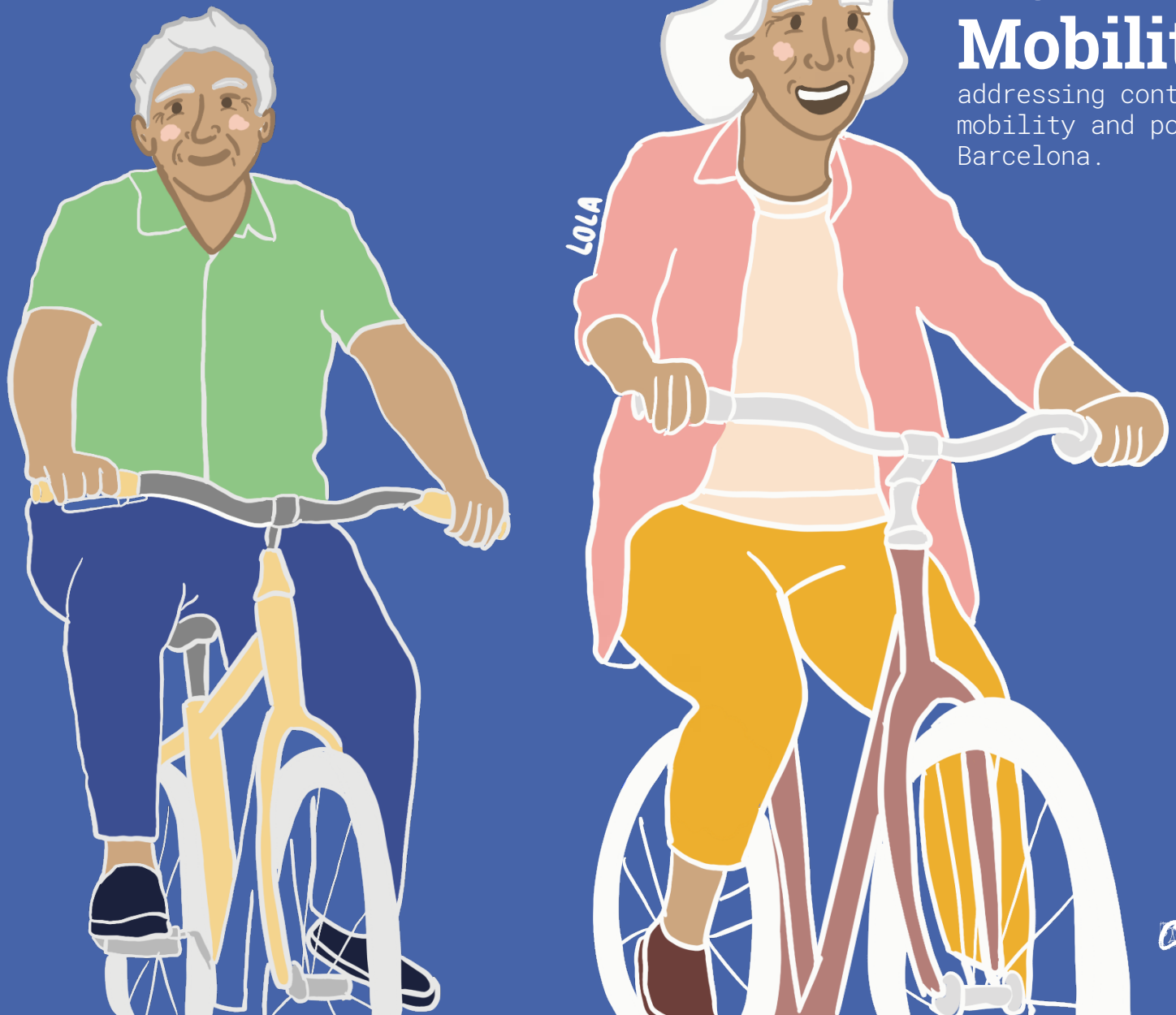
ENTOURAGE

The guide to

‘Age-Friendly Cycling Mobility’

addressing contemporary urban transitions in active mobility and population ageing: lessons from Barcelona.



English Version

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EN-TOUR-AGE: “European tourist cities in transformation: the construction of age-friendly mobilities”

– towards age-inclusive mobility in tourist cities

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Bicicleta Club de Catalunya (BACC)
En Bici Sense Edat Association [Cycling without Age]

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INTRODUCTION, CONCEPTS, AND CHALLENGES

WHAT IS ENTOURAGE?

ENTOURAGE is an academic project carried out in 2022 and 2023 on the topic of the age-inclusion in urban mobility transformations in European metropolises with high tourist attractiveness. In particular, it focused on analysing their effects on active mobility with an emphasis on the perspective of people over 60 years old. The city of Barcelona was one of the case studies of the project, where we focused on the use of the bicycle as a means of transport throughout all stages of life.

OLDER PEOPLE ON BIKES?

The project starts from the observation that cycling is experiencing a remarkable boom in several Spanish cities, reflecting an international trend towards the promotion of sustainable, clean and healthy urban mobility. At the same time, urban areas are undergoing continuous growth of their older population due to reduced mortality and increased life expectancy. Consequently, we observe that the future of cities will be characterised by a demographic composition marked by increased longevity and a growing proportion people in older ages.

When we analyse these concurrent trends in mobility and demography together, an important conclusion of the literature on mobility and inclusion of various social groups is that older people tend to be one of the segments of the population with the lowest use of cycling as a means of transport [1]. For example in Barcelona, the modal split shows that cycling accounts for only 0.6% of daily urban trips among people over 65[2].

Moreover, it is important to note that there is a significant gender gap in this city, which is relevant given that the majority of older people are women[3]. It is therefore clear that older people participate less in cycling mobility, which deprives them of the benefits associated with cycling in the domains of accessibility, health and well-being. This is not a given, however, as older people are frequent users of the bicycle in cities in other countries transport[4].

With this in mind, for the case of a city with low but growing bicycle use, our research seeks to highlight the cycling practices and measures taken to cycle as part of the everyday mobility of older age groups.

1 Aldred, Rachel, Woodcock, James y Goodman, Anna, 2016. Does more cycling mean more diversity in cycling? Transport Reviews 36(1), 28-44. https://doi.org/10.1080/01441647.2015.1014451.
2 Ajuntament de Barcelona, 2022. Enquesta de Serveis Municipals. Disponible en https://dades.ajuntament.barcelona.cat/enquesta-serveis- municipals/.
3 Bicicleta Club de Catalunya, 2023. Radiografia Ciclista de Barcelona. Disponible en https://bacc.cat/radiografia-ciclista-de-barcelona-resultats-de-lestudi/.
4 Harms, L., Bertolini, L., te Brömmelstroet, M., 2014. Spatial and social variations in cycling patterns in a mature cycling country exploring differences and trends. Journal of Transport & Health 1, 232–242. https://doi.org/10.1016/j.jth.2014.09.012.

The key questions we ask ourselves are:

- What are the barriers and facilitators influencing older people's cycling mobility, and what in what ways does the urban environment shape these?
- To what extent do cycling-related urban interventions meet the mobility needs of older people?

These questions will allow us to better understand the dynamics and challenges associated with cycling as a mode of transport among the older population, as well as to identify possible areas for improvement in both public policy and urban planning.

WHAT DOES THE PROJECT HAVE TO OFFER?

