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'Ecological concerns weren't the main reason why I took the bus, that association only came afterwards': on shifts in meanings of everyday mobility

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ABSTRACT

Reducing the modal share of car travel in commuting implies challenging meanings of everyday mobility that tie commuting to driving. Existing research has focussed on describing ways in which everyday mobility is meaningful. However, why shifts in meanings occur remains largely unexplored. This article asks how meanings become ascribed to everyday mobility and identifies dynamics that play a role in shifts in those meanings. We analysed interviews with short distance commuters in two Swiss cities. Combining the analytical foci of the mobilities turn and practice theories, we developed a typology of four registers through which meaning is ascribed to everyday mobility (functional, hedonic, representative, habitual) and identified three sets of dynamics that play into shifts between these registers: i) dynamics related to the spatio-temporal complexity of everyday life, ii) dynamics emerging from different and changing social representations of mobility, and iii) dynamics tied to subjective experiences of everyday mobility. Our findings indicate that shifts in meanings and performances of everyday mobility must be analysed together, and that differences in how commuters ascribe meaning to everyday mobilities can reveal structural dynamics inhibiting the spread of pleasurable low-carbon everyday mobilities.

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Introduction

Transportation accounts for a fourth of European and a third of Swiss domestic greenhouse gas (GHG) emissions (BAFU 2017; EEA 2019b). Individual car travel is responsible for 75% of GHG emissions from transportation in Switzerland (BfS 2019) and accounts for one third to one fourth of the modal share in (sub)urban commuting (Basel Stadt et al. 2017). This high modal share persists despite the well-developed multi-modal transport infrastructure of Swiss cities (BfS 2017; Basel Stadt et al. 2017). Given the ever-increasing number of commuters within and to Swiss cities (BfS 2018), addressing the modal share of driving in commuting is necessary to decarbonise transportation.

Recent developments indicate that in this endeavour, technological innovation alone is insufficient: in Europe, transportation is the only sector in which GHG emissions have increased since 1990, despite substantial improvements in vehicle efficiency (EEA 2019b; Kemp and Van Lente 2011). To break this trend, current mobility patterns must be transformed (EEA 2019a). This involves challenging the practices giving rise to these patterns, and the criteria and discourses through which they become meaningful (EEA 2019b; Heisserer and Rau 2017; Kemp and Van Lente 2011; Prillwitz and Barr 2011). How commuters ascribe meaning to their everyday mobility points to the motivations that underlie specific everyday mobility practices (Heisserer and Rau 2017; Rérat 2019). Challenging the prevalence

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of driving in everyday mobility implies challenging meanings of everyday mobility that tie performances of mobility to the use of the car, or finding ways in which those meanings can be associated with the use of low-carbon modes (Cass and Faulconbridge 2017; Clayton, Jain, and Parkhurst 2016; Watson 2012). This requires understanding how such meanings come into being and are associated with specific means of transportation, as well as the dynamics that play into shifts in these meanings.

Researchers from different disciplinary and theoretical traditions have explored the ways in which mobility can be meaningful. Research in environmental psychology focuses on the values that correlate with the use of or the intention to adopt low-carbon means of transportation. Studies have found significant differences between the values espoused by users of carbon-intensive and low-carbon modes. The latter tend to name environmental concerns as part of what motivates them in their practice (Jansson, Nordlund, and Westin 2017; Lind et al. 2015). However, other studies focussing on environmental concerns as behavioural drivers have found that also research participants using carbon-intensive means of transportation express environmental concerns and the intention to act on them. Nonetheless, they have a low propensity to adjust their mobility practice accordingly. This paradox is termed the 'value-action gap' (Chai et al. 2015; Jansson, Nordlund, and Westin 2017; Shove 2010). Thus, the question of how environmental concerns play into mobility practices requires greater scrutiny. Furthermore, because studies in the field of environmental psychology analyse values and motivations as independent variables, they do not address how values and motivations come into being and change.

A different approach is taken by researchers who study motivations as part of mobility practices. These researchers create typologies of mobile populations based on their means of transportation and the meaning they ascribe to everyday mobility (Haustein and Nielsen 2016; Kaufmann 2000; Kaufmann et al. 2020; Prillwitz and Barr 2011; Rérat 2019). Such studies shed light on the wealth of mobility practices in a given context and show how they are meaningful to people (Götz, Deffner, and Stieß 2011). Fewer, longitudinal, studies trace how meanings associated with everyday mobility and means of transportation evolve over time (Kaufmann et al. 2020). However, such studies do not explain how meanings of everyday mobility come into being and why they change.

Changes in elements of mobility are at the centre of practice-theoretic approaches to everyday mobility. Research in this domain has focussed mainly on the material elements of everyday mobility and how they are entangled with everyday life and social and infrastructural dynamics (Aldred and Jungnickel 2014; Cass and Faulconbridge 2016; Heisserer and Rau 2017; Laakso 2017; Watson 2012). Few empirical studies have inquired into meanings of mobility practices. Cass and Faulconbridge (2017) analysed how everyday mobility becomes meaningful through the integration of valued practices (reading, listening to music, etc.). Sattlegger and Rau (2016) analysed the meanings associated with voluntary carlessness and found that shifts in meanings of mobility are intertwined with the life course. Meinherz and Binder (2020) found that meanings of everyday mobility can change following modal shifts. Though these studies touch on the questions of how meanings become ascribed to everyday mobility and what plays into shifts in these meanings, none of them place them at the centre of inquiry.

With this study, we ask (i) how meanings become ascribed to everyday mobility and different means of transportation, and (ii) which dynamics play into shifts in those meanings. We combined the analytical foci of the mobilities turn and practice theories. Combining these approaches has been found useful for understanding both how meanings of everyday mobility are intertwined with structural arrangements in which mobility is embedded, and how mobility becomes meaningful to people by being performed as part of everyday life (Cass and Faulconbridge 2017).

Theoretical foundations

In this section, we introduce the theories that inform our analytical approach: the mobilities turn and practice theories. We present how they theorise mobility and how it becomes meaningful, and review the state of the art of empirical research on meanings of everyday mobility.

