The effects of a promotional campaign on the practice of utility cycling. The case of bike-to-work in Switzerland

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Each year, thousands of employees take part in the bike-to-work action in Switzerland. This campaign is based on teams of usually four employees who commit to cycling to work as much as possible in May and/or June. While many participants are already regular cyclists, others decide to give it a try.

The bike-to-work initiative aims to encourage some commuters to try utility cycling (cycling as a means of transport rather than for leisure or sport), with the hope that this temporary change will have a long-term effect. This can be seen as a 'nudge in the right direction', a way of influencing people's behavior without the need for prohibitions or imposed changes (Thaler & Sunstein, 2009). Giving people the opportunity to change is a way to facilitate a change in practice that would otherwise be difficult, given that most travel behavior is highly habitual and generally occurs in stable contexts (Moser et al., 2018; Scheiner & Holz-Rau, 2013). Without such opportunities, the inertia of habitual mobility practice can prevent any modal shift[1].

The positive impacts of cycling have been well documented in terms of public health, ecological footprint reduction, and traffic regulation, and a growing number of cities is taking measures to promote cycling. While there is an important body of literature on the factors that may increase the modal share of cycling (such as dedicated and segregated infrastructures, and reduction in the speed and volume of motorized traffic), less is known regarding how cycling may be adopted again after the initial learning phase in childhood, and how it evolves over the life course (Marincek & Rérat, 2020; see also Sayagh, Dusong & Papon as well as Buhler in this volume).

Bike-to-work schemes exist in several countries, but they are usually quite short (e.g. a day) (Lee, 2015; Piatkowski et al., 2015; Rose & Marfurt, 2007). Lasting one or two months, the duration of the Swiss campaign makes it an interesting case to analyze how participants develop a variety of skills and a set of knowledge, and how they experience bike commuting. Switzerland occupies an intermediate position in Europe in terms of the modal share of cycling. According to the 2015 Microcensus Mobility and Transport, 7% of all journeys are made by bike. This is higher than in most Latin and English-speaking countries, but lower than in Northern Europe, where several countries have a more mature cycling culture (J. R. Pucher & Buehler, 2012).

[1] Changes may also be triggered by external factors such as the pandemic (see Cox in this volume) or key events in the life course (see Marincek in this volume).

The aim of this chapter is to explore the effects of the bike-to-work action on the practice of utility cycling. In the following sections, the theoretical framework and the methods are presented. The empirical material shows that the effects of such a promotion campaign are manifold and are observed in terms of uses of the bike (motivational effect), individuals' cycling potential (learning effect), and the bikeability of the context (legitimating effect).

Analyzing the Effects of Cycling Promotion Campaigns

Campaigns promoting cycling take a great variety of forms. Some diffuse information to a general public or to a specific target group (e.g. within a company); some others, which are of interest here, encourage participants to try cycling for a certain duration (from one day to several weeks), for certain motives (utility, leisure, or sport), or certain purposes (environment, health, etc.) (e.g. de Kruijf et al., 2018; Lee, 2015; Piatkowski et al., 2015).

The Various Dimensions of Event-Based Behavior Changes

Existing research usually addresses event-based behavior changes through interviews and surveys before, during, and after the experience, sometimes in comparison to a control group (Yang et al., 2010). Core questions usually center around who participates in these actions, why they participate, and what impact participation has on mobility behavior. While Piatkowski et al. (2012) find no evidence to suggest that the bike-to-work day in Denver, USA, caused significant change with regard to cycling frequency, other research studying longer events that are more focused on a particular kind of user (e.g. car owners to whom an e-bike is lent) or that imply various incentives (e.g. prizes) shows positive impacts, albeit to varying extents (Bowles et al., 2006; Moser et al., 2018; Pucher et al., 2010; Rose and Marfurt, 2007; Yang et al., 2010).

Some studies go more into detail regarding the practice of cycling, analyzing self-reported skills and confidence (Bowles et al., 2006; Telfer et al., 2006), satisfaction with travel (de Kruijf et al., 2018), or health indicators (Rissel & Watkins, 2014). The impact of cycling events may go beyond bike use, to have an influence on self-confidence, sense of belonging, and empowerment, as shown in the case of cycling lessons attended by women migrants (Mundler and Rérat, 2018, see also Buhler in this volume).

Another approach centers on psychology-based individualist models such as Ajzen's theory of planned behavior, which looks at how behaviors are formed and linked with intentions (e.g. Nkurunziza et al., 2012)[2]. Types of (potential) cyclists are also distinguished on the basis of Prochaska's transtheoretical model and on the various stages of change: precontemplation (unaware of problems, no intention to change), contemplation (aware of problems, thinking about change), prepared for action (intention to change in the next 6 months), action (action being taken), and maintenance (has maintained action for 6 months or more) (e.g. Gatersleben and Appleton, 2007). In this perspective, modal shift is a slow process and each stage requires specific strategies, including those that help individuals to maintain new mobility practices.

