Cycling Cities:
The Lisbon Experience

M. Luísa Sousa, Bernardo Campos Pereira, Jaume Valentines-Álvarez, João Machado, Diego Cavalcanti, Patrícia Melo, and David Vale

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The Lisbon Experience[1]

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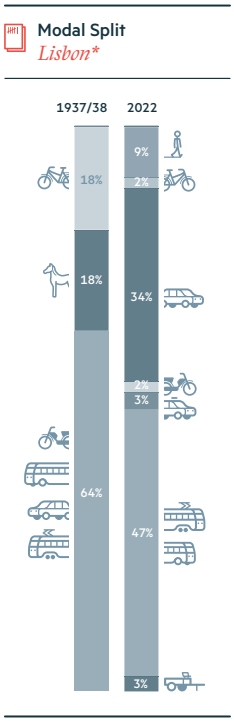
Introduction

Lisbon, a city renowned for its steep hills and breathtaking views of the Tagus River, blends old-world charm with a dynamic, evolving landscape. Its streets wind through centuries of history, from medieval alleyways to nineteenth-century boulevards, all shaped by layers of urban transformation. The devastating 1755 earthquake nearly levelled the city, leading to its rebuilding under the Marquis of Pombal. In the following century, urban developments tackled epidemics and sanitation issues, while shaping mobility.[2] In the late nineteenth century, cyclists began sharing the roads with horse-drawn carriages, and later, trams, laying the groundwork for a cycling culture that, while often overlooked, has endured for more than a century. Though known today as a car-centric city and a global destination accessible by air, with its typical yellow trams climbing the hilly streets and auto rickshaws crowded with tourists, bicycles have long played a role in Lisbon's story.

From the 1890s through the early twentieth century, Lisbon was part of a broader European cycling movement, as cyclists lobbied for better roads and regulations. Cycling wasn't just a leisure activity for the wealthy; it became an essential mode of transport for workers, shopkeepers, and postal carriers navigating the city's narrow streets. However, as the planning for a car-centric city began to dominate, cycling was pushed to the margins. Since the mid-1980s, new highways funded by the European Economic Community have accelerated suburban growth and changed how people travel, with more

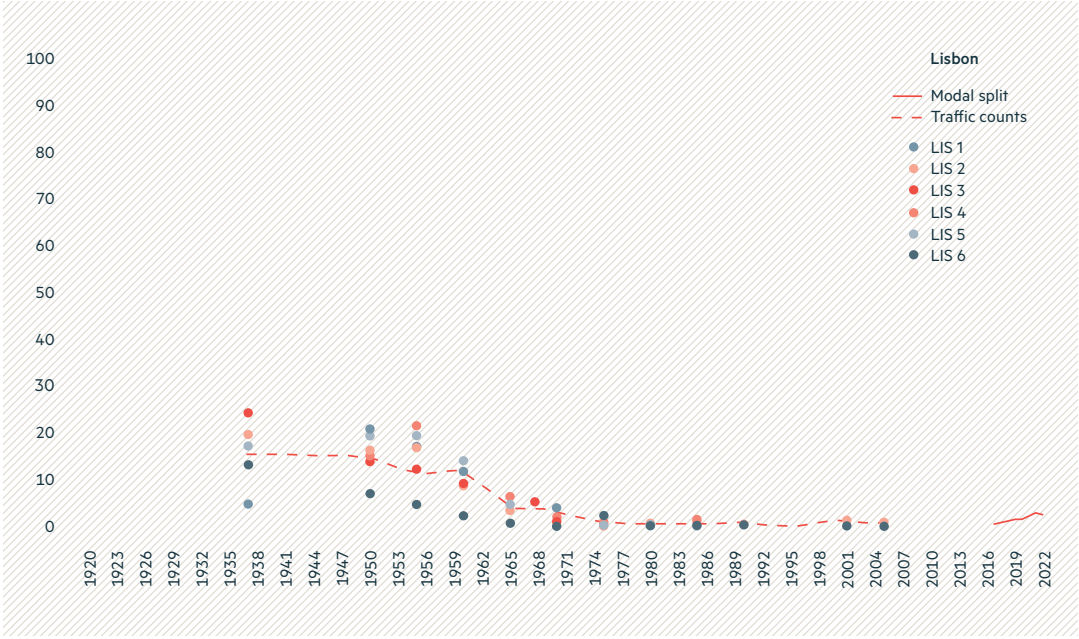


choosing private cars over public transit.[3] Despite the city's hills and the rise of motor vehicles, cycling never fully disappeared. Today, the challenges to cycling in Lisbon are less about its geography—especially its hills, as three out of four streets in Lisbon have a manageable grade of less than 5 percent—and more about the pavement quality, perceptions of unsafety, and driver behavior.[4] Ignoring the fact that people have been cycling in Lisbon since the 1870s—especially beyond the realm of sport—creates another barrier to imagining it as a cycling city. It also obscures how statistics, planning policies, and car lobbying have sidelined cycling.

In recent years, cycling has experienced a revival. What was once a forgotten mode of transport is now being reclaimed by citizens and planners alike, as Lisbon seems to be shifting toward more sustainable mobility solutions. With growing social movements, public advocacy, and new infrastructure, Lisbon is starting to embrace its cycling history, paving the way for a future where bicycles are not just a relic of the past but a key part of the city's identity.

Trend Line for Cycling in Lisbon

Cycling's share of traffic counts (excluding pedestrians) and trips (including pedestrians) in Lisbon 1937–2022.
Sources: see appendices



Women Cyclists in the Public Square

In December 1908, women cyclists participated in a cycling parade that concluded in Lisbon's Terreiro do Paço square. The event was part of the Children's Festival organized by the newspaper *O Século*. Published in an illustrated magazine, this image suggests cycling's popularity and its connection to urban reform and gender equality.

Cycling's First Advocates

At the close of the nineteenth century, Portugal, a constitutional monarchy, was swept up in the wave of industrialization transforming Europe. In Lisbon, bicycles offered a new way for people to navigate and enjoy an increasingly congested city. Portuguese cycling advocates, particularly those in the *União Velocipédica Portuguesa* (UVP), began lobbying for improved roads and greater rights for cyclists. Their demands echoed the political discourse of the era, with cyclists symbolizing the push for urban reform.

In the 1890s, cyclists became pioneers of personal mobility. Unlike trains or streetcars bound to schedules and fixed routes, bicycles offered people

independence and a unique sense of speed and freedom. This new form of transportation redefined travel and shaped road construction and vehicle design. Around the industrializing world, early bicycle enthusiasts banded together through local, national and international organizations to advocate for cycling infrastructure and rights—they were a new kind of road user.[5]

These cyclists organized national associations: the British Cyclists' Touring Club (1878), the League of American Bicyclists (1880), the Union Vélocipédique de France (1881), the Dansk Cycles' Forbund (1881), the Royal Ligue Vélocipédique de Belge (1882), the Dutch Algemene Nederlandse Wielrijders Bond (1883), the German Deutscher Radfahrer Bund (1884), the Swedish Hjuförbundet (1888), the Spanish Unión Velocipédica Española (1895) and, in Portugal, the União Velocipédica Portuguesa (1899).[6] They lobbied governments at a time when public funds prioritized railways and waterways over roads.[7] They promoted cycling as a form of transportation as well as a sport and leisure activity. Associations created cycling-specific media, road signs, itineraries, and maps and advocated for supportive policies like regulation and lower taxes.[8]

Ironically, cyclists' efforts set the foundation that would later benefit motorists. Cyclists introduced the "triptych" for border crossing (a three-part document eliminating customs fees) that was promoted by the *Ligue Internationale des Associations Touristes* (LIAT), established in 1898.[9] Despite differences among nations—whether in road quality, lobbying strategies, or the ways landscapes and landmarks were promoted—these associations influenced each other. They exchanged ideas, collaborated, and helped standardize cycling regulations.[10]

In Portugal, cycling advocacy grew as part of this transnational movement. Cyclists gathered in clubs like the *Real Ginásio Clube Português* (1875), which held Lisbon's first bicycle race in 1885. This group split to form the *Clube Velocipedista de Portugal*. Soon other clubs followed, including the *Real Velo Clubs of Porto* (1893) and Lisbon (1894). In 1899, these clubs united to form the Portuguese Velocipedic Union (*União Velocipédica Portuguesa*, or UVP), inspired by the French model, with the mission to "promote cycling in Portugal…, defend cyclists' interests, and foster …. respect and fraternity."[11]

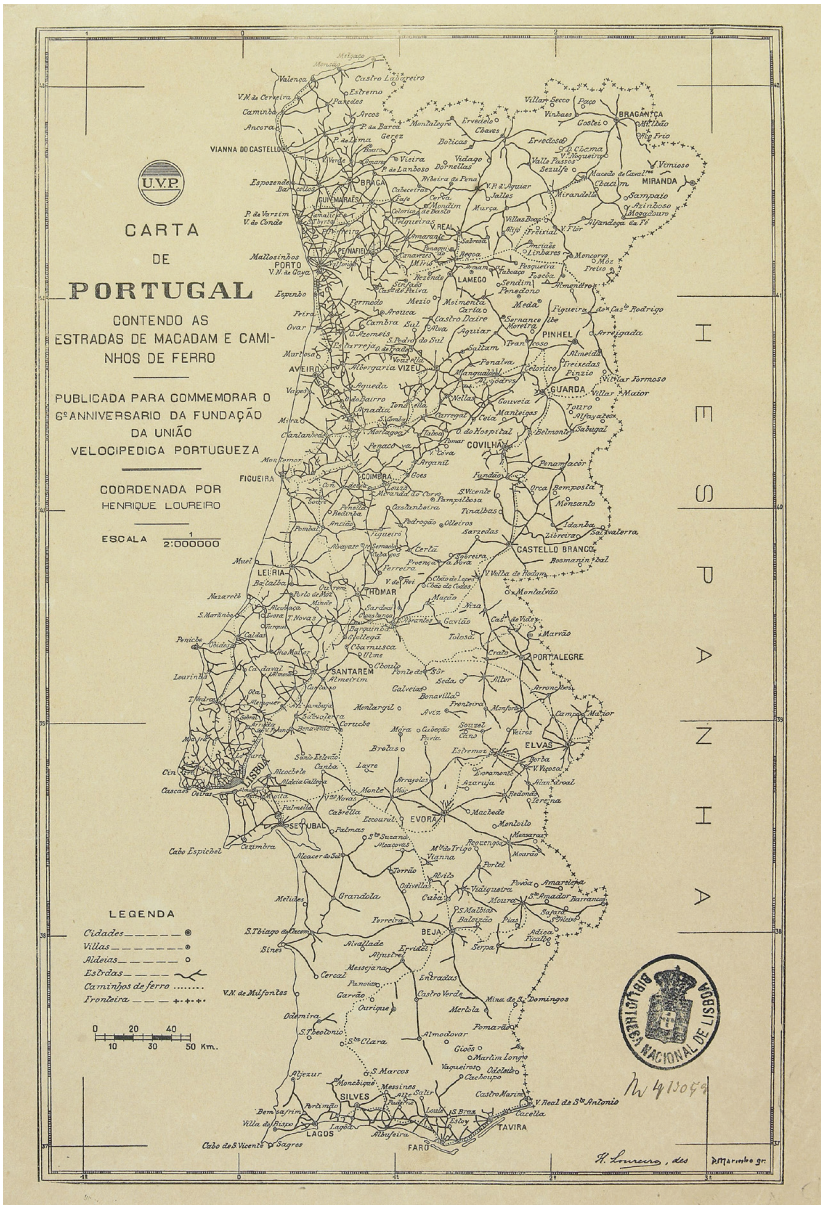
Initially, this "fraternity" largely attracted elite circles. Prominent sports figures such as Artur Seabra (a gymnast), Herbert Dagge (from an English family, cycling in Lisbon since 1878), and Diogo D'Orey (who brought one of Lisbon's first bicycles from Germany, where he was studying) were among the earliest advocates.[12] But cyclists soon sought for broader social and political backing. The royal family—including Queen D. Amélia and her son, Prince Manuel—took up cycling, further elevating its status. Royal patronage became visible in velodrome dedications, like that of the D. Carlos Velodrome in Algés near

Lisbon (1896). The UVP's honorary presidency was held by King Carlos I and later by King Manuel II, while clubs gained prestige when granted the "Real" (Royal) prefix.[13] This royal endorsement provided the cycling movement significant influence and social standing.

The UVP emerged as a well-connected organization, with its initial board comprising capitalists, professionals, army officers, civil servants, and journalists. Its first president, the Count of Caria—a prominent aristocrat and parliamentarian—leveraged his social and political influence to secure

Royalty Embraces Cycling Culture

This 1890s photograph depicts the King's mother cycling in the gardens of the Rococo palace of Queluz (also known as the "Portuguese Versailles") located between Lisbon and Sintra. The royal family promoted cycling in Portugal, serving as honorary presidents of cycling associations, naming velodromes, and enjoying cycling as a leisure activity.



approval for the UVP's statutes and establish ties to international cycling organizations.[14] According to its 1901 statutes, the UVP promoted cycling in "all its forms and uses," through various specialized sections, such as "excursionism, sport, military velocipedia, jurisprudence, medical services, propaganda, and official publications."[15] The legal affairs section, for example, analyzed

Cycling and Connectivity

Published to mark its sixth anniversary, this 1905 map of Portugal by the União Velocipédica Portuguesa (UVP) highlights the country's macadam roads and railroad network, promoting cycling as a leisure activity. Cyclists used trains to transport their bicycles, enabling exploration of these routes. By publishing maps and installing road signs, UVP fostered cyclo-tourism and laid the groundwork for automobile tourism, showcasing its influence on transportation infrastructure.

legislation impacting cyclists and drafted statements for presentation to public authorities. The UVP also tackled issues that it viewed as barriers to cycling in Portugal, including taxes on cyclists, the growing popularity of cars among the wealthy, and what it perceived as a lack of collective engagement action among Portuguese citizens.[16] The organization began hosting national cycling competitions and promoting cycling tourism.[17]

One of the UVP's key contributions was its support of tourism through organized tours and day rides, which cyclists embraced as exciting leisure activities. It published meticulously crafted maps that featured road gradients, distances between towns and stations, population data, town classifications, and points of interest. The UVP negotiated discounts for transporting bicycles on trains and lobbied for improved road signage, better pavements, lower taxes, and traffic regulations—efforts that later would be adopted by automobile and touring clubs, such as the influential *Real Automóvel Club de Portugal* (ACP, founded in 1903) and the *Sociedade Propaganda de Portugal* (1906).[18]

In 1904, for instance, the UVP petitioned the Ministry of Public Works to repair "the roads around Lisbon—Sintra, Cascais, Vila Franca—and also for signposting settlements," as reported in *Tiro e Sport*.[19] By 1907, the UVP had installed signs for cyclists between Lisbon and the popular tourist destination Sintra, as well as in other locations, underscoring its commitment to enhancing the cycling experience.[20] According to one of its publication, "such an initiative was not expected from the *União Velocipedica*, but rather from the *Real Automóvel Club de Portugal*, which represents a much more influential branch of tourism than cycling."[21] Later, oil companies like Vacuum Oil joined the effort by marking roads, identifying railroad crossings, and publishing maps in partnership with the ACP.[22] While the UVP and the ACP shared connections, including founders like Count of Caria and journalist Carlos Calixto, they seldom collaborated directly.

The UVP's ties to the press also helped popularize cycling as a modern, urban pastime. In the 1890s, short-lived publications like *O Velocipedista and A*

Bicycleta broadened cycling's appeal by covering trends, debates, legal updates, and topics of interest to cyclists, including fashion and women's participation. *Tiro Civil*, associated with a hunting club, provided additional coverage of sports, including cycling and initially published UVP's Bulletin, further solidifying the club's influence.[23]

Located in Lisbon, Portugal's capital, the UVP championed urban cycling when public officials did not. In 1894, the Lisbon City Council imposed new taxes and regulations on cyclists, requiring them to register, use horns and lights, avoid sidewalks, and follow speed limits lower than a horse trotting on flat terrain and

Cycling Through Lisbon's "New Avenues"

In this photograph, taken after 1907, cyclists navigate prominent spaces such as Campo Pequeno square and the "new avenues" and streets planned in the late nineteenth century to expand the city onto this large plateau (*planalto*). The street, lined with onlookers of different classes, gender, and ages, highlight cycling's appeal as both a modern innovation and leisure activity. The plateau would subsequently be crucial for the resurgence of cycling in Lisbon.

downhill.[24] By 1901, the UVP was pushing back, requesting "greater guarantees of safety and freedom" for cyclists, including a dedicated cycle lane on Avenida da Liberdade, a prominent avenue inagurated in 1886.[25] Yet, the 1903 urban plan, shaped by the 1891 financial crisis that had bankrupted the Portuguese state, ignored this, prioritizing pre-existing projects aimed at expanding the city's avenues and neighborhoods to the north and northeast instead.[26]

This urban expansion focused on accommodating trams and pedestrians leaving little room for cyclists. City engineers designed these new avenues and wider streets with the necessary width and gradients for tram rails—initially animal-drawn and later electric—as well as sidewalks for pedestrians. Streets built by private developers were often narrow and steep, falling short of legal standards.[27] The plan did not include a bicycle lane on Avenida da Liberdade. Within European cycling advocates circles, there was no consensus on street design—some cyclists opposed modal separation, viewing it as marginalization that ceded space to cars.[28] Lisbon's City Council primarily focused on taxing and disciplining cyclists rather than promoting cycling, enforcing restrictions that limited bicycle use to specific locations.