Mobility beyond movement: insights from the mobilities turn

Since the early 2000s, scholars have called for an analytical turn in social studies, commonly termed the mobilities turn¹ (Sheller and Urry 2006). The mobilities turn brings together perspectives from sociology and geography (Cresswell 2010, 2011). Analysis focusses on the entanglements of social structure with actual and potential mobilities, and on how social structure interferes with who has access to which mobilities (Kaufmann, Bergman, and Joye 2004; Skeggs 2004). For example, mobility is a source of pleasure or power for some, but on others, (im)mobility is enforced (Skeggs 2004). Such differences in access to actual and potential mobilities contribute to reproducing social structure (Kaufmann, Bergman, and Joye 2004).

To analytically capture the entanglements between mobility and social structure, mobility is often broken down into different aspects. The first aspect captures physical movement or absence thereof (Cresswell 2010), and invites us to focus on how mobility is tied to material, spatial, and temporal arrangements of places (Sheller and Urry 2006). For example, the possibility of automobility has created new visions of the city and divisions of space and time, resulting in sociotechnical and spatial arrangements that impose automobility (Sheller 2004; Urry 2004).

The second aspect captures representations (or 'shared meanings') of mobility (Cresswell 2010). This aspect invites us to focus on narratives attached to specific ways of being (im)mobile and to the technological artefacts used, and to analyse how such representations are tied to and reproduce social roles related to class, race, and gender identities (Holton and Finn 2018; Skeggs 2004). For example, automobility is often portrayed as a symbol of freedom and liberty (Kaufmann 2000; Urry 2004).

The third aspect captures the practice of being mobile and how different ways of being (im)mobile result in different experiences (Sheller and Urry 2006). We are invited to study how being on the move becomes meaningful to people, how they experience it, and how subjectivities are created through it (Cresswell 2010, 2011; Sheller 2014). This aspect incites us to focus on differences between voluntary and involuntary (im)mobility (Skeggs 2004) and on how differences in actual and potential mobilities relate to quality of life (Kaufmann, Bergman, and Joye 2004).

Empirical research on meanings of everyday mobility inspired by the mobilities turn has focussed on creating survey-based typologies. Scholars created both typologies of mobile populations according to the ways in which they ascribe meaning to mobility, and typologies of the elements used in ascribing meaning to mobility (Table 1). In the first case, the categories describe different mobilities. Such typologies emphasise that the same means of transportation can be part of mobile practices with different meanings (e.g., 'practical cyclists' versus 'green cyclists' [Haustein and Nielsen 2016]). In the second case, typologies are used to disentangle the multi-dimensionality of meanings of mobility. Categories group the elements that people use when ascribing meaning to their everyday mobility (e.g., 'independence' or 'well-being' [Rérat 2019]).

Such typologies shed light both on the plurality of mobility practices, and on the manifold meanings that people associate with these practices and that play into how (and with which means of transportation) they perform them (Götz, Deffner, and Stieß 2011). Thereby, they stress the importance of not restraining categorisations of mobile populations to the means of transportation used, but to account for what everyday mobility means to people (Rérat 2019).

Mobility as an embedded practice: insights from practice theories

The use of practice theories in mobility research recently emerged in the field of consumption studies (Corsini et al. 2019). In mobility research inspired by practice theories, mobility is conceived of as a practice: 'a routinised behaviour which consists of several elements, interconnected to one other: forms of bodily activities, forms of mental activities, "things" and their use, a background knowledge in the form of understanding, know-how, states of emotion, and motivational knowledge' (Reckwitz 2002, 249). In practice theories, elements of practices, such as material artefacts, infrastructure,

Table 1. Non-exhaustive overview of typologies of everyday mobilities.

Typologies of mobile populations based on how they ascribe meaning to everyday mobility		
<i>Population</i>	<i>Categories</i>	<i>Reference</i>
Commuter cyclists in Switzerland	Active cyclists, civic cyclists, individualist cyclists, enthusiast cyclists	Rérat (2019)
Population of six cities in Switzerland and France	Exclusive motorists, civic ecologists, motorists constrained into using public transport, open to all possibilities	Kaufmann (2000)
Population of Europe	Convenience drivers, busy green drivers, price-oriented public transportation users, green public transportation users, practical cyclists, green cyclists, price-oriented pedestrians, green pedestrians	Haustein and Nielsen (2016)
Active population of Greater Geneva	Exclusive motorists, predisposed motorists, comparing efficiency, comparing comfort, predisposed for individual means of transportation, predisposed for sustainable means of transportation, predisposed for active means of transportation, ecologists	Kaufmann et al. (2020)
Population of England	Addicted car users, aspiring green travellers, reluctant public transport users, committed green travellers	Prillwitz and Barr (2011)
Typologies of elements that are used in ascribing meaning to everyday mobility		
<i>Terminology used in article</i>	<i>Elements</i>	<i>Reference</i>
Motivations	Well-being (pleasure, to take one's mind off things), civic engagement (social activism, positive image of the bike in social circle, respect for the environment), independence (time-saving, flexibility, freedom)	Rérat (2019)
Rationales	Comparison of journey times, cultural predisposition to the use of different modes of transport (values such as speed, individualism, privatisation), rooting of different modal habits in people's lifestyles	Kaufmann (2000)
Experiences	Physical exercise, stress relief, facilitating transition from work to home, to be outdoors or getting fresh air	Hansen and Nielsen (2014)
Registers of underlying logics	Functional, sensitive, social, environmental	Kaufmann et al. (2020)

competences, and representations, are not only analytical categories. They describe 'agentive aspects' (Sahakian and Wilhite 2014, 28). Transformations of practices can originate from them (*ibid*).

Practice theories acknowledge meanings as one of these agentive aspects: '[t]he component of meaning is about making sense of the activities. This includes [...] ideas of what the activities are good for (or why they are considered problematic), [...] emotions related to the activities, [...] beliefs and understandings' (Røpke 2009, 2492). Earlier work emphasised the importance of past experience in how practices become meaningful. Practices are seen as expressions of the accumulated experience of what is possible and, thus, as a form of practical rationality built through the conditions in which life is lived (Bourdieu 1972; Schatzki 1997). Practice theories provide the conceptual means for studying meanings of mobility and their relationship to performances of mobility. Nonetheless, most empirical research has focussed on material elements of mobility practices; notably on how uses of specific means of transportation are entangled with the socio-technical structure (Aldred and Jungnickel 2014; Cass and Faulconbridge 2016; Laakso 2017; Watson 2012).

