

6.1 **BiPEDAL – ‘The (bi)cycle and its educative potential’. Uses of (bi)cycles as forms of participation in the educating city**

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× **Abstract**

“The first mammal to wear pants” (Pearl Jam, 1998), is also the first to pedal a convivial tool (Illich, 1973) - the (bi)cycle, further on broadly replaced by another that generated more demands than it can satisfy - the automobile. BiPEDAL symbolizes the defence of our nature, embedded in our culture, not erased by it. This project aims to understand the educative potential of cycling, questioning their impact in biopsychosocial development, participation in urban space and in the construction of educating cities by analysing cultural barriers and triggers to the expansion of velomobilities in Porto, in order to promote it. Automobility (Cox, 2019) is a relevant cause of such barriers. Motorization generated detachment between human beings and their bodies. Being bipedal is no longer exciting!? The reconnection between body and mind - in individual and collective development, from an educative perspective of urban development can trigger the expansion of velomobility.

Keywords: velomobility, civic participation, educating cities.

Theoretical Framework

The paper ‘The (bi)cycle and its educative potential. Uses of (bi)cycles as forms of participation in the educating city’, presented at the KISMIF Conference 2021, introduced the project ‘BiPEDAL - The educative potential of velomobility. Perspectives of bicycle users, educators and students’, based at iNED – Centro de Investigação e Inovação em Educação. This project is grounded in an integral humanist perspective of education based on the conception of the human being as a whole – *bodymind* and a notion of culture that includes nature, reshaping it but not erasing it (Fernandes, 2021; Levi-Strauss, 2013); on the theorization on Educating Cities which recognize the city as a unique place for encounter and therefore for learning at the informal, non-formal and formal levels (Caballo, 2001); on previous research on the domination of automobility patterns and its negative effects on societies and the environment and on the conception of velomobility and its connections with human development and humanism (Augé, 2010).

In other countries, cycling uses have been framed under ecological perspectives (Lemos et al., 2017) associated with Do-It-Yourself ethos (Barnard, 2016; Ritzer et al., 2012) as well as with the emancipation of minority groups (Ox, 2019; Furness, 2005; Mackintosh and Norcliffe, 2007; Steinbach et al., 2011) highlighting its valorisation for personal development, emancipation and the (re)evolution of cities as renovated places for encounter and humanity (Augé, 2010). In Portugal, there has been focus on analysing the propensity of use, influencing factors of modal shift (Silva et al., 2018), barriers and motivators for modal choice, user profiles (Felix, 2019)

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and lifestyles (Diogo et al., 2018). The educative perspective has been neglected. BiPEDAL will cover that gap, by exploring the educative potential of cycling for the individual and for the collectives and contexts where he/she participates, based on the conceptualization of Educating Cities and on the theories of velomobility in contexts of automobility (Sheller, 2004; Randell, 2017; Cox, 2019).

Therefore, it is relevant to know such potential, in all educative domains - formal, non-formal and informal, and diverse disciplinary areas of education, such as, physical, social, inclusive, linguistic and artistic. By the educative potential of velomobility we mean the possibilities of learning - in an integrated sense of cognition, perception and movement; and of biopsychosocial development - based on the awareness of humans as corporal beings - that the utilitarian and recreational use of cycles can provoke or emphasize in the subjects. Thus, we are interested in the learning triggered by the use of cycles, considering it as a means of experiencing reality, construction of knowledge, self-knowledge, critical questioning, and personal and social transformation.

Velomobility is part of the evolution of social practices and mobility technologies. The uses of the bicycle that have been explored include its use as a means of everyday utility transport, its uses in different sport modalities, and also recreational uses, namely, bicycle tourism and leisure, particularly for children (Augé, 2010; Wexler, 2010). These representations are associated with social representations, which are also dynamic and variable, often expressed in artistic manifestations from different domains, from music to graphic arts, including literature.