The UVP also advocated dedicated cycling paths in Campo Grande Park, an area included in Lisbon's northern expansion plans. Since 1897, city-approved cycling lessons had taken place there, allowing cyclists to ride without a license.[29] Campo Grande Park quickly became a central hub for cycling, offering bicycle sheds, racing events, a gathering point for tours, and bicycle rentals.[30] From 1901 to 1907, the UVP clashed with the City Council over the coexistence of cyclists and horse riders in the park. The UVP argued that horses should be restricted to their own paths—or banned from cycling paths entirely—due to the damage they caused to the pavement, which bicycles did not.[31] Instead, the City Council chose to ban cycling in the park, claiming that bicycle wheels damaged the pavement and raised dust, a claim the UVP disputed.[32]

In 1911, responding to the ongoing conflict, a City Council architect proposed a designated bicycle path, lined with trees and running along the park, segregated between two streets for cars and trams. The original cycling ban had also been justified by concerns for public safety, especially children playing in the park, protecting them from clashes ("disasters") with cyclists, and this new path was seen as a compromise.[33] The safety argument, presenting cycling as potentially dangerous, had been used before. A 1896 manual by an army officer and former gymnastics teacher warned that "in large cities like Lisbon, cycling is far from being a pleasant pastime and can sometimes be dangerous" without the proper training.[34] Despite restrictions, Campo Grande Park continued to offer cycling lessons and remained a popular spot for recreational cycling, introducing many to cycling, albeit in a segregated, limited way.

Where Lisbon's Cyclists Gathered

This 1969 photograph of a bicycle rental shed in Lisbon's Campo Grande Park reflects its long-standing role in the city's cycling culture. Since 1897, the park hosted cycling lessons, rentals, races, and tours. Despite early twentieth-century conflicts, such as the 1907 cycling ban over clashes with horse riders, the União Velocipédica Portuguesa (UVP) called for dedicated paths to be created for bicycles. By 1911, a tree-lined, segregated bicycle path was proposed, cementing the park as a safe space for recreational cycling. In 2001, Lisbon's first cycleway crossed this park.

Terreiro do Paço square, another area where cycling was allowed without a license due to cycling lessons, was a prominent site for public parades. Located along the river in downtown Lisbon, the square attracted cyclists of all ages and styles. UVP member Carlos Calixto noted the diversity of cyclists there: "Men and children, women and boys, of the most diverse appearances and in the most diverse costumes, constantly pedaled there."[35] However, Calixto lamented that a new city ordinance prohibiting evening cycling, a popular time for those working during the day. Terreiro do Paço, once the center of political, economic, and religious power in Lisbon, hosted a range of events, including a 1908 parade of women cyclists, and in January 1911, a gathering of thousand cyclists and their "machines," celebrating the new republican government and the Lisbon City Council's support for the recently established First Republic (1910-1926).[36]

The Republican Revolution of 1910 shifted political affiliations within the cycling community. Many cycling clubs dropped the royal prefix "Real," as did the automobile club *(Real) Automóvel Club de Portugal* (ACP).[37] The UVP, initially supportive of the monarchy despite the prohibition on "discussions and demonstrations of a political or religious nature," also changed.[38] With

the advent of the Republic, UVP's first president, the monarchist Count of Caria, resigned, marking a shift within the cycling community as it adapted to Portugal's new political landscape.

From the 1910s onward, the UVP and other cycling associations in major Portuguese cities emphasized sports over utilitarian cycling, while the automobility lobby gained traction. Among these associations' primary ambitions was the organization of a Tour of Portugal, which materialized in 1927 with support from the press. Meanwhile, the growing influence of the car lobby

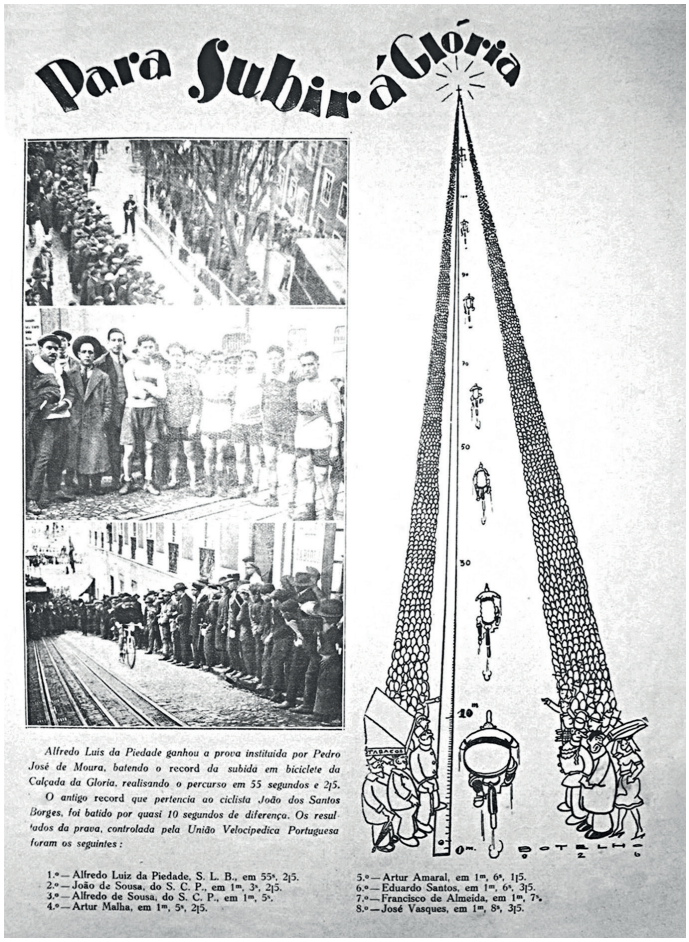
Parading for the Republic

On 8 January 1911, over a thousand cyclists paraded through Lisbon to greet the new Republic and the Lisbon City Council, led by the Republican Party since 1908. Starting at Avenida da Liberdade, cyclists with club insignias cheered the Republic at Terreiro do Paço before gathering at City Hall, where they were thanked by the City Council and the Minister of Justice for their solidarity and trust in the new regime.

Os cyclistas no Terreiro do Paço

became evident as elites shifted to other sports and to automobility, though some cycling advocacy persisted. For example, Carlos Calixto, a journalist covering both sports, founder of both UVP and ACP, and a parliamentarian in the early years of the First Republic, continued to advocate for both cycling and automobility.[39]

However, the government's recognition of the two associations' roles diverged significantly. During this period, the ACP gained authority to appoint technical commissions responsible for issuing driver's licenses and vehicle permits nationwide. Later, it managed cross-border documents for motorists and successfully lobbied for legislation favoring motorists' perspectives on road use.[40] This governmental support boosted ACP's influence and revenue. In contrast, the UVP was never granted the right to issue cycling licenses and was



Climbing to Glory —The Subida à Glória

This 1926 *Stadium* illustration, "Para Subir à Glória," celebrates Lisbon's iconic, hill race on the 265-meter Calçada da Glória with its daunting 17 percent slope. During the race, crowds lined the steep streets, cheering star cyclists like Alfredo Luís Piedade, who achieved a record-breaking 55-second climb. Immortalizing this ultimate test of endurance and humor, the image reflects cycling's transition from aristocratic circuit racing to popular urban sport. In 2013, the race was revived (as a night race) to honor Lisbon's cycling history. It continued to attract big crowds, showcasing the city's distinct urban landscape and rich cycling legacy.

limited to validating races. Facing financial struggles and membership decline, the UPV's role as a cycling advocate for urban cycling before the government and the city council diminished, with its growing focus on competitive cycling overshadowing its broader advocacy efforts.[41]

Cycling was evolving from an elite pursuit into a popular spectacle. Long-distance races and public entertainment transformed cycling into a spectator sport for semi-professional cyclists aspiring for fame and glory. Bicycle brands began sponsoring events to promote their products, and photos from the 1920s capture enthusiastic crowds cheering cyclists. A notable event was Lisbon's uphill race "Subida à Gloria" (a play on the street's name, Climb to Glory) on Calçada da Glória, which symbolized cycling's broadening appeal across all social classes.[42] With the political winds shifting, cycling advocacy would face mounting challenges in the decades to come.

From Taxed Luxury to Transport for All

During the early twentieth century, bicycles in Portugal were considered luxury items. Under the constitutional monarchy and later the First Republic (1910-1926), high taxes and strict regulations limited cycling. Over time, however, bicycles became indispensable for the working class.

By 1900, cycling advocates consistently challenged high bicycle taxes, especially the 27 percent import tax listed in the 1892 tariff book.[43] Owning a bicycle was expensive—and so was using one. Besides the import tax, cyclists in Lisbon had to pay for a license, permit, and certificate from city officials as of 1894—a system soon adopted in Porto as well.[44] In 1899, additional national taxes classified bicycles as luxury items under the "sumptuary" tax and added a stamp duty, further burdening cyclists.

In 1901, the UVP called these taxes "iniquitous" and "absurd," particularly the 27 percent import tax, arguing that the justification of "protecting" a local bicycle industry held little merit given the lack of such an industry, unlike in other European countries.[45] The association also criticized the luxury tax and stamp duty, claiming these measures hindered cycling and contradicted "common sense," which had led other countries to lower similar taxes.[46] However, facing a budget crisis, the government resisted change.

In 1905 and early 1906, the UVP intensified its efforts to convince Lisbon's City Council to reduce the "exorbitant" bicycle taxes, highlighting cycling's benefits as "useful and healthy."[47] The UVP argued that bicycles had become essential for people from all classes: "When the bicycle was considered a luxury object,

this tax could be justified, but today, when it is seen as a means of transport for all social classes, there is no reason for it to exist." Moreover the organization emphasized, "Equating a bicycle with a car that ruins pavements is a nonsense that must end once and for all."[48] In response, in April 1906, City Council reduced the bicycle tax by over 60 percent and halved cyclists's exam fees, though it did not grant UVP's request to administer the tests.[49]

In June 1909, Lisbon City Council member Tomé Barros Queiróz, a businessman and republican politician, proposed more reforms in response to UVP's arguments. He described cycling as "a very economical, fast, and advantageous means of transport for the less well-off," and "a hygienic exercise" beneficial for public health.[50] His proposals included eliminating fees for bicycle tests, allowing cyclists to get a license with a recommendation from a registered cyclist or club, lowering license fees, and mandating oval license plates and document-carrying rules for cyclists.

Nationally, new parliamentarians of the early Republican regime supported similar changes, arguing that bicycles should not be treated as luxury goods. Echoing UVP's arguments, they contended that bicycles represented "the most economical means of transportation, and therefore within the reach of less well-off people."[51] The First Republic government aimed to make taxes fairer and encourage bicycle trade, however, concerns about national revenue led to partial reforms only.[52]

In the 1920s, Portugal's government established the General Administration of Roads and Tourism, funded by the Roads and Tourism Fund. It introduced a new road tax on motorized, mechanical vehicles, and animal-drawn vehicles, including bicycles.[53] As in other countries during this period, Portugal's policy increasingly prioritized automobility. Road and traffic laws, along with public investments, reinforced the notion that the "road problem" required solutions primarily for cars, sidelining the needs of other road users.[54]

During the Military Dictatorship (1926-1933), the 1929 "Single Tax Decree" was issued for motorized vehicles, combining taxes on gas, oil, and tires, while exempting drivers from road and city taxes. While this benefitted car owners, bicycles and animal-drawn vehicles still faced these taxes. In 1930, the UVP protested this disparity, with the leading newspaper *Diário de Notícias* noting that the government had seemingly "forgotten" bicycles.[55]

Initially, bicycle and car interests overlapped, but by the 1930s, they began to diverge. The ACP, after its successful lobby, praised the Single Tax Decree, deeming it fair because "those who drove less would pay less."[56] The 1930 highway code justified tax exemptions for cars, equating them with "railways,

The Great Social Equalizer—for Young Men

Taken around 1900, this group portrait likely captures a leisure cycling outing, marked by the juxtaposition of formal attire and a chaotic pile of bicycles. The mix of middle- and working-class clothing reflects cycling's broad appeal among young men, while the institutional backdrop suggests the activity's organized and aspirational character.

telephones, telegraphs" as essential "means of transport and communication of national interest" deserving "the right to free movement and free access to cities." This "formula of justice and fairness," it argued, relieved "car owners of these tedious and time-consuming formalities."[57] Conversely, the UVP condemned the inequity in its April 1930 UVP bulletin: "Of all the mechanical means of transport, the bicycle is the only one that ends up paying road tax! This situation, we must admit, is very paradoxical!" In particular, "if we take into account that… cycling is an activity cultivated by modest people, it is less understandable that cycling is in a situation of blatant inequality."[58]

Cycling's Rising Status and Democratization

This photograph of a race at Lisbon's Velodrome of Palhavã highlights cycling's evolution into a competitive sport and a popular leisure activity in early twentieth-century Portugal. The packed grandstands and the velodrome's modern design suggest cycling's rise as a major spectator sport.

Since cyclists continued to face city taxes (which varied by municipality) and road taxes, the UVP urged the government in 1935 to "standardize the system and the license fees, avoiding the maintenance of inequalities in fees between municipalities." The UVP argued that "bicycles should not be taxed," given the government's treatment of bicycles as "luggage" in customs tariffs and their role as primary transportation for the "modest classes."[59] Nearly two decades of advocacy eventually led to a change in the 1954 Highway Code, which unified municipal taxes across Portugal and allowed cyclists to obtain their license outside their residence cities.[60]

From Elitism to the "Poor Man's Horse"

Cycling became a primary mode of transportation for many within just a few years. On April 15, 1903, the same day the *Real Automóvel Club de Portugal* (ACP) was founded, the UVP commented on the changing status of cycling and driving in *O Tiro Civil*, arguing that cycling had become a utility vehicle for many: "In Lisbon, where ill-fitting pride and unfounded vanity reign supreme, cycling has declined mainly because the bicycle has become cheaper and more accessible to all social classes, and today the blue-blooded aristocrat can ride a machine just as well as the simple commoner who sweats and toils to earn his daily bread." But the status-sensitive upper class shifting to cars would soon find the streets jammed. The UVP noted: "And so, out of snobbery, out of pedantry, everyone abandons the bicycle, without realizing that if they take the car as a means of transport, they will find people from all walks of life."[61]

In 1906, UVP reported that only 269 cyclists had paid for licenses in Lisbon, a significant decline from 1898, suggesting that many likely cycled illegally due to the high tax costs.[62] Cycling still outpaced imports of cars, motorized tricycles, and motorcycles that year, contradicting the idea that "snobbery" alone was driving people away from bicycles. To justify lowering city taxes on bicycles, the UVP argued that cycling was now "democratized" and had become "simply the *poor man's horse* as they call the bicycle everywhere" rather than "a luxury object."[63] Ads in magazines like *O Velocipedista and O Campeão* from before 1906 reveal that people could rent bicycles, making them more accessible to those who could not afford to buy one.[64]

Bicycles became steadily cheaper due to mass production, lower import duties, the emergence of Portugal's bicycle industry (1922), and people's increased purchasing power.[65] Between 1890 and 1895, a bicycle cost a Portuguese worker three to six months' salary. By 1910, that price had halved and by 1914, a sports bicycle cost about a month of salary. World War I temporarily drove prices up, but by the late 1920s and early 1930s, racing and touring bicycles, or *pasteleiras*, could be bought for around two months' salary.[66] Bicycle imports generally rose between 1890 and 1940, with declines only in the late 1890s with local and national tax increases, during World War I due to loss of trade with Germany, and the Depression years.[67]