In an earlier project report about the case of Barcelona we already proposed an upgrade for cities' aspiration to being 'cyclable' to target a more integral age-friendly cycling mobility. With the present document, we add a set of concrete ideas and tools with applicability at the political, technical and citizen level. Based on applied research executed between the Department of Geography of the Universitat Rovira i Virgili (URV) and the Bicicleta Club de Catalunya (BACC), we share results on:

- ***How and why older people may move around by bicycle;***
- ***The benefits of a look at cycling and cycling infrastructure using an 'age-friendly' approach;***
- ***How an inclusive and safe cycling network can transform urban mobility and urban space more widely.***

Following the exploration of these topics, we propose an urban model that takes into account the ageing population, in which cycling mobility becomes a key tool for transforming urban space and especially targets those groups of people who currently do not often use bicycles for daily urban trips.

AGE-FRIENDLY CITIES

Age-friendliness has initiated as a planning concept that seeks to address two contemporary societal challenges: population ageing and urbanisation. One of the areas to rethink and adapt to the changing needs of the future urban population is that of mobility. However, the relationship of the Age-friendly City with mobility has not always been straightforward. Until relatively recently, urban infrastructures for getting around the city, such as sidewalks, traffic lights and public transport stops, lacked criteria to ensure all-age accessibility. Similarly, and of specific interest to this study, the low cycling uptake of older age groups is an indication that cycling mobility too requires rethinking to ensure accessibility for people of all ages.

Source: World Health Organization.

Figure 1: The 8 thematic areas of the age-friendly cities model

Focusing on the case of the city of Barcelona, the bicycle does certainly not appear to be a means of transport that is 'friendly' to for all ages.

Barcelona's current population over the age of **65 is 21% while by 2030**, this figure is expected to increase to almost 30%.

While the percentage of young people (<19 years old) will remain around 16%, it will be crucial to consider its changing demographic structure in future urban planning. [5]

5 Figures from the Municipal Aging Strategy (2018-2030).

THE CHALLENGE: POPULATION AGEING AND INCLUSION IN ACTIVE MOBILITY UPTAKE IN BARCELONA

The Age-friendly Cities approach is an initiative of the World Health Organization which now consists of network of more than 1100 cities in 44 countries. Importantly, it observes that older age is no longer just a time of decline. Based on academic disciplines such as social gerontology, it supports the idea that we are 'younger' in older age – a shift from the traditional connotation of decline and frailty. Instead, we experience multiple stages of old age – including personal development, social and economic activity, caregiving, retirement, as well as decrepitude and demise. Despite this diversity, ageing is generally not well regarded socially: doing or starting new activities in later life is seen as unlikely, actively participating in society is not always wanted, and places are not always equipped to support older people's needs and desires.

At the same time, older age is thought to be a road into the unknown; new challenges, illness or loss of loved ones, or the frailty that comes with age are hard to predict for an individual. A concern throughout this time is unwanted loneliness, a risk factor for mental health and psychological pathologies. Paradoxically, it occurs more often during a phase in which people have more time than ever to be accompanied by friends, children, or other family members. Scientific studies show the importance of the biographical trajectory to do this, i.e. everything lived at each stage of life: the connections with these people or the physical or cognitive skills we retain. The aspirations we have for retirement or old age are forged in youth or other stages prior to old age: we are the sum of everything we have experienced.

A second contemporary challenge around population ageing is that of intergenerationality, which is defined as the sharing of experiences, conversations and companionship between people of different ages. Today's uncertainties – like those related to the cost of living, energy poverty, climate change and socioeconomic inequalities in general – have created dissonance between generations. Today's younger generations are likely to be poorer than their parents, with less job stability, difficulty accessing adequate housing, and less robust social services as these generations age. In fact, the widespread concern of climate change is already affecting older people due to the effects of extreme weather and air pollution. These effects are likely to have a more significant impact on the lives of the next generations.

In the face of these concerns, we must also consider the opportunities of old age. The prevention of (terminal) diseases and the increase in life expectancy have considerably increased the 'healthy life years'.[6] The opportunities for wellbeing, therefore, have been prolonged, always recognising that frailty and dependency are likely to come – yet later overall. Within those years, people often pursue (physical) activities of low to moderate intensity or cognitive maintenance activities. In terms of mobility, the radius of daily movement tends to become smaller in later life, while we observe an increase in larger trips and a desire to engage in activities that were not possible in youth for various reasons.[7]

6 OECD, 2017. Healthy life expectancy at birth and at age 65. https://www.oecd-ilibrary.org/sites/62efef1d-en/index.html?itemId=/content/component/62efef1d-en.

7 Hitchings, R., Venn, S., & Day, R., 2018. Assumptions about later-life travel and their implications: pushing people around? Ageing & Society, 38(1), 1-18. https://core.ac.uk/reader/185494420.

The ENTOURAGE project links the ageing population-related challenges with cities' growing interest to improve and promote cycling mobility. Policies and initiatives for such promotion often focus on the general demographic, using indicators such as increased trip rates or kilometres of infrastructure created. However, this approach does not necessarily address the lack of access that older people have to cycling in their daily mobility. This is unfortunate given the benefits of cycling for older population groups. Its positive impacts on improving mental health, physical health, cognitive maintenance, and social connectedness are substantial, offering a way to perform a low to moderate intensity activity while going from A to B. Cycling could also be a flexible alternative to other ways of getting around, fitting with the generally smaller radius of daily movement and the importance of quality of life opportunities in proximity of the own home.

ENTOURAGE thus uses the concept of age-friendliness to understand why cycling mobility is less available to groups such as older people and how we can engage this group in improving mobility for people of all ages.

• The challenges

- **Challenges related to population ageing:** mental and physical health, unwanted loneliness, fulfilling new aspirations, maintaining low to moderate physical activity, everyday local trips, and proximity of activities and services.
- **Challenges related to inclusion and equity in active mobility:** everyday outdoor mobility, representation and visibility in cycling, acknowledgement as a cycling collective, and absence in the current promotion of everyday cycling mobility.

• The vision

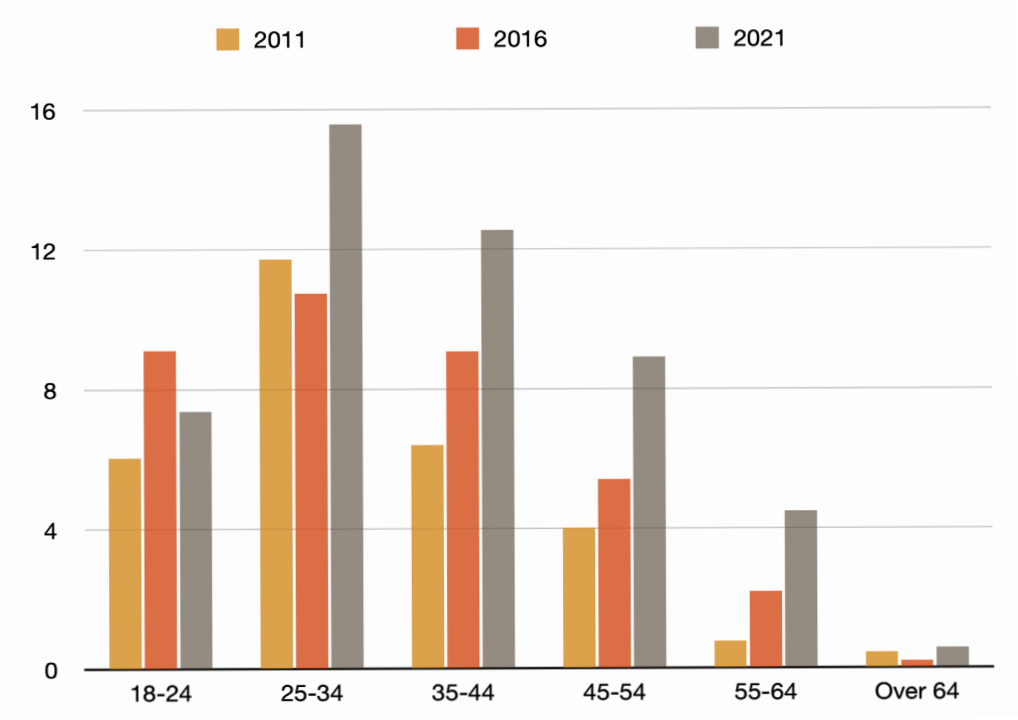
- **Age-friendly cycling mobility makes cycling feasible** for people of all ages.
- **A proposal that starts from the qualities of everyday cycling mobility** from the perspective of older people.