As this review of key tenets of practice theories and the mobilities turn has shown, combining these theories equips us with the necessary tools to study how meanings of everyday mobility are intertwined with the structural arrangements in which mobility practices are embedded, and to analyse how such meanings are constructed as subjective understandings through which commuters make sense of their performances and experiences.

Study context and methodological approach

Our study is based on 18 semi-structured interviews with (sub)urban commuters in two major Swiss cities. In this section, we present the study context, data, and analytical approach.

Study context and data

Given the exploratory nature of our study, we wanted to account for a variety of experiences in the selection of study sites and sampling (Graneheim and Lundman 2004). Thus, we conducted our study in Geneva and Basel, the second and third largest Swiss cities in terms of population. They are comparable regarding population size and density, but differ regarding the modal share of the car (Table 2) and the quality of their transport infrastructure. Basel is rated the most cycling-friendly, and Geneva the least cycling-friendly major Swiss city (Pro Velo Schweiz 2014). Both are border cities, with large agglomerations in Germany and France, respectively. But whereas Basel has a well-developed cross-border public transport network, Geneva did not have any meaningful cross-border public transport connections at the time of data collection² (Dubois 2019). Moreover, Geneva is the most congested Swiss city, whereas Basel is the second-least congested major Swiss city (Schmidt 2020). Thus, studying commuting in these cities allows us to explore a diversity of experiences.

We aimed for a sample consisting of men and women with and without children in their custody, and representing users of all available means of transportation (public transport, car, [electric] bicycle). To constitute a sample that represents these criteria, we approached large employers in the respective cities. Of three contacted companies in Geneva and Basel, two and one, respectively, agreed to screen their employee databases for commuters who corresponded to our sampling criteria and to transmit the contacts of those willing to participate in our study. We compiled our sample from these contacts (Table 3). In line with the core businesses of the employers (media, health, and insurance), most interviewees had pursued higher education degrees and received corresponding salaries.

Prior to the interview, participants completed a short online questionnaire to collect demographic details and information regarding their commuting habits: means of transportation used, available means of transportation, commuting distance and duration, recent changes in trajectory and means of transportation.

The interviews were conducted in May and June 2018 at interviewees' workplaces during their regular working time. They lasted between 45 and 60 minutes and were recorded and transcribed verbatim. The interviews were conducted in interviewees' main national language. We translated the quotes used in this article. The interviews followed an interview guide that we pre-tested with commuters in our research group. Interviewees were asked to provide an overview of their everyday mobility practices and reflect on aspects that mattered to them regarding their everyday mobility and how they experienced it. They were also asked to elaborate on how their everyday mobility practices had changed over the course of their lifetime. To avoid recall biases (Brod, Tesler, and Christensen 2009), interviewees were invited to date the accounts of changes with regard to important life events. The anonymised interview transcripts can be found on the FORSbase repository (Meinherz 2019).

Analytical approach

We analysed the interview data via a four-step content analysis inspired by Bengtsson (2016) (see Figure 1).

First, we identified all elements through which participants ascribed meaning to their everyday mobility practices (experiences and emotions, habits, beliefs, desires, intentions, motivations, social representations, fears, references to what is possible given their situation). We did so starting from

Table 2. Summarised description of the sample cities. Sources: (Basel Stadt et al. 2017; BfS 2015; OCSTAT 2019). All data is from 2015.

City	Inhabitants	Inhabitants per km ²	Modal share of the car in trips performed by city residents
Geneva	349'305	756	38%
Basel	338'285	740	22%

Table 3. Description of the interview sample (N = 18).

ID	Gender	Age	Commuting distance [km]	N° of children at custody	Main everyday means of transportation	Language
Basel						
BAS1	m	60–70	10–14	2	Bicycle	Swiss German
BAS2	m	50–60	10–14	1	Bicycle	German
BAS3	f	50–60	10–14	0	Bicycle/public transport	German
BAS4	f	50–60	10–14	2	Bicycle	German
BAS5	m	50–60	<5	0	Public transport	German
BAS6	f	40–50	≥15	2	Car	Swiss German
BAS7	f	40–50	10–14	2	Car	Swiss German
BAS8	m	40–50	≥15	2	Car	Swiss German
BAS9	f	40–50	10–14	2	Car	Swiss German
BAS10	m	40–50	≥15	2	Public transport	Swiss German
Geneva						
GEN1	m	50–60	≥15	0	Bicycle/bicycle + public transport	French
GEN2	f	50–60	10–14	0	Public transport	French
GEN3	m	50–60	≥15	0	Public transport	French
GEN4	f	40–50	<5	2	Bicycle	French
GEN5	f	40–50	10–14	3	Car	French
GEN6	f	40–50	variable	2	Electric bicycle/car	French
GEN7	f	50–60	≥15	0	Electric bicycle/car + public transport	French
GEN8	m	50–60	10–14	0	Bicycle	French

a preliminary coding grid based on notions from practice theories regarding meanings of practices. We iteratively refined this grid during the coding process.

Second, we organised the elements identified in step 1 into individual maps of interviewees' everyday mobility practices. The maps reproduced the literal content of the text units coded in the first step. They portrayed the different mobility practices that interviewees distinguished, illustrating the elements through which interviewees ascribed meaning to them. We linked these elements to the practices with colour-coded arrows that indicated in which way interviewees used the elements to ascribe meaning to their practices. The colour codes specified the nature of the relationship between the element and the practice (used to describe the practice, question it, explain how it relates to other/prior practices). These maps allowed us to gain an overview of interviewees' practices and how interviewees ascribed meaning to them. Together with the registers developed in the next step, they were the prerequisites for the analysis conducted in the fourth step.

Third, we inductively developed four registers to group the elements identified in step 1 (see Table 4). These registers describe different ways in which everyday mobility can be meaningful. They are purely analytical and can be used conjointly. They served as the coding grid that allowed us to identify in how far mobility practices mentioned by interviewees were qualitatively different regarding their meanings, and thus to identify shifts in meanings.

Fourth, we used the registers to group the elements in the maps. This allowed us to identify qualitative shifts in how interviewees ascribed meaning to their mobility practices. This transposition of the registers onto the maps allowed us to identify which elements and dynamics played a role in such shifts. As we show in the next section, we identified three sets of dynamics that play into shifts between the four registers of meanings.