The Portuguese Territorial Network of Educating Cities (2019, p. 2) highlighted the connections between education, the arts and sport, "in an interdisciplinary and holistic view" including all forms of artistic, cultural, social and sports expression", as we envisioned in this project and incorporated in the interdisciplinary constitution of the research team.

Despite the greater parity in the use of public roads that the 2014 Highway Code decreed and the slight increase in the use of bicycles in Portugal, the excessive use of the private car is a reality that fits into a "globally dominant pattern of auto mobility" (Cox, 2019, p. 4), presenting severe levels of noise and air pollution. According to the European Environmental Agency, transport causes more than a quarter of greenhouse gases and, unlike other sectors, this percentage has been growing; the dominant use of motor vehicles, particularly the automobile, limits public space for pedestrians and cyclists (Fernandes & Kanashiro, 2018). Precarious entitlement was the

reality described in Dublin in recent research with cyclist commuters, confirming the often shared perception of danger by urban cyclists. Even though the law grants them the use of space, that space is often insecure, other road users disregard their right to circulate and law enforcement is insufficient and negligent, making cyclists feel that their defence is in their hands (Egan & Philbin, 2021).

As a structural pillar of human existence, like time (Diogo, 2010) space is one of the internalized and embodied external factors in the processes of identity construction (Fortuna, 2013; Mendes & Nóbrega, 2004). Therefore, living in a given geographical context implies its greater or lesser appropriation, material and symbolic, sensory and embodied, depending on its relevance to everyday life and to individual and collective trajectories. Mobility patterns are a central way of living and appropriating space, through the interaction between body-mind in motion, means of transport and territory (Cox, 2019; Mendes & Nóbrega, 2004).

Given the city's functional, class and identity diversity, it is still an obligation to fight for the right to the city as defended by Lefebvre (2011 [1968]), as we have not yet managed to build fair and inclusive cities, where people with disabilities can participate, live and use the same time-space of services and resources as everyone else (United Cities and Local Governments, 2019). We understand that recreational and utilitarian uses of bicycles, when based in a logic of mobility that rebalances the need for speed and does not propose for example electric bicycles as replacement for cars (Cox, 2021), can be an important tool in the process of democratizing the design and forms of appropriation of the city, contributing to the United Nations' sustainable development objective 11 (Fernandes & Kanashiro, 2018; Ivonia & Albino, 2015; Mota et al., 2019).

The Charter of Educating Cities claims the educative potential of the city, calling the focus of public entities on the development of its citizens through inclusive and participatory policies. The city is seen as a meeting place with several opportunities for collective learning, in formal, non-formal and informal spheres (Rede Territorial Portuguesa das Cidades Educadoras, 2019). According to Caballo (2001), the horizon of educating cities is the articulation between the multidimensionality of education throughout the lives of citizens and the integrated development of territories. This proposal implies the defence of the welfare state and a redefinition of socio-economic relations, favouring citizenship at the local level and local responsibilities in comprehensive and articulated educational policies (Caballo, 2001). It also promotes civic engagement by social economy

organizations, schools and higher education institutions. An educative perspective strengthens approaches to initiatives to promote velomobility (Savan *et al.*, 2007), whose cooperative role is framed in this study (Meiros & Ribeiro, 2017). Within the scope of academic organizational responsibility, bicycle-friendly campus initiatives demonstrated great potential to achieve the UN SDGs objectives, as was experienced in Aveiro (Mota *et al.*, 2019).

This view is in line with the emancipatory perspectives of education (Mezirow, 1997; Freire, 2012), promoting the integration of all areas of knowledge and learning contexts, as well as the non-hierarchical articulation between body and mind in the framework of lifelong learning (Unesco, 2010; Nóbrega, 2005). All spaces of education, participation, claim, conflict and cooperation are experienced from perceptual and cognitive experiences built on the basis of the relationship between the subject and the context, which is concretized in the positioning and movement of his biocultural body in interactions in a given context. This acceptance starts from the challenge to the disjunction between sensation and perception, defending an integrated conception of the sensorial, perceptive, cognitive and participative dimensions of the human experience (Mendes & Nóbrega, 2004). Both “body work and body psychotherapies have concurred for reconducting communication to its perceptive and emotional dimensions, seeking to reach beyond verbal interaction” (Fernandes, 2021, p. 17) which has been “cause of so many misunderstandings” (Fernandes, 2021, p. 110).