• The city

- ***The geographical context of the case study is the city of Barcelona.*** It is a very diverse city in terms of cycling profiles, for example between genders, ages, or residential areas. Moreover, the city's neighbourhoods show very different profiles when it comes to ageing rates.

Barcelona was chosen as a case study city because of the boom in cycling infrastructure and cycling's modal split witnessed over the last decade. In addition to its ambitions to become a cycling city, it is also the subject of several urban interventions aimed at reducing congestion, air and noise pollution, and improving road safety. Current mobility policies aim to transform the modal split of the city to a combined 80% of walking, cycling, personal mobility vehicles (PMV, incl. e-scooters) and public transport. In terms of cycling, the city disposes of almost 300 kilometres of cycling infrastructure (126 kilometres in 2016), divided between new cycle lanes and shared-use pedestrianised streets (calles pacificadas).[8]

Current bicycle use varies greatly by neighbourhood, being almost non-existent among residents in hillier parts of the city. At the same time, there are large demographic variations, with substantially lower use among women and only 0.6% of the trips made by people over 65. The supposed age gap in Barcelona becomes very visible when we analyse the indicated use of bicycles by citizens for their main activities. **The graph presents the trend in cycling over the last ten years, showing a persistently low proportion for the over-64 age group and substantial growth in other age groups**.



Q: What means of transportation do you use to get around for your main activities?

A: Own bicycle or Bicing

Graph 1: The share of cycling in everyday mobility trips in Barcelona between age groups, 2011-2021.
Source: own elaboration following the 'Enquesta de Serveis Municipals 2022'.

8 Ajuntament de Barcelona, 2020. Pla de Mobilitat Urbana 2024 (Document per a la Aprovació Inicial). Barcelona: Ajuntament de Barcelona, Direcció de Serveis de Mobilitat.

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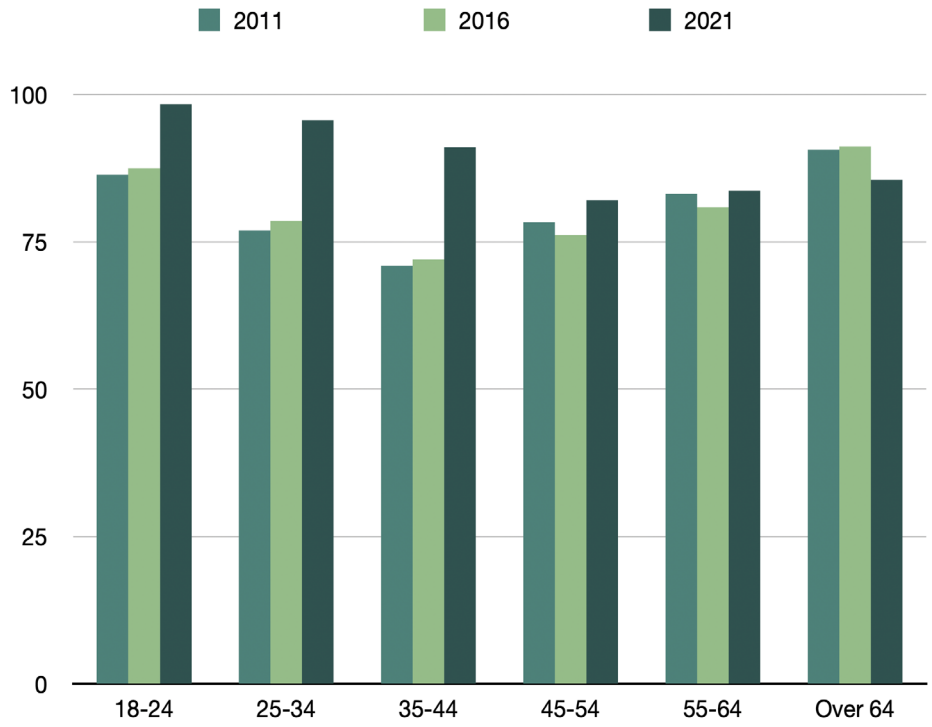
Similarly, the next graph shows that the use of sustainable transport modes among Barcelona's inhabitants is increasing among younger groups, but decreasing among the 64+ group. It is also worth noting that the city estimates that, by 2030, one in three residents will be over 65, a figure substantially higher than the 21% in 2018[9]. Currently, we observe low rates in Ciutat Vella, the areas along the coast, and the Nou Barris district, while in some districts the percentage of people over 65 is already around 30%.

By current standards, therefore, a growing part of the population would have increasingly less access to cycling-related interventions in the city. To address this situation, **this study aims to understand how best to include cycling in everyday mobility over the course of life, highlighting its relationship with the urban environment, the normalisation of its use, and the specific qualities that cycling can offer in later life.** In the following section we explain the data collected as part of this research and develop six proposals derived from their analysis.



Q: What means of transportation do you use to get around for your main activities?

A: Sustainable transport.

(Non-private or motorized vehicles)

Graph 2 : The proportion of sustainable travel modes (walking, cycling, PMV or public transport) as part of everyday mobility trips in Barcelona between age groups, 2011-2021.

9 Ajuntament de Barcelona, 2018. Estratègia sobre canvi demogràfic i envelliment: una ciutat per a tots els cicles de vida 2018-2030. Barcelona: Àrea de Drets Socials.

By 2030, one in three residents will be over 65, substantially higher from 21% in 2018.

SIX PROPOSALS FOR AN AGE-FRIENDLY CYCLING MOBILITY

METHODOLOGICAL NOTE

The project used three complementary methods to capture and understand the cycling experiences of people aged 60 and over. **On the one hand, a biographical method was used, consisting of interviews inquiring about the adoption of different modes of transport throughout life. It considered the experience of starting to cycle at any point in life,** as well as the opportunities and obstacles encountered for cycling to be incorporated into everyday mobility – in the past, present and (foreseen) future. **Moreover, we applied so-called mobile methods consisting of bicycle rides accompanied by the researcher.** They allowed us to get to know the experiences of mobility in a 'live' context and served both to observe the interactions with urban space and the setting in which the experiences that the participants told us about during the interview took place.

The interviews were audio-recorded, while the accompanied rides were recorded in both audio and video. This allowed the researchers to analyse the on-the-go conversations with the participant, collect visual data, interpret the flows of movement, and the participant's own movements and interactions with other actors in the city. As a final method, a first analysis was presented in a focus group discussing the qualities and barriers to cycling in Barcelona in a participatory way.

The study involved 37 participants of various older ages (60-88 years). Both men and women were equally represented and their residential locations were spread over all districts of Barcelona. Importantly, the study sought different levels of cycling experience, from beginners to lifelong cyclists. Once the interviews were completed, participants were asked to keep an online travel diary and were invited to accompanied rides on one of their regular journeys around the city. Fourteen people took part in the latter activity, riding a total of 17 routes of between 1 and 11 kilometres with an average of 4.4 km. Finally, the day of feedback sessions and focus groups was held to share key insights about the motivations and obstacles of cycling in later life. In the remainder of this guide, we will present the six proposals derived from the analysis of all the data obtained.