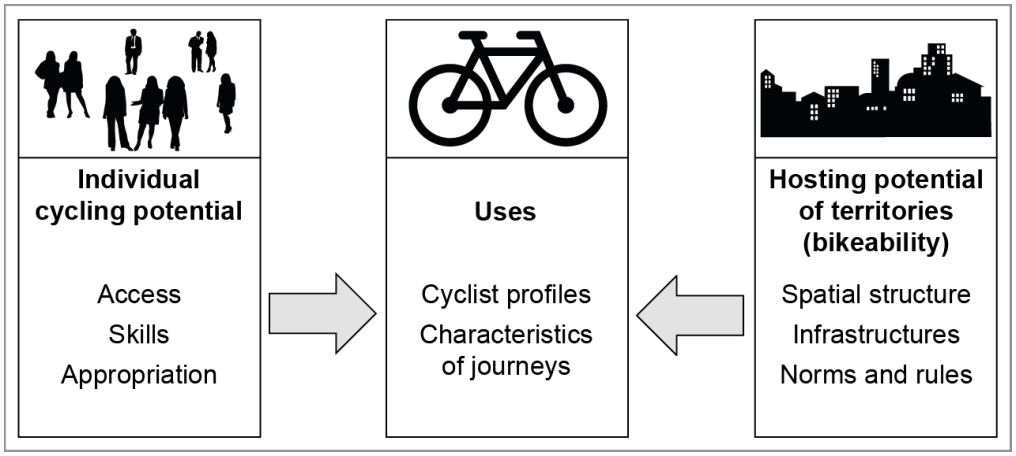
This chapter takes a different view and starts with the concept of velomobility. Based on a questionnaire survey and interviews with participants, it highlights the variety of effects an event like bike-to-work may have on both an individual and a contextual level.

[2] Ajzen's theory states that three elements determine intentions and behaviors: attitude toward the behavior (e.g. positive or negative evaluation), subjective norms (linked to social pressure), and perceived behavioral control (difficulty and feasibility of alternative behaviors) (Al Chalabi, 2013).

The System of Velomobility

The theoretical framework I propose in this chapter draws on the work by Kaufmann (2011). I adapt his conceptualization of mobility to cycling, based on three interlinked dimensions: movement in physical space (the use of the bike), the aptitude of movement or motility (the individual's cycling potential), and the field of possibilities of a context, or its hosting potential for cycling (its bikeability) (Figure 1). Together, these dimensions form the system of velomobility (Behrendt, 2018)[3]. This framework can be used at a macro level to analyze the system of velomobility in a city or a country (Rérat, 2021; Rérat et al., 2019). It is applied here in a dynamic way to address the changes that participation in bike-to-work may imply.

Figure 1: The System of Velomobility (Rérat 2021; images taken from pixabay.com)



The first dimension of the theoretical framework—the use of the bike—covers factual elements that transportation studies traditionally address: the characteristics of the trips (frequency, length, origin/destination, motives, etc.) and the profile of users (socio-economic status, gender, age, etc.). The level of use of the bike can be regarded as resulting from the confluence of two potentials: the individual's cycling potential and the territories' hosting potential (bikeability). Applied to bike-to-work, an increase in the practice of cycling may be explained by changes in these two dimensions.

The individual's cycling potential is the set of characteristics enabling an individual to use a bike. Individuals are characterized by their aptitude for movement in a given physical, economic, and social context (Kaufmann, 2011, 37). This aptitude, or cycling potential, comprises three dimensions: access ("can"), skills ("know"), and appropriation ("want") (ibid.).

Access covers the options for mobility, that is, "all the instrumental resources which individuals get the right to use" (Flamm and Kaufmann, 2006, 171). This applies, for example, to vehicles (different kinds of bikes, etc.), public transport passes, and subscriptions to bike-sharing schemes.

Riding a bike involves skills in five fields in addition to keeping balance while pedaling (Flamm, 2004): physical condition; experience of concrete traffic situations; knowledge of the spatial context (in order to find a convenient route or to avoid disruptions in the urban fabric); ability to estimate the duration of trips; and organizational knowledge (e.g. the

[3] The need to take into account a wide range of individual, social, political, and material elements has also been highlighted through various theoretical lenses and through the analysis of cycling as a social practice (Spotswood et al., 2015) or of cycling cultures (Cox, 2015).

ability to orient oneself, to plan activities, or to do repairs; for repair and maintenance, see Abord-de-Chatillon in this volume). These skills develop with experience ('learning by doing' and training). Skills can involve the adoption of tactics (de Certeau et al., 2010) in order to cycle in a social and spatial context dominated by automobility (Urry, 2004). Choosing a route involves several of the required skills (Flamm, 2014), as there is often a "substantial investment in route determination" (trial-and-error selection, taking secondary and residential roads, taking exhaust-free off-road paths, timing the commute to avoid rush hours, etc.) (Bonham and Koth, 2010, 100).

Appropriation defines the way individuals perceive and select mobility options according to their plans, aspirations, and habits. The actual use of a transportation mode depends, among other things, on individuals' perceptions of the various modes.

The hosting potential of a context is how receptive or suitable it is for a practice. A context offers a specific field of possibilities (Kaufmann, 2011) and favors some modes of transportation to the detriment of others. I define the hosting potential of a territory for cycling as its bikeability, which has three dimensions: spatial context, infrastructure, and norms and rules.

The spatial context includes topography and weather conditions but also—and perhaps more importantly—the urban form. Density, compacity, functional diversity, the attractiveness of the landscape, and the built environment along cycling routes are all factors that favor (or not) the practice of cycling (Handy et al., 2014; Heinen et al., 2010).

Infrastructures and material artefacts refer to cycling urbanism. Cities and regions experiencing a cycling renaissance have implemented policies to increase their bikeability through traffic calming measures and cycling infrastructures, such as networks of integrated bikeways and the provision of bicycle parking (e.g. Buehler and Dill, 2016; Héran, 2014; Pucher and Buehler, 2012).

