resulted in the historic focus of German mobility policy on cars. Altogether, the concept of the responsivity gap culminates in our empirical and analytic focus on citizen knowledge and on cycling. In other words: The practice of admitting limited types of knowledge to mobility policy manifests its historic path dependencies. The basis for policy input becomes necessarily linked to current mobility trends such as vehicle counts over time. Against this background, The VEF can be seen as a holistic challenger to the responsivity gap in Germany's mobility policy.

We argue – in contrast to more state-centered understandings of citizen participation – that the VEF was a process of re-claiming the responsivity gap. Much literature assumes a top-down approach, investigating how citizens can be invited into spaces for participation in which they can be informed, heard, or contribute to policymaking (Arnstein, 1969; Fung, 2006; Mutz, 2006; Smith, 2009). Participation has also been discussed in terms of spaces that differ with respect to their openness for citizen involvement and origins (Gaventa, 2006; 2007; 2017; Cornwall, 2002). In this text, we particularly focus on the interplay of 'invited' and 'claimed' spaces. In the first type, authorities (such as governments) that wish to involve or consult a given group of citizens or other actors invite them to take part in a participatory process (Cornwall, 2002). The inviting organization has control over the formatting of the space: the problem definition, rules of the game within the space and results of the process. Such boundaries can be too limiting for some societal actors, who may decide to create a more satisfying space for themselves by claiming it "from or against power-holders" (Gaventa, 2007: 215). Importantly, the spaces for participation do not exist in a vacuum and need to be analyzed in relation to each other. It is often the case that: "[p]ower generated in one space may be used to enter or affect other spaces" (Gaventa, 2007: 216). The present case is an appropriate example in this context, because citizens actively claimed the space for participation in a political space that is legally foreseen but must be actively claimed in order to exist in practice (Gaventa, 2006; Mirafab, 2004). This practice of (re-)claiming political space is not only interesting as an activist strategy. We argue in due course that the social, epistemic, and spatial formatting of the claimed space enabled a radical departure from status-quo policies by including the citizen-as-user (and potential-user) perspective.

2.1. Cycling policy in Berlin: Overcoming the responsivity gap

In this section, we connect our understanding of the status-quo of cycling policy with the notion of the responsivity gap. This link shows that political space in mobility policy is closely entwined with the distribution of physical space in a town or city.

In the early 1950s, cycling counts in West Berlin were twice as high as in 2000 (united Berlin), and despite the recent continuous rise in cycling, counts still fall short of the numbers from the early 1950s. Due to broader changes in attitudes, lifestyles and policy discourses, many Berliners are reorienting themselves back toward cycling. Build-

ing corresponding infrastructure is a continuous challenge because of the institutional fragmentation between city districts and due to the spatial extension of the city. In spite of the lack of improvements in cycling infrastructure, cycling in Berlin increased 9 percentage points between 2013 and 2016 (using 2000 as a baseline) and continues to rise (SenUVK, 2019). This experience is also likely to be connected with an intensified expectation of policy action for accommodating the higher amounts of cycling. Berlin has an average of 1.6 bicycles per household, and in 2018 the modal share of cycling was 18% (Gerike et al., 2020).

Cycling has been identified as an urban transport solution that brings benefits in the fields of health, economics, and the environment (Pucher and Buehler, 2017; Pucher et al., 2010a; Sustrans, 2003; Welch et al., 2016; Wang et al., 2004; Rojas-Rueda et al., 2011). There is broad consensus that cycling is more desirable for urban mobility than automobile traffic with respect to environmental policies and ambitions (European Conference of the Ministers of Transport, 2004), but this consensus is not carried out in policy and German traffic policy maintains its automobile focus (Schwedede, 2011). To increase cycling, numerous studies as well as practice examples from the Netherlands and Denmark have stressed the importance of corresponding infrastructure. Physical separation of cyclists from motor traffic is a promising pathway to increase cycling uptake (Buck/Buehler, 2012; Aldred et al., 2017; Pucher et al., 2010b; Pucher and Buehler, 2008). Interestingly, data from Germany emphasizes the importance of subjective safety: 41% of Germans would like to cycle more than they do, and 55% cite that the most important aspect for cycling infrastructure is that it is not shared with other types of vehicles (Sinus-Institut, 2019). This epistemic dimension points to a major constraint in mobility policies. Established experts in the field of transport policy in Germany had largely developed planning processes based on objective safety data. They were thus unable to apply the notion that a barrier toward higher cycling share was the lack of protected infrastructure. Subjective safety can hardly be grounded in quantitative evidence related to crash statistics, a preferred measure for identifying danger in policy circles. As this focus on safety exemplifies, Berlin’s cycling policies represent a specific case of lacking responsivity: relatively simple policies – be it separated bike lanes, or bike sharing options – can directly impact a population’s

health and safety, while political path dependencies hinder a corresponding political ambition.

In many places around the world, citizen movements increasingly challenge the responsivity gap in urban cycling policy. Despite a lack of documentation, it is fair to draw the following insights from research about local cycling initiatives: Aldred (2013) describes a cycling movement in London specifically in election times, which also sought to influence policy connected to elections. More recently, McCullough et al. (2019) have provided recommendations for addressing diversity in planning and advocacy. Lugo (2018) provides a detailed account of cycling activism and lobby networks, describing the linkage between dominant power-structures and a focus on bicycle infrastructure. Specifically for Germany there is less literature available on cycling advocacy as social movements (for further discussion of the VEF, see Ludemann/Strößenreuther, 2018; Schneidmesser et al., 2018). For a broader context, Schwedede (2017) provides an analysis of the political field of mobility, which includes civil groups, revealing their traditionally marginal role in the field of transport policy in Germany. Altogether the responsivity gap in mobility policy becomes more and more apparent due to increased attention from both policy-making and social movements. Notably, research has stressed that formal democratic processes often afford activists with substantial, but temporally limited opportunities to claim political attention.

2.2. Redefining the space for responsivity: The Volksentscheid Fahrrad

In mobility and cycling policies, there is a lack of responsivity between the governed and the governing. At the same time, there are emerging opportunities to tie the formulation of political measures to citizen concerns. Our case study directly connects to this insight as cycling activists or simply interested citizens were confronted with an opportunity to claim political space in 2013. The government of Berlin proclaimed the need for more cycling (Senatsverwaltung für Stadtentwicklung und Umwelt des Landes Berlin, 2013). That same year, the responsible administrative department carried out a large-scale participation project in an ‘invited space.’ They called the *Rad-sicherheitsdialog* (bicycle safety dialogue) to identify where citizens felt unsafe while cycling. During the online participation, 27,000 individu-