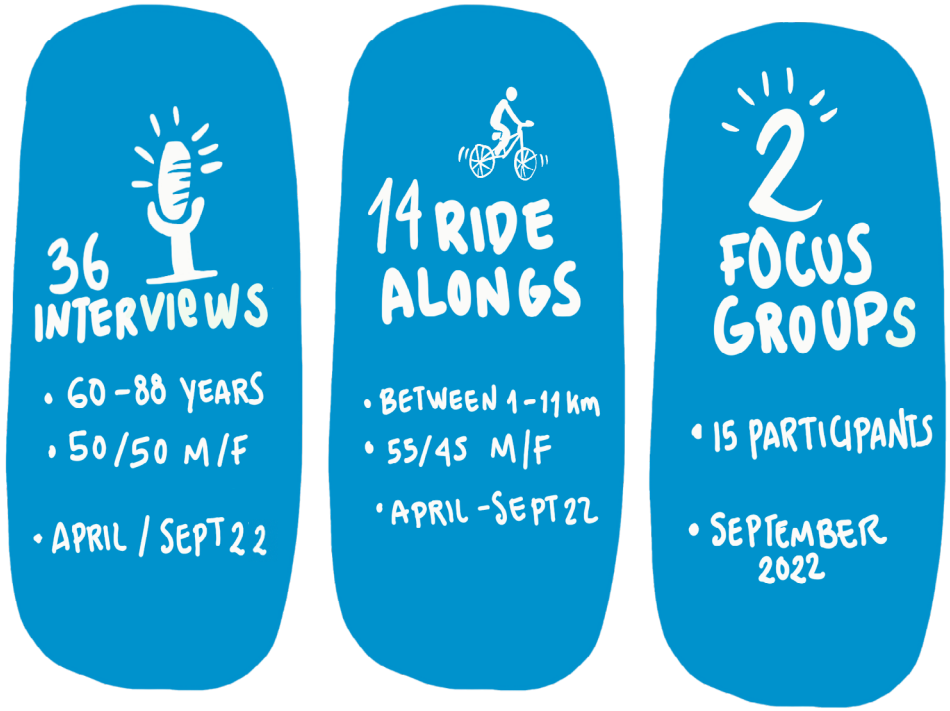


Figure 2: Graphical scheme of the three components of the methodological design

Source: own elaboration.

The study involved 37 people of various older age groups (60-88 years)

PROPOSAL 1: PRIORITISING THE AGE-FRIENDLY QUALITIES OF CYCLING

The qualities that cycling mobility offers in later life are multiple, influential and transformative.

The analysis of the interviews, the accompanied rides, and the focus group shows a great extent of 'age-friendly qualities' of cycling: connectivity; adaptability; personal and collective safety; health and well-being; care for the environment and other generations; and visibility of older age groups.

- **Quality 1. Connectivity.** Cycling mobility allows for a self-paced, measured effort and door-to-door mobility. Depending on their needs or preferences, participants choose direct and faster routes, calmer and safer routes, routes with fewer climbs, or ride for example on traffic-calmed streets or areas shared with pedestrians. They are not dependent on a fixed timetable or traffic conditions, and the flexibility of route choice allows them to get to places comfortably and stress-free.

- **Quality 2. Adaptability.** Participants are found to adapt their cycling style according to their physical abilities. The bicycle itself allows for this adaptation, for example with models with a lower frame, or with basket or pannier racks to carry groceries. In addition, we find a frequent use of folding bicycles, allowing easier storage at home or other buildings, or making their use compatible with public transport. Finally, e-assisted bicycles allow participants to regulate physical effort and the speed needed to keep up with traffic.

- **Quality 3. Personal safety, also referring to responsibility towards other people.** For some of the participants, their motivation to cycle its movement at 'human speed', without polluting or endangering others. They recognise that they do not use an "aggressive" form of transport (Daniela, 60, Horta) and one that is in tune with the dimensions of the streets, for example in pacified areas or "the urban structure of the Gothic Quarter" (Marc, 66, El Poblenou). Some also recognise an improved perception of their own safety, in which the bicycle reduces the fragility of moving around the city alone.

- **Quality 4. Health and well-being.** Two of the main positive aspects of cycling highlighted by participants are the improvement or maintenance of physical health and the sense of achievement that comes from moving under one's own steam. Being able to go, to continue going, and aspiring to keep goign in the future are sources of self-confidence and longevity to stay active and fit. In addition, opportunities to explore the city and its surroundings, to keep an open mind and to simply enjoy yourself are appreciated.

- **Quality 5. Care for the environment and other generations.** Cycling enables mobility for caring reasons, such as for children or grandchildren, partners or parents, or for people with reduced mobility. Aside from its functional purpose, it may also form a distraction from the psychological burden of caring, and a way to have fun and connect with people of different ages and backgrounds. Finally, for many participants in the study, cycling evokes memories of their own youth, when they discovered the pleasure of the playful use of this means of transport.

- **Quality 6. Visibility of older age groups.** Although older age is traditionally known as a time of fragility and disappearance from society, the people consulted in the study undertake frequent social and civic activities. They participate in volunteering at civic centres, NGOs, public bodies, or neighbourhood movements, among others. These activities are not always cycling-related, though it is often the preferred means of transport to connect these activities or to make themselves visible to the groups in which they participate.

"I even feel young, sometimes I have to tell myself 'hey, I'm 67 years old, I can't do crazy things', as if I were the young girl who was always cycling in summer (…) The last time I had an accident, luckily I haven't had many, was because I forgot how old I am. I did a race with my grandson. And I started to race, really to win. And of course, right then my granddaughter called me, so I braked and fell off. I forgot that I don't have the age to race with a ten-year-old." (Quality 5)

– Eva (67, La Ribera)

"The good thing about cycling is that you see the city in a different way, you can enjoy it in a different way. That's interesting, because we are so used to riding at full speed, you don't see things anymore. I always like to look. Well, look, here is a roof patio with a parasol [points up]. I'm always looking at the rooftops. They are curious places." (Quality 4)

– Sebastián (60, La Dreta de l'Eixample)

"It gets you to work, but after riding the five kilometres along Gran Vía or the Consell de Cent street, you also arrive in a different way as you would on the metro. [By bicycle] you arrive more oxygenated, happier. It's noticeable." (Quality 1)