Bicycles became vital for people's work and public services. Telegraph and postal, the police, and the military all used bicycles, with the Portuguese Army maintaining a cycling squadron in Mafra since 1898 and equipping each of its six light infantry "Caçadores" battalions with a cyclists' platoon by 1907. The UVP even helped the army train a cycling unit around 1908.[68]

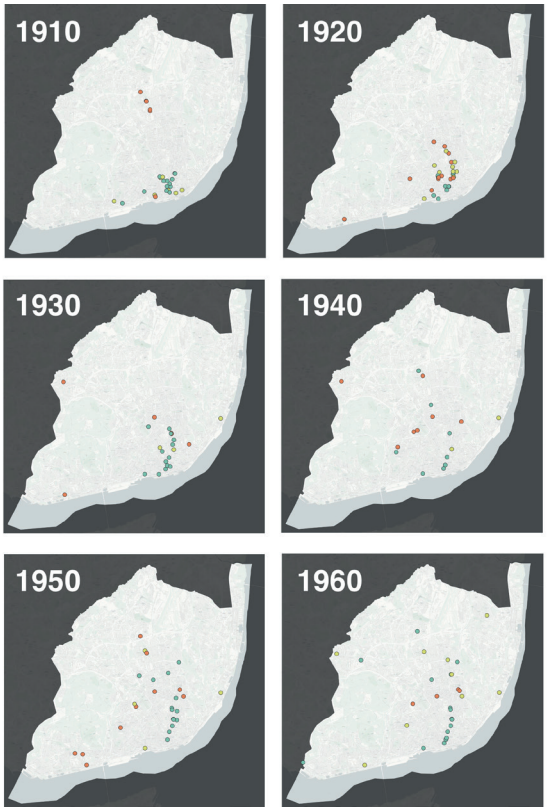
In Lisbon, cycling became popular across various social groups and professions. Our study of "Velocipedists Licenses" from 1909 to 1924 shows that the highest number of cyclists registered was in 1910, with 4,784, and the fewest in 1922, with 526. These records suggest that about 24,000 cyclists lived in Lisbon during this period, with a population of about 435,000 in 1911, and 486,000 in 1920.[69] After analysing 3,436 entries, we found that cyclists came from diverse backgrounds, held a range of jobs, and lived throughout the city.[70]

Cycling was especially popular among business workers, including shop owners and employees, who made up 42 percent of the cyclists. Skilled tradesmen, such as locksmiths, carpenters, tailors, and bakers, also relied heavily on bicycles, underscoring their value as a "poor man's horse" for small entrepreneurs and the self-employed. While cycling numbers eventually declined, both blue-collar and white-collar workers continued to cycle.

Students embraced cycling, with bicycles providing a means of commuting to school. Most cyclists were young, around 24 years old on average. Though

Ice Cream on Wheels at Estrela Garden

A woman behind her ice cream tricycle cart near Lisbon's iconic Jardim da Estrela in 1968, surrounded by the park's lush greenery and wrought-iron fencing, highlights the versatile role of bicycles in supporting small businesses. This bourgeois, nineteenth-century park, with its exotic trees, flower beds, and fountains, served as a popular spot for Lisboans to relax and socialize.



Lisbon Bicycle Businesses Persistence

Between the 1910s and 1960s, Lisbon had thirty shops selling, renting, and repairing bicycles, except during the 1930s and 1940s, when the number dropped to about twenty. In the 1910s, most shops were concentrated downtown, with rentals available at Campo Grande Park in the north. By the 1920s and 1930s, the two axes connecting downtown Lisbon to the hinterland—along Avenida da Liberdade and Avenida Almirante Reis—emerged as prominent locations, with the latter maintaining its significance for decades. Other shops appeared along the Tagus River in industrial areas like Alcântara (west) and Beato (east), as well as near recreational spaces such as Monsanto Park and Estrela Garden (Benfica and Campo de Ourique), and Belém in the west.

- Sales and Accessories
- Rentals
- Repair

most were men, some women used bicycles to commute as domestic workers, teachers, and merchants. A photograph of a woman ice-cream vendor on a bicycle reflects how women participated in Lisbon's cycling culture. However, the records do not offer information on the ethnic diversity of cyclists.

Initially, most cyclists came from working-class neighborhoods like Anjos, Santa Isabel, and Socorro. Later, they also came from Anjos and Arroios, connected by Avenida Almirante Reis, planned in the late nineteenth century to link the city's center to northeastern areas.[71] Bicycle and repair shops along this avenue from the 1910s and 1960s illustrate its significance for Lisbon's cycling scene. In 1955, between 5 and 9 percent of traffic into downtown Lisbon from Avenida Almirante Reis came via bicycles and motorcycles, underscoring the role of cycling for city access.[72]

By the 1930s, under the Estado Novo regime, bicycles had become essential for many in Portugal. In Lisbon, however, car-centric planning would begin sidelining cycling by the end of the decade.

How Automobility Disciplined Cyclists

As automobility expanded, non-motorized road users such as pedestrians, horseback riders, and cyclists, were increasingly marginalized as legitimate users. Roads were redesigned with cars in mind, a shift supported by the growing influence of the car lobby.[73] This automobility system spread through transnational exchange, intergovernmental bodies, and professional organizations, even at a time when cars represented only a fraction of the total vehicles on the road.[74] In many countries, automobile clubs and tourism organizations championed the "inevitability" of cars becoming the most dominant mode of transport.[75] In Europe, automobile clubs were instrumental in promoting car-centric policies, though each country adopted its own approach.[76] Automobile clubs led the way in France and England, and tourism clubs in Italy and the Netherlands.[77] In Portugal, the *Automóvel Club de Portugal* (ACP) became a major force in advancing the automobility system.[78]

Seaside Sophistication in São Martinho do Porto

This August 1937 photograph captures Carlos Pitta de Henriques Lebre and Helena Maria Geraldes Barba, at São Martinho do Porto, a popular seaside retreat in 1930s Portugal. Their bicycles embody the era's growing trend for both mobility and leisure, blending elegance, modernity, and the freedom to get around Portugal's towns and coastline.

Women, Cycling, and Wartime Pragmatism

This 1941 magazine article shows young women cycling in Campo Grande Park—a longstanding cycling hub—during World War II. Fuel rationing and limited public transit made cycling more prominent. Published under the Salazar regime's propaganda, these images subtly challenged conservative gender roles, depicting women cycling alongside men in a modern portrayal of life. Framed as health-promoting and recreational, cycling gained popularity during the war, with the magazine reporting weekly growth in the number of cyclists.

Many people were worried about traffic as cars became more prominent. ACP's magazine often blamed non-motorized road users, with other newspapers echoing these sentiments by holding pedestrians and cyclists responsible for road dangers. Cyclists, in particular, were labeled as irresponsible, with accusations that "cyclists, with a recklessness that becomes criminal, especially on the outskirts of cities, are ... elements of indiscipline, pedaling in droves, relying on we don't know what principle of impunity."[79]

In the late 1930s, the ACP published several articles offering "friendly advice" to cyclists on proper road conduct. Written in a sarcastic tone, these articles advised cyclists to use their brakes, avoid speeding, use lights, refrain from riding side by side, and avoid carrying children on their bicycles. They even proposed that the government should mandate white-painted mudguards on

Fascist Leaning Portuguese Youth Parade with Bicycles

Around sixty members of Estado Novo's Portuguese Youth (*Mocidade Portuguesa*) participated in a bicycle parade in downtown Lisbon (Rua Áurea). This organization, established in 1936/37 and inspired by Italy's Fascist *Balilla* and the Hitler Youth, was mandatory for children aged 7 to 14. Activities such as cycling, wearing uniforms, and giving the Roman salute were used to "strengthen the race" and foster a national "consciousness."

all bicycles—a regulation already enforced in Nazi Germany on "all bicycles circulating in the territory of the Reich."[80] The City Traffic Commission should also ban racing bike handlebars, which made cyclists pedal with "their eyes fixed on the ground," not seeing motorists, "in an abnormal posture" that was "likely to cause fatigue to the optic nerves."[81]

The ACP magazine continued to argue that cars were not the problem, but other road users were. During World War II, as car traffic resumed following Portugal's relief from fuel and tire shortages, the ACP's calls for "disciplining traffic anarchy" resurfaced.[82] The magazine identified specific "problematic" groups on

public roads, including “the pedestrian,” “the cyclist,” “animal-drawn vehicles,” and “certain drivers.” Pedestrians were described as “reckless, distracted, rebellious, and rarely careful,” and cyclists were labeled as “one of the biggest obstacles to traffic” with “unpredictable behavior.” Animal-drawn vehicles were also viewed as hazards, traveling “unruled on the road” and largely exempt from fines.[83] This discourse, which sought to discipline non-motorized road users, emerged when car traffic in Portugal was still relatively limited but became reinforced and expanded after World War II.

In 1950, cyclists (40 percent) and animal-drawn vehicles (13 percent) made up the majority of traffic on Portugal’s national roads. However, this balance shifted gradually and steadily; by the end of the decade, bicycles accounted for about one-third of the traffic, while motor vehicles comprised for 67 percent.[84] Articles in the ACP magazine and “road safety” campaigns continued to emphasize that cyclists needed “discipline,” often blaming them for being the victims of traffic “accidents” with motor vehicles.[85] These messages reinforced the automobility-focused framework that had been laid out years before, prioritizing cars and subtly sidelining cyclists.

Planning Out the Bicycle

In the 1940s, cyclists in Portugal began to feel the effects of a shifting urban landscape. Although cyclists and motorists had initially shared the road, a new era of planning and infrastructure projects started to prioritize cars, forcing cyclists to the margin.

The change had been brewing since 1927, when the Military Dictatorship’s Autonomous Board of Roads *(Junta Autónoma de Estradas*, JAE) took over the responsibilities and structures of the General Administration for Roads and Tourism.[86] In the following years, under Salazar's Estado Novo far-right ditactorship (1933–1974), the government focused on boosting the economy by developing national roads and bridges as part of a broader “regeneration” plan, with the JAE as its key agency. Engineers aligned their work with Salazar’s political agenda, shaping roads as symbols of order and hierarchy.[87] For cyclists, this transformation wasn’t just a policy change but a fundamental shift in the philosophy of road usage. Though technically responsible only for national roads, JAE’s expertise influenced urban planning in Lisbon, where traffic data and methods were used to legitimize street layouts that favored motor vehicles over cyclists.

The impact of these changes came through to cyclists with Portugal’s first traffic census conducted by JAE between 1937 and 1938. Informed by standards set by

the international traffic studies of the International Commission for the Study of Standardization of Traffic Censuses in Paris in 1927 and the traffic censuses standards from the Fifth Congress of the Permanent International Association for Road Congresses (PIARC) in Milan (1926), the first census data (1937–1938) categorized vehicles into three types: motorized ("mechanical") vehicles, animal-drawn vehicles, and bicycles, the latter grouped alongside pushcarts. Pedestrians were not included in the survey at all.[88] The census, carried out ten years after PIARC's recommendations, was a landmark in data collection that

Postmen in the "Race of the Crafts"

This photograph captures nine postmen at the starting line of the "Race of the Crafts" on Avenida da Igreja. The avenue was named after the church under construction in the background. Set in the newly planned Alvalade neighborhood, bordered by Campo Grande Park and part of the 1948 "De Groër" plan, the area was designed according to "modern" traffic principles, including the separation of car and pedestrian traffic. Cycling was a visible and practical mode of transport, widely used by professional groups such as postmen, police, military, and vendors of various goods.

Cycle Dreams with Armando Crespo

This 1939 photograph shows bicycles parked along Rua do Crucifixo 112–114 in downtown Lisbon at Armando Crespo e C.ª's Casa Victoria during the "Dream Contest," a lottery by the newspaper *O Século* supporting underprivileged children. Casa Victoria contributed fifty bicycles to the event, which also featured cars, furniture, and clothing. Ads on the wall promote Michelin tires and brands like Raleigh, Elgin, Chandler, Helios, Thomann, and Deka. Products were displayed at Parque Eduardo VII before the lottery, drawing large crowds. From the 1900s to the 1960s, Casa Victoria played a key role in promoting cycling.

shaped infrastructure decisions, repeated every five years (except in 1945).[89] Over time, counting methods favored cars, leading to the exclusion of roads with minimal car traffic but higher bicycle use. For cyclists, however, it marked the beginning of their exclusion from official planning. After 2005, bicycles were removed from traffic counts altogether.[90]

Traffic census data became essential for planning and justifying roads and streets tailored to motor vehicles.[91] The criteria used to collect the data shaped how roads and streets were designed, with calculations based on vehicle weight, vehicles, pavement wear and tear, and optimal road layouts—including width, curves, slopes, and lane count.

For cyclists, these decisions mattered: The 1937-38 census data fed directly into the 1945 national road plan, which went into effect for the next four decades until 1985. Although the Eighth PIARC Congress in The Hague (1938) had recommended separating traffic types for safety (cyclists, pedestrians, fast and slow motor vehicles, animal-drawn vehicles, and animals) and dedicated lanes for cyclists, the 1945 plan did not follow these guidelines.[92] Instead, it prioritized national roads for motorized vehicles, providing for footpaths for pedestrians, cyclists, and animals near urban centers or on roads crossing them, but leaving cycleways as optional and rarely implemented.[93] The plan's vague language about cycleways—stating they "could" be built near cities—offered little assurance to cyclists. By 1953, the president of JAE conceded that "the intensification of cycling in the vicinity of large cities or industrial centers creates the need to build special lanes for cyclists," to protect all road users.[94] Yet, despite this acknowledgement, very few lanes were created.

In Lisbon and its environs, the inclusion or exclusion of cycleways was justified by traffic data—whether real or estimated. The 1934 proposal for a bridge linking Lisbon to the south bank estimated that 28 percent of the traffic would consist of bicycles, horses, and cattle. The design included dual platforms for trains and cars, along with 2-meter-wide sidewalks for pedestrians and cyclists.[95] Despite these estimates and earlier traffic counts, as well as the cyclists who used ferries to cross the Tagus River, the bridge inaugurated in 1966—at a different location and with a completely different design—lacked provisions for pedestrians and cyclists.[96]

Similar planning decisions affected projects like Monsanto Forest Park, created in the late 1930s. Described as a design for "the people of Lisbon" to "provide useful entertainment for the different classes of the population," the park would feature "a network of roads that would be comfortable for motorists and a network of paths exclusively for pedestrians," as well as "cyclists and horse riders should also have their own dedicated lanes."[97] However, most park roads were designed for motor vehicles, and bicycles regarded primarily as tools for adventure and recreation.[98]

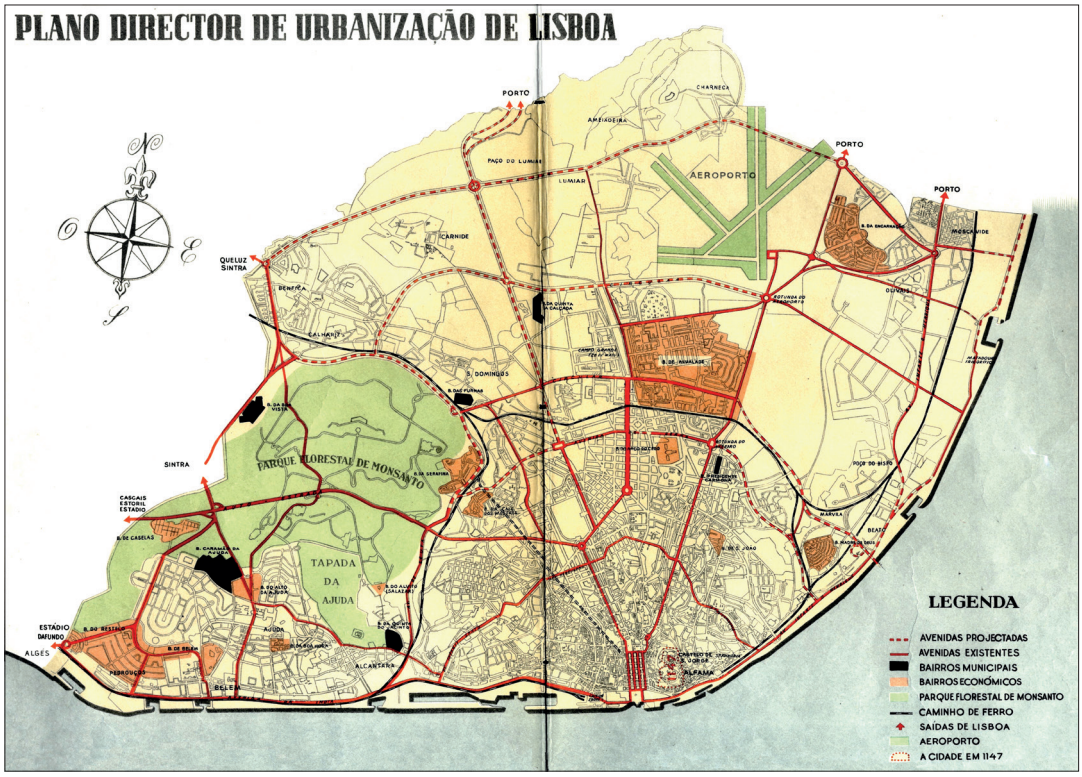
Cyclists faced immediate, tangible challenges as projects were implemented. The tourist road from Lisbon to Cascais, omitting cycleways despite growing numbers of cyclists touring the coast, was designed to privilege motor vehicles.[99] Paulo Marques, JAE engineer in charge, described cyclists as "undisciplined" hazards, noting "they often ride together and at any point on the road; they have considerable speed and mobility." He acknowledged that their separation was necessary, but claimed that "the limited space available in large sections did not allow the adoption of a profile that would accommodate lanes

for cyclists."[100] The road's layout ended up accommodating only pedestrians and motor traffic, sidelining cyclists entirely.