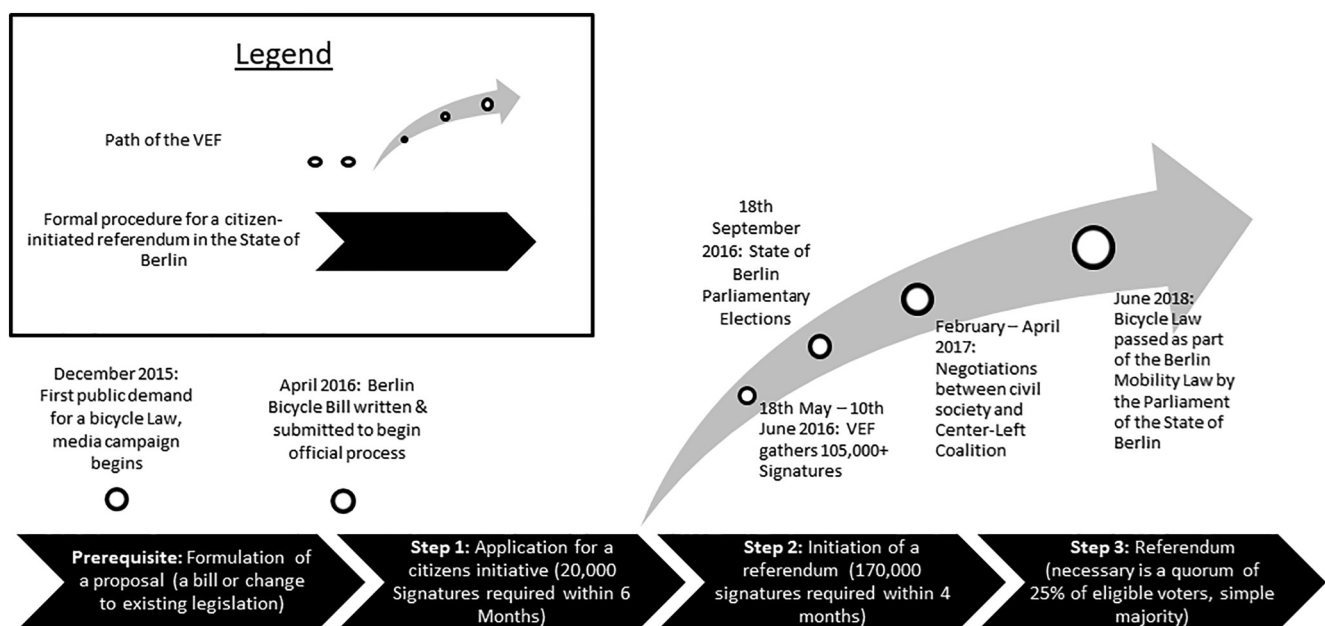


Fig. 1. The process toward a citizen-initiated Referendum in the State of Berlin. After steps 1 and 2, the initiators of the referendum process and the government have the possibility to negotiate a solution.

als visited the website, and identified more than 5,000 locations where they do not feel safe while cycling (Senatsverwaltung für Stadtentwicklung und Umwelt des Landes Berlin, 2014b). Hence, the ‘invited space’ formatted by the city administration temporarily bridged the responsiveness gap, at least in terms of drawing public attention and showing interest in bicycle users’ perspectives. In the following years, however, very little was done to address the safety issues raised in that dialogue. Following this, it is all the more interesting to study the successive events in 2015, when VEF actively claimed a political space.

The VEF went public with a list of 10 demands in December 2015, announcing the intention to pursue legislation to ensure these demands via a citizen-initiated referendum process (Volksentscheid Fahrrad, 2016a). The constitution of the state of Berlin establishes the procedure for citizen-initiated legislation processes in three steps. Step one is the application for a citizen’s initiative (for which 20,000 analog signatures must be gathered within six months). Step two is initiation of the referendum (again signatures must be gathered, this time seven percent of the electorate – roughly 170,000 – within four months), and step three is the referendum itself (required is a simple majority with a quorum of at least 1/4th of eligible voters). Upon each completed step toward a referendum, the initiative and government may enter into negotiations to seek a solution in consensus. If consensus is reached, the process toward the referendum becomes redundant (Fig. 1).

To initiate the process toward a referendum, proposed legislation or a change to legislation is required. The VEF wrote a bill in early 2016 based on their 10 demands. The VEF only took the first step in the formal referendum process and then entered into negotiations. This was a response to the VEF campaign. The goal of the VEF was not only to improve the situation for those already cycling, but to make cycling attractive for those who do not yet cycle. The VEF collected more than 100,000 signatures in 3 ½ weeks in May and June 2016 (five times as many signatures as necessary in a fraction of the time allotted), directly before the election campaigning period for Berlin’s parliamentary elections in September 2016. The newly forming center-left coalition that resulted from the elections in September 2016 announced that it would enter into negotiations with the VEF to negotiate a new formulation for the law. The center-left coalition passed a two-part Mobility Law in June 2018: new policy for public transit and the bicycle (Land Berlin, 2018). Especially the bicycle part of the law represents an unprecedented shift in focus in German transport law.

3. Methods

3.1. Comparative content analysis of the Berlin bicycle bill and the mobility law

We carried out a comparative content analysis to trace the policy impact of the VEF, seeking to decipher the extent to which the content of the Law corresponds with that of the Bill. We therefore used the last version of the bill published by the VEF in February 2017, hereafter referred to as the ‘bill’ (Volksentscheid Fahrrad, 2017), and the Mobility Law passed by the Berlin parliament in June 2018, hereafter referred to as the ‘law’ (Land Berlin, 2018). Our comparative analysis is based on the “directed” content analysis approach described by Hsieh and Shannon (2005) and is geared to trace the formulations that were suggested by citizens to be included in the law. Box 1 shows the ten goals that the VEF published December 2015 (Hasselmann, 2015), which served as a central focus for the initiative’s own undertaking to write a bill to be able to initiate a referendum process. We used the ten goals as codes for comparing the two texts, applying the codes to the bill and the law where they specifically corresponded to these goals. Having accumulated excerpts from both the bill and the law that corresponded with the 10 goals, we compared these in terms of form (wording) and content (meaning).

Correspondence was determined in three steps. The first step determined whether the goal from box 1 was represented in the respective documents (bill and law). For each goal found in both the bill and the law, step two examined the degree of similarity: were formulations referring to the goal found in the bill found again in the law in a different formulation or with the exact same wording in word chains of eight or more words? Step three addressed the quantities linked to the goals in the law and the bill, enabling a comparison of whether the quantities increased, decreased, or remained the same from the bill to the law. Our goal was to trace the origins of the passages, and while our analysis provides evidence, it is not exhaustive. This analysis captures only the manifest meaning and the genealogy of the formulations in the bill and law. A focus on tacit meaning warrants future research because the negotiation was characterized by different world views with regard to the future of mobility.

Results of the comparative analysis are shown in Table 1 and presented in section four. The goal, and corresponding text sections from the bill and the law are aligned in rows (step one). For a given row, the results from step two are displayed in that exact word chains of eight or more words are in bold, while text sections that represented the same goal but with differing formulations are regular text (step two).

Box 1 Codebook: the 10 Goals of the *Volksentscheid Fahrrad*:

- 1) 350 km of new cycle streets (where cyclists have the right of way)
- 2) 2 meter wide safe cycling infrastructure on every main road
- 3) 75 dangerous intersections ‘neutralized’ per year
- 4) Transparent and efficient infrastructure repair
- 5) 200.000 bicycle parking spots at transit stations and streets
- 6) 50 Green Waves for busses, cyclists, and pedestrians
- 7) 100 km Bicycle highways for commuters
- 8) Bicycle police units and Special unit for bicycle theft
- 9) More Bicycle Infrastructure Planners in city/district administration

3.2. Interviews with citizens

We investigated the process of the VEF by means of semi-structured interviews, which were designed to capture the individual perceptions as well as the complex interaction during the negotiation process (Leech, 2002). We developed an interview guideline with questions aimed at how and why citizens asserted their knowledge and sought to integrate it into mobility policy. The Berlin Bicycle Bill was developed in what the VEF called a ‘Legislation Hackathon’ (Volksentscheid Fahrrad, 2016b). To ensure that our interview partners were involved in writing the law, we created a list of potential interview partners using a group photo from the hackathon event and a list of names that the initiative had made of the participants in the hackathon. Of the 36 individuals on the list (6 females, 30 males), we were able to identify 18 on the photo for whom contact information was available. We contacted these 18 individuals, and were able to carry out interviews with 12 of them. We also interviewed one more individual, who was suggested by our interview partners; this interviewee was not physically present at the hackathon, but involved in the VEF and the process of writing the bill, and was a board member on the first board of Changing Cities e.V., the NGO founded by the VEF. With this interview, we came to a total of N = 13 interviews.

Based on these 13 interviews, we address the questions of why citizens created this bill, and how this process was able to position citizen knowledge as applicable input in a policy field otherwise dominated by technocrats and policy professionals. We recorded and transcribed

Table 1

Comparative analysis of the Berlin Bicycle Bill and Berlin's Mobility Law (bold text indicates exactly identical formulations in chains of eight or more words).