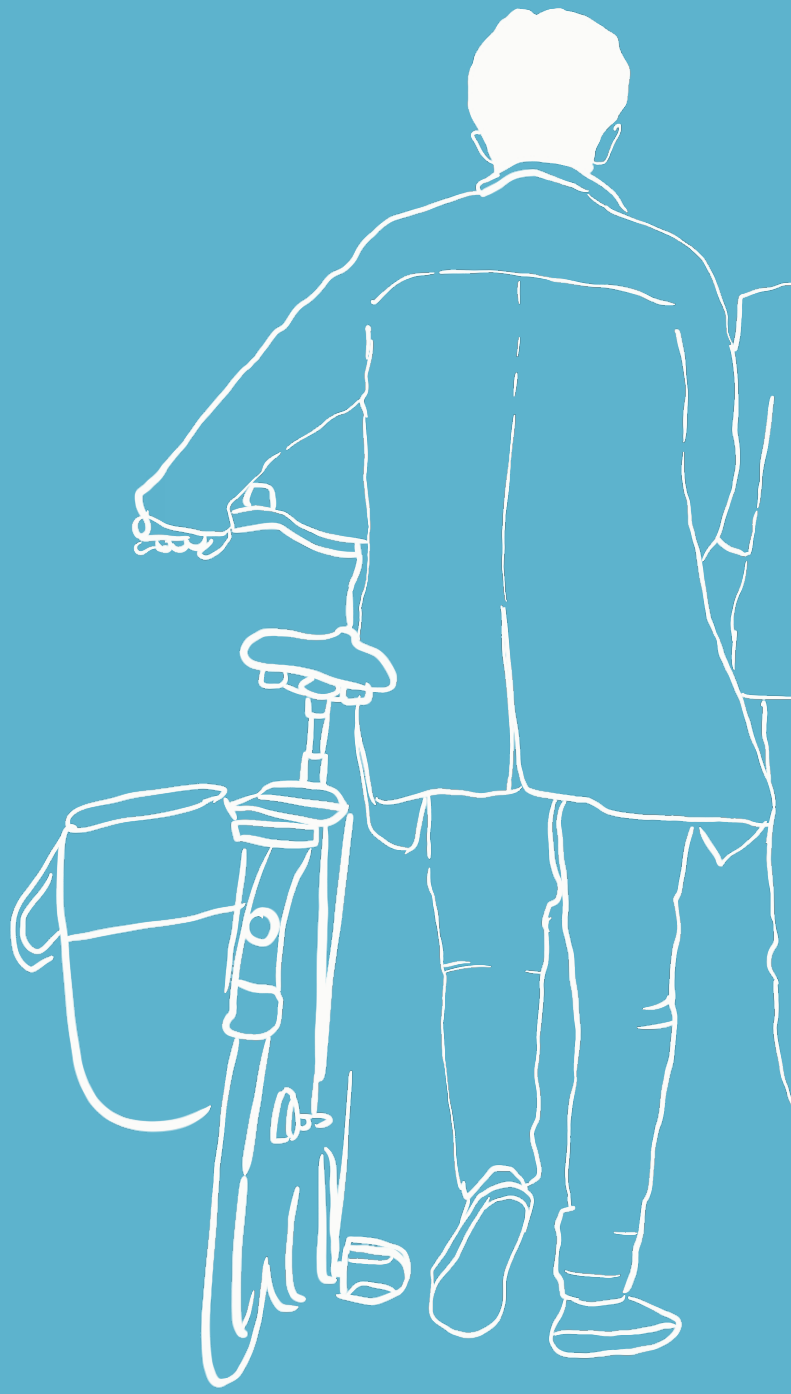
– Héctor (62, la Bordeta)

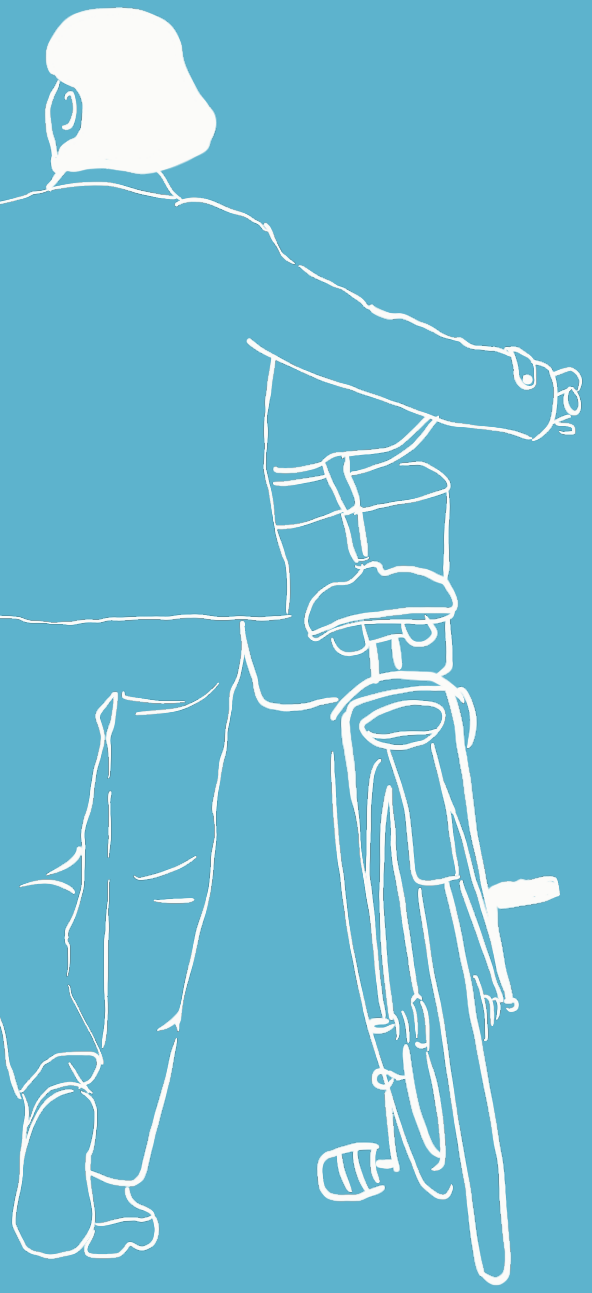
"Now with the electric bike I go all over Barcelona. There are beautiful lanes in every neighbourhood. In Tres Torres, Sarrià, Poblenou, Horta." (Quality 1)

– Gerard (71, la Dreta de l'Eixample)

"I began to realise that my obvious limp, the fact that I walk slowly, had made me an easy target for a dodgy kind of people. In that sense, the bike has also brought me safety." (Quality 3)

– Flor (60, Les Corts)





- CONNECTIVITY
- ADAPTABILITY
- PERSONAL SAFETY
- HEALTH AND WELL-BEING
- CARE FOR THE ENVIRONMENT AND OTHER GENERATIONS
- VISIBILITY OF OLDER AGE GROUPS

PROPOSAL 2: RECOGNISING DIVERSITY IN CYCLING

The six qualities of Proposal 1 lead us to look differently at the ways in which mobility is commonly understood. The profiles, motives and routes, preferences and frequencies of cycling vary greatly among the people who participated in the study: there are simply too many types of cycling and experiences to unilaterally define what 'age-friendly cycling' is. The mobility histories and current cycling patterns are, for example, highly diverse between the older person who has been cycling in Barcelona since their student days, the person who started cycling when the Bicing system was introduced, and the people with little cycling experience who are still anxious about riding in the city. These types even occur within the same person: the reasons, routes, and frequency of cycling are related to people's family, work, residential, etc. conditions and change over time and in different kinds of company.

In short, there is neither a single type of 60+ cycling mobility nor a more general one. Instead, we propose to look at the city from the perspective of diversity, allowing people in any time of life, physical condition or level of experience to cycle in the city and respond to their mobility needs through sustainable and enjoyable forms of transport. In this diversity we also include the variety of destinations and motivations for cycling. We found that cycling connects neighbourhoods, allows for errands, shopping, and commuting to work, going to see friends or family, going for a walk with them, or simply to 'see the city', the mountains or the sea. **The fact that these functional, leisure-oriented or care-related activities are mixed and interlinked underlines that cycling mobility is connective, non-linear, and pluriform.**

PROPOSAL 3: UNDERSTANDING AND RESOLVING THE REAL BARRIERS TO CYCLING

Barriers or disadvantages to cycle for everyday trips exist for people of all ages. To make comfortable and safe journeys, (almost) everyone would benefit from well-segregated cycling infrastructure, a connected, dense and extensive network, and a peaceful urban environment pinned on sustainable mobility options. However, our analysis shows that difficulties of cycling in older age groups differ from those of the general population.

The behaviour of the participants in the study takes place in areas with very diverse characteristics. The types of streets used, the dimensions of the cycle lanes, their connectivity, their signage, and their often partial extension throughout the city and the metropolitan area are just examples. In terms of connectivity, the lack of connection between lanes at junctions or traffic lights, limited visibility, and the absence of spaces to stop can make trips difficult or create insecurity about cycling trips. All of this goes against what is understood as an inclusive cycling space, one that is coherent, continuous, safe and easily understood. [10] Furthermore, the profiles of other users within the cycle lanes, different types of vehicles such as e-scooters and electric bikes which go at higher speeds, can complicate coexistence on the cycle lanes.