A territory's bikeability also has immaterial and symbolic dimensions, such as the rules of the road, and social norms. The car has informally privatized public space so that other users do not feel legitimate anymore, and the road has become a dangerous place for them (Lee, 2015). Where the bike is widespread, it is accepted; where it is rare, it is less tolerated and is the target of negative attitudes, as the minority practice of cycling may be perceived as a critique to the dominant system of automobility (Prati et al., 2017; see also Caimotto in this volume). Social norms regarding cycling may also differ between social groups as shown by Welsch (in this volume) in an analyze of the differences in cycling behaviors and socialization between people from immigrant and non-immigrant backgrounds.

The modal share of cycling can be interpreted as the meeting point between individual cycling potential and the hosting potential of a context for cycling. It is important to note that these are interrelated. Geller, a planner in Portland, proposed a typology of transportation cyclists: "The Strong and the Fearless", "The Enthused and the Confident", "The Interested but Concerned", and, finally, the "No Way No How" group of non-riders (for a discussion and empirical survey, see Dill and McNeil, 2013). This typology is based on people's relationships to bicycle transportation and highlights the differing needs of different types of cyclist in terms of bikeways and other infrastructures. In other words, a weak level of bikeability will restrict cycling to a specific part of the population (as risk awareness differs between ages and genders), while a high level of bikeability widens the profile of cyclists (Garrard et al., 2012; J. R. Pucher & Buehler, 2012). Indeed skills for utility cycling do not only refer to individual characteristics. They are highly dependent on what the hosting potential of a space requires or its bike ability (see below and Adam *et al*. in this volume).

Methodology

Organized by PRO VELO, the national bicycle advocacy association, the Swiss bike-to-work campaign has been in place since 2005. Similar schemes exist in many countries, with some differences, particularly in terms of duration. In the Swiss case, participation is open to any company, in exchange for a small financial contribution[4]. It is based on teams of usually four employees, who commit to cycling to work as much as possible in May and/or June. The participants fill in a diary (number of trips, distances, etc.), and take part in a contest to win prizes. The objectives of the campaign are to make utility cycling more visible, and to convince employees to try bicycle commuting in the hope that they will consider adopting this practice.

An online survey was sent to the participants in September 2016. A total of 44,726 emails were sent, and 13,744 questionnaires were filled in (response rate: 31%). The survey addressed the dimensions of the system of velomobility discussed above. In addition to closed questions, several spaces throughout the questionnaire gave participants the opportunity to write spontaneous comments (11,000 were collected). Thirty semi-structured interviews were also carried out with students and members of staff at the University of Lausanne who participated in the campaign.

The goal of the research project was not primarily to assess the impact of the bike-to-work event. This would have implied tracking changes among participants through surveys or interviews before, during, and after the campaign. However, several questions addressed the uses of the bike before and after the action, the motivations to participate in bike-to-work and its impact on their perception of bicycle commuting. In addition to quantitative data, we gathered qualitative material through comments left in the questionnaire and interviews. The many comments mentioning the bike-to-work action were used to identify its multiple potential effects and to look at how commuters can become urban cyclists. This explorative study paves the way for future research on the impacts of cycling promotion campaigns.

In the sample, women are slightly underrepresented in comparison to the labor force (42% vs. 46.6%), which may be explained by a higher likelihood of women to work part-time and by the overrepresentation of men among sports cyclists (some of whom may join bike-to-work). On the national scale, the shares of men and women commuting by bike are actually similar and both account for 7% (OFS, 2018). Two age groups are overrepresented in comparison to the working population: the 25–39 year olds (35.6% vs. 32.2%) and the 40–54 year olds (46% vs. 35.3%), whilst the younger and older age groups are underrepresented. People with a higher education are also more present (54% vs. 41.2%). Finally, although it is open to students (1.7% of the sample), bike-to-work targets the working population and excludes children, teenagers, or seniors, for whom other campaigns exist.

The empirical sections of this chapter analyze the three main effects of the bike-to-work campaign: the motivational effect (recruiting new bike commuters), the learning effect (developing the individuals' cycling potential), and the legitimating effect (normalizing a minority practice).

[4] The contribution comes to 120 Swiss francs (110 euros) for companies with less than 10 employees. It then increases non-proportionally according to the number of employees.

Motivational Effect: Recruiting New Bike Commuters

For a third of respondents, this was the first time they had taken part in bike-to-work. For half of them, it was at least their third participation. Most participants were used to bicycle commuting: three quarters cycled to work regularly defined as at least every other time (17.2%) or most of the time (56.2%) before bike-to-work. 18.4% claimed that they cycled for less than half of their commuting journeys, and 8.2% did not cycle to work previously. Even though those who did not previously cycle to work represent a minority of participants, their number accounts for several thousand each year and highlights the potential of the campaign to extend the practice of cycling[5].

This diversity of cyclists is also found in the motivations for participating in bike-to-work (Figure 2), which include both extrinsic motivations ("to do something in order to attain some external goal" (Hennessey et al., 2015)) and intrinsic motivations ("doing something because it is inherently interesting or enjoyable" (Ryan and Deci, 2000)).