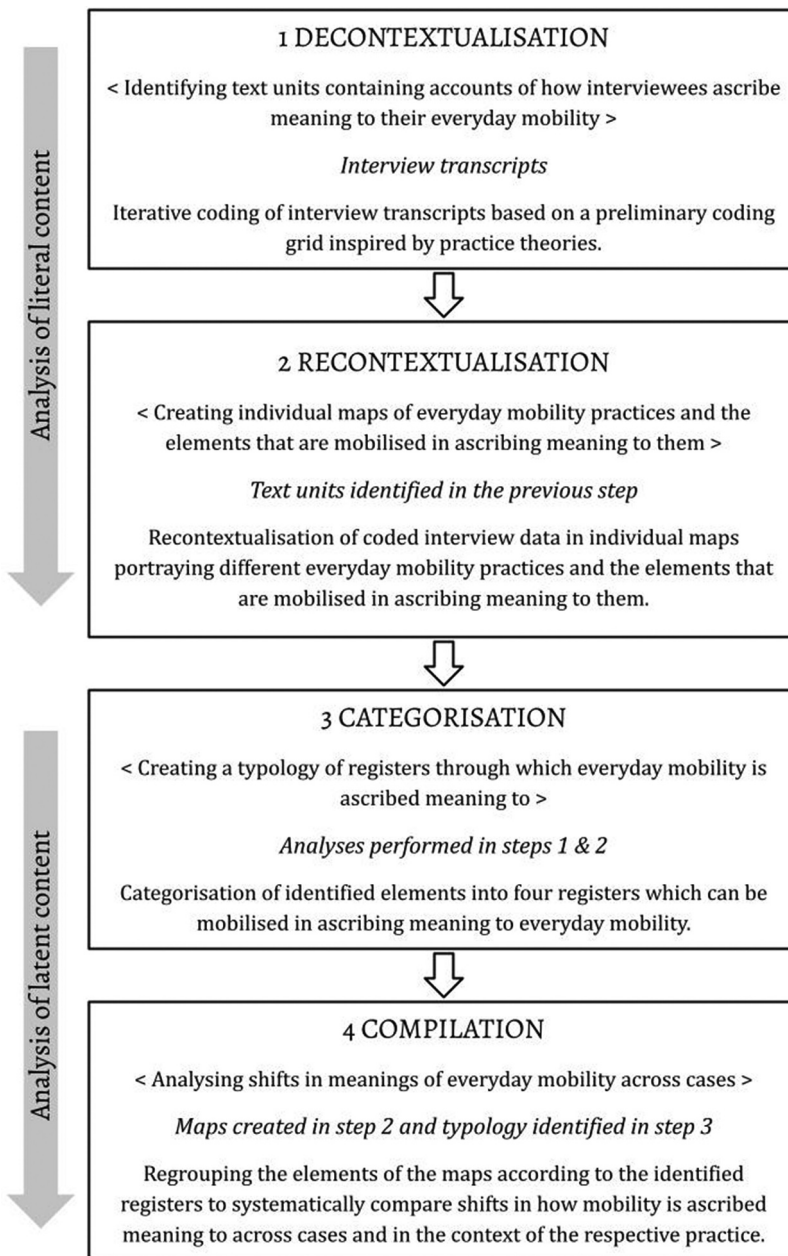


Figure 1. Overview of the four-step qualitative content analysis. Figure created by the authors inspired by Bengtsson (2016).

Findings

In this section, we present the three sets of dynamics that shaped which register(s) (Table 4) interviewees used in ascribing meaning to everyday mobility and that played into shifts between registers: i) Dynamics related to the spatio-temporal complexity of everyday life, ii) dynamics that played out in the nexus between socially prevailing and personally meaningful social

Table 4. Registers capturing ways in which everyday mobility can be meaningful.

Register	Description	Example
Functional	This register refers to mobility needs and the perceived possibilities for satisfying them. Everyday mobility is meaningful as a practice necessary to accomplish other ends. This register captures problematisations and idealisations of ways of performing everyday mobility based on it being perceived as (dys)functional.	'I commute by car, and that's only because I have two children [...] it's a lot of organising, with the children, with work [...] so I've got my own car, because I'm more flexible that way.' (BAS7)
Hedonic	This register refers to how everyday mobility is experienced and intrinsically valued. Everyday mobility is meaningful as an end itself, as a pleasurable and valuable activity. This register captures problematisations and idealisations of ways of performing everyday mobility based on how it is affectively experienced.	'In the evening I'm all happy to pedal a bit, to get home, I pass by a forest, that frees my mind after a day at work [...] I take pleasure in commuting with my normal bicycle, with the other means of transportation I take no pleasure at all!' (GEN1)
Representative	This register refers to representations of movement, mobility and means of transportation, and/or to everyday mobility as a way of constructing one's identity.	'I really prefer cycling. [...] [It] defines me as a person, I also like being seen that way.' (BAS4)
Habitual	This register refers to the routinised aspect of everyday mobility. It captures how commuters ascribe meaning to everyday mobility by referring to accumulated experience or habit.	'To me, that's just routine [...] it just became common practice, I've never really thought much about it [laughs]' (BAS7)

representations of everyday mobility and means of transportation, and iii) dynamics that characterised experiences of mobility.

Juggling the double burden: how meanings of everyday mobility are entangled with the spatio-temporal complexity of everyday life

The first set of dynamics playing into shifts in meanings of everyday mobility relates to changes in the spatio-temporal complexity of everyday life. Increases in the spatio-temporal complexity of interviewees' everyday lives tended to coincide with a shift from ascribing meaning to everyday mobility through the hedonic and/or representative registers to ascribing meaning to it through the functional register. Inversely, when the spatio-temporal complexity of interviewees' everyday lives decreased, the functional register tended to lose importance in meanings of everyday mobility; instead, the hedonic and/or representative registers were used. Such shifts rooted in the experience of being forced into or released from highly complex mobility needs. Taking on or reducing childcare duties was a key factor in changes in the spatio-temporal complexity of everyday life:

GEN5: 'I moved further away due to the cost of real estate, but also my children were born [...] [H]aving a family means that one has to accept to be in a different kind of mobility [...] [before having a family] I used to cycle a lot, I liked it, it also allowed me to exercise, to revitalise my body [...] [the car] isn't my thing [...] but at one point I said no [...] I had to deal with the different situation, not always being able to do what I like best. Ideally, I'd always cycle.'