Row number	Goal (Corresponds with Box 1)	Berlin Bicycle Bill (Volksentscheid Fahrrad, 2017)	Berliner Mobility Law (Land Berlin 7/5/2018)
1	7	Volksentscheid Fahrrad (2017): Gesetz zur Förderung des Radverkehrs in Berlin. (RadG). Volksentscheid Fahrrad. Available online at https://volksentscheid-fahrrad.de/wp-content/uploads/2017/02/2017_02_12_RadG_korrigiert.pdf , checked on 9/17/2018. §2.11: Radschnellwege sind selbstständig geführte Verbindungen im Radverkehrsnetz, die wichtige Quell- und Zielbereiche mit hohem Pendlerpotenzial über größere Entfernungen verknüpfen und durchgängig und jederzeit ein sicheres Befahren mit einer Reisegeschwindigkeit von mindestens 20 km/h ermöglichen §6.1: Innerhalb von 8 Jahren nach Inkrafttreten des Gesetzes sind mindestens 100 km Radschnellwege zu errichten. Es sollen mindestens 8 bis 10 Radschnellwege mit mindestens 5 km Länge angelegt werden. Diese Mindestlänge von 5 km kann auch in mehreren Bauabschnitten erreicht werden. Diese Radschnellwege sollen sich an den Pendlerströmen orientieren.	Land Berlin (7/5/2018): Gesetz zur Neuregelung gesetzlicher Vorschriften zur Mobilitätsgewährleistung. Berliner Mobilitätsgesetz. In <i>Gesetz- und Verordnungsblatt für Berlin</i> 74 (18), pp. 464–478. §45.1: Radschnellverbindungen sind Verbindungen im Radverkehrsnetz, die wichtige Quell- und Zielbereiche mit entsprechend hohen Potenzialen über größere Entfernungen verknüpfen und durchgängig ein sicheres und attraktives Befahren auch mit hohen Reisegeschwindigkeiten ermöglichen. § 45.2: Es sollen mindestens 100 km Radschnellverbindungen errichtet werden. Die Mindestlänge von Radschnellverbindungen soll möglichst fünf Kilometer betragen. Sie kann in mehreren Bauabschnitten erreicht werden.
2	4	§18.1: Bei allen Baumaßnahmen, die den Radverkehr betreffen können, sind Radverkehrsverträglichkeitsprüfungen und Sicherheitsaudits durchzuführen, zu dokumentieren und unverzüglich im Internet zu veröffentlichen.	§39.3: Bei der Planung von Baumaßnahmen im Straßenland ist zu prüfen und bei relevanten Vorhaben zu dokumentieren und unverzüglich im Internet zu veröffentlichen, inwieweit mit dem Abschluss der Baumaßnahme eine Radverkehrsanlage im Sinne dieses Gesetzes und der weiteren Regelwerke geschaffen werden kann.
4	2	§7.1: Auf oder an allen Hauptstraßen sollen Radverkehrsanlagen mit leicht befahrbarem Belag, in sicherem Abstand zu parkenden Kraftfahrzeugen und in ausreichender Breite eingerichtet werden. Diese sollen so gestaltet werden, dass sich Radfahrende gegenseitig sicher überholen können. §7.2: Die Radverkehrsanlagen sollen so gestaltet werden, dass unzulässiges Befahren und Halten effektiv verhindert wird.	§43.1: Auf oder an allen Hauptverkehrsstraßen sollen Radverkehrsanlagen mit erschütterungsarmem, gut befahrbarem Belag in sicherem Abstand zu parkenden Kraftfahrzeugen und ausreichender Breite eingerichtet werden. Diese sollen so gestaltet werden, dass sich Radfahrende sicher überholen können. §43.2: Die Radverkehrsanlagen sollen so gestaltet werden, dass unzulässiges Befahren und Halten durch Kraftfahrzeuge unterbleibt.
5	1, 2, 7	§3.1: Der Senat erarbeitet innerhalb eines Jahres nach Inkrafttreten dieses Gesetzes in Abstimmung mit den Bezirken, den Interessenverbänden des Radverkehrs und der Öffentlichkeit den Entwurf eines Umsetzungs- und Budgetplan zur Umsetzung der Maßnahmen nach §§ 4 bis 11 zur Schaffung, Vervollständigung und Verbesserung des Berliner Radverkehrsnetzes.	§41.3: Das Berliner Radverkehrsnetz wird durch einen Netzplan als Bestandteil des Radverkehrsplanes beschrieben. Der Netzplan ist von der für Verkehr zuständigen Senatsverwaltung binnen eines Jahres nach Inkrafttreten des Gesetzes zu erarbeiten.
6	1	§4: Die Verwaltung wird aufgefordert, jedes Jahr 500 km StraÙe daraufhin zu prüfen, ob hier StVO konforme FahrradstraÙen eingerichtet werden können.	§44.1: Eine Ausweisung von NebenstraÙen im Radverkehrsnetz als FahrradstraÙen wird angestrebt.
7		§ 5: Öffnung von EinbahnstraÙen für den Radverkehr Es soll innerhalb von einem Jahr nach Inkrafttreten des Gesetzes für alle EinbahnstraÙen geprüft werden, welche EinbahnstraÙen gemäß den Kriterien der VwV StVO für den Radverkehr in Gegenrichtung freigegeben werden können.	§ 46: Öffnung von EinbahnstraÙen und Sackgassen für den Radverkehr (1) Alle EinbahnstraÙen sollen bei der Erstellung und Fortschreibung des Radverkehrsplans auf Freigabe für das Fahrradfahren in Gegenrichtung geprüft werden.
8	3	§8.1: Das Land Berlin wird jährlich mindestens 20 der für Radfahrende gefährlichsten Knotenpunkte zur Erhöhung der Verkehrssicherheit umbauen, um die jeweiligen Gefahrenquellen, auch für zu Fuß Gehende, zu beseitigen. Die Auswahl der Knotenpunkte bestimmt sich nach der jährlichen Sonderuntersuchung Radfahrerverkehrsunfälle in Berlin“ aus der Verkehrsunfallstatistik der Polizei Berlin sowie aus weiteren objektiven Erkenntnisquellen.	§21.3: Im ersten Jahr nach dem Inkrafttreten dieses Gesetzes sollen mindestens zehn, im Folgejahr mindestens 20 und danach jährlich mindestens 30 der nach dem Merkblatt der Unfallkommission ermittelten gefährlichsten Knotenpunkte mit den höchsten Häufungen an Unfällen mit beziehungsweise schwerverletzten Personen so verändert werden, dass die Gefahrenquellen bestmöglich beseitigt werden und eine Erhöhung der Verkehrssicherheit sichergestellt ist. Die Auswahl der Knotenpunkte bestimmt sich nach der Verkehrsunfallstatistik des Polizeipräsidenten in Berlin zu Verkehrsunfällen sowie nach weiteren objektiven Erkenntnisquellen.
9	3	§8.5: Nach jedem Unfall mit schwerem Personenschaden oder Getöteten ist innerhalb von 4 Wochen zu prüfen und im Internet zu veröffentlichen, ob und inwiefern die Gestaltung der Verkehrsanlage oder Verkehrsführung dafür mitursächlich war. Ist die Mitursächlichkeit der Gestaltung der Verkehrsanlage oder der Verkehrsführung für den Unfall gegeben oder kann sie nicht ausgeschlossen werden, sind innerhalb von sechs Monaten entsprechende bauliche oder sonstige geeignete Maßnahmen nach Absatz 3 zur Vermeidung künftiger Personenschäden zu ergreifen.	§21.2: Nach jedem Unfall mit Verkehrstoten an einem Knotenpunkt soll von der für Verkehrssicherheit im betreffenden Fall zuständigen Stelle unverzüglich geprüft werden, ob Maßnahmen kurz-, mittel- und langfristig ergriffen werden können, um weitere Unfälle mit Personenschaden zu vermeiden. Dasselbe gilt für Unfälle mit schwer verletzten Personen an einem nach polizeilicher Unfallstatistik bekannten Unfallschwerpunkt oder einem Knoten, der durch diesen zusätzlichen Unfall per Definition zu einem Unfallschwerpunkt würde. Das Ergebnis der Prüfung ist im Internet zu veröffentlichen.
10	3	§7.3: Bei der Einrichtung der Radverkehrsanlagen sollen Knotenpunkte zur Herstellung von Sichtbeziehungen und der Verbesserung der Verkehrssicherheit gemäß § 8 (4) gestaltet werden.	§44.3: Die Knotenpunkte sind so zu gestalten, dass alle am Verkehr Teilnehmenden gute Sichtbeziehungen haben und beim Abbiegen sicherheitsverträgliche Geschwindigkeiten eingehalten werden. <i>*(See also §38.2, below)</i>
11	3	§8.4: 5 bis 15 m vor und nach Knotenpunkten sollen die Sichtbeziehungen verbessert und die Abbiegegeschwindigkeit verringert werden, §8.3: Bei Umbau eines Knotenpunktes sollen Radverkehrsanlagen unter Berücksichtigung guter Praxis zur Erhöhung der Verkehrssicherheit eingerichtet oder angepasst sowie die Maßnahmen nach Absatz 6 umgesetzt werden.	§38.2: Bei der Umgestaltung eines Knotenpunktes sollen Radverkehrsanlagen zur Erhöhung der Verkehrssicherheit nach dem Stand der Technik eingerichtet oder angepasst werden; Maßnahmen nach Radverkehrsplan sollen umgesetzt werden. Bei der Einrichtung der Radverkehrsanlagen sollen Knotenpunkte so gestaltet werden, dass optimale Sichtbeziehungen bestehen.