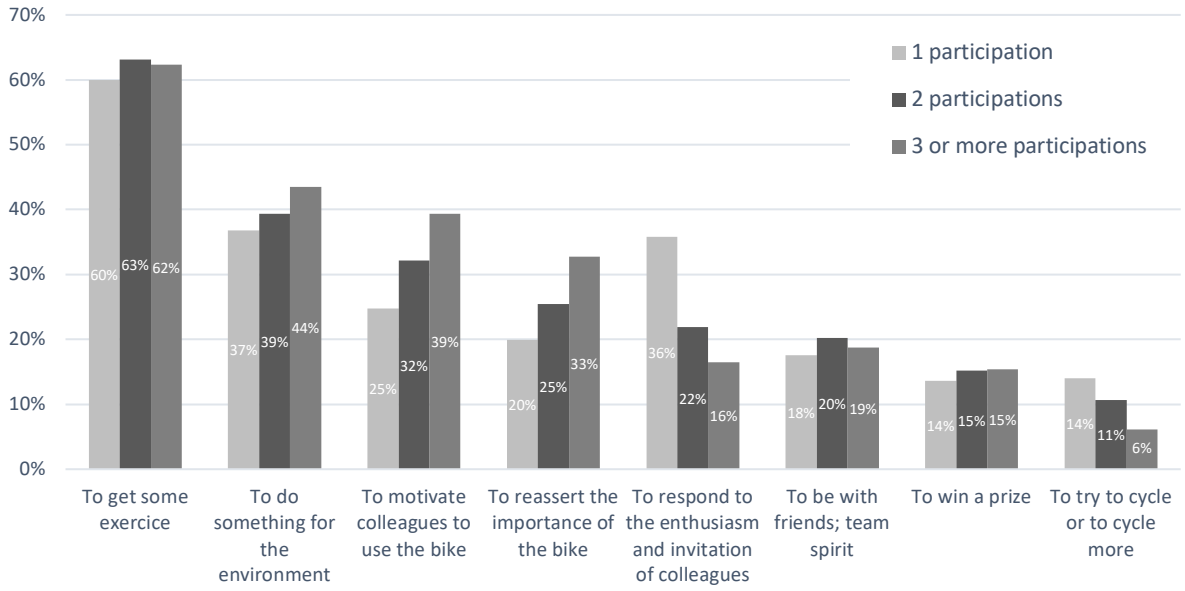
Most mentioned motivation, quoted by more than six respondents, is intrinsic: the opportunity to get some exercise. The other intrinsic (micro) motivations are seen as less important: the possibility of winning a prize, or the opportunity to try cycling or to increase their cycling practice. Ranking second and fourth in importance are two extrinsic (macro) motivations: the opportunity to do something for the environment and a desire to reassert the importance of the bike. As bike-to-work is a group activity, two (meso) factors related to the team are found: participation in order to encourage colleagues to cycle or in response to an invitation. Thus, the team aspect of bike-to-work provides a context, although for a limited time, that supports behavioral changes[6].

Comparing the weight given to these motivations with the number of participations shows a relative stability for exercise, being with friends, and winning a prize. Three factors increase in importance with the number of participations: doing something for the environment, motivating colleagues, and reasserting the importance of the bike. For those who participated for the first time, trying cycling or responding to the enthusiasm of colleagues is logically given more weight.

[5] Some differences appear between those who did not cycle to work previously and those who did so most of the time. Among neophytes, participants tend to be slightly younger (6.9% are under 25 and 41.8% are between 25 and 40, vs. 3.9% and 35.7% for regular cyclists), and women are overrepresented (50.7%) in comparison to regular cyclists (42.0%), while the opposite is found for holders of a university degree (48.4% vs. 54.0%).

[6] While participation is mainly a bottom-up process (employees volunteer to create teams), a few companies play a more active role through communication (e.g. internal newsletters, website) and the organization of events (see later).

Figure 2: Motivations to participate in bike-to-work according to the number of years of participation (maximum three answers per participant)



The formation of teams creates a motivational effect that concerns three kinds of participants. The first category gathers commuters who did not use to cycle to work previously. Three months after bike-to-work, 65% of those who did not cycle before stated that they were now cycling more (this includes 50% who did so but on an irregular basis). The initiative may restore a practice of cycling after a period of abandonment for various reasons (e.g. preference for motorized vehicles, new residential or work location, etc.). It provides a '*trigger*' or '*kick start*' and gives "*a new impetus*" to start cycling again and to maintain the practice:

> *It has motivated me to cycle more again. When I lived in the city, the bike was MY means of transportation. I did not need a car. In the countryside this habit changed. Participation in bike-to-work has given me new momentum* [Male, 53].
>
> *Bike-to-work was the momentum I needed to start cycling again.* [Male, 46]
>
> *Bike-to-work was the trigger. The idea, the intention to commute by bike, had already been there for a long time* [Male, 44].

Comments in the questionnaire show that the effect is not always immediate and may require more than one participation:

> *It is mid-September and I am still cycling. After my first participation last year, no lasting effect was visible yet and I got straight back into the car* [Female, 51].

A second group assembles people with a seasonal cycling practice or a practice more oriented toward leisure and sport. Bike-to-work motivates them "*to get their bikes out*", "*to get the season started*", "*to overcome their cycling inertia*":

> *Bike-to-work motivates me every year in spring to get my bike back into working order. Then I've got it at my disposal again and I use it more, all summer and autumn [Female, 38].*
>
> *Bike-to-work gives me the kick start to use my bike most of the time till the end of the year* [Male, 44].

These two groups are mobilized by the bike-to-work action, while a third category of regular bike commuters are motivated to increase their cycling practice even further. The setting up of teams creates a "*group dynamic*" and the opportunity to "*share experiences*", and facilitates a team spirit between colleagues around "*a common hobby*", encouraging them to be "*proud*" of cycling. Some interviewees are spurred on by the team aspect of the contest and by counting the kilometers they do:

> *During bike-to-work we set challenges between colleagues and we went by bike every day, even in heavy rain, which I usually do not do. With the right equipment it does not pose any problem.* [. . .] *We pushed the limits and added additional kilometers to lengthen the trip. We were proud! Generally, I felt great and happy when I arrived in the morning and I looked forward to cycling again in the evening* [Female, 39].