GEN2: 'Back when I was driving it almost felt like an obligation, because I was in charge of the children, of driving them everywhere [...] now that they're older I can manage my time more freely [...] in the bus I'm seated, calm, I read a book, it's approaching life in a much more relaxed way.'

Several interviewees mentioned the difficulty of finding affordable housing for families in city centres and the resulting increase in commuting distances as a driver of the increasing spatio-temporal complexity of their everyday lives after childbirth. Furthermore, the narratives of many interviewees indicated that gendered distributions of care work affected the impact of childbirth on the spatio-temporal complexity of commuters' everyday lives. In our sample, only mothers were concerned by increasingly complex mobility needs following childbirth³:

BAS6: 'Since I live in Dornach I exclusively travel by car. No bicycle. My husband, yes, as soon as the weather improves in spring he commutes by bicycle [...] My situation is entirely dependent on the children. If it weren't for the children I'd never go through all that hassle, in the mornings and evenings with the car on the freeway [...] We tried to rent an apartment in Basel [...] precisely to avoid this problem, but the rent is simply too high [...] I don't like [driving]. But I have to, I need to keep up with the schedule, and I'm under such time pressure [...] and for my husband it's much easier, he goes to work in the morning and comes back in the evening. And I have to get 100'000 things done throughout the day, it's pure madness, all over the place.'

BAS8: 'To me it was obvious, one and then two children, [my wife] needs the car more than I, I'm sitting in the office all day long. For me it was the logical conclusion that it's not her who takes public transportation.'

As these extracts illustrate, interviewees primarily associated the functional everyday mobility that ensued from taking on childcare duties with the car. This association also emerged from interviewees' statements that they could not imagine managing family life without a car:

BAS8: 'There are also people in our family who don't own a car, and they're fine without it, but they don't have children. I always say once there are children, one has to start planning differently.'

In summary, our findings show that shifts between registers of meanings of everyday mobility were shaped by a set of dynamics resulting from the embeddedness of mobility in the spatio-temporal complexity of everyday life. They further indicate that this complexity depends on gendered distributions of care work and on housing availability.

Pride and prejudice: how meanings of everyday mobility are entangled with representations of everyday mobility

A second set of dynamics playing into shifts in meanings is related to social representations of everyday mobility and different means of transportation. Interviewees ascribed meaning to their everyday mobility practice by either defying or building on such representations. This concerned both representations internalised by commuters, and representations that they perceived as prevailing in their social environment.

Interviewees who had internalised specific social representations of everyday mobility had to deconstruct them to ascribe meaning to their practice in a way that contradicted these representations. Several interviewees stated that, at one point in their lives, they went through a process of deconstructing the idea that everyday mobility had to primarily serve the purpose of maximising speed. They used to ascribe meaning to everyday mobility through the functional register based on this internalised representation, but then started defying it. Subsequently, they began ascribing meaning to everyday mobility through the hedonic register:

GEN2: 'I was scared of [the bus], I don't know why, like, "I have to take a connection, I'll have to wait 10 minutes, dear god, what a disaster." But actually, no, you just have to take your time. Learning how to take your time, and that's what I didn't, I was always, "hurry up", in fact it's a lifestyle one has to change.'

BAS8: 'It's always annoying when I know that there's this perfect connection, it'll get me there half an hour prior to the meeting, and then there are the first announcements, the train is 10 minutes late so I'll miss the connection, and so I'm already stressed out though I can't do anything about it! But maybe that's also our Swiss way of thinking, maybe we don't take the liberty of saying "oh well, the train was cancelled I'll get there when I get there [...] 15 minutes later is fine as well."

In several interviewees' narratives, representations of everyday mobility were entangled with representations of how life should be lived. Concomitantly, the process of deconstructing representations of everyday mobility coincided with a process of redefining one's approach to life. The following excerpt describes a shift from the functional to the hedonic register. It is from an interviewee who shifted from a car-based everyday mobility, which she described as purely functional and dire, to an everyday mobility based on the electric bicycle, which she experienced as pleasurable. She described

this shift as part of a larger therapeutic process, during which she learnt defying an approach to life akin to Calvinist ethics, hostile of pleasure and based on embracing frugality and hardship:

GEN7: 'It's also a whole mental approach [...] of thinking one has to suffer [laughs] [...] and then to say "enough now! If it's easier, grant yourself [an electric bicycle]" [...] when I commuted [by car] [...] I wouldn't say that it was part of my leisure time [...] I listened to the radio but for me it's stressful to drive in the city [...] Age played a role, with age I started telling myself "now stop doing violence to yourself, come on, grant yourself some pleasure" [...] and that transformed my everyday life, really, transformed, because now there is more pleasure to it.'

Interviewees whose ways of ascribing meaning to and performing everyday mobility conflicted with social representations prevailing in their social environment reported feeling isolated or unsupported in their practice, or facing opposition:

GEN1: 'There are quite some people at [company] who cycle, but often, at the meeting table, when I say "I came by bicycle, it was nice" they call me an assassin! [...] To me that's absolutely incomprehensible, to say that I came by bicycle and then to be called an assassin! Whereas the one who came with his two tonnes of scrap metal, he wouldn't kill a soul! He doesn't risk anything, that's normal! There's still this, it's a problem of mentality.'

Others, who perceived that their practice reflected social representations with which they did not identify, actively distanced themselves from these representations. For example, one interviewee who commuted by public transport for practical reasons clearly distanced himself from representations of public transportation as a low-carbon alternative to the car:

BAS5: '[C]oming to work by car in my opinion isn't reasonable [...] I'm just stuck in traffic, aren't I, and then I park the car here and have to pay 200 CHF [...] [it is a matter of] time, comfort, and not of ideological issues like "I have to take public transport because cars are destroying the universe."

When interviewees built on, rather than defied, social representations, they ascribed meaning to their performance of everyday mobility through the representative register. In many cases, feeling aligned with social representations affirmed them in their practice and procured them a feeling of pride. Being able to build on social representations further allowed interviewees to ascribe meaning to their everyday mobility as part of their identity:

GEN7: 'There's also this image you project when you commute by bicycle, which is nice [...] I remain this woman who exercises by taking my bicycle, eco-friendly for sure, because I don't bring my car to [company], so this image, like, I'm not polluting.'