In this sense, it is important to recognise that the barriers to cycling in older age are not just about the size of cycle lanes or constructed kilometres of lanes. An age-friendly approach to cycling cannot exist without including the other components of a journey from A to B.

Therefore, **we emphasise the 'real' journey infrastructure, one that extends from the time and place where one decides to take the bike to the arrival at the destination.** This infrastructure and the barriers to its use can already be found in the need to bring the bicycle down from home, its storage at home, the use of the public bicycle system, cycle parking on the street or at the destination, accessibility at the final destination (entrances, ramps, kerbs), or proximity to bicycle services (for repairs, adjustments, availability and storage of adapted bicycles). We summarise the total number of barriers and their areas of overlap in the figure.

These elements are all key to completing a cycle trip, thus composing a 'real infrastructure': absence of any element could result in extra effort or cost to move around by bicycle, something that not all (older) cyclists can afford. The fit between each of these elements is crucial for (potential) cycling by people of all ages. In this respect, it is important to highlight the barriers encountered among participants who do not cycle regularly. New users, above all, report difficulties in finding safe spaces to practice their newly acquired skill, anxiety about cycling outside limited spaces or known routes and about integrating cycling mobility into their daily social reality, for example at destinations they usually go to or with people they usually travel with using another means of transport.

10 Doran, A., El-Geneidy, A., & Manaugh, K. (2021). The pursuit of cycling equity: A review of Canadian transport plans. Journal of Transport Geography, 90, 102927. https://doi.org/10.1016/j.jtrangeo.2020.102927.

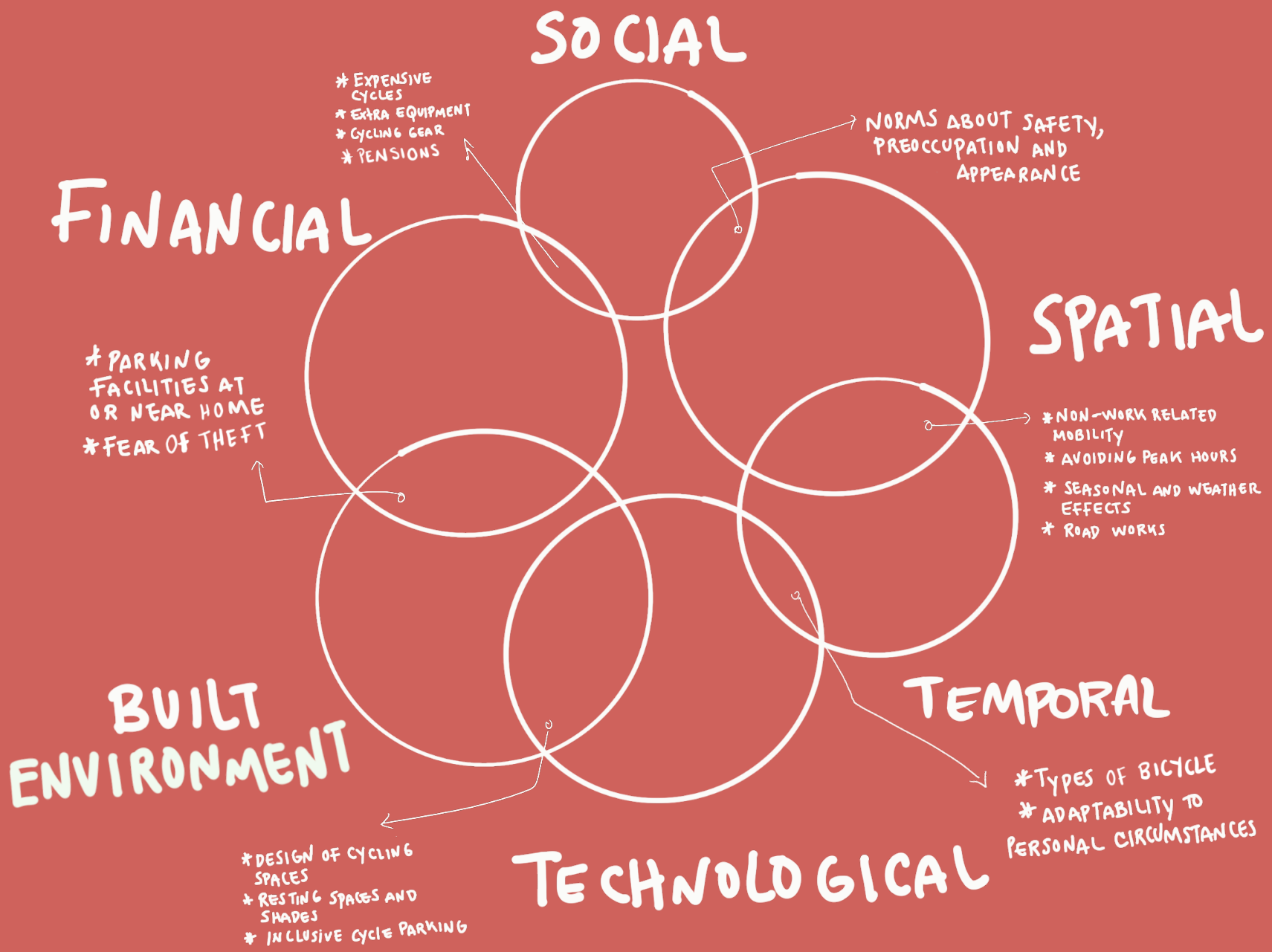


Diagram: graphic sketch of the barriers to cycling use and their overlaps.

Source: own production based on analysis of the project data

PROPOSAL 4: AVOIDING PHYSICAL EFFORT

This proposal underlines the previous findings that cycle-friendly mobility is flexible and adaptable according to the capabilities of an individual. This adaptability allows to address the 'weaknesses' of cycling in later life such as increasing physical frailty, concerns about safety or continuity of routes, as well as overcoming inclines, among other challenges. In older age, as with other demographic groups, we know that the benefit of cycling is greater benefit when having safe infrastructure that includes wide, continuous lanes, no obstacles and smooth turns.

However, in the current experience of the studied group, we observe that physical power is often needed to overcome deficiencies of the current cycling environment. Besides physical power, we also find the requirement of cognitive effort, experienced mostly by less experienced cyclists. This is formed by pressure of the city environment that requires being always attentive, trying to foresee dangers, or on the lookout for mistakes of other road users **(see photos).**

The level of cycling effort is defined by the type of cycle one has, whether it has gears, electric assistance or accessories. Even so, the design of cycling infrastructure has the greatest role to play in the creation of a calmer cycling experience. We see a clear preference for cycling in wide spaces, segregated from other modes of transport, without unnecessary stops, and with a legible and continuous design.

Photos: examples of pressures created by dangerous driving

Such spaces lower the stress caused by the continuous need for high attention and physical ability. Furthermore, we see that the ability to anticipate or avoid situations of (possible) danger requires a high level of previous cycling experience, built up over years and often gained when the city was much less prepared for cycling. Inclusive cycling mobility can surely not require this reliance on historical experience from potential future user.