The car-focused approach continued to affect cyclists as part of the Estado Novo regime's broader agenda, which sought to showcase Portugal's "modernization" through infrastructure projects, such as this tourist road.[101] Duarte Pacheco, an engineer and briefly Lisbon's mayor in 1938, as well as Minister of Public Works and Communications, invited French urban planner Alfred Agache to plan Lisbon's western suburb, the "Costa do Sol" (Sun Coast), as a motor-friendly

Car Modernization and Connectivity—The 1948 Vision

This map from Étienne de Groër's Masterplan illustrates Lisbon's mid twentieth-century shift to car-centric infrastructure, featuring radial road systems and the westward expansion with connections to Estoril and Cascais. Rooted in Garden City principles, it integrates zoning, green spaces, and riverside development along the Tagus River. The plan defined Lisbon's urban growth for decades, reflecting the Estado Novo regime's modernization ambitions.



Paving over Non-Motorized Mobility

Photographer Judah Benoliel (1900–1968) captures Lisbon's transformation in this 1950 image of Avenida dos Estados Unidos da América under construction, part of the 1948 Plano Director de Urbanização de Lisboa (the "De Groër" Plan). While pedestrians, bicycles, and a donkey cart (right) navigate the cobblestone street, the wide avenue and modernist buildings signal a future dominated by cars. Under Salazar's regime, car-oriented planning reshaped the city, sidelining traditional mobility even as cars remained a rarity.

area. Agache proposed a regional approach—including a new suburban model for Lisbon—, but left the project in 1936, and was replaced by his colleague Étienne De Groër.[102] Both Agache and De Groër aimed to reduce city density by promoting suburban expansion, an approach aligned with Salazar's agenda of dispersing urban concentrations of working-class people who might oppose the regime and rebuilding the city's image on its imperial past and ambitions.[103] This low-density, sprawling design included wide, high-speed roads, essentially pushing cyclists further to the margins of the urban framework.[104]

For cyclists, this suburban expansion posed yet another barrier to access. Agache

and De Groër's approach favored a dispersed, "garden-city" model drawn from Ebenezer Howard's original ideas.[105] De Groër promoted a city built on zones, using "zoning" (a garden city concept) to control different areas for industry, commerce, civic events, and leisure, while managing population density.[106] For cyclists, however, this meant fewer safe routes through an increasingly car-oriented city. De Groër's commitment to suburban development supported ring roads and multi-lane exits, reinforcing car access while ignoring cyclists.

De Groër relied heavily on a 1938 survey by engineer António Emídio Abrantes, which informed the Lisbon Urban Plan. This plan, approved by the council in 1948, marked a departure from Lisbon's northern expansion toward a new radial-centric urban expansion meant to facilitate fast motor traffic into the city center.[107] De Groër prioritized "fast" radial and exit roads to "bring vehicles as close as possible to the center of Lisbon," and he asserted that "urban plans must be designed to accommodate the ever-increasing volume of mechanical vehicles and their ever-increasing average speed."[108] For cyclists, this car-focused design narrowed road space available to them, reinforcing their marginalization.

The design choice became evident in the traffic data presented by De Groër, which mapped vehicle volumes at Lisbon's main exits according to JAE statistics, showing "number of vehicles per day."[109] Although JAE's 1937-38 traffic census showed that bicycles and pushcarts accounted between 11 and 31 percent of traffic, De Groër's maps excluded these figures.[110] Instead, he proposed changes for downtown Lisbon to further accommodate cars, including removing sidewalks and creating arcades for pedestrians, arguing that these would protect pedestrians from sun and rain.[111] Cyclists now saw road space reallocated for cars at the expense of their own safety and accessibility.

Between 1954 and 1959, a revised version of De Groër's plan for Lisbon intensified car-centric policies, including a new location for the planned Tagus River bridge connecting Lisbon with the south bank, which began construction in 1959. This new planning phase prompted a new traffic census in Lisbon conducted with JAE engineers, who continued to sideline non-motorized transport: bicycles were grouped with motorcycles, and only cars were considered in the results.[112]

For cyclists, the 1940s automobility blueprint did more than transform the physical roads; it fundamentally reshaped how city planners and policymakers perceived them. Revisions in the 1950s continued to exclude bicycles. By the time the dictatorship ended in 1974, De Groër's focus on suburban sprawl and high-speed motor routes had left a lasting legacy, marginalizing cyclists within

the transportation network and forcing them to reclaim road space in a car-dominated city. This legacy endured well into the late twentieth century.

The car-centric planning pushed not just cyclists aside, but also dealt a blow to public transit. The appendices show historical travel data for Lisbon.[113] Initially, public transit—mainly trams, and later buses—connected the city with suburban trains and ferries. De Groër's transportation philosophy favored buses over trams, advocating for removal of trams despite their essential role in Lisbon's public transit system.[114] His vision began to materialize with the introduction of six motorbuses for the Portuguese World Exhibition in 1940.[115] In 1950, Lisbon had only 22 cars per 1,000 people, making them luxury items. Although slightly more cars than bicycles existed, daily car traffic counts were three times higher. By the 1960s, car usage surged, public transit fell, and cycling nearly disappeared in the city. The introduction of the metro system in 1959 replaced central tram routes with underground routes, freeing above-ground space for cars as promoted by the 1954-59 revision of De Groër's plan.[116] Between the 1960s and 1970s, tram ridership fell, while bus, ferry, and train usage dropped starting in the late 1980s. This trend reversed slightly after the opening of the Tagus railroad crossing bridge to the south bank in 1999 and its expansion to Setúbal in 2004.

Highway expansion, spurred by Portugal joining the European Economic Community in 1986, further entrenched car dependency, increasing road capacity and suburban sprawl without similar investments in public transit.[117] From 1981 to 2021, car use rose from 14 percent to 51 percent, while public transit dropped from 67 percent to 28 percent in the same period.[118]

When the regime transitioned from dictatorship to parliamentary democracy in 1974, opportunities emerged to support diverse and sustainable transportation modes. Social activists took the lead.

A Revolution by Bicycle? After 1974

In 1974, the Carnation Revolution brought sweeping political change to Portugal, ending the Estado Novo dictatorship. Amid the revolutionary fervor, bicycles emerged as a symbol of liberation and community-oriented urban life. For decades, bicycles had been the transportation choice of the working class, and now, in the wake of the revolution, they became icons of a new, more just society. Cycling found renewed significance.

"Red carnations, a symbol of victory over fascism, bloom on lapels, soldiers' weapons, car windshields, and motorcycle and bicycle handlebars," wrote

Bicycle Cart Vendors

In this 1960s photo, Arnaldo Madureira captures a bustling working-class street, focusing on a street vendor with a tricycle cart with fruit. The image highlights the bicycle's role in urban logistics and the city's reliance on manual labor. Surrounding the vendor are nine women with goods or shopping bags, two women transporting or selling items, and a shopkeeper watching from a doorway. A well-dressed passerby contrasts with the working-class scene. Cobblestones, tiled facades, wrought-iron balconies, and a partially visible truck frame the setting, showcasing the interaction of labor, commerce, and community in mid twentieth-century Lisbon.

French communist newspaper *L'Humanité* in April 26, 1974, capturing an iconic image of the Carnation Revolution. This quote suggests that bicycles were woven into the revolutionary landscapes of the era, where "red-black" politics combined with "green" movements to inspire new social visions in Portugal.

Bicycles had long been intertwined with revolutionary politics in Portugal. Autobiographical notes from Portuguese Communist Party members like Soeiro Pereira Gomes, Alfredo Dinis, and Fernando Piteira Santos, along with fictional

works like *O homem da bicicleta* (Bicycle man), an adaption of the novel *Até amanhã, camaradas* (See you tomorrow, comrades) by the party's general secretary Álvaro Cunhal, highlight the bicycle's symbolic and practical role in resisting Salazar's regime.[119] Cycling enabled many dictatorship opponents to navigate streets and roads inconspicuously and evade capture, prison, and concentration camps. The "poor man's horse"—which accounted for 40 percent of traffic on national roads in 1950 and 17 percent in 1965—was widely used by the working class.[120] In this sense, it offered a more anonymous mode of movement than public transit, which was tightly controlled by the repressive corporatist state.

Bicycles and Portugal's Carnation Revolution

This May Day 1974 image shows a cyclist adorned with flowers and a Portuguese flag amidst a crowd on Avenida Almirante Reis, passing boys holding red carnations and a banner proclaiming, "The People United Will Never Be Defeated!" The scene reflects the transformative energy of the Carnation Revolution. However, on a broader level, the bicycle was completely overlooked in the Revolution's mainstream social and political aspirations.

After the Carnation Revolution, the bicycle took on a new political dimension as a "technology of protest" that symbolized an alternative, community-based urban life.[121] This sentiment was echoed in Ivan Illich's *Energy and Equity* translated into Portuguese at this time, which opened with the famous statement of José Antonio Viera, Deputy Secretary of Justice in the Chilean government of Salvador Allende: "Socialism can only arrive by bicycle."[122]

Portugal's rising car-population ratio—still modest compared to European countries like Sweden, France, and Italy—brought the harmful effects of car-centric policies into sharper focus.[123] These concerns were intensified by the 1973 oil crisis, which prompted the state-run television to broadcast documentaries like *Urban Growth in Lisbon* and *Traffic in Lisbon*, depicting the city as overwhelmed by gas shortages, long queues at gas stations, traffic jams, dirty pavements, badly parked cars, delayed buses, unplanned urban growth, air pollution, and incessant honking. Lisbon was described as ugly, gray, unhealthy, and chaotic.[124] Narrator Luís Filipe Costa, who later supported the 1974 coup by broadcasting the Armed Forces Movement's messages, advocated for a fundamental reshaping of Portuguese cities.

During the "Revolutionary Process in Progress" (1974-1975), public transit companies and the energy industry were nationalized, and public debates about democracy, housing rights, and urban quality-of-life intensified. Nationalized media criticized the car-centered city in militant terms. Television documentaries like *Traffic, Dead-end Labyrinth* framed urban mobility as a choice between cars and people, machines and humans, noise and silence, urging audiences to embrace an alternative vision based on public transit, walking, and cycling.[125] In the Constituent Assembly, Communist Party members highlighted the car's association with individualism and bourgeois privilege.[126] In contrast, the car lobby press rushed to disassociate automobiles from a symbol of capitalism and the image of the "rich man's horse."[127] Auto magazines like *AutoMundo* and *Mundo Motorizado* countered with stories about Leonid Brezhnev's "fascination with cars," the significance of the automotive industry in Eastern Europe, and the need to "democratize" the car in Portugal, promoting campaigns for the so-called "proletarian car."[128]

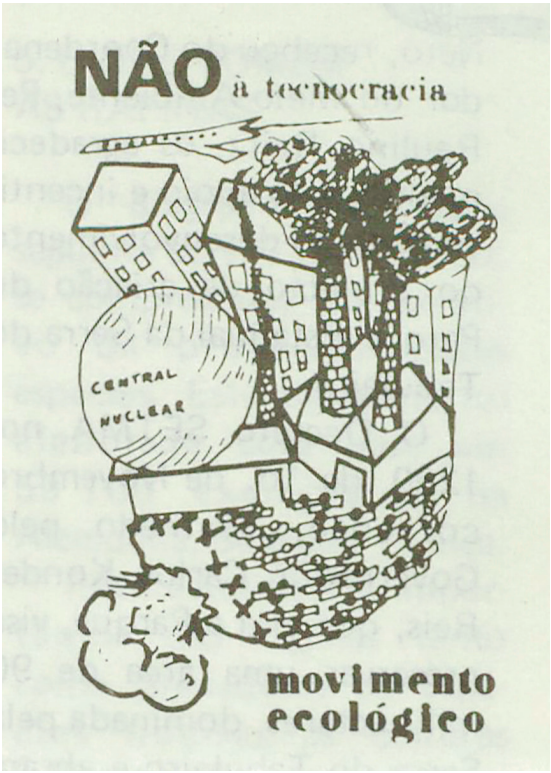
This critique was not limited to communists. The conservative Monarchist Party, led by landscape architect Gonçalo Ribeiro Telles, opposed car-centered planning in Lisbon as part of a broader resistance to "industrial society," including projects like the proposed nuclear power plant in Ferrel and the massive Alqueva River dam.[129] As Sub-Secretary and later Secretary of State for the Environment, Telles, proposed greenways and leisure paths to connect Lisbon's center with parks and suburban green spaces.[130] His vision was continued by his successor, forest engineer Manuel Gomes Guerreiro,

under the first constitutional government headed by Socialist Mário Soares (1976-1978). Guerreiro, influenced by French "green" politician René Dumont, described noise pollution and vehicle emissions as a "serious and offensive situation," declaring that "the time has come to define pedestrian zones." As Secretary, he promoted public initiatives like the World Environment Day in Lisbon, celebrating walking and cycling as responses to "the battle against the environment, a battle in which, until recently, industrial and technological society was the victor."[131]

Scientists, too, began focusing on environmental impacts, renewable energy, and urban pollution.[132] Pedro Martins da Silva at the National Civil Engineering Laboratory (LNEC) conducted pioneering research on noise pollution, equipping the lab with acoustic rooms and hosting the Portuguese Acoustic Society and the Portuguese-Spanish Conference on Environmental Acoustics (since 1978). The Working Group on Sound Pollution at the National Commission for the Environment also contributed to the emerging field. The Secretary of State for the Environment, in turn, played a role in promoting this field alongside public advice, educational activities, and environmental assessment. Despite resistance from government agencies and ministries tied to the energy and industrials sectors, the 1976 Portuguese Constitution was groundbreaking in enshrining the right to a "healthy and ecologically balanced environment" and "the duty to defend it."[133]

Grassroots activists, workers, anarchists, and counterculture movement youth took this constitutional "duty" seriously, especially regarding noise and transportation. The Portuguese Environmental Movement (MEP), founded on May 16, 1974—just three weeks after the revolution—launched an "anti-noise campaign" in its first bulletin, denouncing the "sound violence" of motor vehicles, declaring, "the right to silence is one of the fundamental human rights."[134] MEP publications referred to noise as "daily fascism" and featured complaints from citizens and neighborhood associations from across the country. The Armed Forces Movement's slogan "Progressive but accelerated increase of living standards" aligned with MEP's vision of eco-friendly cities. One MEP article boldly declared: "Gentlemen of City Hall, go away! Make room for competent people who are working to transform Lisbon into the city of pedestrians, and not …the cemetery city of car wrecks."[135]

Unlike environmentalists in cities like Amsterdam, Paris, and Barcelona, MEP's members such as Afonso Cautela focused more on walking and public transit than cycling.[136] On the one hand, the bicycles retained their importance as practical and affordable "poor man's horse" during the economic crisis of the 1970s. On the other hand, cycling was largely viewed as a sport. Events like the 1975 "Red Carnation" cycling festival, which brought 300 young participants



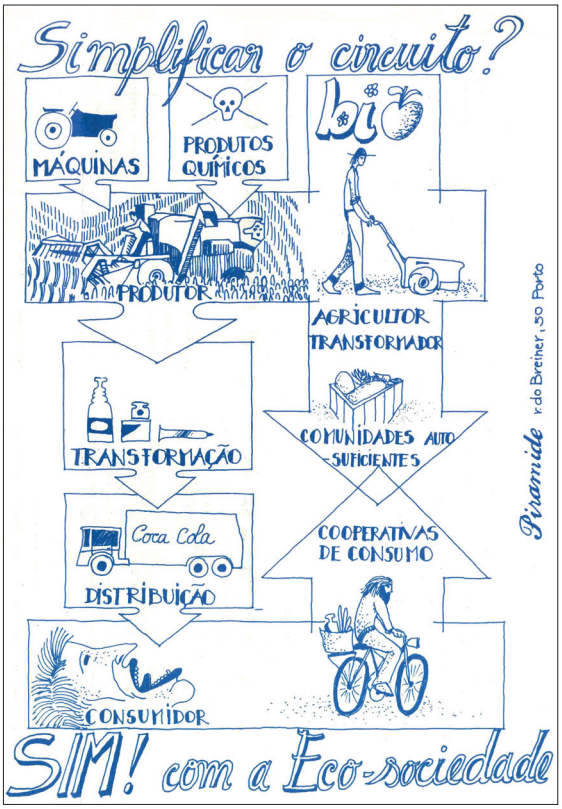
Reclaim the Streets, Reclaim the World

This cartoon from the Portuguese Environmental Movement's magazine vividly illustrates the chaos of city transit through exaggerated visuals. Titled, "Say no to Technocracy," it combines congested roads, exhaust fumes, airplanes, overcrowded buildings, and a nuclear power plant in one image. Created in the wake of the Carnation Revolution, the cartoon critiques industrial society's pollution and noise, while advocating for sustainable urban mobility, renewable energy, and a people-centered vision for the future.