BAS8: '[The car] is for sure a luxury but it's also very comfortable [...] I'm part of the affluent society, by now I can grant myself that luxury!'

Furthermore, in interviewees' accounts of how their everyday mobility evolved over their life course, we observed a shift in the social representation of the car. On the one hand, this shift showed in interviewees' general appreciation of the car. They reported that they used to see the car as the embodiment of success, freedom, and pleasure, but that they increasingly perceived it as the embodiment of a burdensome mobility that further creates socio-ecological problems:

GEN1: 'Everything comes together! There are the environmental issues, there's global warming, we didn't really talk about that 25 years ago! And the fact that, anyways, driving has become shit! That's why I'm saying I really don't think that the future of the car is electrification, because that more or less solves the pollution issue and not even that's for sure, but it doesn't solve the traffic issue. In my opinion [...] individual car travel in the city, it's over.'

GEN2: 'Having a car meant having socially succeeded [...] it was freedom, I could go wherever I wanted, it was terrific! But no concerns for the environment, really, none at all! [...] [nowadays] it's not the same anymore [...] the traffic jams, road rage, rights of way that aren't respected, huge SUVs that don't respect rights of way, people, let's say bourgeois people who believe that the road belongs to them, it's [...] this society that I don't like that reveals itself on the road.'

On the other hand, we observed shifting social representations of the car in how interviewees ascribed meaning to their own everyday mobility. Some interviewees who used to ascribe meaning

to their car-based everyday mobility through the habitual register reported that they increasingly started to question their practice because they felt guilty about it:

BAS9: 'I'm thinking, what if [our family] renounced using the car altogether? [...] Because somehow my colleagues, there are many who commute by public transport, so I ask myself "why can't I do the same", I do have the possibility to do the same, maybe somewhat a bad conscience.'

Others who had never used the car and used to feel as exceptions in a car-based society stated that as a result of such shifting social representations, they felt increasingly affirmed in their mobility. They started ascribing meaning to it through the representative register:

GEN7: 'I really get the feeling that it's entering people's minds now, people are starting to shift to non-motorised means of transportation, which I don't think were very common some 10, 15 years ago. Everybody was in their car, but nowadays I feel very aligned with what's going on, especially in Geneva, there are plenty of electric bicycles. Before I felt more like, not the exception, but you know what I mean. And now it's really, that's it! I feel that, even if at work I'm the only one who commutes by bicycle [...] I still feel supported, with a policy that's been developed here at [company].'

In summary, our findings show that meanings of everyday mobility were shaped by a set of dynamics resulting from social representations that pre-existed individual interviewees. We observed that interviewees defied, deconstructed, or affirmed such representations in ascribing meaning to their mobility. Our findings also revealed dynamics inherent to such representations *per se*. We notably observed a shift in interviewees' representations of the car. Such dynamics in representations could lead to shifts in the registers that interviewees used to ascribe meaning to their mobility.

Crossing the Rubicon: how meanings of everyday mobility are entangled with experiences of everyday mobility

A third set of dynamics playing into shifts in meanings of everyday mobility is related to changes in commuters' experiences of everyday mobility. We observed that such changes resulted from changes in the conditions of use of different means of transportation and from modal shifts. In many cases, they were entangled with different and shifting representations of everyday mobility and specific means of transportation.

Changes in the conditions of use of interviewees' means of transportation affected how they experienced their everyday mobility. This became apparent from the narratives of interviewees who used to see the car as the default mode for getting around, but who, because of increasing congestion, increasingly experienced it as tedious and cumbersome. As a result, they ceased ascribing meaning to it through the habitual or hedonic registers:

GEN1: 'I really take no pleasure in using my car around here anymore because I'm always stuck! [...] There was this time when I drove my car, yeah, I drove my car everywhere! I didn't even think about it; it wasn't really something I thought about! Until it started to be shit!'

BAS1: 'Back in the days it was this feeling of freedom, a feeling of getting quickly from one place to another. Public transport wasn't that good either, some places where I worked I couldn't even have reached without a car, and that's different now, in the sense that there is more traffic, being stuck in traffic, and so one really starts thinking whether it's reasonable to take the car.'

Due to the deteriorating experience of driving, some interviewees adopted a different means of transportation. Some transposed the meanings previously associated with driving onto their new practice. In such cases, only the means of transportation changed, but the meaning ascribed to everyday mobility remained the same. In particular, interviewees who had valued the car for the freedom and flexibility it procured them stated that they experienced the same when walking or cycling, but not when using public transport:

BAS1: 'Getting into the car, that was like, freedom, breaking free [...] Bicycle or motorcycle was a bit similar, or walking, so, that's always been a form of freedom, to move, and to get somewhere. With the train that's less the case, because train means fixed schedules, fixed routes.'

GEN4: 'I mainly get around by bicycle [...] I tried taking the train at one point, but it wasn't really practical for afterwards, when I had to get somewhere at lunch [...] there was a good train connection, but somehow out of laziness I took the car; out of laziness and for practical reasons [...] I realised that [taking the train] cost me some flexibility, for instance, at lunch.'

Other interviewees started ascribing meaning to their everyday mobility differently once they experienced it with a new means of transportation. For instance, interviewees who used to ascribe meaning to everyday mobility through the functional register and who changed their means of transportation for practical reasons subsequently started ascribing meaning to their everyday mobility through the hedonic register. In some cases, they also started looking at their previous practice differently:

GEN2: 'I hurt my knee, and so I couldn't drive for a while, I had to take the bus [...] and then I realised that it wasn't as disagreeable as I thought, that I could read a book, arrive at work calmly, and not get all worked up in traffic. So I adopted this means of transportation [...] I used to love driving, but not anymore [...] this feeling of going to war, in the car.'

GEN4: 'I realise now the waste of time, of energy [that is the car], and financially, well, the gas, but it's not only those practical issues, it's that I feel like a cyclist [...] I enjoy it, it's not just a means of transportation, it's a pleasure [...] It's true that, in the beginning, I didn't see it that way at all [...] in the beginning I maybe felt a bit more vulnerable.'