(continued on next page)

Table 1 (continued)

Row number	Goal (Corresponds with Box 1)	Berlin Bicycle Bill (<i>Volkentscheid Fahrrad</i> , 2017)	Berliner Mobility Law (Land Berlin 7/5/2018)
12	3	§8.2: Zusätzlich sollen jährlich 5 Knotenpunkte umgebaut werden, die nach dem subjektiven Sicherheitsgefühl der Radfahrenden Verbesserungen erfordern. Dazu sind mindestens alle 5 Jahre, erstmals innerhalb von einem Jahr nach Inkrafttreten dieses Gesetzes, Erhebungen über das subjektive Sicherheitsgefühl durchzuführen.	§38.1: Über das Sicherheitsempfinden von Radfahrenden an Knotenpunkten sind mindestens alle fünf Jahre, erstmals innerhalb von einem Jahr nach Inkrafttreten dieses Gesetzes, Erhebungen durch die für Verkehr zuständige Senatsverwaltung oder das landeseigene Unternehmen nach § 37 Absatz 3 durchzuführen.
13	6	§2.7: Grüne Welle die Koordinierung von Lichtzeichenanlagen, so dass mindestens 85% des Radverkehrs ohne Halt mindestens drei aufeinanderfolgende Lichtzeichenanlagen mit gleichmäßiger Geschwindigkeit in Geradeaus-Richtung passieren können;	§42.2: Im Vorrangnetz Radverkehr sollen im Rahmen des geltenden Rechts die Lichtzeichenanlagen für einen fließenden Radverkehr koordiniert werden.
14	4	§10.2: Die zuständige Senatsverwaltung soll spätestens 9 Monate nach Inkrafttreten dieses Gesetzes eine Liste mit allen bekannten Mängeln erstellen und auf ihrer Internetseite veröffentlichen. Diese Liste ist mindestens monatlich zu aktualisieren. In diese Liste fließen die Ergebnisse jeder Straßenzustandserfassung und -bewertung, ausgewertet für den Radverkehr, sowie von Behörden und von Bürgern gemeldete Mängel ein.	§48.1: Der Zustand der Anlagen des Berliner Radverkehrsnetzes soll durch die für Verkehr zuständige Senatsverwaltung regelmäßig erhoben werden. Die Ergebnisse der Erhebung sollen im Internet öffentlich auf eine Weise verfügbar gemacht werden, die einen Zugriff durch internetbasierte Anwendungen ermöglicht. §48.3: Die für Verkehr zuständige Senatsverwaltung stellt sicher, dass ein Register über die Mängel der Radverkehrsinfrastruktur geführt wird. Registriert werden nicht nur die in eigenen Erhebungen der zuständigen Stellen ermittelten Mängel sondern auch Mängelmeldungen aus der Bevölkerung. Die für Verkehr zuständige Senatsverwaltung wird in geeigneter Weise über die Behebung der Mängel und die Verbesserungen der Radverkehrsinfrastruktur berichten.
15	4	§10.4: Jeder Mangel soll zeitnah und nachhaltig beseitigt werden, möglichst innerhalb von 6 Monaten nach dem Datum seiner Meldung.	§48.2: Mängel, die Radfahrende erheblich gefährden, sollen soweit möglich unverzüglich beseitigt werden. Ist dies nicht möglich, sollen Sicherungsmaßnahmen vorgenommen und alternative Angebote für den Radverkehr hergestellt werden. Sonstige Mängel sollen möglichst innerhalb von sechs Monaten ab Kenntnis beseitigt werden, es sei denn, der Mangel besteht an einer Anlage, für die eine größere Baumaßnahme vorgesehen ist. Für diesen Fall sollen temporäre Sicherheitsmaßnahmen umgesetzt werden. Dazu gehört auch die kurzfristige Anordnung und temporäre Einrichtung von Radfahrstreifen und Schutzstreifen.
16	5	§11.1: In den ersten 2 Jahren nach Inkrafttreten des Gesetzes sollen zusammen 20.000 und in jedem weiteren Jahr weitere 20.000 Abstellmöglichkeiten bis zu einem Zielstand von mindestens 100.000 Abstellmöglichkeiten an Haltestellen von Bus und Bahn eingerichtet werden. 80% dieser Abstellmöglichkeiten sollen innerhalb von 100 m im Umkreis der jeweiligen Ein- und Ausgänge dieser Haltestellen sein. §11.5: Zusätzlich zu Absatz 1 sollen in den ersten 2 Jahren nach Inkrafttreten des Gesetzes zusammen 20.000 und in jedem weiteren Jahr 20.000 Abstellmöglichkeiten bis zu einem Zielstand von mindestens 100.000 Abstellmöglichkeiten eingerichtet werden.	§47.4: Unabhängig von Absatz 1 Satz 1 sollen 50.000 Fahrradstellplätze an den Stationen und Haltestellen des ÖPNV sowie weitere 50.000 Fahrradstellplätze im öffentlichen Raum, insbesondere an sozialen und kulturellen Einrichtungen, an Schulen und Einzelhandelseinrichtungen bis zum Jahr 2025 eingerichtet werden.
17	5	§11.2: An Regionalbahnhöfen sollen innerhalb von 3 Jahren nach Inkrafttreten des Gesetzes Fahrradparkhäuser und Fahrradstationen eingerichtet werden. §2.4: Fahrradstation eine Einrichtung, die mindestens folgende drei Grundfunktionen erfüllen muss: gesicherte Abstellmöglichkeiten in geschlossenen Räumen, Vermietung von Fahrrädern sowie Serviceleistungen für Fahrräder; §2.5: Fahrradparkhaus eine überdachte bauliche Anlage zum Abstellen und Anschließen von Fahrrädern;	§47.4: An wichtigen Regionalbahnhöfen sowie wichtigen Stationen und Haltestellen des ÖPNV sollen innerhalb von fünf Jahren nach Inkrafttreten dieses Gesetzes Fahrradparkhäuser und Fahrradstationen erstellt werden. Fahrradstationen sind Einrichtungen zum gesicherten Abstellen von Fahrrädern in geschlossenen Räumen, mit Vermietung von Fahrrädern sowie Serviceleistungen für Fahrräder. Ein Fahrradparkhaus ist eine überdachte bauliche Anlage zum Abstellen und Anschließen von Fahrrädern.
18	5	§11.9: Die Abstellmöglichkeiten sollen regelmäßig daraufhin überprüft werden, ob sie nutzbar sind. Schrotträder sollen entfernt werden.	§47.2: Die Abstellmöglichkeiten sollen regelmäßig daraufhin überprüft werden, ob sie nutzbar sind. Zerstörte oder offensichtlich nicht mehr zum Fahren geeignete Fahrräder sollen entfernt werden.
19	8	§ 12 Fahrradstaffeln	§21.4: Die örtlichen Fahrradstreifen der Berliner Polizei werden unter Beachtung der gesamtbehördlichen Aufgaben und Ressourcen ausgeweitet. Die Fahrradstaffel der Berliner Polizei wird sukzessive ausgebaut, ihr Handeln richtet sich am Unfalllagebild aus. Sie wird in allen Teilen Berlins tätig.
20	8	(1) Bei allen Polizeidirektionen und Ordnungsämtern sollen Fahrradstaffeln eingerichtet werden. (2) Die Fahrradstaffeln sind personell und technisch so auszustatten, dass sie ihre Aufgaben erfüllen können. §12.3: Aufgaben der Fahrradstaffeln sind insbesondere 1. den Dialog mit allen Verkehrsteilnehmern über die Verkehrssicherheit für Radfahrende und zu Fuß Gehende zu intensivieren, 2. Regelverstöße zu ahnden, die die Sicherheit von Radfahrenden und zu Fuß Gehenden gefährden, und	§21.4: Aufgaben der Fahrradstaffel sind insbesondere 1 Hauptunfallursachen und Regelverstößen nachzugehen und zu verfolgen, die die Sicherheit der nicht motorisierten Verkehrsteilnehmenden gefährden, 2 den Dialog mit allen Verkehrsteilnehmenden über die Verkehrssicherheit der nicht motorisierten Verkehrsteilnehmenden zu intensivieren.

