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Theme 3: The potential of walking for modal shift



Submitted by [Forum Vies Mobiles](#) on Mon, 03/20/2023 - 10:48

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Date

Thu, 03/16/2023 - 08:45

Date du début

Thu, 03/16/2023 - 12:00

Présentation longue

Cycling and walking: literature review - The potential of walking for modal shift

In terms of orders of magnitude, walking represents between 30% and 45% of urban trips in European cities. In France, the 2019 Personal Mobility Survey shows that 23.9% of local trips are mainly made on foot, with an average duration of 14 minutes. This modal share is higher among women — at 25.8% compared to 21% for men. While the modal share of walking has increased by 3% for men over the last ten years (mainly to the detriment of cars), it has remained stable among women during

the same period. More generally, the survey shows that individuals have higher levels of active mobility in dense urban environments such as city centres, “intermediate” levels in suburban and small-town environments, and generally lower levels in rural environments (Hess, 2018). In addition, individuals residing in neighbourhoods with good access to green spaces and nearby amenities are particularly likely to walk or cycle (Charreire et al., 2012). While residential density correlates with both utilitarian and recreational walking, hilly terrain plays a favourable role in encouraging recreational walking, but tends to hinder utilitarian walking (Lee and Moudon, 2006). However, beyond these general considerations, Tamara Bozovic highlights in her thesis (Bozovic 2021) a lack of consensus in research on how the environment influences the choice to walk in everyday life. While it is understood that the same environment may be experienced differently by different people, there is a lack of research on the interaction between individual characteristics and the perceived importance of certain elements or barriers to walking. In addition, the objective and perceived characteristics of the walking environment tend to be used tautologically to describe “what matters” in order to promote walking and predict physical activity and walking. There is also little analysis of how the objective characteristics of the walking environment influence people’s perceptions of walkability among people of different ages, abilities, and backgrounds. While research on these aspects is still lacking, here we highlight various studies that identify levers not directly linked to road planning issues but which can be leveraged to either promote or discourage walking among certain categories of the population.

Feelings of insecurity

Several recent studies, such as Börjesson (2012) and Diaz (2021), indicate that insecurity — whether perceived or real — can be an obstacle to walking and therefore to the use of public transport. A study on pedestrians (Albrecher et al. 2022) identified three areas of insecurity: road insecurity (lack of readability, lack of clear separation and designation between pedestrians and cars, forced crossings), social insecurity (refers to other users and their real or potential behaviour) as well as the insecurity that can be conveyed by a location’s atmosphere. These aspects are greatly underestimated in modal shift policies (on this subject, see also theme 5 “The experience of walking and cycling”). In many cities in Latin America, but also in Europe, the daily practice of walking is limited by fear of assault. This phenomenon affects women more strongly but is not limited to women. It is also more pronounced in the evening and at night. This issue often remains a blind spot in policies

promoting a modal shift to active modes and public transport. However, to encourage walking, policies aimed at reducing this sense of insecurity need to be implemented (Gekoski, Gray, Horvath, Edwards, Emirali and Adler 2015, Loukaitou-Sideris and Fink. 2009). In terms of urban planning, public lighting contributes to improving safety, in line with the “eyes on the street” concept according to which pedestrians should feel like they are always visible from the surrounding buildings or by other users of the public space, particularly in the event of an assault (Jacobs, 1961).

The fear of getting lost

The fear of not being able to find the way can be an obstacle to walking, especially when going to unknown places. To remedy this issue, research on pedestrian wayfinding was developed, integrating four processes: orientation, route planning, route monitoring, and destination recognition. Markus Kattenbeck conducts studies on pedestrian behaviour and orientation using eye tracking devices to understand how the environment influences practices (Kattenbeck, 2015). Taking an interdisciplinary approach, Manuell Ullmann (computer science), Christina Bauer (artificial intelligence), and Bernd Ludwig (information linguistics), studied the behaviour of pedestrians based on their perception of the environment and their orientation skills (Bauer, 2015; Ullmann, 2016). This work led to the development of a pedestrian navigation system called “URwalking”^[1] on the campus of the University of Regensburg. This system takes into account pedestrian needs and aspirations, allowing for qualitative choices to be made (for example: choosing a sheltered path in case of rain, the shortest route, without obstacles, etc.) While research on wayfinding focuses primarily on how pedestrians process information, the praxeological approach complements it by focusing on the sensory experience of the environment (Kazig, 2011). A recent study (Bongiorno, 2021) shows that pedestrians tend to choose the most direct route from their starting point to their destination, rather than going on a meandering journey.

Walking during childhood

It should also be noted that primary socialisation is an important element in promoting the appropriation of public spaces (Gülgönen, 2015). When children practise walking, it allows them to acquire independence and autonomy by exposing them to social life, to a changing environment, to other modes of travel, to the weather and, more generally, to the risks and pleasures of public space, the city and outdoor life (Kyttä, 2018; Tsoukala, 2007; O'Brien, 2000; Horton, 2014). Walking is

not just about putting one foot in front of the other. It requires the honing of skills to manage diverse and changing situations as well as unknown terrain and paths. The demanding nature of walking is regularly noted by people who grew up in the countryside. Even experienced walkers from this category of the population can find walking in the city taxing and tiring. The sooner children learn to manage these risks and challenges, the less they will find urban walking challenging.

The desire to get by without motorised transport in daily life

In his doctoral thesis, Derek Christie (2018) describes the frequent urban walkers. Representing a small minority of the population, a few percent, these are people who have started walking rather than using other means of transport, whether mechanised (such as cycling) or motorised (such as cars or trains), sometimes to commute, sometimes for other reasons - excluding leisure walks that have no other purpose than the walk itself. These individuals walk for a long time - 45 minutes, an hour, or more per day - and do so in urban areas (Christie. 2018). What motivates their daily trips on foot? While the statistics do not provide us with the answers, Derek Christie's thesis offers several ideas. Their behaviour first of all stems from a desire to avoid driving a car or taking crowded public transport at rush hour, and instead to rediscover the pleasure of strolling on foot. They also view walking as a way to do more physical exercise, given how difficult it can be to make time for sports with the many daily demands of contemporary life. Finally, some are guided by reasons that are linked to environmental concerns, while others are more prosaically seeking to add some joy to their daily life by walking.

Pedestrian lane equipment

According to recent research, several specific amenities are likely to promote walking: benches are an essential ingredient, for various reasons linked to the social nature of the public space, to the appropriation of time and to the need to rest for an increasingly elderly population (Albrecher et al. 2022a). Promoting walking undoubtedly requires a policy that invests in benches, which are a staple of public space and yet have scarcely been studied. There is therefore a need for more research and analyses on the diversity of needs in terms of the materials and locations of benches. Not all benches are necessarily adapted to all uses and users, just as not all materials allow for the same uses. To offer benches that are adapted to all groups of users and to encourage their use, we must understand the needs in

<div class="logo logo-mobile"> 1</sup>]: <https://urwalking.ur.de/navi/> [¹]: <https://urwalking.ur.de/navi/>

Chapô

Walking has significant potential for growth but is poorly analysed. We will review this topic here by focusing on the drivers that are likely to promote or discourage walking and that are not necessarily linked to road development.

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