The benefits of physical activity for well-being and learning are largely documented (Villwock and Valentini, 2007). However, we are still far from considering the body as a component, rather than a mere instrument, of the teaching-learning processes and biopsychosocial development (Gardner, 1999; Strazzacappa, 2001). Hence, our education systems are highly centered in verbalized communication and have been part of the organizations that historically constructed power dispositives to discipline human bodies according to certain production logics and its inherent power hierarchies (Apple, 2004). Schools as well as cities designed according to the industrial mode of production and as an instrument of its maintenance, are crucial steppingstones to assure symbiosis between the accumulation of humans and the accumulation of capital. The accumulation of docile bodies controlled by minds that follow the norm and are formed in the acceptance that their own body functions and movements are ruled externally according to a given social order (Foucault, 2021 [1975]). How can a subject be free

when built from obedience to the restriction of its own embodied experience?

In our perspective, velomobility can demonstrate how the body is an element of learning and development in itself (Hempkemeyer & Guimarães, 2016), at the same time managing to counter the artificial opposition between leisure time and work / work hours (Araújo, 2017), which will favour the revaluation of the experience so crucial in the development of collective sensibilities (Maffesoli, 1996). In previous exploratory research on groups promoting the use of bicycles in Porto, we identified ecological, anti-mechanization, DIY and anti-capitalist motivations, as well as the promotion of physical activity, sports and healthy lifestyles. This research revealed the valorisation of the bicycle as a means for biopsychosocial development and for emancipation, particularly for women, given that the movement promotes emancipation and the transformation of mentalities and attitude patterns (Diogo *et al.*, 2018). The management of the senses achieved by the development of psychophysical capacities, motivated by the formation of perception in movement, favours the awareness of oneself, among others, as well as the knowledge of territories, enhancing the strengthening of emancipatory social bonds (Maffesoli, 1996).

In other contexts, velomobility has also been framed in ecological perspectives focused on promoting harmony between humanity and the planet (Lemos *et al.*, 2017), associated with the DIY ethos and bicycle repair practices and prosumption (production + consumption), such as bicycle workshops (Barnard, 2016; Ritzer *et al.*, 2012). As Illich (1974, p. 63) defines it, the bicycle is a “user-friendly tool” that “generates only the demands it can satisfy”, maintaining a balance between “living space” and “lifetime”. This means that bicycles are means of transport that favour the design of a city tailored to people (Diogo *et al.*, 2020), considering the spatiality and temporality of human bodies. Such user-friendly tools (Illich, 1974) enhance human capacities without replacing the work of the body (Arendt, 2001), promoting their valorisation in spatial development (Soja, 2009), ultimately, in the work of building a future project for Humanity.

The bicycle is seen, therefore, as an instrument of democratization in urban planning (Diogo *et al.*, 2018; Mota *et al.*, 2019; Ivonia & Albino, 2015; Fernandes & Kanashiro, 2018) and for the emancipation of minorities (Cox, 2019). During the 19th century, its use challenged the ideas of femininity, expanding the social space of women and promoting the use of more practical clothes (Furness, 2005; Mackintosh & Norcliffe, 2007), even in our times, it was found that some women cyclists feel that they have developed

their assertiveness when taking place in the public space, interacting openly as cyclists with other users of public roads (Steinbach et al., 2011). The bicycle itself is an identity object, as it is impossible to talk about it “without talking about yourself”, it allows us to explore capacities and interests, “testing the freedom” that it conveys and represents (Augé, 2010, p. 9). It can even be an identity mark for a region or district, improving its cohesion and sustainability (Ivonia & Albino, 2015).