(aged 4-16) to Sporting Clube de Portugal's Alvalade Stadium, kept cycling visible, though primarily as a leisure activity.[137]

Beyond MEP, neighbor and activist groups formed across Portugal with the goal of pursuing social and environmental justice. These groups were part of a local movement as well as a transnational movement. Many were inspired by the New Left's ecological ideas brought by political exiles and war deserters who returned to Portugal, especially from France, with foreign counterculture magazines in their suitcases. At the same time, young idealists from other countries like the United Kingdom saw Portugal as one of Europe's last utopias to help shape.[138]

Newly born underground magazines covered large-scale bicycle demonstrations in European cities and enriched the debate.[139] The first issues of *Alternativa* (1976) criticized car traffic as "against the school and the city" and advocated for renewable energies that were "at our hands."[140] In 1977, *Raiz e Utopia*, dedicated to "alternatives for a different civilization," brought together intellectuals, architects, engineers, ecologists, and anti-nuclear activists. The issue



The Bicycle at the Heart of Eco-Society

This 1978 leaflet by the environmentalist group Pirâmide highlights the bicycle as a symbol of sustainable, community-focused transportation. Contrasting the resource-heavy industrial model with a streamlined eco-society, it advocates for local connections between producers, cooperatives, and consumers. Emphasizing simplicity, environmental care, and fossil fuel independence, the leaflet reflects Portugal's emerging post-revolution, ecological ideals and envisions the bicycle as central to a balanced, accessible future.

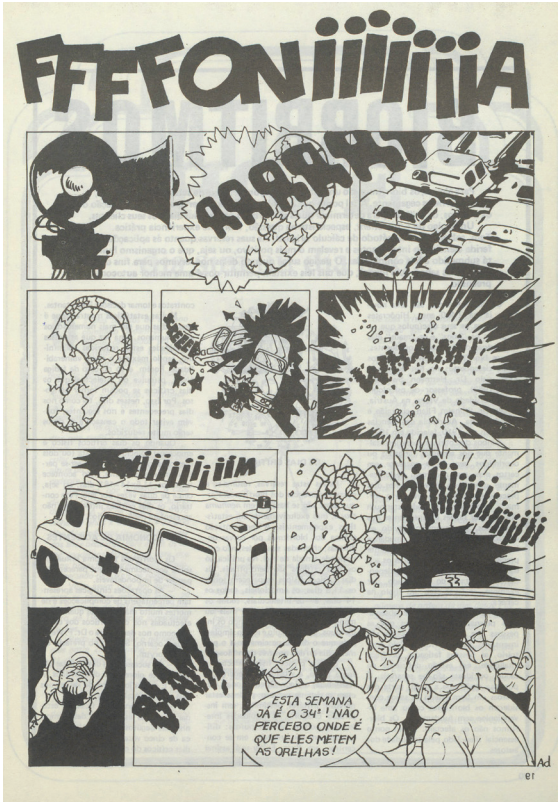
featured an article envisioning a future "Ecopolis," translated from the French counterculture magazine *Le Sauvage*, boldly proclaiming "absolute priority for pedestrians and bicycles."[141] The article argued for decentralization, recycling, and empowering ordinary people—not technocrats—to make decisions on urban planning.

Another publication, *Cadernos de ecologia e sociedade*, promoted bicycles as an appropriate solution for developing countries, including Portugal and the African nations that had recently gained independence from Portugal. It argued that the bicycle was the most efficient means of transport ever invented in terms of energy and speed, offering a model for "small," "intermediate," and "village" technologies like rickshaws and threshing machines.[142] In 1978, environmentalist groups like Pirâmide Cooperative and GAIEP created exhibits and pamphlets depicting the bicycle as central to alternative societies based on bio-agriculture.[143] A bicycle basket full of vegetables symbolized new connections between city and countryside, producer and consumer, human and machine.[144] In 1981, the magazine *Sobreviver* (Surviving) dedicated an issue to

the “praise of silence,” depicting noise as public menace through cartoons and humor.[145] At that time, visuals and humorous forms of protest shaped science and environmental politics globally.[146]

One of the most radical critiques of urban mobility appeared in *Urtiga*, a do-it-yourself counterculture magazine, which argued that cities like Lisbon needed to radically reduce their reliance on cars. “It is not possible to imagine a capital-intensive area without fast cars crossing huge highways. But it is possible to conceive a [small] city with active traffic by bicycle or on foot,” the authors wrote.[147] They called for transformative reforms to reduce carbon dioxide and noise pollution, including shortening work-home distances to 10-15 kilometers, banning private cars from 8 a.m. to 8 p.m., converting streets to parks, and enhancing cycling safety and public transit infrastructure.

They identified cycling as the most environmentally friendly transport mode, emphasizing its efficiency in “social time” and its economic benefits compared to direct and external costs of car mobility, such as road maintenance, police



Silence vs. Motorized Noise

This 1981 comic strip critiques the health-damaging noise pollution from motorized vehicles, a major concern of the Portuguese environmental movement after the Carnation Revolution. Using bold visuals and a dramatic text, it condemns the disruption caused by airplanes, cars, motorcycles, and ambulances, understanding noise as “daily fascism.” The strip urges readers to envision quieter, healthier cities and promotes cycling, walking, and sustainable transport to reclaim urban spaces for people.

services, and hospitals. Declaring that it "should be the most common means of transport," they viewed the coexistence of cars and bicycles impossible "for safety reasons."[148] The article concluded with a provocative question: "Driving or living?" Portuguese songwriter Paco Bandeira echoed this car-bicycle conflict in his lyrics on LP *Em Guarda pela Revolução* (Guarding the revolution): "Forget the car, my friend / if you really like the city / don't fill it with junk / and ride a bicycle!"[149]

By the mid-1980s, however, radical discussions about alternative, greener mobility largely faded. Sporting and touring clubs promoted cycling as an "infinite source of health, happiness, and freedom" in nature and an escape from "industrialization, noise, and pollution," but rarely advocated utilitarian cycling in the city.[150] Their primary focus shifted to road safety, especially as the President of the Autonomous Board of Roads promised an audience of 8,000 cycling enthusiasts at the National Bicycle Day in 1987 that Portugal's national roads might be adapted for two-wheeled traffic by building cycling lanes—a promise that remained unfulfilled.[151]

The Wheels of Fortune

This 1981 poster from *Ciclismo* journal declares: "The bicycle: means of life and health. Meet happiness and freedom, pedal... from 7 to 70 years old." It features an elderly man and a boy on bicycles. During the 1980s, sporting and touring clubs primarily promoted cycling as a leisure activity and a way to escape from industrialized landscapes, with minimal advocacy for its utilitarian role in the city.

Empowering Communities Through Bicycles

This 2010s poster announces the re-opening of the Recicleta collective, a weekly gathering at GAIA in Lisbon's Alfama neighborhood promoting bicycle use and a DIY bike workshop. Recicleta became a vibrant hub for cyclists from Lisbon and its suburbs, environmental activists, environmental engineers, artisans, and enthusiasts. It exemplifies how social movements create inclusive spaces, empowering individuals to repair, share, and advocate for sustainable, non-hierarchical urban mobility.

The revolutionary cycling ideal of the 1970s endured quietly in individual activism and small collectives. By the 2000s, these ideas re-emerged with the rise of "Critical Mass" in Lisbon, part of an international movement that was reignited in San Francisco in 1992, with historical roots in the 1970s.[152] This movement spurred other grassroot activities, including the "Beta" mobile bike repair workshop in 2007 and a Bike Camp in 2008. In the 2010s, Lisbon had a network of community bicycle workshops in squats, environmentalist associations, and social centers like the Cicloficina dos Anjos and the Cicloficina de Alfama (later called Recicleta, at the Grupo de Acção e Intervenção Ambiental Gaia).[153] Since then, pro-cycling demands and "creative resistance" against car-centered urbanism have shaped Lisbon's policies and street life.[154]

The Carnation Revolution didn't just bring a new political regime to Portugal; it sparked new conversations about urban life and transportation. While cars symbolized the consumerist society of capitalism, bicycles came to embody a vision for a more equitable, democratic, and sustainable city. Although the

post-revolutionary era did not prioritize cycling, the revolution's legacy endured, intertwining bicycles with social justice, public space, and a vision for an alternative, people-centered city.

Stagnation, Revival, and Social Movements

Since the late 1990s, Lisbon—now integrated into the European Union—experienced both stagnation and a gradual revival in urban cycling. Although car-centric policies persisted and even expanded with European funding, grassroots movements increasingly challenged car dominance. Initiatives like Critical Mass and Association for Urban Mobility by Bicycle (MUBi) emerged, advocating for safe, accessible cycling infrastructure and reclaiming urban streets for cyclists as a sustainable and socially just form of urban mobility.

From 1990 to 2005, urban cycling growth was limited. The city's District Commission for Cycle Tourism (CDCL), established in 1980, promoted recreational cycling and cycle tourism, focusing on leisure activities, including mountain biking. Utilitarian cycling, however, only made a comeback in the 2000s.[155] The creation of Lisbon District's first cycleway in 1996, located in the coastal municipality of Cascais and designed for leisure rather than commuting, reflected this trend.[156] Meanwhile, Portugal's entry into the European Economic Community in 1986 spurred significant highway investments, including the Lisbon-Cascais and Lisbon-Porto highways completed in 1991 and the Vasco da Gama bridge in 1998—the second bridge over the Tagus River in Lisbon, though built without a railroad platform. These developments expanded Lisbon's urban footprint and deepened car dependency.[157] Between 1989 and 1999, Portugal's car fleet doubled, and by 2011, nearly half of Lisbon's commuters drove to work.[158]

Utilitarian cycling remained marginal. By 2005, traffic counts showed that only 0.13 percent of Lisbon District commuters cycled.[159] A 2005 mobility report, "Lisboa: O Desafio da Mobilidade" (Lisbon: The Challenge of Mobility), largely ignored cyclists and pedestrians, devoting just four pages to the pedestrian network and four brief mentions of cycling across its 291 pages.[160] This omission reflected a broader political and institutional neglect of urban cycling, while sports and recreational cycling remained popular.

The 1987 founding of the Portuguese Federation of Cycle Tourism and Bicycle Users (FPCUB) was a key step in organizing recreational cycle tourism, long-distance, and leisure cycling groups. Throughout the 1990s, mountain biking surged in popularity, fueled by affordable bicycles in department stores.[161]
In Lisbon, cycling was still largely seen as a leisure activity. The region's first

Critical Mass... Sparking Lisbon's Cycling Revival

This 2006 photo of Lisbon's Critical Mass ride on Avenida da República captures a grassroots response to decades of car-centric policies, when cycling accounted for just 0.13 percent of commuter traffic. Critical Mass, followed by Cicloficina "Beta" (2007), MUBi (2009), and supportive policymakers, championed safer, more accessible cycling infrastructure. These efforts led to Lisbon's first utilitarian cycle lanes, transforming the avenue into a cornerstone of the city's planned cycling network and a symbol of the shift toward sustainable urban mobility.

cycleway, a 9 km path along the N 247 road between Cascais and Guincho Beach, opened in 1996, repurposing the road shoulder for shared pedestrian and cyclist use. In 2001, Lisbon City Council launched its first urban cycleway: a 3.4 km route connecting the Entrecampos and Telheiras neighborhoods, going through Campo Grande Park and public transit hub, just ahead of Car-Free Day celebrations.[162]

In the 2000s, grassroot social movements rekindled interest in urban cycling. Monthly Critical Mass rides, launched in 2003 from the central Marquês de

Shared Bikes in Action

In October 2019, two girls ride their Jump dockless e-bikes in Largo do Rato in Lisbon, possibly heading home, or to extracurricular activities. Part of Uber's shared bicycle program, Jump launched in Lisbon in February 2019 with 750 e-bikes, expanding to 1,750 by May. Though much less popular than the public bikeshare system (GIRA), dockless e-bikes also represented a step toward integrating shared mobility into Lisbon's transportation system, offering an eco-friendly, flexible option for short city trips.

Pombal roundabout during rush hour, grew from 14 participants to 350 riders by 2012. Meanwhile, over 1,000 cyclists rallied for the Almirante Reis cycleway in 2021.[163] The founding of MUBi, Portugal's first urban cycling association, in 2009, further legitimized cycling advocacy, pushing for safer infrastructure and raising public awareness.[164] Economic pressures during the 2010–2014 debt crisis likely contributed to the rise in utilitarian cycling as a low-cost transport option.[165]

Pro-cycling policymakers, responding to these social movements, also mattered. Deputy Mayor José Sá Fernandes (2007–2021) and his team of advisors developed a network of bike paths in Lisbon's green infrastructure and

urban areas. Notable projects included the riverside bike path in 2009, a section from Santa Apolónia station to Parque das Nações in 2010, several other cycling network expansions, and a pedestrian and cyclist bridge over a highway in 2015.[166] In 2008, Lisbon introduced a digital public participation budget initiative inviting citizen proposals, with cycling projects often receiving strong public support.[167] Although some projects faced delays, the initiative signaled cycling's growing importance on Lisbon's policy agenda.[168]

In the Lisbon Metropolitan Area, support for cycling grew in affluent neighboring towns of Oeiras and Cascais. In Oeiras, the "Ciclovia na Marginal" proposal won public budget support in 2014, 2019, and 2021, though all three proposals remain unimplemented. In contrast, Cascais, advanced a 2021 proposal for a cycleway to connect with Oeiras to implementation phase, demonstrating varying levels of regional interest in cycling infrastructure.[169]

The city's 2012 Masterplan marked progress in urban planning by incorporating cycling into Lisbon's planning framework, though it stopped short of outlining a comprehensive cycleway network. The "Uma Praça em Cada Bairro" (One Square in Each Neighborhood) initiative began reclaiming space from cars, creating key cycleways along part of the city's main north-south axis. Projects like the Avenida da República-Saldanha-Fontes Pereira de Melo cycleway, which connects northern neighborhoods to the city center, and the launch of the "Gira" bikeshare system in September 2017, have made cycling more accessible. Between 2009 and 2021, the hourly average number of cyclists on two major city routes in Lisbon and Oeiras rose from 4 to 97, and by May 2023, a record number of 533 cyclists per hour passed on the Avenida da República cycleway during rush hour.[170]

Symbolic of Lisbon's policy commitment to cycling, the Gira bikeshare system, initiated in 2017 with a pilot at Parque das Nações, expanded rapidly.[171] By October 2024, Gira offered 1,800 bicycles and 160 stations, with plans for further expansion.[172] Policymakers, seeing the 2020–2021 pandemic as a pivotal moment, leveraged the opportunity to advance cycling initiatives. Like their counterparts in Paris, Milan, and Bogotá, forward-looking policymakers in Lisbon seized the pandemic lockdowns to solidify temporary cycling measures based on prior plans. As COVID-19 lockdowns began in March 2020, Lisbon adapted urban spaces and promoted walking and cycling. Keeping the Gira bikeshare system operational, the city swiftly introduced new cycleways and car-free streets under the slogan "A Rua é Sua" (The Street is Yours).[173] These actions, coordinated with the city's expanding cycleway network and the preparation for the international Velo-City 2021 conference, underscored Lisbon's commitment to cycling and drew international attention to its urban mobility efforts.[174]