Table 1 (continued)

Row number	Goal (Corresponds with Box 1)	Berlin Bicycle Bill (<i>Volksentscheid Fahrrad</i> , 2017)	Berliner Mobility Law (Land Berlin 7/5/2018)
21	9	3. das Parken in zweiter Reihe, auf Bussonderfahrstreifen, Gleisanlagen sowie in den entsprechenden Haltestellenbereichen und auf Radverkehrsanlagen und Gehwegen unterschiedslos zu ahnden. § 14 Stabsstelle Radverkehr auf Senatsebene	§37.2: Bei der für Verkehr zuständigen Senatsverwaltung wird eine Koordinierungsstelle Radverkehr eingerichtet, die als Stabsstelle unmittelbar der Leitung untersteht.
22	9	(1) In der zuständigen Senatsverwaltung ist eine an die politische Leitung angebundene Stabsstelle für Radverkehr zu schaffen. § 16 Bezirkliche Stabsstellen für Fahrradangelegenheiten	§37.5: Jeder Bezirk benennt eine für die Koordinierung der Radverkehrsangelegenheiten zuständige Person. In jedem Bezirk sollen mindestens zwei hauptamtlich Beschäftigte (Vollzeitäquivalente) für den Radverkehr tätig sein. Ihre Aufgaben sind Planung und Umsetzung der bezirklichen Maßnahmen zur Radverkehrsförderung; dabei arbeiten sie mit den anderen für den Radverkehr zuständigen Stellen des Landes Berlin zusammen.
23	10	(1) Jeder Bezirk schafft eine Stabsstelle für Fahrradangelegenheiten, die bei dem für das Straßen und Grünflächenamt zuständigen Bezirksstadtrat angesiedelt ist. § 17 Bezirkliche Fachstellen für Fahrradangelegenheiten (1) Jeder Bezirk schafft eine Fachstelle für Fahrradangelegenheiten. §19.1: Der Senat informiert die Bevölkerung kontinuierlich über die tatsächliche und zu erwartende Zunahme des Radverkehrs, die Auswirkungen daraus sowie über die Maßnahmen und die Ziele dieses Gesetzes. Dazu gehören 1. die Sicherheit der Radfahrenden, 2. die für alle Verkehrsteilnehmer geltenden Verkehrsregeln, 3. die Verbesserung der Verkehrsmoral für ein besseres Miteinander aller im Verkehr, 4. die positiven Effekte des Radfahrens und 5. die Sensibilisierung von gewerblichen Kraftfahrzeug-Führenden für ihre besondere Verantwortung und ihr Gefährdungsrisiko gegenüber anderen Verkehrsteilnehmern. (2) Die Wirksamkeit dieser Informationsarbeit ist jährlich zu evaluieren und das Ergebnis im Internet zu veröffentlichen.	§21.5: Das Land Berlin wird durch kontinuierliche Öffentlichkeitsarbeit und begleitende Kampagnen die Verkehrssicherheit über alle Verkehrsmittel insbesondere durch Information über die geltenden Verkehrsregeln verbessern. Die Schwerpunkte werden in Abstimmung mit den betroffenen Verbänden und Gremien festgelegt. Die Wirksamkeit dieser Informationsarbeit ist regelmäßig zu evaluieren und das Ergebnis zu veröffentlichen. §38.5: Das Land Berlin wird durch kontinuierliche Öffentlichkeitsarbeit und begleitende Kampagnen die Verkehrssicherheit über alle Verkehrsmittel insbesondere durch Information über die geltenden Verkehrsregeln verbessern. Die Schwerpunkte werden in Abstimmung mit den betroffenen Verbänden und Gremien festgelegt. Die Wirksamkeit dieser Informationsarbeit ist regelmäßig zu evaluieren und das Ergebnis zu veröffentlichen.

the interviews; here they are anonymized and represented with the letters A through M. For the analysis, we again applied the directed approach to qualitative content analysis described by Hsieh and Shannon (2005). That is, we identified categories for what we called 'factor containers' to categorize the interview material according to its relevance to citizen knowledge (knowledge), motivation as regards the responsiveness gap (motivation), and claiming political space (process). Those 'factor containers' were used to deductively narrow-down our points of interests in the study, while iteratively enriching them with unexpected findings in the interviews. A group process of individual and collegial interview interpretation was used to ensure intersubjective validity of our categories. This also led to a further sub-division of the categories. The analysis in section five is the written result of this interpretative process.

4. Comparing the Berlin bicycle bill and Berlin's mobility law

The results of step one of the comparative analysis of the bill and the law shows that each of the goals of the VEF was written into both documents. Chronologically, the bill preceded the law and thus we assume that the bill served as a basis for the law.

Step two sought to identify passages where the content from the bill was found in the law, either using the exact same wording or through a different formulation. There are numerous passages that have the exact same wording. For example, one of the major goals of the VEF was to require by law bicycle lanes on every main street. The formulation that the VEF wrote into the bill is almost identical to the formulation found in the Mobility Law, "Bicycle infrastructure should be built on or along every main street with an easy to ride surface, with a safe distance to parked motor vehicles and of a sufficient breadth." The formulation in the law uses "main traffic streets" instead of "main streets," and "a low-vibration, good to ride surface" instead of

"easy to ride surface." Here, the qualities in the law become more precise than were found in the bill.

The following sentence, providing further qualities for the bicycle lanes is exactly the same in both documents: "These should be designed in a way that allows bicyclists to safely pass one another" (*Volksentscheid Fahrrad*, 2017: §7.1; *Land Berlin*, 2018: §43.1, own translation). The same applies to the respective next paragraphs: "the bicycle-traffic infrastructure is to be designed in such a way that illegal driving or stopping on it is not possible" (*Volksentscheid Fahrrad*, 2017: §7.2; *Land Berlin*, 2018: §43.2, own translation).

4.1. Quantities and qualities from the Berlin bicycle bill to the mobility law

Step three of the comparative analysis shows that quantities vary or are presented differently in the bill and the law. While not surprising for the bill, the representation of each goal in the law is notable. While the 10 goals themselves were not more than phrases, the VEF's bill specifies these precisely with quantities and qualities. The quantities in the bill mainly focus on amounts (e.g. kilometers or intersections), and time (e.g. years). Compared to the VEF's bill, the law has largely maintained qualities, while many of the quantities have been reduced or are absent. This is especially notable for quantities regarding timeframes for implementation in the Law. While these are not completely absent, many of the timeframes for implementing infrastructure are not found in the law, while timeframes for tasks not related to building of infrastructure (for example surveying use or communication tasks) are more often found again in the law.

While the VEF's goal 3 (safe intersections, see Table 1 rows 9–12) is represented in the law, the quantity of intersections to be rebuilt for more safety per year (25, stated in the bill) is absent in the law. The bill and the law both mandate that for safe intersections, visual standards ensuring a good visual overview of intersections are to be

achieved. While the bill mandates this by allocating areas within five to 15 m of an intersection for expanded sidewalks or bicycle parking (which do not hinder the view at the intersection like car parking), the law requires 'optimal' visual standards are achieved, but does not designate quantities for achieving this.