As Augé (2010, p. 84) states, “cycling is a humanism”. It provides a “continuous training for the learning of freedom” and the mutual respect that the refocusing of the human experience on the “satisfaction of living” as a corporal being - completely biological and completely cultural - can provide (Mendes & Nóbrega, 2004). Velomobility can bring us back to our biological rhythm, by countering the ‘whirlwind of moments’ that urban agitation sets up, giving rise to an ‘aesthetic of the moment’ that decentralizes us. This balance with the body rhythm gives the human being time to enjoy and care for himself/herself and self-knowledge, the thinking enjoyment that favours the critical interrogation of common sense and his own experience. In a dominant auto-mobility scenario, velomobility can contribute to a greater balance between self-care and the organization of the city (Maffesoli, 1996). These grounds do not, however, encourage us to have a normalized view of cycling, hence there are many forms of velomobility and furthermore the uses of cycles are always clustered in far wider entanglements of socioeconomic structures, political frameworks and cultural patterns, including the social uses of technology and the values attributed to it (Cox, 2021). For these reasons, we perceive the educative potential of velomobility inserted in the context of Educating Cities that are based on the protection of the Welfare State and foster civic participation, cooperation and self-management initiatives by the people at the local level.

This knowledge encourages us to question, across all domains of education - formal, non-formal, informal and transdisciplinary - physical, social, inclusive, linguistic and artistic, what is the educative potential of velomobility, not only for the individual but for groups and contexts where he or she fits, particularly, in urban spaces

Methodology

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The question “What does one learn by cycling?” was the starting point of this project. The moto that led us to explore the potentialities of velomobility in response to the global challenge of education.

Our acronym BiPEDAL symbolizes our human condition seen through a concept of culture that integrates nature is based on a holistic, humanistic and critical conception of education, bringing together a multidisciplinary team with training in these different areas and experience in the three educational spheres. We are united by the following finality:

To understand and promote velomobility as means to integral and integrated development of people and communities, favouring the inclusive co-construction of educating cities.

This aim is divided in the following goals: 1) identify cultural barriers to the utilitarian and recreational uses of cycles; 2) analyse the representations and practices that highlight the relations between cycling uses and learning, biopsychosocial development, civic participation and the inclusion of people with disabilities in urban areas; 3) broadcast these connections in order to promote the use of cycles.

Based on action-research (Henson, 2015) it is structured in two axes: the first is an exploratory stage in the educative context of the promoter organization, hence in order to investigate and act simultaneously, researchers should, firstly, apply reflection and promote change in their own concrete action contexts. The second axis is of more extensive research, it will be focused on diverse social contexts and groups, in order to amplify the understanding on representations and practices that constitute cultural barriers or motivators of the educative potential of velomobility.

The first axis – learn from within includes the following activities with students of several Graduate Degrees and two Master Degrees, focus groups; audio-script-visual-itineraries, experienced *in loco*; a velomobility meeting between cyclists, cycling promotion groups and the academic community, and educative projects within the master program of Heritage, Arts and Cultural Tourism.

The participatory dimension of this project is also achieved by the collaboration with our civil society partners: *MUBi – Associação pela Mobilidade Urbana em Bicicleta*, a national association focused on the promotion of velomobilities that conquer to more sustainable and living cities; and BYCS, an international

non-governmental organization based in Amsterdam moved by the belief that 'bicycles transform cities and cities transform the world'.

The coordinator of BiPEDAL has been an associate of *MUBi – Associação pela Mobilidade Urbana em Bicicleta* – since 2017 and is one of the founders of the Porto local section, in 2019, having been actively involved in the coordination and promotion of its activities since then. In July 2021, the cycling movement in Portugal experienced a particularly intense moment when, in sequence of a fatal traffic collision between a car and a woman riding a bicycle in Lisbon, several collectives all over the country have scheduled a common protest in her memory and to demand more safety on the roads for vulnerable users (pedestrians and cyclists). In 2020, 79,0% of the road collisions occurred within urban areas, 50,8% of fatal victims as well as most of the accidents with wounded victims. The percentage of fatal victims has increased 10,9%, since 2019. The rate of collisions with victims in Portugal has been above the European average since 2000 and this trend has not been changing.