Some interviewees who adopted low-carbon means of transportation appreciated being able to reduce their carbon footprint. They started ascribing meaning to their everyday mobility through the representative register by referring to representations of pro-environmental lifestyles. However, whereas such social representations affirmed interviewees in their new modal practice, they did not play a role in interviewees' decision to adopt a different means of transportation:

GEN8: 'Gradually, I started commuting by bicycle, simply to exercise, and in the meantime it's because there's too much traffic, it takes much longer by car than by bicycle [...] and then it's also better for the environment.'

GEN2: 'I don't know whether ecological concerns were the main reason why I took the bus, I think that association only came afterwards [...] It wasn't the main reason, no, I don't think so. It was only afterwards that I said, "oh the bus, I'm doing something good for the environment, that's good," and so that affirmed me in my choice of taking the bus.'

In summary, our findings show that meanings of everyday mobility were shaped by a set of dynamics ensuing from changes in subjective experiences of everyday mobility. Interviewees mentioned changes in the conditions of using the car as a factor that led them to question how they ascribed meaning to their car-based everyday mobility. Interviews also revealed shifts in meanings of everyday mobility that resulted from experiences with different means of transportation.

Concluding discussion

In this section, we first briefly recapitulate our findings. Second, we discuss them in relation to studies that ask which meanings foster the adoption of low-carbon transport modes. Third, we discuss our findings in view of existing literature on the structural dynamics of mobility. Fourth, we discuss the implications of our findings for political reflection on the decarbonisation of everyday mobility. We close by pointing to the limitations of our study as well as to avenues for further research.

Recapitulation of findings

With this study, we explored how commuters ascribe meanings to everyday mobility, and the dynamics that play a role in shifts in those meanings. To identify shifts in meanings, we developed a typology of four registers through which meaning can be ascribed to everyday mobility (see Table 4). Our analytical approach, which draws on the mobilities turn and practice theories, allowed us to account for the routinised aspect of everyday mobility and to complement existing typologies (*cf.* Table 1) with a habitual register. The importance of routines in performances of everyday mobility has been emphasised, amongst others, by Cass and Faulconbridge (2016) and Watson (2012).

We found that shifts between registers of meanings resulted from three sets of dynamics shaping i) the spatio-temporal complexity of everyday life, ii) the interplay between socially shared and personally meaningful representations, and iii) subjective experiences of everyday mobility. (Figure 2) recapitulates how these sets of dynamics manifested in interviewees' narratives, as well as the processes through which they affected shifts in meanings. The sets of dynamics are not mutually exclusive. In many cases, they were entangled in (shifts in) how commuters ascribed meaning to everyday mobility.

Reframing the challenge of decarbonising everyday mobility: beyond the 'value-action gap' and sacrificial low-carbon everyday mobilities

The empirical insights gained add nuance to two widespread assumptions regarding the link between meanings of everyday mobility and the persistence of carbon-intensive mobility practices: The assumptions that to achieve a shift to low-carbon everyday mobilities, firstly, an alleged 'value-action gap' must be overcome, and secondly, that commuters must be enticed to sacrifice personal benefits.

First, our insights challenge the underlying assumption of research enquiring into the 'value-action gap'; namely, that people who agree with pro-environmental values should, in principle, act in accordance with them (Chai et al. 2015; Jansson, Nordlund, and Westin 2017). Our findings corroborate the assertion that 'the gap is only mystifying if we suppose that values do (or should) translate into action' (Shove 2010, 1276).

We observed that interviewees started embracing representations of environmentally friendly and/or healthy lifestyles following a modal shift to low-carbon means of transportation. Such representations affirmed commuters using low-carbon transport means of transportation. However, they were not salient in the case of commuters using cars; in principle, the latter may agree with such representations, but they did not refer to them when ascribing meaning to their

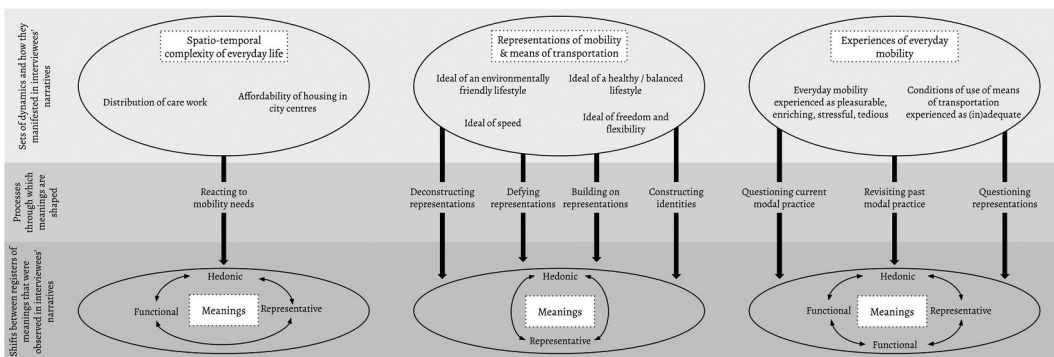


Figure 2. Summary of findings: sets of dynamics identified and how they affect meanings of everyday mobility.

everyday mobility. These findings indicate that focussing on a presumed gap between representations (or the values captured therein) and performances of everyday mobility hardly allows for understanding shifts in either performances or representations. They indicate that when enquiring into the persistence of carbon-intensive mobility patterns, meanings and representations of mobility should be analysed as attributes of everyday mobility, rather than as properties of commuters that motivate them to adopt specific practices. This insight resonates both with the assumptions underpinning research on mobility styles (Götz, Deffner, and Stieß 2011) and practice theoretic research on mobility (Watson 2012).

Second, our findings challenge the assumption that a shift to low-carbon means of transportation is complicated by the sacrifices it requires in terms of personal wellbeing or affluence (Jakovcevic and Steg 2013; Steg et al. 2014). Our results corroborate studies that found strong associations between the use of active modes (cycling, walking) and increased wellbeing (Olsson et al. 2013; Plazier, Weitkamp, and van den Berg 2017; Singleton 2019), and that car commuters are most likely to experience their commute as stressful (Gatersleben and Uzzell 2007; Legrain, Eluru, and El-Geneidy 2015). We observed stressful car-based everyday mobilities in the case of interviewees who were forced to drive as a result of the high spatio-temporal complexity of their everyday life. The association of pleasure with active modes was particularly pronounced in the case of interviewees who adopted them as an alternative to the car, which they no longer perceived as pleasurable or functional.