In some instances, quantities for infrastructure have been reduced. Goal 5 (200,000 bicycle parking spots) has been reduced by half in the law (see Table 1 row 16). Other quantities such as that for goal 7 (100 km of bicycle highways) have been maintained in full, including the requirement from the bill that these be implemented in lengths no shorter than five kilometers (see Table 1 row 1).

The least clearly anchored of the 10 goals, number 6, for 50 Green waves is the least visible in the law (Table 1, row 13). The law makes reference to traffic lights timed to enable flowing bicycle traffic on the main bicycle traffic network, but does not further specify quantities or qualities. Refer to Table 1 for further examples of correspondence between the VEF's bill and the law.

5. Citizens demanding policies to respond to their knowledge

In the previous section, our analysis demonstrates that to a large extent the policy output, the bicycle part of Berlin's Mobility Law, was based on and inspired by the Berlin Bicycle Bill, policy input created by citizens. In this step, we look at how this happened. Our interview partners identified the nature of the 'claimed' space as enabling them to extend the spectrum of possible policy content to create policy more responsive to their expectations, explicitly drawing a comparison to the 'invited space' of the *Radsicherheitsdialog*. Thereby it became possible to integrate knowledge hitherto believed to be outside the realm of possibility for mobility policy, enabling a departure from the status-quo and closing the responsivity gap.

5.1. Learning by Doing: Who can write a bicycle Law?

While nearly all of our interview partners said that they learned a lot through their engagement in the VEF, the knowledge they brought with played a significant role in enabling their contributions to the creation of the bill and to the VEF in general. There was a broad range of professional backgrounds and experience amongst our interviewees; their professions were in architecture, engineering, biochemistry, sociology, civil service, traffic engineering, business, journalism, urban planning, law, information technology, and students. 11 of our 13 interview partners were male (a similar gender ratio as in the list of the hackathon participants) and all had attended a university.

While the perception of our interview partners revealed that they did not perceive the group as being diverse, they did perceive diverse knowledge in the group. Many of our interviewees mentioned that there were mainly professionals in the group. This enabled, some maintained, a certain structure, goal-orientation, and high quality of output. The structure and decision-making practices were oriented toward, as E. put it "doing and output," which "did not even allow in the first place that lots of people, shall we say, into the core of the group, like you find in lots of initiatives like this, they come and talk a lot and are very outraged and are looking for social connection." Motivation and goal-oriented organization made up for certain knowledge deficits, such as experience with writing legislation.

Though there were numerous individuals among our interviewees who had experience interpreting laws, none of them had written a bill before. We asked the question of how the individuals in the VEF knew how to write a law and what was needed in a law. K. responded to this question succinctly: "We did not know." This reflects the responses to this question across the board. Often there was a bit more elaboration, but the essence was generally very similar. In E.'s words: "And then we had to somehow write a law. And nobody knew how to do that, of course, right? And so we just simply asked in our supporter community: Who knows that?" None of our interviewees claimed that they

knew at the time how to write a law, and they all said that nobody knew how. The lack of experience or knowledge in law writing was overcome by the common agreement on the goal, which was determined by the process. The individuals in the VEF wrote a bill, because they needed to do so in order to get a bicycle law. The perception was that this would oblige the authorities to make radically different decisions regarding traffic infrastructure.

As L. said: "we didn't always do everything in the big group. Instead, there were sub-groups for the specific paragraphs." In this way, the learning process could be streamlined. The orientation toward achieving the goals within the timeline certainly had a significant effect at enabling the initiative and streamlining decisions, leading to a tempo that required fast learning.

Pragmatism figured into the approach to this task of writing a bill where all those involved freely admitted to not possessing this expertise. As B. stated: "So we thought about it, that everything, that we see as being our goals, (...) has to go into this law. And that you just have to phrase it so it sounds as if it were a law." This pragmatism was not limited to the approach to the knowledge related to the content itself, but other forms of knowledge enabled the group to make up for a lack of expertise in this area. Process expertise was an important form. One person played a key role in establishing time pressure, which may have enabled others to adopt the pragmatic approach to the task of writing a law that otherwise may not have come about.

"We did this law hackathon, for two days, also with an external moderator and tried to get the first body there somehow. We told the press, eighty percent were finished, was really maybe five to ten percent, but it doesn't matter. And then there were a lot of night shifts, weekend shifts, that at the end of February, I think 23 February 2016, we had the first draft that we could present to the public. That's what we then did: press conference. That suddenly gave us a different impact as an initiative, because the media noticed: they're really delivering, they weren't just talking, something's happening. When I had this idea of a referendum in autumn 2015, I met one of those people again from whom I had the idea. He said, what is your timetable? I said, yeah, we will start now in November. January, February, March we write the law, we start to collect [signatures], he laughed his ass off. He said, really you need two years for a law like that. I say, no, not with me. And we also had the milestone at the end of March. Say, that's simply the goal. It has to be finished, otherwise you can forget all the rest." (G.)

5.2. Claiming responsivity: decisions, goals, and timelines

Writing a law was an important step toward creating policy change, but our interview partners underlined the importance of public support for achieving influence as a serious political force in the mobility policy field. They mainly attributed the VEF's influence and ability to maintain the political space also in negotiations with the government to the media attention they were able to garner in the run-up to the Berlin state elections.

The citizens of the VEF believed that more would have to be done to assert their knowledge in the policy process than simply fulfill the formal criteria of claiming the formally foreseen political space of initiating a referendum around the safety of cycling in Berlin (as outlined in section 2.2.1). The VEF therefore looked to draw attention so that their messages would be picked up by the media. B. attributes the successful political act to the media campaign: "At the political level, we were actually taken very seriously at many levels. In particular, I think that this perception in the media was also responsible for it, because it was really this presence in the media that was responsible for it."

Referring to the ensuing negotiations with the new governing coalition, once the VEF established itself as an actor, C. says that the VEF continued to put effort into the public perception of the campaign so that they maintained the power to claim responsivity:

“I also don't know if these were single moments that made it successful. Or whether it was simply the initiative that cleverly managed to place the actions or the events, or the themes. Well, I would even say that we have already brought the topic of bicycle traffic to the public as a relevant topic. [...] we have shaped this also by really very good and/or good press work and/or we have already hit a nerve. [...] Yes, but because we have also made sure that we are taken seriously.” (C.)

The VEF was acutely aware of media logic, and used these converging factors, media logic combined with election-campaigns, to identify a window of opportunity which they sought to exploit to ensure political relevance. F. illustrates this as follows: “So the central move or the central lever was the Election. And when it was then possible to oblige the election campaigners to make such public statements [regarding the VEF], the chances of success were greatly increased.”

The maintenance of influence which enabled the impact of the ‘claimed space’ (Gaventa, 2006; Mirafteb, 2004) moved at a pace that could satisfy a hungry media cycle, while at the same time maintain the motivation of those involved:

“we had such fast decision-making, they were crazy fast. I think that it was our largest resource, that we were that fast, that there was always something happening, and always this feeling that everybody had that so many things are happening at the same time, that was motivating. So that always emphasized the motivation.” (G.)

The media-orientation, however, was a carrier for the content, which our interview partners were convinced was the fundamental ingredient for the successful campaign. E. contextualizes it thus:

“It was clear to everyone that it can't go on like this, the traffic system is collapsing, it's going to drive into the wall: we have an unbelievable danger potential out there, the city is growing and everyone knows that we have to change course, but nobody does. And that somehow a knot had to be cut, so to speak. And I think this is one of the great success stories of the [VEF], because we have shown a way to get from the situation we find ourselves in – we in the sense of the cities today – to the cities that we want to get to.”

5.3. Motivation: Why citizens engaged despite the responsiveness gap

The notion of the responsiveness gap also begs the question of why citizens engaged in the first place. The individuals we interviewed mentioned a range of factors that motivated them to get involved in the VEF. These ranged from being rooted in personal experience cycling in Berlin and the frustration with the infrastructure, to seeing the possibility to bring the topic of cycling or sustainable mobility into the public discourse, to a feeling of civic responsibility. Some became involved because they were specifically asked to participate and provide their expertise; others had been looking for a good opportunity to bring about a transformation toward more sustainability and perceived this as that opportunity.