> *Participation in bike-to-work increased my ambition because we compared who rode the most in my team* [Female, 36].

This effect may, however, be experienced in a negative way and can be felt as peer pressure:

> *The fact of "having to" commute by bike for a whole month was not positive for me. I forced myself to come by bike for my teammates and colleagues. At the end of the "required" month, I did not touch my bike again to come to work* [Male, 35].

Learning Effect: Developing the Individuals' Cycling Potential

Bike-to-work is a crucial period for which, or during which, some commuters develop their cycling potential. This may be as a result of improved access to equipment (e.g. through repairing one's bike or buying one that is more adapted to one's needs) and accessories (waterproof clothing, bike lock, etc.), skills (knowledge of the trip, physical condition, behavior in traffic, organization of the everyday life), and/or appropriation (feasibility and attractiveness of trips made by bike).

Getting Access to Suitable Equipment

Participating in bike-to-work relies on access to a bike. Only 0.1% used mainly bike-sharing to commute (due to the limited size of bike-sharing schemes), and a similar proportion stated that they had borrowed a bike (e.g. from a colleague). Access to a functioning bike is therefore widespread among the participants[7]. It is worth noting, however, that the lack of a bike may prevent other employees from giving cycling a try.

In terms of equipment, bike-to-work has more impact before it actually takes place. Some participants stated that it had prompted them to repair their bike or to buy one suitable for commuting:

> *It gave me the impetus to repair my bike. That's why I used it more again afterwards* [Male, 28].

For others, bike-to-work was an opportunity to try various kinds of bike and to choose one that was adapted to their needs and that would make their journey more enjoyable. This is specifically the case of e-bikes:

> *I bought an e-bike to be able to meet my commitment to bike-to-work, because I do not have the physical condition for a "normal" bike* [Female, 47].

[7] In comparison, according to the 2015 Microcensus Mobility and Transport, 76% of people living in Switzerland always have a bike at their disposal or can access one on demand (OFS & ARE, 2017).

> *The 1st year I had a standard bike. I told myself that I would never participate again. My trip was too long (35–40 minutes). The 2nd and 3rd years I used an e-bike with a 25 km/h assistance. It was OK, without real pleasure. I therefore did it only in June and then absolutely not the rest of the year. The 4th and 5th years I used an e-bike with a 45 km/h assistance. The trip really became a pleasure. Without bike-to-work, I wouldn't have taken the step* [Male, 53].

> *I bought an e-bike after having participated in bike-to-work, and I use it every day now, because I can ride the steep hill on my way back and I do not have to fall back on public transport* [Male, 47].

Other impacts are mentioned in terms of equipment such as waterproof clothing, helmets, bike locks, etc. Some purchases are done in anticipation of the bike-to-work action; some others are done in hindsight:

> *Because of bike-to-work I bought a helmet and a bike lock. I restored my old bike to good condition with a full service. My experience showed me that it was completely possible to commute by bike* [Female, 52].

Developing Skills and Confidence

Both the participation in the event and the creation of teams represent a way to gain or exchange experiences between colleagues that are crucial for neophyte cyclists, since commuting by bike requires skills and tactics to cope with the traffic and the level of infrastructure.

Bike-to-work gives novice cyclists the opportunity to gain skills and to become accustomed to cycling. Participants who did not cycle to work before bike-to-work were asked to evaluate the impact of the experience. Globally, the participation had a positive impact. As mentioned above, two thirds of them stated that, three months after the end of bike-to-work, they were cycling to work more often than they had used to. This result is explained by several positive effects on perceptions of the commuting trip (Table 1).

Table 1: Impact of participation in bike-to-work on perceptions of the commuting trip among people who did not use to cycle to work

	Less than before	As much as before	More than before
It seems to me that the trip requires physical effort.	44.5%	42.2%	13.3%
It seems to me that the trip is enjoyable.	4.0%	60.5%	35.5%
It seems to me that the trip is safe.	11.1%	81.2%	7.7%
It seems to me that the trip takes less time.	31.8%	56.0%	12.2%
I feel at ease in traffic.	8.4%	76.1%	15.5%

Among the participants who did not cycle to work previously, 44.5% feel that the trip requires less effort than expected, 35.5% that it is more enjoyable, and 31.8% that it takes less time:

Before bike-to-work, I had always thought that my place of work was located too far away from my home [Female, 35].

The more we ride, the fitter we are, and the less tiring it is! [Female, 22]

I am just more trained and quicker, and therefore it is less tiring and I find the trip shorter [Female, 46].

My pleasure at being in nature has increased and I have a more vivid experience of the seasons [Male, 54].

A feeling of increased ease is mentioned by 15.5% of the neophyte cyclists, and 7.7% find the trip to be safer than they thought:

I use the bike more. I feel safer and I am more motivated. I always had the feeling that all this was so hard, but the reality has changed [Female, 33].

There was a time when I was afraid of cycling. This has changed with this team event, in the sense that at the beginning we often rode together, and that safety came with the exercise. I still feel more at ease on countryside paths than on the road, but this has much improved and I am not afraid anymore. But still, I always have rushes of adrenaline! ;-) [Female, 44].

However, the feeling of safety is the only one for which the negative answers are more numerous (11.1%) than the positive evaluations. Experience may lead to a greater awareness of the dangers:

Gaining confidence in traffic is not necessarily positive. We take more risks! And car drivers are really aggressive with cyclists. I have been insulted several times! [Male, 38].