Lisbon had also issued the Strategic Vision for Mobility 2030 (MOVE Lisboa 2030), aiming to reduce car usage from 46 to 34 percent and prioritize sustainable modes, setting a target for "alternative modes" to reach 66 percent by 2030. Proposed measures included 200 km of new bike routes for commuting and recreation, traffic calming, "30 km/h plus bicycle" streets, and additional bike-sharing stations.[175] In 2020, Lisbon Municipality introduced a bicycle-subsidy program, which helped 3,305 residents to buy bicycles before scaling it back when the new municipal government came into office in 2021. A national environmental program launched in 2019 further encouraged the use of cargo bicycles for everyday activities.[176]

With a center-right shift in Lisbon's government in September 2021, cycling became a politically contentious issue. New mayor Carlos Moedas initially campaigned to remove the cycleway on Avenida Almirante Reis and other cycleways, such as the dedicated cycle lanes on Avenida de Berna, faced partial dismantling, spurring legal and public backlash. In response to public opposition, Moedas' administration commissioned an audit by the international consultancy Copenhagenize. Meanwhile, the municipal executive announced a 2024–2025 plan to extend cycleways by 17 km and increase Gira bikeshare stations to 193, covering all 24 city boroughs with 1,900 bicycles.[177] Lisbon's selection in 2023 as a Bloomberg Initiative for Cycling Infrastructure (BICI) city supported further cycleway development, with technical assistance from the Global Designing Cities Initiative (GDCI) to enhance school connections, address network gaps, collect more traffic and qualitative data, and expand community engagement.[178]

Parallel to policy efforts, Lisbon witnessed a commercial shift in utilitarian cycling driven by international meal delivery corporate platforms. Since 2017, primarily South Asian migrant men have become increasingly visible as app-based meal delivery couriers, often using electric throttle-assisted bicycles for city food delivery services.[179] Lisbon's cyclists now represent diverse backgrounds, including families with child-seats and cargo bikes, immigrants, tourists, young professionals, teenagers, children on bicycle "trains" to school, and senior citizens. Many residents use the city's Gira public bikeshare, while tourists favor rented and dockless bicycles. This broad (and inequal) participation highlights cycling and micromobility's growing role in Lisbon's transportation system.[180]

Finally, the political issue of counting cyclists remains significant. Lisbon's approach to cycling data illustrates a longstanding, complex and car-centric planning history. Planners like Agache and De Groër pushed automobility in the 1930s and 1940s, expanding high-speed roads and suburban sprawl while excluding cyclists in the Urban Master Plan, despite available statistics. It

wasn't until 2016 with the installation of a cycle traffic counter on Lisbon's Av. Duque d'Ávila cycleway, that Lisbon began counting cyclists again, marking a shift as cycling advocates within Deputy Mayor José Sá Fernandes' team gained influence. In 2017, Lisbon contracted the University of Lisbon's Instituto Superior Técnico (IST), providing valuable data. By 2021, 34 automatic counters underscored this growing commitment to cycling, though both municipal and fixed counts halted in 2023, while national traffic counts, which had counted cyclists since 1937/8 stopped in 2005, continued tracking cars. Supplementary moving counts by Bernardo Pereira (since 2009) and fixed counts by IST researcher Rosa Félix (since 2016) complement official counts, countering the historical marginalization of cyclists in official statistics. These statistical practices reveal the ongoing fragility of cycling support and underscore challenges in building an inclusive, bicycle-friendly city.[181]

Protecting Cyclists

A boy with a tennis racket cycles on a rainy day in November in 2019 on a freshly painted green cycle lane on Av. Defensores de Chaves, highlighting Lisbon's push for safer, on-street cycling infrastructure. As part of citywide efforts, the lane symbolizes a shift toward reducing car dependency and promoting active transportation, advancing Lisbon's vision for a more sustainable and livable city.

Although cycling still represents a modest share of Lisbon's modal split, the combined efforts of social activists and key policymakers have made a notable impact. The city's cycling revival is a testament to the power of grassroots activism in shaping urban policy through occasional collaboration with policymakers.

Conclusion

Cycling in Lisbon has come a long way from its modest beginnings in the late nineteenth century, when cyclists first navigated the city's streets alongside horse-drawn carriages—before sharing space with trams, buses, and cars. Today, while bicycles still account for a relatively low percentage of the city's transport landscape, sustained advocacy by social movements and strategic initiatives produced by policymakers have spurred a significant shift. The growing number of cycleways and the popular GIRA bikeshare system are examples of efforts to promote a more bike-friendly city.

Lisbon's cycling history tells a story of resilience, resistance, and reinvention. From early advocacy in the 1890s to resurgence in the twenty-first century, cycling has long presented a vital—yet mostly sidelined—component in the city's mobility landscape. Today, a coalition of engaged citizens and diverse policy actors, has placed cycling on the agenda, maintaining contact with institutions to ensure that this movement keeps moving forward. Active community groups like Cicloda, Bicicultura, and MUBi champion cycling justice, while more institutionalized organizations such as UVP-FPC and the Portuguese Federation of Cycle Tourism and Bicycle Users (FPCUB) have had an influential, albeit less city-focused, role.

Policy conflicts and complexities are evident in the evolution of Lisbon's cycling infrastructure. While some cycleways have been dismantled, others, such as the essential route along Avenida Almirante Reis, have been preserved thanks to collective citizen action. However, challenges persist. Lisbon sits at the heart of a metropolitan area with 18 municipalities that lack adequate cycle routes. Only a few cycleways connect to rail and ferry stations. Beyond Lisbon's Gira's bikeshare system, there are no large-scale public bikeshare programs to support first- or last-mile commuting in the surrounding areas. Paradoxically, more people may have cycled during the so-called "bicycle decline" of the mid-twentieth century than during the current resurgence.

Despite recent urban, real estate, and tourist driven transformations, long-standing continuities endure. Campo Grande Park in uptown Lisbon has been a popular site for recreational cycling for nearly a century and was the first

location in the city to feature a cycleway, introduced in 2001. Yet cycling in Lisbon has also been marked by segregation and neglect. Poorly designed and insufficiently connected infrastructure has frequently forced cyclists into unsafe practices.[182] In this context, cycling is reclaimed by its users as a demand for mobility justice.[183] The infrastructure gap is notorious on car-clogged Avenida da Liberdade that, as of 2024, still lacks a dedicated cycleway—despite cyclists advocating for one since 1901.

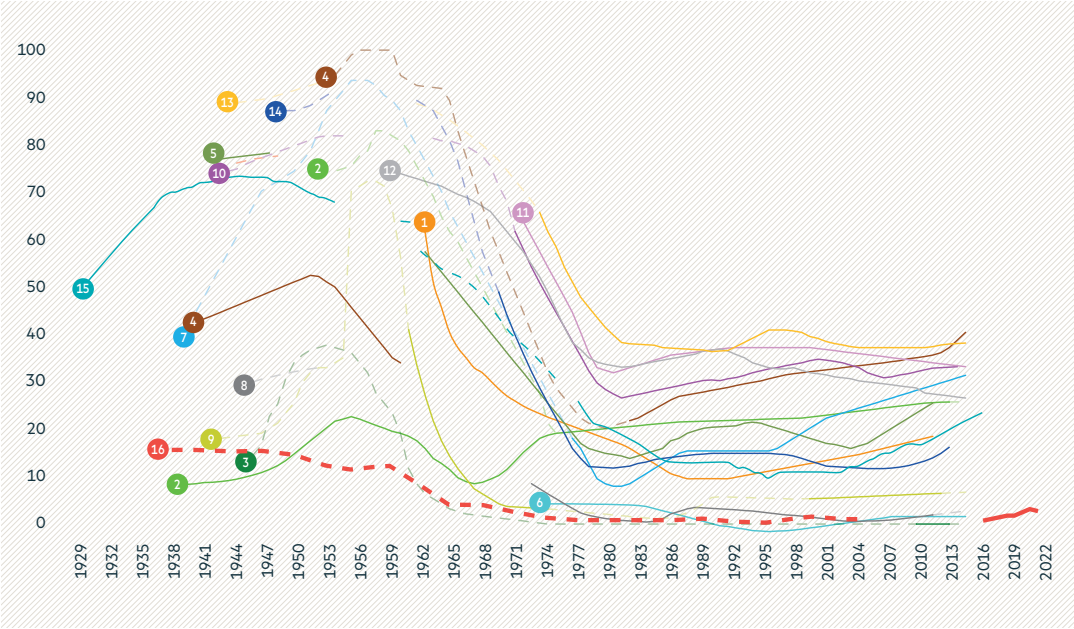
While obstacles remain—such as filling infrastructure gaps, improving safety and reducing the number of cars significantly—Lisbon's cycling future looks brighter than a decade ago. More than just a story of transport statistics, this evolution speaks to a broader vision: citizens reclaiming their streets, making bicycles an integral part of Lisbon's identity, and building a sustainable city for generations to come.

Appendices

Cycling in Numbers

The graph combines both traffic counts and modal split figures to create an overview and trend line of bicycle traffic developments in the twentieth century: it highlights the bicycle's share in comparison with other forms of traffic, such as cars, public transit, and mopeds.
For a more detailed explanation see Frank Veraart, "Cycling in Numbers 1920-2015," in Ruth Oldenziel, Martin Emanuel, Adri Albert de la Bruhèze, Frank Veraart (editors), *Cycling Cities: The European Experience. Hundred Years of Policy and Practice* (Eindhoven: Foundation for the History of Technology, 2016), 201-203.

Cycling's Share of Traffic in Lisbon



Lisbon

LIS1
Traffic Counts on Lisbon Exit Roads to the Northwest, 1937–1990 (Average Annual Daily Traffic)

Sources: Junta Autónoma de Estradas 1945, 1950, 1955, 1960, 1965, 1970, 1980, 1985, 1990.

	Bicycles[1]	Motorcycles	Passenger Cars[2]	Heavy Trucks[3]	Bus/Trolley	Other[4]
1937	45		880			77
1950	39		149			22
1955	113	37	334	134	80	9
1960	206	70	725	176	158	21
1965	80	217	1170	206	200	14
1970	155	824	2906	509	353	43
1975	45	776	5221	458	424	48
1980	29	651	4741	521	643	44
1985	57	476	4531	422	424	10
1990	317	87	9472	627	467	18

Several traffic stations are grouped under the same category based on their promiximty to one another. This chart represents the numbers from counting stations 153 (1937–38), 129 (1949–50), 600 (1955–75), 600A (1980–90).

LIS2
Traffic Counts on Lisbon Exit Roads to the North (C. Carriche-Loures), 1937–2005 (Average Annual Daily Traffic)

Sources: Junta Autónoma de Estradas 1945, 1950, 1955, 1960, 1965, 1970, 1980, 1985, 1990, 1995; Instituto das Estradas de Portugal 2000; Estradas de Portugal 2006.

	Bicycles[1]	Motorcycles	Passenger Cars[2]	Heavy Trucks[3]	Bus/Trolley	Other[4]
1937	306		1244			598
1950	243		1254			134
1955	509	162	1834	585	262	139
1960	664	266	3305	609	304	91
1965	317	809	5194	1036	473	87
1970	986	322	10586	1221	730	103
1975	64	925	20052	888	784	25
1980	178	689	17943	1586	1012	30
1985	82	525	9498	493	1060	11
1990	347	255	11917	602	1010	40
2001	55	117	5730	402	154	103
2005	58	99	5002	261	116	98

Several traffic stations are grouped under the same category based on their promiximty to one another. This chart represents the numbers from counting stations 113, 129 (1937–1938); 30 (1949–1950); 601 (1955–1990); 594 (2001), and 594A (2005).

LIS3
Traffic Counts on Lisbon Exit Roads to the North (near Encarnação), 1937–1960 (Average Annual Daily Traffic)

Sources: Junta Autónoma de Estradas 1945, 1950, 1955, 1960.

	Bicycles[1]	Motorcycles	Passenger Cars[2]	Heavy Trucks[3]	Bus/Trolley	Other[4]
1937	1575		4894			752
1950	452		2732			118
1955	755	280	4079	2050	191	107
1960	1324	455	7583	2587	352	4

Several traffic stations are grouped under the same category based on their promiximty to one another. This chart represents the numbers from counting stations 59, 67, 80, 92, 97, 107, 114 and 136 (1937–1938), 2 (1949–1950); 602 (1955–1960), and 602A (1965–1990). This traffic station stopped counting bicycles due to the regulation of national roads—it became EN1/A1 motorway—in 1965. For this reason, data from 1965 onwards are not shown.

1 Includes pushcarts in 1937 and 1950 and without motors; since 1955 includes bicyles with and without motors (up to 50 cm3)
2 Includes Passenger cars and light commercial vehicles (up to 3 tons). For 1937 and 1950, it includes a count of "motor vehicles." After 1950, motorcycles and buses are listed separately.
3 Includes trucks over 3 tons (with and without trailer). In 1960 and 1965 it includes tractors with trailers.
4 Includes animal-drawn vehicles, agricultural tractors, tractors without trailers, special vehicles, and except for 1960 and 1965 tractors with trailers.

LIS4
Traffic Counts on Lisbon Exit Roads to the Northwest (near Odivelas), 1950–1990 (Average Annual Daily Traffic)

Sources: Junta Autónoma de Estradas 1950, 1955, 1960, 1965, 1970, 1980, 1985, 1990.

	Bicycles[1]	Motorcycles	Passenger Cars[2]	Heavy Trucks[3]	Bus/Trolley	Other[4]
1950	109		611			59
1955	182	364	344	2	0	1013
1960	371	127	1144	267	219	28
1965	211	483	1727	342	4	338
1970	523	150	2813	382	377	12
1975	36	519	4626	367	364	9
1980	39	509	7903	582	407	32
1985	162	231	4639	948	401	24
1990	317	87	9472	627	467	18

Several traffic stations are grouped under the same category based on their promiximty to one another. This chart represents the numbers from counting stations 155 (1937–1938); 218 (1949–1950), 662 606 (1955–1985), and 600 (1990).
This traffic station stopped counting bicycles due to the regulation of national roads since 2001 (EN 250 / IC 17 highway). For this reason, data from 2001 onwards are not shown.

LIS5
Traffic Counts on Lisbon Exit Roads to the West (near Benfica), 1937–1990 (Average Annual Daily Traffic)

Sources: Junta Autónoma de Estradas 1945, 1950, 1955, 1960, 1965, 1970, 1980, 1985, 1990.

	Bicycles[1]	Motorcycles	Passenger Cars[2]	Heavy Trucks[3]	Bus/Trolley	Other[4]
1937	133		633			51
1950	274		1138			47
1955	602	214	1409	502	489	12
1960	1063	352	3277	507	457	23
1965	422	972	5602	667	2	733
1970	154	891	10443	747	973	28
1975	64	691	14639	809	694	44
1980	262	357	11885	686	845	9
1985	45	512	26993	1295	277	116
1990	109	416	35574	1798	249	196

Several traffic stations are grouped under the same category based on their promiximty to one another. This chart represents the numbers from counting stations 152 (1937–1938), 117 (1949–1950), 609 (1955–1985), and 608 (1990). This traffic station stopped counting bicycles due to the regulation of national roads since 2001 (EN249 / IC19 highway). For this reason, data from 2001 onwards are not shown.

LIS6
Traffic Counts on Lisbon Exit Roads to the West (Algés), 1937–2005 (Average Annual Daily Traffic)

Sources: Junta Autónoma de Estradas 1945, 1950, 1955, 1960, 1965, 1970, 1980, 1985, 1990, 1995; Instituto das Estradas de Portugal 2000; Estradas de Portugal 2006.

	Bicycles[1]	Motorcycles	Passenger Cars[2]	Heavy Trucks[3]	Bus/Trolley	Other[4]
1937	1554		10085			798
1950	232		3081			37
1955	367	326	4547	298	33	20
1960	584	445	8393	306	86	24
1965	192	831	11102	616	2	126
1970	61	921	17392	823	170	16
1975	502	638	21428	441	138	10
1980	45	704	20399	579	128	16
1985	76	708	24068	886	162	13
1990	88	748	33922	860	192	37
2001	247	538	42056	288	184	125
2005	193	530	42248	191	167	72

Several traffic stations are grouped under the same category based on their promiximty to one another. This chart represents the numbers from counting stations 179, 180, 182-187, 189, 190 (1937-1938), 22 (1949-1950), and 616 (1955-2005).

LIS7
Modal Share in the Lisbon Metropolitan Area by Type of Individual Transport, 2017–2022 (Percentage)

Sources: Instituto Nacional de Estatística 2018; CML-DMM and Lisboa E-Nova.