The VEF offered an outlet for the motivation to engage that some interviewees did not find elsewhere. As mentioned above, numerous interviewees were motivated by the dynamic structure and fast pace of the VEF, which gave them the feeling of being able to contribute to a policy change. As A. put it: “I have time, and I want to apply it effectively.” This shows how a lack of responsiveness from the policy side can be overshadowed by a vivid civic society so that citizens would engage anyway.

One exemplary event that was noted by more than half of our interview partners was the ‘invited space’ of the *Radsicherheitsdialog 2013* (described in section 2.2). From the perspective of many in the VEF, this participation process was a disappointment or a frustration that

motivated them to try to make a change in a different way. The fact that they felt “fooled,” (F.), or as H. and J. put it, that nothing was done, shows how the citizens did observe a responsiveness gap in the first place:

“So then they analyzed everything. And said ‘something's got to be done here.’ And then, basically as good as nothing happened. And the worst part, as I saw it, was that then, I think it was the head of traffic, [says name] in the administration, who then once said, I don't know in what context, he said ‘maybe we shouldn't have done that survey.’ And that was of course for me an absolute sign of failure. You do a survey. You ask the citizens. They say ‘we feel unsafe there.’ When you compare that data with the crash statistics, there's a big overlap. And then the guy who's responsible for that says ‘no, we haven't done much now. Maybe we shouldn't have done that survey and the public awareness with it.’ That shows, really, that actually we don't have any desire to do anything in this area. Somehow we can't. And that was distressing for me.” (H.)

“The *Radsicherheitsdialog*, when it started, was a sign of departure for me. I thought, wow, finally they are doing something. And finally maybe we can even get involved. And of course I participated, and I entered various intersections, which in my opinion are life-threatening, there. The interesting thing was that nothing happened after the dialogue. So almost nothing was implemented. And in this sense, the traffic dialog was in two respects the beginning or a trigger of this movement.” (J.)

Those involved in the VEF had mustered around not only a common problem definition, but also a common belief in a particular solution to what they perceived as something of a responsiveness gap. This led to the bundling of knowledge from outside of the policy field being brought in to that policy field through the agency of the initiative.

6. Discussion: Co-Creative policymaking in a claimed space

6.1. Co-creative policymaking

We posit that the process that led to the Mobility Law was a process of co-creative policymaking (for a broader context of co-creation applied to mobility policy, see Herberg et al., 2020). This term captures the object-oriented, boundary spanning, and collaborative creation of an outcome that transcends and transforms previous controversies and inertias. Co-creative policymaking in particular accommodates the notion of expertise as a process. We suggest that co-creative policymaking is characterized by a) the creation of policy output in a material dimension, b) a horizontal or bottom-up nature, claiming or inventing spaces of participation where power is at least temporarily redistributed in a spatial dimension, and c) collaborative processes in a social dimension.

6.1.1. The material dimension

The Mobility Law is a major output at the material dimension of this process. The example of VEF proves that a bottom-up collaboration starting in a claimed space may actually generate a substantial material output that can “be used to enter or affect other spaces” (Gaventa, 2007: 216). The bill resulted from a creative process within the initiative, turned out to be an effective boundary object that enabled further productive interaction with the policy-making system.

In their 10 goals, the VEF defines a quantity of two meters for the width of bicycle lanes on the main streets. This firm quantity is not even found in the VEF's own formulation in the bill, where they rather opt for the requirement that these bicycle lanes “should be designed in a way that allows bicyclists to safely pass one another,” which is exactly that found in the law. Noteworthy is that a year after the law was passed, the Berlin Department for Traffic sent a directive to all responsible administrative offices clearly defining two meters for

the required width of these bicycle lanes ([Senatsverwaltung für Umwelt, Verkehr und Klimaschutz, 2019a, 2019b](#)). Here, the material output in the directive was either arrived at by traditional experts and the citizens separately, or the definition of two meters was pre-empted and influenced by citizen knowledge.

6.1.2. The spatial dimension

Our case was that of a group of activists that would traditionally be labelled as lay-people. Yet they reached policy impact that is elusive to most policy experts. As we have shown (see Table 1), much of their input has been made law. Judged by results, these citizens turned out to be highly effective policy-makers. This happened through a process of claiming the space of participation ([Gaventa, 2006; Mirafteb, 2004](#)), so that the VEF was also able to co-determine the boundaries of the participation. This intermediary function is characteristic of a 'claimed space' and can be contrasted within the notion of an 'invited spaces.' This spatial formatting allowed the initiative not only to offer a different type of expertise than was commonly accepted in the policy field. In the sense of claiming responsibility, they also pushed for their knowledge to be thoroughly considered and potentially implemented in a consecutive policy process. For a large group of policy experts, this path is not available, as they are invited (based on the type of expertise desired) to apply expertise to policy matters, but their mandate rarely extends to pushing for the inclusion of their ideas into policy.

6.1.3. The social dimension

The knowledge represented amongst our interviewees was heterogeneous. Exploring our case, we observed that citizen expertise was not only possessed by or located within certain individuals, but that it was gradually and collectively developed. No one in the group knew how to write a law, but together they achieved the task of writing a bill of a high enough quality that a law was very closely based upon it. This supports the analytical value of a decentralized and distributed dynamic conceptualization of expertise, rather than a reification of expertise and the dichotomy to which it leads of 'experts' and 'lay persons' ([Arancibia, 2016](#)).

More directly in the context of co-creative policymaking are the VEF's interactions with the established policy actors. Acknowledging that "expertise is built dynamically among a set of heterogeneous actors" ([Arancibia, 2016: 485](#)) led to an entirely different sort of encounter than we have become accustomed to under the title of participation and which differs from usual policy processes in the field. Adding a reflexive form of interaction that acknowledges power relations (an important factor in the social dimension of co-creative policymaking) can allow perceptions of other types of knowledge as valuable, and that reflective processes are necessary to be able to integrate it into decision-making ([Fischer, 2000](#)). It is against this backdrop that we preferably speak of a responsibility gap instead of a linear implementation gap. This is a critical aspect when it comes to role of administrators and politicians, who, just like citizens will need to bring about a change through communicative processes of learning that alter their ways of functioning and the types of knowledge they can integrate in their governance practices ([Voorberg et al., 2017; Noveck, 2015](#)).

6.2. A different quality of knowledge in claimed spaces

Previous research has entwined a dynamic concept of knowledge and a more relational understanding of public participation. [Aldred \(2017\)](#) suggested that traffic policy corresponds with what those involved in traffic policy measure. Mobility policy in Germany is no exception, and the experts in this field have established processes that are based on measuring certain things, numbers of crashes or numbers of cars, for example, but not feelings of safety. The result is that "objective safety", as reflected by crash counts, has been considered in

building traffic infrastructure, but subjective safety has not, and the infrastructure reflects this.

Data on subjective safety can be delivered in a quantitative form, but this process tends to be more tedious than for data on objective safety. This becomes evident through the inability of established experts to use and react to the data gathered in the 'invited space' for the participation process *Radsicherheitsdialog*. The established processes were closed to the type of knowledge that was sought, and thus an adequate policy response was not achieved.

The challenge of institutionalizing processes to integrate citizen knowledge into policy remains. In specialized journals in the German transport policy field, authors continue to discredit the value of the citizen and user perspective to infrastructure design. They do this by referring to citizens and alternative experts as 'external' or 'lay people,' and discussions around their ideas as a 'hype,' and suggesting that they are not legitimate because they were not established according to the traditional way of knowledge production in the field ([Kunst, 2018; Schwab, 2019](#)). These reactions show the limitations placed on the possibilities for policy change from the view of the established policy actors. This could be interpreted as a response to a movement for inclusive planning that undermines authority based on an exclusive notion of expertise, and underlines the importance of a political space in which those challenging the established norms in the field have the opportunity to decide what is possible and appropriate to address a problem.