I have noticed more dangerous points, and I have had a bump with a car/a distracted driver at a roundabout [Female, 54].

The more I cycle across Geneva, the less confidence I have! The risk taken is proportional to the number of journeys!!! [Male, 42].

Participation in bike-to-work enabled neophytes to gain knowledge of the local area and of the realities on the ground, and to identify situations that are potentially problematic:

My awareness of "black spots" of traffic has increased so much that I could map them! [Female, 56].

I have realized how many times my rights are denied. For example, failure to give way by car drivers, etc. [Female, 50].

It can also help participants to grasp the point of view of other road users. This is specifically the case of motorists who, through taking part in bike-to-work, now have a better understanding of the needs and behaviors of cyclists, and recognize their legitimacy on the road:

I now understand the problems in traffic from the point of view of the cyclist but also of the car driver, and I try to behave the best way from both perspectives [Female, 59].

I have become more sensitive to other road users across the board [Female, 47].

With participation in bike-to-work we have become more aware of the dangers that are on the way to work. We drive in a more respectful way with regard to cyclists [Male, 52].

The low score for safety is explained by the fact that safety depends not only on the participants' skills and level of ease but also, and especially, on the existing infrastructure and on cohabitation with motorized traffic. This partly explains why one third of the neophytes do not continue cycling long-term. This highlights the limits of an event that promotes cycling by focusing on behavior and not on the material conditions:

> *I see the biggest problem for cyclists in Switzerland in the deficient infrastructure. There are almost no cycle tracks separated from the road in the regions of Basel and Zurich. A cycle lane painted on the road unfortunately does not provide enough safety. If we want to motivate people to cycle, we should invest in this kind of infrastructure. Bike-to-work is unfortunately not enough* [Male, 39].

> *For me, bike-to-work was a very motivating factor to travel by bike. Unfortunately, conditions are not very favorable. There should be more cycle tracks separated from the road. It would require significant changes, but would make it possible to increase the modal share of bikes. Some cities have taken it up, but unfortunately not Lausanne and its region* [Female, 44].

> *It is motivating to be made aware of the bike in spring. But safety on my way to work does not improve, nevertheless. That's why I've not been using my bike to commute since the bike-to-work campaign. But in my free time I am motivated to find nice rides in nature and on paths that are quieter and less frequented* [Female, 48].

Some comments identified additional effects of bike-to-work: some individuals not only bought equipment for riding in the rain, as mentioned above, but they have become used to cycling in inclement weather or have adopted strategies (e.g. leaving earlier or later to avoid a storm, using weather forecast apps, etc.).

Finally, choosing a mode of transport is part of an individual's daily organization. Mobility brings together the different facets of their lifestyle by connecting the places where their activities take place. Changing mode of transport therefore frequently involves adjustments to their daily life and organisational skills:

> *Using a bicycle requires me to think more about my organisation, in order to focus my need for a motor vehicle on a single day, and do everything on that day* [Female, 49].

> *Thanks to bike-to-work I have learned to organise myself better in terms of the things I take with me or leave behind, in terms of the time I take to change. This makes the exercise easier and less tedious. The weight of your bag is still an issue when you have to carry your laptop* [Female, 42].

Finding a Suitable Route

Interviews and comments highlighted the importance of a specific skill: the ability to choose the commuting route. A low level of ease would imply the choice of a safe route away from car traffic. Yet research carried out in Geneva, Switzerland, showed that the importance of habit in the choice of routes is underestimated in the promotion of cycling (Flamm, 2014). Indeed, when people first start to cycle, they often choose the routes they are used to taking by car or by bus, although these may not be the most adequate.

Choosing a route may require an investment of time. It involves trial and error, consulting paper or online maps, and testing various options, such as moving away from the busiest roads and from certain junctions during rush hours:

> *Thanks to bike-to-work, I discovered a safer route from my home to my workplace. These paths are inaccessible to cars and parallel to the road, and I didn't know they were there before* [Female, 39].
>
> *Bike-to-work had me "visit" my city via different routes. And to find the least frequented ones. . .* [Female, 33].
>
> *With practice we optimize the trip to gain time and/or safety and/or pleasure. As for me, I have found several alternative routes for my commuting trip* [Male, 44].

The learning process may have a collective dimension: neophyte cyclists make inquiries of more experienced colleagues. The following discussion took place on a social network among students at the University of Lausanne. It summarizes the necessary skills and the interest in developing exchanges of experience between cyclists of different levels:

> Person 1: *Would it be possible to do "accompanied" or "guided" journeys from UNIL? I would like to do my journeys by bicycle, but I don't know how to behave (with a two-wheeler) on the road. The big roundabout at* […] *is the main reason why I come by bus and not by bicycle. In any case, I'm not sure it's a "good route" for a cyclist...*
>
> Person 2*: There may be cycle tracks and underpasses that would enable you to avoid cycling via the* […] *roundabout.*
>
> Person 3*: I don't know exactly where you come in from but one possibility,* […] *is to take the* […] *cycle paths. It does take you on a detour, but there's hardly anyone on this route. On the other hand, if you want to go to* […]*, you have to weave along UNIL's cycle paths. I don't know if that is of help to you, if not, let me know!* [A section of a map illustrating the route is included here]
>
> Person 1*: It's already clearer ;-).* […] *There are lots of us who "don't know how to ride a bicycle on the road". It's a skill that can't just be taken for granted, even if you have a driving licence. I think that offering to accompany people could be a great way of promoting it* […] *and would encourage cycling* […].
>
> Person 4*: Totally! We'll have to put it in place. If you cycle regularly, there are a few "keys" to understanding motorists and putting yourself in as little danger as possible. But the first thing is to make sure you can be seen (lights, etc.), to pay attention (watch cars carefully and anticipate their movements) and, above all, signal your own changes of direction, etc. And it's also true that the more your journey involves car-free routes, the lower the risk ;-) In any case, let us know your route, so that a regular cyclist* […] *can go with you and show you the best paths.*