	Pedestrian	Bicycle	Motorized Vehicles	Public Transit	Other
2017	23	0,5	59,8	15,1	1,60
2020	15,6	1,7	50,2	30,8	1,70
2021	8,8	0,3	30,1	60,3	0,50
2022	9,2	1,9	38,7	47,3	2,90

LIS8
Percent of Trips in the City of Lisbon by Type of Transport, 2018–2022

Sources: Google Environmental Insights Explorer. "Lisbon - Transportation Emissions."

	Pedestrian	Bicycle	Motorized Vehicles	Public Transit	Other
2018	39,3	0,69	42,26	17,74	
2019	40,9	0,92	41,76	16,15	0,29
2020	33,6	1,17	50,27	14,98	
2021	33,2	1,99	48,92	15,61	0,31
2022	34,7	1,65	43,76	19,59	0,34

LIS9
Evolution of Travel Mobility in Lisbon: Individual Transit

Source: Melo, Cavalcanti, and Sousa 2024.

	Annual Average Daily Traffic[1] (thousands)		Vehicles per thousand Inhabitants[1]		Road Length (km)[1]	
	Bicycles	Passenger Cars	Bicycles	Passenger Cars	Motorways	Main Arterial Roads[2]
1937	11	37	5	8	0	0
1940			8	11	0	0
1945			13	8	8	8
1950	24	97	16	22	8	8
1955	13	45	18	32	8	8
1960	19	83	19	54	8	8
1965	13	131	15	70	32	32
1970	14	272		125	39	39
1975	3	375		146	39	39
1980	4	399		162	60	60
1985	4	433		173	62	67
1990	6	829		264	62	67
1995	4	643		353	142	163
2000	2	760		447	178	229
2005	3	928		485	190	247
2010				553	249	295
2015				593	249	295
2020				675	249	295
2021				636	249	295
2022				697	249	295

[1] Data refers to the district of Lisbon. For the precise geography of reference of each data see Melo, Cavalcanti, and Sousa 2024.
[2] Refers to IP (Itinerários Principais) and IC (Itinerários Complementares, some of which are also motorways).

LIS10
Evolution of Travel Mobility in Lisbon: Public Transport

Source: Melo, Cavalcanti, and Sousa 2024.

	Number of Passengers (millions)						
	Tramways (Company CARRIS)	Buses (Company CARRIS)	Total (Company CARRIS)	Lisbon Underground (Company Metropolitano de Lisboa)	Ferryboats (operated by several companies)	Suburban Train (Company CP)	Suburban Train (Company Fertagus)
1937	127		127		5		
1940	133		133				
1945	227		227				
1950	273		273		11		
1955	283	74	357		15		
1960	265	112	377	16	21		
1965	218	168	386	22	28		
1970	164	162	326	56	38		
1975	83	163	246	86	37		
1980	96	322	418	120	48	154	
1985	75	394	469	134	62	147	
1990	66	409	475	142	46	163	
1995	25	354	379	124	42	130	
2000	23	303	326	140	43	113	11
2005	18	223	241	185	30	96	21
2010	20	221	241	183	29		23
2015			145	139	16		18
2020			79	91	11	66	15
2021			91	84	11	75	16
2022			127	137	16	110	24

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Endnotes

* Note Modal Split Lisbon: 1937/38: Annual Average Daily Traffic for the District of Lisbon (bicycles: without engine; includes pushcarts). Source: Junta Autónoma de Estradas 1945; 2022: Percentage of the modal share for the Lisbon Metropolitan Area. Source: CML-DMM e Lisboa E-Nova. s.d. «Mobilidade». Observatórios Lisboa. Accessed 4 March 2024. https://observatorios-lisboa.pt/info_mobilidade.html

1 This book benefited from the comments, editing, and inspiration of Ruth Oldenziel and the participants of the public workshops organized through the project *Hi-BicLab, History Lab for Sustainable Urban Mobilities: Lisbon's Cycling Policies* (2022–2024), http://doi.org/10.54499/EXPL/FER-HFC/0847/2021, of which this book is one of the outputs. We also acknowledge the support of the project *Exchange Zones of Epistemic Resistance and Alternative Innovation: Activism, Grassroots Movements and Expertise, 1970s-1990s*, (EXCHANGEACTIV, PID2023-150413NB-C21), 2024–2029.

2 Pinheiro 2011; Simões and Diogo 2022; Silva and Sousa 2019.

3 During the twentieth century, after a century of population stagnation, Lisbon's population grew steadily from 350,000 in 1900 to 800,000 in 1981, when it began losing residents to the suburbs. Meantime, the Lisbon metropolitan area continued to expand, eventually accounting for more than 20 percent of Portugal's population by the end of the century. (Valente Rosa 2000; Baptista 1994.) For highway construction and suburban sprawl since the 1980s: Padeiro 2018; Melo, Sobreira, and Goulart 2019.

4 Félix, Moura, and Clifon 2019; Félix, Cambra, and Moura 2020.

5 Oldenziel and Hård 2013, ch. 4.

6 Oldenziel and Hård 2013, 137–38.

7 Mom 2007a, 43, 67; Sousa 2016a, 264–66.

8 Buiter 2011; Bertho Lavenir 1999, 95, 108–09, 155; Bertho Lavenir 2000, 117–18; Bertho Lavenir 1997; McShane 1994, 56, 118; O'Connell 1999, 15, 19, 81; Rodrigues 2018, 33–36; Oldenziel and Hård 2013, ch. 4.

9 Buiter 2011; Merki 1998, 340–41.

10 Oldenziel and Hård 2013, 135–45.

11 Quotation from União Velocipédica Portuguesa 1913, 3; União Velocipédica Portuguesa 1902, 7.

12 Moreira 1980, 18–21; Pinto et al. 1999, 13–21; Alves and Carvalho 2013, 51–2.

13 "S.M. El-Rei D. Manuel II, presidente honorario da UVP," 30 March 1908; *Boletim da União Velocipédica Portuguesa*, 12 November 1908.

14 The UVP's first board included 8 capitalists, 6 liberal professionals, 5 army officers, 4 civil servants, 3 journalists, 1 clerk and 1 student. (União Velocipédica Portuguesa 1902, 20–1; Costa 1999, 46–47.)

15 União Velocipédica Portuguesa 1913, 18.

16 União Velocipédica Portuguesa 1902, 49–50.

17 Moreira 1980, 49; Pinto et al. 1999, 36.

18 On UVP excursions: Moreira 1980, 206–07. União Velocipédica Portuguesa 1902, 4; Barroso 2001, 10–11; Alves and Carvalho 2013, 52; Moreira 1980. On the roles of ACP and SPP: Sousa 2016a, ch. 2; Cerdeira 2019. On the role of the UVP in the negotiation of the transport of bicycles in trains: "Notícias da União. Redução de preços," 1 April 1905; "O transporte de bicycletas na linha do Sul e Sueste," 15 June 1906.

19 Quoted in Costa 1999, 72.

20 For example, the placement of signs on roads of Grândola, Ferreira, and Santiago do Cacém in 1907: "Placas indicadoras," 28 July 1907; "Notas várias," 1907.

21 "Placas indicadoras."

22 Sousa 2016a, 114.

23 Carlos Calixto, a UVP member and prominent sports journalist, wrote for the French daily Auto-Vélo in 1901 and various Portuguese publications. The magazines *O Tiro Civil* and *O Cyclista* included the UVP *Bulletin* in their own sections starting in 1900 until UVP began publishing it independently in 1905. (Pinheiro 2009.)

24 Morgado, Câmara Municipal de Lisboa, and Aleixo 1912, 52–53; 263–66. Updated 1923 47–50, 72–73. Regulations for bicycles aligned with those for cars and carts.

25 União Velocipédica Portuguesa 1902, 47.

26 Silva and Sousa 2019.

27 Silva and Sousa 2019.

28 Oldenziel and Hård 2013, 147–55.

29 Morgado, Câmara Municipal de Lisboa, and Aleixo 1912, 52–53; 263–66.

30 "Excursionismo. Excursão a Loures," 19 October 1906; Morgado, Câmara Municipal de Lisboa, and Aleixo 1912, 214–15; Moreira 1980, 31.

31 União Velocipédica Portuguesa 1902, 47; "Representação á Camara Municipal," 23 February 1907.

32 "Opinião da imprensa/ Nós e a França," 24 March 1907.

33 Silva, 19 November 1911.

34 Alarcão 1896, 71.

35 A new proposal for an ordinance regulating cycling in Terreiro do Paço allowed it from 5 a.m. to 10 a.m. from April to October and from 7 a.m. to 10 a.m. in November, with a fine of 2,000 reis. (Callixto, 15 August 1902, 6.)

36 Benoliel, 14 December 1908; Benoliel, 16 January 1911.

37 The Real Automóvel Club de Portugal collaborated with successive governments, removing "Real" from its name in 1911. (Sousa 2016a, ch. 2.)

38 King Carlos I and his son, Luís Filipe served as honorary president and vice president of the UVP, respectively, until their assassination in February 1908. Manuel II succeeded Carlos I, accepting the UVP honorary presidency. The UVP's March 1908 bulletin openly supported the monarchy, citing cycling's mission in "rejuvenating the race." This support was short-lived, however, as Manuel II was exiled after the First

Republic's establishment in 1910. ("S.M. El-Rei D. Manuel II, presidente honorario da UVP," 30 March 1908; União Velocipédica Portuguesa 1913, 3.)

39 Pinto et al. 1999, 36, 37; Silva 2003, 15; Sousa 2016a, 63.

40 Sousa 2016a, ch. 2.

41 UVP's 1935 annual report discusses its financial difficulties. (União Velocipédica Portuguesa 1936); The sport focus intensified when UVP became the Portuguese Cycling Federation (Federação Portuguesa de Ciclismo, FPC). (Pinto et al. 1999, 36–41.)

42 Santos 2011, 22.

43 Direcção Geral das Alfândegas, 17 May 1892; Moreira 1980, 56–57. Criticism of the sumptuary tax was common in the sports press, such as *O Campeão* (1898-1900). Parliamentary debates and a 1900 letter by lawyer Afonso Costa sought tax exemptions for his clients. Clubs also petitioned the Chamber of Deputies to lower import duties. (Pinto et al. 1999, 22–23.)

44 Moreira 1980, 33; Morgado, Câmara Municipal de Lisboa, and Aleixo 1912, 52–53.

45 União Velocipédica Portuguesa 1902, 11. European nations taxed imported bicycles to protect local industries, leading to the creation of the "triptych" document to facilitate border crossings. (Oldenziel and Hård 2013, 141.)

46 União Velocipédica Portuguesa, 1902, 14.

47 "Taxas de licenças" 8 November 1905; "Taxas de licenças" 10 January 1906; Conde de Caria and Neves, 12 March 1906.

48 "Taxas de licenças" 8 November 1905.

49 "Redução da licença camararia de Lisboa" 13 April 1906.

50 Câmara Municipal de Lisboa 1909, 329–31.

51 *Diário do Senado* 9 January 1913, 5.

52 Import taxes were eased before the 1923 tariff reform, with late nineteenth-century trade agreements with Germany, France, and the Netherlands reducing per-weight taxes and imposing additional tax reductions on mechanical parts.

53 Regulated in 1924, this fund imposed 5$00 on bicycles, while passenger cars were taxed between 120$00 and 360$00, depending on horsepower (amounts in Portuguese Escudo). (Ministério do Comércio e Comunicações, Portugal, "Decreto n.o 7037," 17 January 1920 and "Decreto n.o 10176," 17 October 1920, 1433.) In 1928, following the abolition of the General Administration of Roads and Tourism—replaced in 1927 by the long-lived Autonomous Board of Roads (JAE) and the short-lived Direction General of Roads—the fund was renamed "Road Fund." (Ministério do Comércio e Comunicações, Portugal, "Decreto n.o 14890," 14 January 1928.

54 Ministério do Comércio e Comunicações, Portugal, "Decreto n.o 7037," 17 January 1920; Oldenziel 2014; Sousa 2016a; Mom 2015; Oldenziel, Sousa, and van Wesemael 2020.

55 The newspaper *Diário de Notícias* discussed tax reductions and compared them to decreases in England, France, and Spain. ("As taxas de licença e as pautas aduaneiras," April 1930.)

56 Automóvel Club de Portugal 1931; Santos 1930.

57 Ministério do Comércio e Comunicações, Portugal, "Decreto n.º 18406." 31 May 1930, 972.

58 "As taxas de licença e as pautas aduaneiras," April 1930.

59 União Velocipédica Portuguesa 1936, 3.

60 "Despachos, Circulares e Ofícios emanados do Governo," 1955.

61 "Velocipedia. O cyclismo em Portugal," 15 April 1903, 5, 6.

62 Conde de Caria and Neves, 12 March 1906. info/your-city-next/

63 In italics in the original, the UVP first used it ("Taxas de licenças" 10 January 1906) in a 1901 parliamentary petition opposing the sumptuary tax, arguing it would increase access to cycling. (União Velocipédica Portuguesa 1902, 44–46.)

64 According to Lisbon ordinances, only registered cyclists were permitted to rent bicycles. The rental market also supported competitive cycling on public streets. (Santos 2011, 22.)

65 Bicycle manufacturing in Portugal began in 1922 at the Fábrica Nacional de Bicicletas - Vilarinho & Moura (later known as Vilar) in Porto. The company received a "new industry" patent in 1930, granting it production exclusivity for the decade. (Fábrica Nacional de Bicicletas 1939.)

66 Moreira 1980, 63–4.

67 Import statistics are from the Ministry of Finance's *Comércio e Navegação*, later renamed *Estatística Comercial and Comércio Externo*.

68 *Boletim da União Velocipédica Portuguesa* 12 November 1908; Martins 2014, 10.

69 Direcção Geral de Estatística 1926, 5.

70 Câmara Municipal de Lisboa, "Registo de inscrições de velocipedistas, 1909-1924." Unfortunately, these are the only cyclist licenses records preserved in the Lisbon Municipal Archive, despite licenses continuing to be issued throughout the twentieth century.

71 Avenida dos Anjos, planned in the late 1870s, was renamed Avenida Dona Amélia in 1903 and then Avenida Almirante Reis after the 1910 Republican Revolution. (Silva and Sousa 2019.)

72 C.M.L. Gabinete de Estudos de Urbanização, 1959, IV.2.1/96, IV.2.1/103 in Cap. IV - Comunicações e transportes.

73 Bertho Lavenir 1999, 159–63; Sousa 2016a; Oldenziel, Sousa, and van Wesemael 2020, 35; Mom 2015.

74 Oldenziel, Sousa, and van Wesemael 2020; Schipper 2008.

75 Norton 2008. For details on Portugal: Sousa 2016a.

76 Oldenziel, de la Bruhèze, and de Wit 2005, 115; Schipper 2008, 25.

77 In France, the Touring Club's significant role contrasts with the elitist composition of the French Automobile Club. (Bertho Lavenir 1999, 108; Mom 2007b, 41–42. On the role of these mediators: Oldenziel, de la Bruhèze, and de Wit 2005; Schipper 2008; Bertho Lavenir 1999 (France); Mom, Schot, and Staal 2009 (Netherlands); Sousa 2016a (Portugal).

78 Sousa 2016a.

79 "Á margem do código. O Transito nas estradas constitue um problema grave para o qual urge procurar solução definitiva," September 29, 1940.

80 "Aos ciclistas. Alguns conselhos amigáveis," 1939; "Os ciclistas e o trânsito," 1938. The 1954 Highway Code later required white-painted mudguards.

81 "Um perigo para os automobilistas," 1938.

82 Sousa 2016a, ch. 4.

83 "A disciplina é a base da segurança do trânsito," 1943.

84 Junta Autónoma de Estradas 1965, 22.

85 "Atenção, ciclistas, às regras do trânsito que por vezes esqueceis..." 12 April 1956; "A Campanha de Segurança Rodoviária" 7 September 1959; "A demonstração inequívoca de um perigo público: 19791 ciclistas autuados em dois meses!" 1962.