Technical solutions or advice to avoid physical exertion are manifold and appear in other studies[11], but the ones that seem to be most imperative among older cyclists are:

1. **Working on the 'network effect', generating confidence that you can cycle to all parts of the city and its surroundings.**

2. **High-comfort infrastructural elements: smooth and even paving, well maintained surfaces, and with a width that allows you to overtake and be overtaken without leaving the lane. We can also consider resting structures at traffic lights (see photos) or spaces to move the bicycle on and off the bike lane when ending or pausing the ride without blocking the traffic.**

3. **Traffic lights adapted to the speed of the bicycle, prioritising the passage of people using sustainable modes, and always including a priority phase that is exclusively for bicycles (i.e. not only using flashing yellow lights in the case of Barcelona)**

4. **Well visible and uniform horizontal and vertical signage. Visual, acoustic or tactile information orients the user about their location, their route options, and communicates the rules of the road. In case of construction works, even if small or of short duration, uninterrupted and equally signposted passage must be ensured.**

5. **Safe, diverse and easy to use parking spaces. A bicycle can serve as a mobility aid and comes in various shapes and sizes. Therefore, apart from the need to avoid bike theft, parking needs to be easy, very close to the final destination, and usable without having to lift the bicycle.**

6. **The availability of non-conventional cycles,11 adapted bicycles and accessories to facilitate prolonged use of the bicycle (mirrors, low bar or step-through frame, electric assistance, comfort saddle), and support and repair services that take those cycles into account. This availability could also be considered at the level of shared systems, including Bicing in Barcelona.**

Photos: examples of (non-intended) resting structures.

11 Col·lectiu Punt 6 i Anaya Boig, Esther, 2021. Recomanacions per integrar una perspectiva feminista interseccional en la mobilitat ciclista de Barcelona. Ajuntament de Barcelona. https://bcnroc.ajuntament.barcelona.cat/jspui/bitstream/11703/124686/5/20~FQRCA.pdf.

PROPOSAL 5: WORKING ON SOCIAL AWARENESS

One of the domains in the diagram of barriers to cycling is the social one. In the study, participants know and observe that the established social norm is that an older person does not or is not expected to use a bicycle as a means of transport. Views expressed by family members, co-workers and other members of the community imply – directly and indirectly – that cycling as a form of mobility is perceived as a 'counter-current' activity for older people.

However, in an increasingly ageing society, it is important to recognise the possibility of cycling by a diversity of ages and abilities. The study shows that cycling mobility is feasible for older people if the city allows it. This implies not only a diversity of bicycle types and infrastructural adaptations, but also adequate promotion and visibility. It is crucial to communicate that cycling is an option for all people and to represent each social group in this narrative. Likewise, it is important to highlight that cycling encompasses a variety of functional and leisure trips, promoting health, socialisation, independent mobility and ultimately positive ageing. In addition, some of the participants recently benefitted from cycle training tailored to their needs: it is never too late to learn!

Examples of Age-Friendly Awareness Initiatives

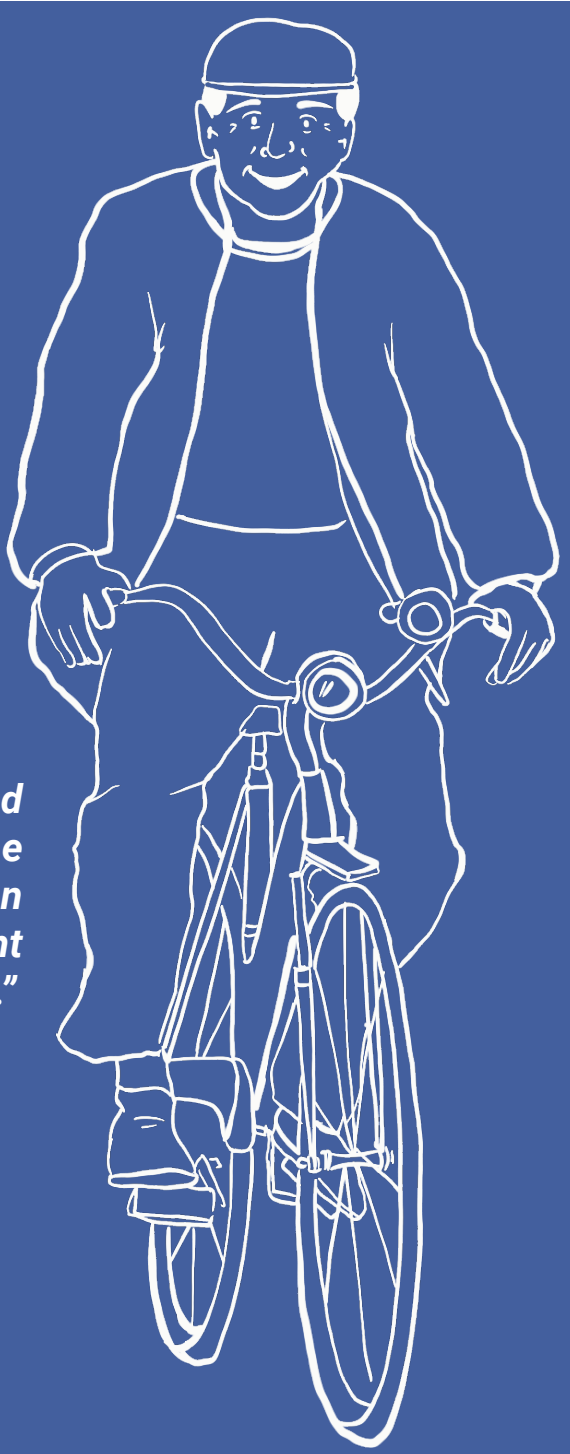
Source: Maragall Respira neighborhood platform; @Guineu_blava (i), Barcelona City Council (d)

"I am the only one at work who rides a bicycle. Yes, I have had that honor for many years. (...) 'And you ride a bicycle, but how dare you?' Well, you don't dare, I don't see any problem. People are also very afraid of bicycles. They think there is something, an accident, risk, dangerous activity."

– Llorenç (61, La Dreta de l'Eixample)

"Since [my youth], I didn't touch a bicycle again until I was 58. I learned to ride when I was older. So with handlebars like that it's very hard for me to let go of my hand. Those are things that are noticeable, for a person who started cycling when I was older. For my grandchildren it's a different thing, they even ride in the mountains. It's not the same, I'm the granny."

– Rosa (77, Sants)



PROPOSAL 6: CREATING TRANSVERSAL BENEFITS

Many mobility experts already agree that future cycling mobility needs to be more inclusive and socially just. This study adds that cycling has a key role to play to ensure the appropriateness of urban mobility for the increasing older population. In the case of Barcelona, the greatest share of potential users is found in the older age group **(ref. to graph 1).** This may not only to increase their mobility and active ageing opportunities, but also shows a commitment to 'friendlier' urban environments

The shift from being a 'cyclable' city (one where cycling is increasingly possible but not attractive nor socially inclusive, as outlined in this blog) to an (age-)friendly city implies a change in the ways of thinking about and planning the city. Recent urban planning interventions in Barcelona (Superblocks, 'green axes') are already moving away from the traditional idea that mobility only serves for getting around with the highest possible efficiency. Part of the difficulties in cycling (Proposal 3), however, stem from an approach that still prioritises the belief that efficiency in urban mobility is reached through fast motorised vehicle traffic. The occupying capacity of private motorised vehicles and the required infrastructures is dominating the pedestrian or cycling experience (noise, air pollution, parked vehicles), also in this study. This limits equitable cycle use and means that the 'real infrastructure' of cycling mobility is not fully resolved, especially when considering that cycling is efficient in terms of time and energy, but also more adaptable to one's individual capacities and contributing to a safer and environmentally healthier cities.