Cohabiting with Motorized Traffic

An additional challenge for utility cyclists is frequent cohabitation with motorized traffic due to a lack of separated cycling infrastructure. Cyclists adopt various tactics in order to cope with the dominance of motorized traffic. On the basis of the 30 interviews carried out at the University of Lausanne (Schmassmann, 2018), a gradient could be identified from the cautious cyclist to the self-confident cyclist. These two ideal types refer to different strategies in motorized traffic—keeping out of the way, or forging a way—and trade-offs between safety and speed.

Cautious cyclists tend to keep out of the way in traffic, to keep a low profile, to take up as little space as possible, and to ride as near as possible to the right side of the road in order to avoid disturbing other road users:

> *If the routes I have to use are not designed for bikes, it is true that I quickly get frightened* [. . .]. *I try to ride as far to the right as possible, to not be in the traffic too much. So I don't really take my place as a vehicle. Either I am on the pavement because I feel really protected there, or I am really on the edge* [Female, 26].

Their feeling of safety is low, and this influences their choice of route. They prioritize safety over speed and directness, try to avoid motorized traffic as much as possible, and are quick to make detours. For this category, cycling infrastructure and separation from cars are crucial. It is worth noting that this behavior refers to subjective, but not objective, safety. What is seen as a cautious way of riding may actually lead to dangerous situations (e.g. riding too close to the edge of the road makes the cyclists vulnerable to potholes, car-dooring, etc.).

As level of ease increases, cyclists tend not to necessarily keep away from traffic but to adapt their behavior according to the traffic conditions. In their choice of route, speed becomes more important, and they tend to find safe routes without too much of a detour:

> *My commuting trip is on an 80 km/h road without a cycle lane. In the morning it is not a problem, as there is little traffic. But in the evening, I always make a detour* [Male, 32].

> *It depends a lot on the traffic. Bicycle lanes are not really protected, they are often on major roads* [. . .]. *In the morning it's OK as motorists are calm. In the evening they are excited. . . At that point, frankly, we don't feel safe when they accelerate* [Male, 34].

Confident cyclists are less afraid of the traffic. They tend to be younger, fitter, and more experienced. They do not hesitate to take their place and to claim their legitimacy as road users. They are confident in their bike, in their riding, in their ability to anticipate the rhythm of the traffic. These cyclists use their bike more intensively (during rush hours, bad weather, etc.). Most important in their choice of route are speed and efficiency. For them, a route should be, as far as possible, linear, and without detour, as they feel more capable of facing various situations by forging a way through the traffic:

> *For me the commuting trip is fine.* [. . .] *I don't mind being a cyclist in the car lane. If I need to take my place, I take it. I don't worry!* [Female, 35].

The level of ease is linked to experience and regularity of cycling, but also depends on other factors (e.g. gender, age, personality, physical condition, equipment). It is worth noting, however, that skills and context are closely linked. Suitable infrastructure is likely to make cycling accessible and attractive to a large part of the population independently of their skills and level of ease.

Legitimating Effect: "Normalizing" a Minority Practice

As stated above, a promotion event over the short term does not address problems that exist due to inadequate infrastructure. However, some discourses refer to the context and its bikeability on a symbolic level. It is indeed worth remembering that only a small minority (7%) of the Swiss working population use the bike as their main means of transport to commute. According to the survey, one third of the participants do not feel respected by other road users, and this proportion is much higher in regions with a low modal share (Rérat, 2021).

For some participants, bike-to-work represents an opportunity to legitimate the bike as a fully-fledged mode of transportation, to make a minority practice visible. It is also a way to create a sense of belonging to a larger group, to "*be part of something*", and to "*cast a vote for cycling*":

It was fun. And I noticed that we weren't the only bike freaks! [Female, 39].

It has some positive influence. We speak more about bikes at work [Female, 57].

I am and I was a bike freak. I take part to underline the importance of the bike as a means of transportation [Female, 48].

I feel linked to my colleagues who took part in bike-to-work as well. I feel less isolated in road traffic [Male, 58].

Bike-to-work is a way to give [cycling] more visibility. It may also motivate new people to cycle. [. . .] *It is a way to cast a vote for the bike* [Female, 35].

Some institutions organize events to highlight the importance of the bike. The University of Lausanne and the Federal Institute of Technology Lausanne, who share the same campus, organize parades inspired by events such as critical masses in which cyclists meet at a given place and time to ride together in a city. At the end of bike-to-work, a parade gathers cyclists who ride in the surrounding roads, stopping the motorized traffic for a while (with the permission of the police in that case) (Figures 3 and 4). A specific t-shirt reinforces the group effect, as well as an aperitif organized afterwards. Other institutions use teams of personalities – e.g. members of a city council – to communicate the importance of the bike. The organizers of bike-to-work also take the opportunity to cite information about the number of participants, which gives visibility to utility cycling in the national media.