While there has long been awareness that feelings of subjective safety influence mobility behavior ([Aldred et al., 2017; Nello-Deakin, 2020](#)), it took a citizen initiative to integrate these ideas into policy. One previously 'unthinkable' proposal of physical separation between cycling and motor infrastructure was carried over directly from the bill to the Law (displayed in bold in Table 1, row four): "the bicycle-traffic infrastructure is to be designed in such a way that illegal driving or stopping on it is not possible" ([Land Berlin, 2018; Volksentscheid Fahrrad, 2017](#)). The notion of physically protected bicycle infrastructure had been rejected by the established bicycle lobby in Germany for decades, and advocacy focused on vehicular cycling ([Legeland, 2017](#); see also the vehicular cycling debate [Forester, 2001; Pucher, 2001](#)). It might have been due to the fact that the adoption of standards such as wide, separated bike lanes as pursued by the VEF meant a thorough and widespread renewal of traffic infrastructure on a scale that established policy actors thought impossible or impractical. The VEF's clear intention to shift the burden of safety away from the individual cyclist and toward traffic infrastructure set it apart from many established actors and advocates in Germany at the time. The departure from that status-quo was not achieved in the 'invited participatory space' of the *Radsicherheitsdialog*. It was only achieved when the VEF could define the value of knowledge and co-determine the boundaries of policy change on its own terms in a 'claimed space' for participation ([Gaventa, 2006; Mirafteb, 2004](#)).

7. Overcoming the responsibility gap through Co-Creative Policy-Making?

In this contribution we referred to the notion of the responsibility gap as the major problematic of recent policy-making in mobility and other areas (cf. [Rosanvallon, 2018](#)). This notion also represents a relational turn in participation research, problematizing a static division of labour between policy makers, experts, and citizens. This means that the failure to implement ambitious environmental policies is not only an implementation gap, but directly connects to deficiencies in democratic institutions. Specifically recent developments in mobility, where civic activism and climate policy ambitions are on the rise, can be investigated as a test-bed for democratic innovations. We have shown with the example of the VEF in Berlin that the success-

ful integration of citizen knowledge into policy is possible, and that it can serve to improve policy in terms of user orientation as well as in pursuit of a democratic foundation for sustainability policies. Yet, we argue that it is not a sustainable, reliable, or normatively adequate model that can be institutionalized in its current form. This is due to tensions and shortcomings we want to pinpoint in the following.

The overarching question for future discussion is how involving citizens more directly in policy processes may play a part in overcoming the responsivity gap in mobility policy. The relevance of this challenge is not only high in Germany, where there are currently more than 40 cities and states with bicycle referendum movements following the model of the VEF (Changing Cities, 2020). When social movements in Germany and beyond (e.g. Fridays for Future or Extinction Rebellion) demand policy action, political actors so far have not been able to enter into a productive relationship with those prompting a response. In Germany, this is due to their political-cultural or even interest-driven ties with the legacies and path dependencies of fossil-friendly law-making (Herberg et al., 2020). The case of VEF can point to ways to address this challenge while grounding the subsequent controversies in a solution-oriented process of policy making. Public administrators in Germany are key actors in the policy process, and at the same time they are responsible for implementing policies. If administrators strongly determine the range of possibility for policy change, it may lead to policy development that does not depart enough from the status-quo to address pressing expectations. The case of the VEF and the policy change achieved when the citizens claimed the space and determined the limits of possible change can offer lessons for reforming mobility policy. Yet the division of labor in responsive and co-creative policy making requires a critical normative discussion.

First, the role of citizen knowledge is often portrayed as a necessary and positive to sustainability policies. As much as we have highlighted such advantages, the formatting (design, selection, and facilitation) of co-creative processes is a demanding process with significant potential for conflict. Citizens can – through the referendum process – contribute to the policy process by initiating and formulating appropriate laws. Thus the citizen fills various roles, all of which should be considered to better design processes that integrate these roles. Citizens are experts as users of transport infrastructure and policy; they are in a civil role also a sovereign with a claim to co-determine policy. In the role of activists, as was assumed by those citizens involved in the VEF, the citizen combines these two roles to enable the provision of expertise and the pursuit of its implementation simultaneously. This hybrid role was effective in the case of the VEF, where citizens in this function were arguably the greatest barrier to the continuation of the status-quo in Germany's mobility policy. However the selection of which kind of role and which kind of citizen groups are to be involved in policy processes is all the more complex when considering the diverse notions of citizenship. A higher heterogeneity linked with citizens claiming and defining the boundaries of their participation allowed for a more substantial departure from established policy than was possible in the 'invited spaces' for participation (contrast the policy change of the *Radsicherheitsdialog* with the VEF). This resonates with two important aspects of the theory behind deliberative democracy. First, that deliberation amongst diverse views can increase the quality of positions (Bohman, 2007). There has been evidence that deliberation leads to favoring of environmental considerations leading to higher readiness to accept policies for sustainability (Sanders, 2012), underlining the potential for diversity policy processes for sustainable mobility transformations. Second, that through deliberation, boundaries maintained by political and administrative elites can be questioned and overcome (Dryzek et al., 2019).

Yet, VEF fell short of normative and epistemological expectations of diversity. The makeup of the VEF was biased in that there were more young educated males in the group than in the population as a whole. This begs questions regarding whose interests are being represented. (For example, in the context of cycling and mobility, issues of physical

ability might need to be addressed.) While it can be legitimate to pursue change from within a relatively homogenous group of citizens, the moment that an expert role is assumed in advising the legislative, as was the case for the VEF during the negotiations with the governing coalition, the responsibility to uncover and address blind spots takes on an important new dimension. When citizens get closer to the practice of policymaking they also assume a responsibility that goes beyond representing their own interests, for instance, as users of public infrastructure. The implications of this shift – with regard to professionalization of social movements, facilitation of citizen participation or the division of roles in democratic systems – should be subject to further scrutiny.

Second, the concept of the responsivity gap highlights implicit processes of exclusion that are noteworthy for political and administrative actors (but also for initiatives like the VEF). That also implies that overcoming a responsivity gap is an uphill battle: the wider it is, the more demanding is the communicative process. High levels of training and expertise were required to be able to create the 'claimed space' in which the VEF asserted citizen expertise. This suggests that the barriers to entry for alternative types of knowledge are high, and may need to be reassessed. Involvement in policy processes should not necessarily be coupled with political or communicative savvy. If free time and cognitive surplus are a prerequisite to integrating citizen knowledge into policy processes, it will lead to the exclusion of valuable perspectives. This shows that re-claiming the responsivity gap should not be the new normal of citizen engagement. Claiming a space should always contribute to lowering the threshold for others to follow. Lowering the threshold for participation cannot be the task of citizens mainly, but of policy makers and policy experts. That means that the promise of 'claimed spaces' should not overshadow the importance of 'invited spaces' (Gaventa, 2006; Mirafteb, 2004).

While top-down participative processes may be difficult to design so that they fill out the spatial dimension of co-creative policymaking, there have been 'invited spaces' that display some of the benefits offered by 'claimed spaces,' such as the Danish consensus conferences (Fischer, 2000: 234ff). Especially policy experts who already see their role as facilitating and mediating expertise, rather than reifying and guarding it (Arancibia, 2016; Fischer, 2017) can play a critical role in shaping inclusive policy processes in 'invited spaces.' In order to benefit from citizen knowledge, methods like random citizen selection are appropriate to lower the threshold for citizens that do not belong to the established group of 'usual suspects' (for an example of random selection for policy processes, see Farrell et al., 2019). Further, practitioners should design with processes that allow for productive aspects of the social and material dimensions of co-creative policymaking, which could enable a departure from the status-quo.

Altogether, our study suggests the need to reassess policy and planning culture in the German mobility transition. While citizen involvement and expertise can help address challenges in the mobility transition, it is necessary to both strengthen and learn from citizen engagement as well as to clarify expectations and obligations in the underlying democratic procedures.

8. Note

One of the authors of this paper, Dirk von Schneidmesser, was involved in the initiative VEF.

CRedit authorship contribution statement

Dirk Schneidmesser: Conceptualization, Methodology, Formal analysis, Resources, Writing – original draft, Writing – review & editing, Supervision, Project Administration. **Jeremias Herberg:** Methodology, Validation, Formal analysis. **Dorota Stasiak:** Conceptualization, Validation, Writing – review & editing.

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