On the one hand, these findings show that shifts from the car to low-carbon means of transportation can result in improved wellbeing. This insight leads us to suggest reframing the problem: the question should not be how commuters can be enticed to commit to personal sacrifices in order to adopt low-carbon everyday mobility practices. Instead, the question should be why positively experienced low-carbon everyday mobility practices do not spread.

On the other hand, as we discuss in the next section, these findings extend existing empirical research by providing possible explanations for these differences in how meaning is ascribed to everyday mobility.

Differences in meanings across commuters: a gateway to structural constraints inhibiting the spread of low-carbon everyday mobilities

The three sets of dynamics that we identified illustrate different ways in which sociocultural and material dynamics shape subjective experiences of mobility and translate into individual acts of ascribing meaning to everyday mobility. The insights gained indicate that enquiring into meanings is a promising avenue for uncovering structural constraints inhibiting the spread of pleasurable low-carbon everyday mobilities. We illustrate this by relating our findings on shifts in the meanings associated with a car-based everyday mobility to studies analysing automobility as a system (Rosa 2013; Urry 2004; Mattioli et al. 2020).

Such studies have shown that the kind of mobility represented by the car is necessary given the spatio-temporal organisation of car-based societies. The car embodies ideals of speed, freedom and flexibility, whereas automobility as a system contributes to creating an ever-greater need for speed and flexibility. Automobility is associated with a spatial planning that involves an increase in the distances that have to be bridged and a multiplication of the places that have to be reached (Rosa 2013; Urry 2004; Mattioli et al. 2020). The ensuing spread of a car-based everyday mobility results in traffic congestion and standstill; a paradox that Rosa (2013, 49) called 'dysfunctional deceleration' (translated from German by the authors).

Our observation that many interviewees experienced their functional car-based everyday mobility as stressful (see also Gatersleben and Uzzell 2007; Legrain, Eluru, and El-Geneidy 2015) can be interpreted as the affective manifestation of dysfunctional deceleration; a deceleration that is enforced upon commuters who depend on being fast and flexible. Our findings indicate that the dysfunctional deceleration does not affect all commuters in the same way. Some interviewees

shifted to different means of transportation in reaction to congestion. This enabled them to continue experiencing everyday mobility as a pleasurable activity. Others felt forced to take the car despite the inconveniences it presented. Our findings in this regard mirror previous studies on gendered everyday mobilities (Holton and Finn 2018; McCarthy et al. 2019; McQuaid and Chen 2012): mainly women with childcare duties felt that their complicated schedules pressured them into car-based everyday mobilities.

In thus revealing the manifold ways in which meanings of everyday mobility are embedded in sociocultural and material structures and dynamics, our study shed light on an aspect that is conceptually present in both theoretical currents that informed our study (the mobilities turn and practice theories), but that had thus far been neglected in empirical research. The insights gained can open up avenues for political reflection on the decarbonisation of everyday mobility.

Avenues for decarbonising (sub)urban commuting

Our findings can inform transitions towards low-carbon everyday mobilities. First, the identified registers (see Table 4) provide policy-makers with a tool for considering the plurality of differently meaningful practices in policy development. The importance of doing so has been stressed, among others, by Götz, Deffner, and Stieß (2011), Meinherz and Binder (2020), and Rérat (2019).

Second, in identifying three sets of dynamics that give rise to this plurality in meanings, our study extended existing research and offers new reflections for policy-making. Thereby, our findings can inform policy development that comprises targeted communication strategies that connect to different meanings (see also Götz, Deffner, and Stieß 2011), and that reflects the variety of ways in which everyday mobility is performed and preserves this pluralism throughout the transition (see also Meinherz and Binder 2020). In addition, by revealing who does (not) use low-carbon means of transportation for which reasons, and the dynamics that play a role therein, our findings pinpoint the structural constraints and dynamics that must be addressed to ensure that everybody has access to pleasurable low-carbon mobilities. In our sample, the cost of housing in city centres and gendered distributions of care work exacerbated the spatio-temporal complexity of working mothers' everyday lives and forced them into car-based everyday mobilities. These findings indicate the need for policies that reduce the spatio-temporal complexity of working mothers' everyday lives by addressing gendered distributions of care work and facilitating access to affordable housing for families in city centres. Thereby, our findings show the limitations of sectoral policies and stress the importance policies that account account for the wider dynamics in which mobility is embedded.

Limitations and future research

Our study presents an empirical and a conceptual limitation. First, sampling through companies introduced a clear focus on the active population's experiences and excluded, for instance, experiences of commuting students and young adults. This focus on a particular stage of life may explain why childbirth stood out as the most notable life event affecting shifts in meanings.

Second, the focus of this study on the embeddedness of mobility practices came at the expense of a close consideration of the individual commuter's embeddedness. The latter has been found to vary throughout the life course (Sattlegger and Rau 2016). Research that adopts a biographical approach focussing on shifts in meanings over the life course of commuters would allow for exploring such dynamics and provide a more in-depth understanding of differences in how life events are experienced and affect shifts in meanings. Further research that accounts both for how meanings of everyday mobility are embedded in socio-cultural and material dynamics, and for how they are entangled with the individual life course, can make valuable contributions to understanding not only how 'actual or potential capacity for spatio-social mobility may be realized differently or have different consequences across varying socio-cultural contexts' (Kaufmann, Bergman, and Joye

2004, 750), but also across the life course; thereby providing yet more nuanced insights into who (does not) have access to low-carbon mobilities at which life stage for which reasons.

Notes

1. Some authors employ the term 'New Mobilities Paradigm' to refer to the same current. However, the same authors are critical of using the term 'new paradigm', as the mobilities turn does not break with previous research paradigms (Cresswell 2010, 2011).
2. Since the interviews were conducted, the Léman Express, a rail network of six train lines that connects the transborder agglomeration of Geneva, entered into service, with the first lines opening in December 2019. It was constructed to facilitate the use of public transportation for commuters in Greater Geneva (Fumagalli 2019). Thus, this structural difference between the cities may no longer apply.
3. Our sample only comprised commuters who, at least while their children were living at home, lived in heterosexual relationships with the other parent.

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