Instead, a planning focus on the diversity and longevity of cycling mobility offers an opportunity to turn around the appropriation of public space by urban transport systems, which currently primarily facilitate polluting and exclusionary forms of travel. Despite these structural barriers, the experiences of age-friendly mobility and its endurance of over time highlight the transformative capacity of the bicycle, both for the city and the individual. It is worth remembering that this capacity contains specific qualities in older age **(Proposal 1)** and motivates many participants to maintain their mobility and participation in society according to their own pace and capacities.

- A platform that already shares best practices on the cross-cutting lifelong benefits of active mobility already exists at the international level: https://www.880cities.org, The8-80 city.

- In the context of Barcelona, a study commissioned by the City Council's Department of Ecology, Urbanism and Mobility on the cross-cutting benefits of the feminist perspective on cycling mobility has already been carried out. Its recommendations and indicators can be found in: https://bcnroc.ajuntament.barcelona.cat/jspui/bitstream/11703/124686/5/20~FQRCA.pdf.




CONCLUSIONS AND REMAINING CHALLENGES

In cities with relatively low cycling use, its modal split is usually the lowest among older age groups. In response, the ENTOURAGE project has studied what it takes for cycling to be a suitable mobility option for a wider age range, showing how its significant benefits in the areas of mobility, wellbeing and 'positive ageing' come together in everyday mobility behaviours. In Barcelona, the main case of this project, older people are a minority of those currently cycling. However, after consulting 37 participants living and commuting in different areas of the city and with varying levels of cycling experience, we have identified cases of cycling mobility that is friendly and sustainable over the years.

If we talk about its applicability in cities that aspire to improve their mobility in a sustainable and socially inclusive way, we find the transformative capacity of the bicycle to lead a healthy and balanced life and to get to places effectively and pleasantly. However, cycling is only a part of the picture: not all participants used the bicycle for 'feasible' cycling journeys nor will everyone be able or willing to consider its use in everyday mobility.

In many cases, the possibility of achieving the multiple benefits of cycling is based on an intrinsic capacity of the individual, previously acquired in the other stages of life. Although the circumstances for cycling in Barcelona have improved substantially, its uptake is not always feasible for beginners or for using cycling for everyday trips, aside from occasional or recreational use.

The required skills are found to consist of, among others, a certain physical ability, a normalised perspective on the use of the bicycle in urban mobility, and having experience with its use in a crowded, chaotic and unpredictable urban environment. Furthermore, taking up cycling in everyday mobility requires a 'trigger point' in the urban environment (such as the introduction or extension of the public bicycle system) or in one's personal life (such as a relocation, encouragement from a reference person, initial recreational use).

To reverse the presently unbalanced cycling situation and, instead, reach a wide range of ages and abilities, it is imperative that planning and mobility actors adopt an 'age-friendly' approach to cycling.

Photo: Example of conflicts with other cycle lane users

With the aim to include cycling as a viable, safe, and accessible means of transport, we summarise the contributions of this study in six proposals:

- **Prioritise the 'age-friendly' qualities that cycling has: connectivity; adaptability; personal and collective safety; health and well-being; care for the environment and other generations; and visibility of older age groups.**
- **Recognise the diversity of people (potentially) cycling, their abilities, types of cycles, and of the activities for which they may use bicycles.**
- **Understand and resolve the barriers to cycling, recognising that people's realities of using cycling infrastructure extends beyond the cycle lane: from the time and place where one decides to take the bike until the arrival at the destination.**
- **Avoid reliance on physical effort, which makes cycling mobility only feasible for people in good physical condition or with long cycling experience.**
- **Work on social awareness and the normalisation of cycling among people of all ages.**
- **Create transversal benefits for all ages, such as a rethinking urban interventions and moving away from the idea that mobility is only for getting around individually and as efficiently as possible.**

The barriers and enablers to cycling mobility presented in this study should contribute to an improved understanding, both at academic and institutional levels and among citizens, of the transformative potential of cycling mobility in any urban environment. In terms of public policies, it is important to note that improving cycling conditions is not only a mobility challenge, but also touches on the areas of social inclusion, accessibility, and liveability of the city. Current urban problems such as pollution, public health, sedentary lifestyles, loneliness, among others, are not only solved by making the city bicycle-friendly, but also through a broader perspective such as the one offered by the Age-friendly City concept (extending to public space, housing, social participation, local economy, etc.).

Photo: example of unprotected spaces to access main attraction points (the train station)

Therefore, public interventions to the city and its mobility system should be comprehensive and coordinated between the fields of public health, social and ageing policy, i*nnovation and economy, culture, urban ecology, etc.* ***- in addition to mobility.***

In the case of Barcelona, this approach should be adjusted at the local level, understanding its topographical situation, variation between neighbourhoods, existing infrastructures, tourist pressure, and its local social fabric. This also implies that social organisations and companies dealing with ageing, active mobility, mobility services, social support, etc. should reinforce their commitment to age-friendliness as a cross-cutting inspiration within organisational and project principles.

In this sense, we can expect political leadership: being part of the Age-Friendly Cities network since 2009, Barcelona City Council has already committed itself to promoting ageing in place, to making urban services and spaces age-friendly, and to creating accessible urban transport that is pinned on proximity. [13]

13 Ajuntament de Barcelona, 2018. Id.

Inserting age-friendliness into cycling mobility, presented as an emerging and transformative phenomenon in this study, would mark the beginning of a path that enables cities to meet the combined challenge of ageing and inclusiveness in active and proximate forms of mobility.

Photos: Examples of conflict with other types of users.

THE CITY OF THE PAST

If you look out of your house, the only thing you see is a street with traffic and parked cars. It is only logical that you take your car or motorbike to go to the gym or to do sport. You park them in the street next to your destination. You do your shopping in malls on the outskirts of the city, easily accessible from the motorways. You know your neighbours by the colour of their cars. A grey film always covers the facades of the buildings. When you overlook the city from a high point, you see it covered with a grey-yellow layer. You always have to watch out when you go out walking or cycling. A moment's inattention or a step on the road can be deadly. Even if you have green, you always cross the road in a state of alertness. You would never let a child walk alone in the street, and you would discourage an older person from riding a bike, or walk through a junction when the green light starts flashing. There are delivery vans parked all over the place and motorbikes, bikes and scooters are riding on the narrow pavement. You help a neighbour in a wheelchair get past the parked motorbikes. The pavements are barely shaded and when it rains the surface does not drain. In summer, the heat stays in the city and the streets are ventilated by a sticky wind.[14]

14 Brink Suzanne (2024). Na de 15-minutenstad ook het 15-minutendorp. Utrech: Fiestsersbond

Image source: OpenAI, 2024.

THE CITY OF THE FUTURE

When you walk out of the door, you see other people and smell flowers and freshly baked bread. Trees provide shade and several people are sitting on benches. You hear birds and a lizard scurries along the outside wall. When you walk or cycle you find all your needs in 5 to 10 minutes. As you stroll, you notice the weather and the tranquillity that allows you to look around and say hello to the neighbours. Where once cars and motorbikes were parked, children run around and play on the climbing frame. You notice the clean air and the green plots contain interesting plants that grow around a small pond with a fountain. Your package awaits you at a collection point where the delivery drivers arrive via a safe route. The staff at the hub helps you carry larger parcels with a trolley or cargo bike. Bus, tram and metro stops are accessible and close by. You don't need your own car and you use the saved money to go out with friends, sign up for a new sport, or do that renovation you've been wanting to do for years. Do you need your own car to get to work or for a family trip? No problem, it's parked in a garage in the next block.

End note

Informed consent applies to all parts of the study. Participants' identifiable details were anonymised in the analysis in compliance with GDPR regulations and data management procedures approved by the Ethical Committee for Research on People, Society, and the Environment of the Universitat Rovira i Virgili (CEIPSA-2.021-PR-0037).

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Entourage, 2024