Figure 3: Parade at the end of bike-to-work 2017 at the Federal Institute of Technology and the University of Lausanne (source: EPFL, 2017)

Figure 4: Parade at the end of bike-to-work 2018 at the Federal Institute of Technology and the University of Lausanne (source: EPFL, 2018)

Conclusion

Bike-to-work is an event organized each year in Switzerland that gathers thousands of teams of four employees who commit to cycling to work as much as possible over one or two months. Several questions from a survey sent to participants, as well as information given in comments interviews, were used in an explorative way to identify three effects of the bike-to-work action: a motivational effect (a group dynamic to recruit utility cyclists), a learning effect (to increase the cycling potential of individuals through the gaining and exchanging of experience), and a legitimating effect (to normalize a minority practice) (Table 2). While many studies focus on the issue of modal shift—which may be the ultimate goal—these results highlight some of the mechanisms that are necessary to recruit new utility cyclists and to convince commuters to change their habits.

Table 2: Effects of the bike-to-work event on cycling practice

Motivational effect (group dynamic)	Recruitment (new utility cyclists) Reminder (leisure, sport, seasonal cyclists) Extension (distances, time)
Learning effect (gaining and exchanging experience)	Access to suitable bikes and equipment Skills (physical condition, choice of route, cohabitation with motorists, etc.) Appropriation (feasibility of the commuting trip, etc.)
Legitimating effect (recognition of minority practice)	Sense of belonging A way to "cast a vote" for cycling

The motivational effect stems from the group dynamic induced by bike-to-work. It is a tool of recruitment as it encourages several kinds of people to try and adopt cycling. According to the survey, 8.2% of the participants did not cycle to work before. Among them, two thirds claim to have taken up bicycle commuting three months later (this represents several thousand people each year). The survey here is limited due to its methodology: the frequency of cycling to work is not known precisely, and nor is it known whether the practice is continued over the longer term (including winter). Moreover, as stated by some participants, the adoption of cycling may take more than a single participation in bike-to-work.

The motivational effect creates a period during which the practice of cycling is encouraged. It may lead some car drivers or public transport users to question their habits, kick-starting a change to another means of transport that may see them becoming utility cyclists. The motivational effect also concerns additional categories of commuters: leisure or sport cyclists may widen their practice (temporarily or not) to utility cycling. This is important, as cycling can actually be divided into several different practices (utility, leisure, sport) that are somewhat separate, at least in the case of Switzerland. Bike-to-work may also be a reminder for seasonal cyclists to start cycling again. Finally, during the competition, some regular utility cyclists deliberately travel further than they otherwise would.

The learning effect leads to an increase in cycling potential for neophyte and irregular cyclists. Skills and knowledge are often underestimated in transport studies (Kaufmann, 2011), but our results highlight their crucial importance in the adoption of utility cycling. Even though these skills may appear mundane or self-evident, they require a certain period of learning. This is made possible by the length of time that the Swiss campaign lasts (one to two months, while many others are much shorter) and by the exchanges between regular cyclists and neophytes. The increased individual cycling potential may result from (a) improved access to equipment (through getting their bike back into working order, or buying a bike that is better more adapted to their needs, for example) and accessories (waterproof clothing, bike locks, etc.); (b) improved skills (knowledge of the trip, physical fitness, knowing how to cycle in traffic); and/or (c) appropriation (feasibility and attractiveness of bicycle commuting).

The legitimating effect makes utility cycling more visible, and generates an image of critical mass. It helps to normalize and legitimate cycling, which is still a minority practice, particularly in the professional world, where the car is often strongly embedded. Bike-to-

work contributes to a sense of belonging and a sense of community. This kind of argument gradually gains in importance with the number of participations in bike-to-work.

For the newcomers, the impacts of bike-to-work are usually positive on the perception of the commuting trip (in terms of physical effort, length, duration, and enjoyability). However, the effect is much less positive as far as safety is concerned, due to the lack of dedicated infrastructure in Switzerland. Many participants left comments in the survey about the problems they face on an everyday basis in a context dominated by the car and where cycling is a minority practice. One third of all participants state that they do not feel respected by other road users on their commute. This proportion is much higher in regions with a low cycling culture (defined in terms of modal share, dedicated infrastructures, or general image), and it is more difficult for neophytes to take up cycling in these contexts. This assessment highlights the limits of promotional campaigns such as bike-to-work, as well as initiatives that focus on improving individual skills: they do not influence the material dimensions and bikeability of territories. In other words, although bike-to-work represents a favorable moment for the practice of cycling, it encounters restrictions due to the spatial context. It is therefore important not only to focus on individuals but also to question current planning and transport policies, and to implement cycling urbanism, making the practice of cycling attractive, efficient, and safe for all.

The goal of the research project on which this chapter is based was not to evaluate precisely the impacts of bike-to-work. This would have required other methods, such as interviews or surveys before, during, and after the action. However, the empirical material found that the initiative had three types of effect (motivational, learning, and legitimating). These effects, although sometimes difficult to measure, go far beyond the potential of modal shift usually addressed in the literature. They also show that utility cycling has a dynamic dimension and could be addressed in further research.

Moreover, various elements of cycling trajectories are to be considered while promoting cycling: the continuation of the practice, its abandonment (e.g. after a residential move, a new job, or the birth of a child), and the decision to start again after events like bike-to-work. In other words, it is crucial to understand not only why some people adopt cycling but how they can maintain the practice or why they gave it up at some point in their life course.

On the whole, the identification of the motivational, learning, and legitimating effects not only calls for further research (in terms of quantification, among others), but could also inform policies. Indeed, these effects refer to various dimensions—access to equipment, skills, appropriation, legitimacy, and image—that could be more explicitly integrated into the design of promotional campaigns and activities.

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