Lisbon and Porto are the districts where most occurrences take place as well as most of the victims. In Lisbon, the municipality started to improve the conditions to cycle since 2008 by implementing cycle lanes and in 2017, a public bike-sharing system was created, resulting in the increase of bicycle users (Felix, 2019). These changes generated more debate on mobility choices and road conflicts, with significant clashes occurring in social media channels dedicated to cycling or neighbourhood and urban matters. The topic of road victims, particularly fatal victims has been one of the most broadcasted and debated, giving higher visibility to this serious long-lasting problem which concurred for a wide mobilization of bicycle users and sympathizers, in 2021. Indeed, urban cycling conditions became a significant subject in the local elections campaign in September, not only in Lisbon where most changes in infrastructure occurred.

Vera Diogo was announced Bicycle Mayor of Porto in March 2021. Bicycle Mayors are volunteers that act as pollinators between different institutions and groups of people in order to spread the seeds of bicycle culture. In her mandate, directed towards spreading the added value of cycling among children and women, the promotion of School Bus lines was the priority, initiated in a primary school in Porto in July 2021. This first pilot line came about given the contact with a teacher in that school in a civil society initiative to teach people how to cycle or help them gain more confidence cycling in the city. This action – Bicular – involved people involved in several collectives, so far, it was developed between April and July of 2021, and the group is planning to restart in October. The people that participated as learners were mostly children accompanied by their parents, and a few adult women also came to learn to pedal for the first time or to (re)gain confidence, and have succeeded, at least for a first level of motorial skills. Among the group, another member is leading a parents' association in a neighbour municipality, Matosinhos, together with other parents, he has made contacts with the local authorities to create conditions to start a School Bike Bus line, also there.

These initiatives have proliferated in Lisbon, since a municipal project was launched under the School Mobility section of the Mobility Department with support from a civic movement that created the first *School Bike Bus – Cicloexpresso do Oriente*, in 2015. In 2021, a national federation – *Federação de Cicloturismo e Utilizadores de Bicicleta* – started to organize school mobility meetings of people involved in the promotion of School Bike Bus Lines and other initiatives involving educative communities. From north to south, including one experience in the Islands, Azores, these Bike Bus Lines are running. A common nationwide initiative is planned for 2022, with the purpose of giving visibility to this important pattern change and its benefits in children's and parents' wellbeing and motivation to start the day, reclaiming attention and support from political authorities.

The second axis includes the collection of songs that represent velomobility; map representations and practices of the population of Porto Metropolitan Area through a questionnaire that will allow us to understand what associations are made between cycling and learning and which are the groups that highlight it more.

Through interviews, we will explore the representations and practices related with velomobility, from diverse groups: i) cyclists - developing in depth analysis of their experiences and reflections; ii) elderly people that are former cyclists - with the intention of finding lessons from the past, regarding active mobility; iii) people with disabilities - with focus on the specific factors that may drive them towards or away from cycles; iv) representatives of educative organizations, municipal representatives and members of the Portuguese Territorial Network of Educating Cities. The analysis of the representations and positions of the last groups will be particularly articulated, with the purpose of understanding the concepts of Educating Cities that are defended and operationalized by them, and the place they assume in the co-construction of these cities and,

particularly in the promotion of velomobility.

Currently, we are developing the first axis of our project, analysing 13 Focus Groups with students. The exercise presented at KISMIF was a first experience in analysing a song lyric that develops on concepts that are crucial to our project – human evolution and human nature.