86 Sousa 2016a, 272–96.
87 Ministério do Comércio e Comunicações, Portugal, "Decreto n.º 13969," 20 July 1927; Sousa 2016a; Ninhos and Sousa 2017; Saraiva, 2009; Diogo and de Matos 2012; Diogo and Saraiva 2021; Andrade 2004.
88 Junta Autónoma de Estradas 1947, 91; Junta Autónoma de Estradas 1960, 8; Ulrich 1950, 189. The first two road censuses (1937–38 and 1949–50) classified vehicles into three categories: mechanical vehicles (motorized, including motor-assisted bicycles), animal-drawn vehicles; and bicycles (non-motorized), which were counted alongside pushcarts. Since 1955, assisted bicycles (with an engine capacity of less than 50 cm3) have been included in the bicycle category, following the redefinition of "velocipede" in the 1954 highway code. (Ministério do Comércio e Comunicações, Portugal, "Decreto-Lei n.º 39672," 20 May 1954, 588.)
89 Presidência da República, Portugal. "Lei n.º 2037," 19 August 1949, 593.
90 The number of counting stations fluctuated over the years. By the time automatic counting was introduced in 1955, the number of stations decreased to about one-third of those used in the first two road censuses. Manual counting remained in use to identify vehicles, but the methodology favored cars, leading to the exclusion of roads with fewer cars and more bicycles. For a discussion on the politics of counting traffic data collection: Oldenziel 2014.
91 Traffic censuses were influenced by American traffic engineering from 1955 (3rd edition). Junta Autónoma de Estradas 1950, 105, 106; Junta Autónoma de Estradas, 1955, 3, 4.
92 Melo 1944, 50.
93 Ministério das Obras Públicas e Comunicações, Portugal, "Decreto-Lei n.º 34593," 11 May 1945, 376, 378; Lima 1951, 21.
94 Macedo 1953, 18.
95 "Um projecto grandioso. A futura ponte sobre o Tejo será depois de concluída, a segunda do mundo," 30 March 1934; Sousa 1934; Ministério das Obras Públicas e Comunicações, Portugal 1934; Oliveira 1959.
96 Melo, Cavalcanti, and Sousa (2024) documents passenger and cyclist crossings over the Tagus by boat from 1937 to 2022.
97 "Parque Florestal de Monsanto," 1940, 56–7.
98 Santos 2013.
99 Sousa 2016b, 183.
100 Marques 1941, 337, 342.
101 Sousa 2022, 127.
102 Duarte Pacheco, Minister of Public Works and Communications from 1932 to 1936 and again from 1938 and 1943, died in a car crash in 1943. (Almeida 2009, 208–32.) Agache and De Groër were key figures in urban planning mandated by the 1934 legislation requiring city councils to draft topographical and urban plans (Silva 1986; Ministério das Obras Públicas e Comunicações, Portugal, "Decreto-Lei n.º 24802," 21 December 1934.). Their influence extended into the 1990s. De Groër, a professor at the Paris's Institute of Urbanism, trained architects who contributed to Lisbon's urban planning. De Groër also created plans for ten Portuguese cities in the 1940s. For details on Agache and De Groër: Almeida 2009, 274–75 and 290; On Agache's removal in 1936: Pereira 1994, 84–5. Although the correct spelling of Étienne De Groër according to primary sources (urban plans, articles, personal letters, work contracts) has the umlaut on the "e", it is common to find the umlaut on the "o" (Gröer), and also no use of the umlaut at all (Groer). We have used the umlaut on the "e" (Groër), but kept the original spelling in each reference, so the bibliography shows the three spellings: Groër, Gröer, and Groer. (See Bertoni 2024.)
103 Camarinhas 2011, 12.
104 Groër 1945, 49, 55, 66.
105 Geertse 2015, 3–5; Groër 1945, 24, 45; also Bruant 1994, 54. Groër advocated horizontal development to promote public health and resilience, emphasizing spaced, low-density (sprawled) housing. (Groër 1945, 28, 39, 40; Groër1948b, "Densidades de população.")
106 Bruant 1994, 26, 52; Groër 1945, 24–5, 34, 74.
107 Brito and Camarinhas 2007, 185; Abrantes and Jorge 1938.
108 Groër 1948a, 30, 31.
109 Groër 1948a, 26.
110 Junta Autónoma de Estradas 1945, 10–13; Groër 1948a, 26.
111 Groër 1948c, 14–17.
112 C.M.L. Gabinete de Estudos de Urbanização, 1959, Cap. IV - Comunicações e transportes.
113 See LIS9 and LIS10 in the Appendices. Also in Melo, Cavalcanti, and Sousa 2024 database.
114 Groër 1945, 66.
115 Lisbon's adoption of motorbuses as public transit came later than other European cities. For a periodization: Divall and Schmucki 2003.
116 C.M.L. Gabinete de Estudos de Urbanização, 1959, IV.5/3 in Cap. IV - Comunicações e transportes.
117 Padeiro (2018) discusses Lisbon and Porto highway networks. Pereira and Pereira (2016) analyze Portugal's infrastructure investment (1980 to 2011), prioritizing highways, which peaked at 47 percent in the 1990s. Highway investment grew from 2 to 11 percent between the 1980s and 2000s, which a smaller share for railroads (5–6 percent). (Rocha et al. 2023). Rocha et al. (forthcoming) estimate positive effects of highways on suburbanization and urban sprawl.
118 INE census data (every ten years) on Lisbon's commuter transport modes. National Statistics Portugal (i.e., Instituto Nacional de Estatística, INE).
119 "Entrevista a Fernando Piteira Santos," 1992; Reis 1981, 66; Gralheiro 1982.
120 Junta Autónoma de Estradas 1965, 29.
121 Valentines-Álvarez 2022.
122 Illich 1975.
123 For motorization comparisons: Wolf 2010, 3–4, and ch. 2.
124 Costa 1973a; Costa 1973b.
125 Martins 1975.
126 Sousa and Marques 2013, 3. The Constituent Assembly worked between April 1975 and April 1976 to draft and approve the new Portuguese Constitution.
127 Vieira 1975; "Valerá a pena destruir o automóvel?," 22 April 1975; Sousa, 20 June 1975, quoted in Sousa and Marques 2013; Sousa 2021.
128 "O homem e o carro na União Soviética," March 1976; "Análise breve da indústria automóvel de Leste," 29 May 1975; "Brezhnev: O fascínio dos automóveis," 5 June 1975, quoted in Sousa and Marques 2013.

129 Costa et al. 1981; Pereira, Carvalho, and Fonseca 2017.
130 Magalhães 1993.
131 Guerreiro 1977.
132 Valentines-Álvarez 2021.
133 Assembleia Constituinte, 1976, Article 66.
134 "Campanha anti-ruído," 1974; "Ruído: Violência quotidiana e contínua," 1974.
135 "Lisboa: Desordem urbana, caos ecológico," 1976; "Ruído: Esse fascismo quotidiano," 1976.
136 Cautela 1976; Afonso Cautela's texts in *Boletim MEP* and *Frente Ecológica*; Carvalho and Cautela 1976.
137 "O festival ciclista 'Cravos Vermelhos' ficou a dever-se apenas à iniciativa popular," 29 April 1975.
138 Pinheiro 1978.
139 "Uma manifestação em bicicleta...," 1978; Furtado 1980; Valentines-Álvarez 2021.
140 "O tráfego automóvel. Contra a escola e a cidade," February 1976; Madeira 2017.
141 "Ecopolis," 1977, translated from *Le Sauvage*, 37 (1977).
142 *Tecnologia de aldeia, tecnologia de futuro*, 1977.
143 Pirâmide, and GAIEP, 1978.
144 *Sobre o antagonismo cidade campo*, 1977. The city-countryside divide was debated in other magazines like *A ideia* (issues 26–27).
145 "Ffffoniiiia," 1981. As Ivan Illich later observed, silence was to be considered a common good. (Illich 1983.)
146 Valentines-Álvarez and Macaya-Andrés 2019. Also the cartoon in *Sebenta*'s issue 2 (1977) on ecology, architecture, and urban planning.
147 Silva and Ramos 1978.
148 Silva and Ramos 1978.
149 Bandeira 1975. Also Sousa 2021.
150 "Bicicleta, meio de vida e saúde," 1981; "Andar de bicicleta está de moda," 1980.
151 "Veículos de duas rodas vão ter vias próprias," 29 June 1987.
152 Pereira 2022, 286; Oldenziel et al. 2016, 171.
153 In 2016, nine Lisbon-region bicycle workshops and other grassroots groups in Porto and Coimbra held a national meeting to promote urban bicycle mobility: EPHEMERA, "Massa Crítica"; Bicicultura; Cicloficina dos Anjos; Ciclaveiro. We are grateful to members of these organizations for sharing their knowledge, experiences, homes, and digital records.
154 Valentines-Álvarez 2022; Valentines-Álvarez and Sousa 2021.
155 Vieira 2015; Massa Crítica Portugal 2007.
156 Pereira 2022.
157 Wolf 2010, 3.
158 Costa e Silva 2015, INE 1991, 2001, 2011.
159 Estradas de Portugal 2006; Eurobarometer 2007; Eurobarometer 2010.
160 Câmara Municipal de Lisboa, Coelho, and Marques 2005.
161 Alves and Carvalho 2013; Vieira 2015; Barroso 2017.
162 Pereira 2022.
163 Massa Crítica Portugal 2007; Massa Crítica Portugal 2012; Lusa 19 October 2021; Raposo 23 November 2023.
164 MUBi 2010.
165 Pereira 2022.
166 Barone 2013.
167 Câmara Municipal de Lisboa 2020.
168 Pereira 2022.
169 União das Freguesias de Carcavelos e Parede 22 October 2024.
170 Félix, Cambra, and Moura 2020; Pereira 2022; Interview Bernardo Campos Pereira with Rosa Félix 10 January 10 2024 and 14 June 2024.
171 Vasconcelos Maia 2021.
172 "GIRA celebra hoje o seu 7º aniversário," 19 September 2024; Município de Lisboa 3 October 2024.
173 "COVID-19 Cycling Measures Tracker" 2020.
174 Pereira 2022; Carvalho 8 April 2020.
175 Câmara Municipal de Lisboa et al. 2020, 38.
176 Câmara Municipal de Lisboa et al. 2021.
177 Correia May 2024; Município de Lisboa 23 May 2024
178 Global Designing Cities Initiative 16 September 2024; Município de Lisboa 2 June 2023; Lisboa E-Nova 16 September 2024.
179 Filipe 2023.
180 Sheller 2018.
181 Pereira 2022.
182 Pereira 2022, 162–67, 226–28.
183 Sheller 2018.

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6 Group of cyclists, c. 1900. © Arquivo Municipal de Lisboa | [Grupo de ciclistas: reprodução], Alberto Carlos Lima, LIM002816.

9 A group of ladies participating in the bicycle parade, 1908. Benoliel, Joshua. "Um grupo de senhoras que tomaram parte da parada cyclista." *Illustração Portugueza*, 14 December 1908. Courtesy of Hemeroteca Municipal de Lisboa.

11 D. Maria riding a bicycle in the gardens of the Queluz Palace, c. 1890s. "D. Maria a andar de bicicleta nos jardins do Palácio de Queluz," Photographer unknown, Palácio Nacional da Ajuda. Courtesy of Museus e Monumentos de Portugal /Arquivo e Documentação Fotográfica.

12 Map of Portugal, with macadam roads and railways: published on the 6th anniversary of the *União Velocipédica Portuguesa* 1905. Loureiro, Henrique, e José Pires Marinho. "Carta de Portugal contendo as estradas de Macadam e caminhos-de-ferro: publicada para commemorar o 6o anniversario da fundação da União Velocipedica Portugueza." Lisboa: União Velocipédica Portuguesa. Biblioteca Nacional de Portugal. CC-9-P2. Courtesy of Federação Portuguesa de Ciclismo/ UVP and Biblioteca Nacional de Portugal.

14 Bicycle race, c. 1910. © Arquivo Municipal de Lisboa | [Prova de ciclismo em Lisboa], Eduardo Alexandre Cunha, ACU000657.

16 Area of Campo Grande Park reserved for bicycle rental, 1969. © Arquivo Municipal de Lisboa | Local do Jardim do Campo Grande reservado a aluguer de bicicletas, João Hermes Cordeiro Goulart, JHG003348.

17 Cyclists in Terreiro do Paço, 1911. Benoliel, Joshua. "A parada cyclista do dia 8. Os cyclistas no Terreiro do Paço." *Illustração Portugueza*, 16 January 1911. Courtesy of Hemeroteca Municipal de Lisboa.

18 Subida à Glória Cartoon, 1926. Public Domain.

21 Group of cyclists, c. 1900. © Arquivo Municipal de Lisboa | [Grupo de ciclistas: reprodução], Alberto Carlos Lima, LIM002816.

22 Race at Lisbon's Velodrome of Palhavã, c. 1914. © Arquivo Municipal de Lisboa | [Velódromo de Palhavã: prova de ciclismo], Eduardo Alexandre Cunha, ACU000655.

24 Ice cream seller, 1968. © Arquivo Municipal de Lisboa | Vendedora de gelados, Casa Fotográfica Garcia Nunes, NUN002226.

25 Maps of Lisbon's bicycle businesses (1910-1960). These businesses and their addresses were found in Lisbon's *Anuário Comercial* following ten-year intervals, and projected over contemporary maps. © João Machado.

26 Man and a woman riding bicycles, São Martinho do Porto, Portugal, 1937. Credits: Sérgio Geraldes Barba. Courtesy of Maria Madalena Geraldes Barba de Henriques Lebre.

27 Portuguese women of the twentieth century, 1941. "Portuguesas Século XX," *O Século Ilustrado*, no. 178, 31 May 1941, 8. Courtesy of Biblioteca Nacional de Portugal.

28 Portuguese Youth Parade near the Lisbon & Azores Bank, before 1947. © Arquivo Municipal de Lisboa | [Desfile da Mocidade Portuguesa perto do Banco Lisboa & Açores], Paulo Guedes, PAG000703.

30 Race of the Crafts in Alvalade, Postmen, 1954. © Arquivo Municipal de Lisboa | Corrida dos Ofícios em Alvalade, boletineiros, Armando Maia Serôdio, SER000749.

31 Some of the bicycles offered by the company Armando Crespo and Co. for the "Dream Contest," 1939. "Algumas bicicletas que a firma Armando Crespo e C.ª oferece para o 'Concurso dos sonhos'," Photographer unknown, Empresa Pública Jornal O Século, Álbuns Gerais n.º 63, doc. 684N, PT/TT/EPJS/SF/001-001/0063/0684N, ANTT. © Arquivo Nacional da Torre do Tombo. https://digitarq.arquivos.pt/details?id=7958555. Courtesy of ANTT.

33 Master Plan of Lisbon 1948. De Groër, Étienne, "Plano Director de Urbanização de Lisboa." Courtesy of Gabinete de Estudos Olisiponenses.

34 Lisbon's Avenida dos Estados Unidos da América under construction, c. 1950. © Arquivo Municipal de Lisboa | Construção da avenida dos Estados Unidos da América, Judah Benoliel, JBN004661.

37 Fruit vendor on the street, 1960. © Arquivo Municipal de Lisboa | Vendedor ambulante de fruta, Arnaldo Madureira, ARM000459.

38 Cyclist and carnations at Avenida Almirante Reis on May 1st, 1974, International Workers' Day. Frame from the film *As Armas e o Povo*, Colectivo dos Trabalhadores da Actividade Cinematográfica, 1975 (time-code: 00:28:36:05). Courtesy of Cinemateca Portuguesa.

41 Cartoon "Say no to Technocracy," Portuguese Environmental Movement's magazine. *Frente Ecológica* 9 (1976): 16. Courtesy of Cristina Cautela and Biblioteca Nacional de Portugal.

42 Leaflet "Say yes to a Ecosociety" by the environmentalist group Pirâmide, 1978. Courtesy of José Carlos Marques and Filipe Valente Rocha.

43 Humorous cartoon on harmful motor noise pollution. "Ffffoniiiia." *Sobreviver. Revista mensal dos (im)pacientes* 6 (1981): 19. Courtesy of Ulmeiro (José Ribeiro) and Biblioteca Nacional de Portugal.

44 Poster "Means of life and health: Towards happiness and freedom," "Bicicleta," *Ciclismo* 2, no. 19 (1981). Courtesy of Biblioteca Nacional de Portugal.

45 Poster announcing the reopening of the "Recicleta" bicycle workshop in the Alfama neighborhood, Lisbon, in November 2014. Courtesy of GAIA.

47 Photograph of Critical Mass at Avenida da República, Lisbon, 2006. © Ana Pereira. "Massa Crítica de Lisboa em 30 de Junho de 2006, na Av. República." Courtesy of Ana Pereira.

48 Photograph of Largo do Rato, Lisbon, 2019. © Bernardo de Campos Pereira. Courtesy of Bernardo de Campos Pereira.

51 Photograph of Avenida Defensores de Chaves, Lisbon, 2019. © Bernardo de Campos Pereira. Courtesy of Bernardo de Campos Pereira.

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