Pearl Jam's Do the evolution

This song was included in the album Yield published in 1998, and according to Rampton (2019) inspired in a novel by Daniel Quin, Ishmael, which questions human supremacy and sheds light on relevant challenges of modern societies as ethics, sustainability and global risks.

Do the evolution by Pearl Jam (Album Yield, 1998)

Woo
I'm ahead, I'm a man
I'm the first mammal to wear pants, yeah
I'm at peace with my lust
I can kill 'cause in god I trust, yeah
It's evolution, baby

I'm at peace, I'm the man
Buying stocks on the day of the crash, yeah
On the loose, I'm a truck
All the rolling hills, I'll flatten 'em out, yeah
It's herd behavior, uh huh
It's evolution, baby, good

Admire me, admire my home
Admire my son, he's my clone
Yeah, yeah, yeah, yeah
This land is mine, this land is free
I'll do what I want but irresponsibly
It's evolution, baby

I'm a thief, I'm a liar
There's my church, I sing in the choir
Ooh ooh ooh ooh
Ooh ooh ooh ooh

Admire me, admire my home
Admire my son, admire my clones
'Cause we know, appetite for a nightly feast
Those ignorant Indians got nothin' on me
Nothin', why?
Because it's evolution, baby

I am ahead, I am advanced
I am the first mammal to make plans, yeah

I crawled the earth, but now I'm higher
2010, watch it go to fire
It's evolution, baby
It's evolution, baby
Ah, do the evolution

Come on, come on, come on

As can be read above, the lyrics highlights six main traits of human societies constructed throughout the modernity process:

- ✦ Antropocentrism – the *first mammal to wear pants* is the first to produce other animal species according to its needs and to perceive the ecosystem as its own property. The development of the notion of culture and of culture as human's specific nature (...), as well as the long processes of civilization that disciplined the bodies by camouflaging human's animality (Elias, 1990), has favored this worldview.
- ✦ Domination of nature – exploitation of resources and reshaping of natural ecosystems and landscapes only with focus on the requirements of the expansion of economic activities, as the phrase *All the rolling hills, I'll flatten 'em out* pictures.
- ✦ Mechanization of humanity – the same processes applied to the natural world are applied to human nature, which is reconceptualized, limited and shaped according to a given social order that is centered in a form of production – industrialization ruled by mechanization. *On the loose, I'm a truck* impersonates the individual as a motor vehicle as if the human body is not powerful enough and at the same time hence it is no longer in control once mankind has followed this track of intoxication with technology.
- ✦ Conformism and normalization – expressed clearly in the phrase *It's herd behavior*. This scenery is only made possible by the power of the norm and the establishment of power-knowledge relations that perpetuate authority positions and obedience to authority as moral behavior pattern based in the dualism of obligation and punishment (Foucault (2021 [1975]); Kropotkine (2018 [1899])).
- ✦ Private property defines one's freedom – *This land is mine, this land is free* prescribes the logic of freedom based on economic rights and the land as the first commodity, free for the taking, not free to share or as the basis of ecosystems which are respected in their own balance. Free, once a legal system defines the limits and the order of each users' freedoms, rights, privileges and power.
- ✦ Individualism and carelessness – *I'll do what I want but irresponsibly* does not reflect the logic of the individual freedom perceived as dependent on the preservation of the species (Kropotkine (2018 [1899])). On contrary, this is the individual that did not learn to think in morals terms guided by reason, therefore once free from control, this subject's actions are only directed towards self-satisfaction, in complete disregard of others and oblivious of how the consequences of such actions in the others and on the environment affect his own subsistence.

Inconclusions

The brief content analysis exercise of *Do the evolution* which critique is easily read by our theoretical lenses, can serve as a symbolic portrait of the *homo economicus* or the unidimensional man (Marcuse, 2011 [1964]) which BiPEDAL is opposing to. The six categories identified can become pivotal transversal themes for future analysis of song lyrics directly referencing bicycles or cycling, therefore this analysis has contributed for the advance of the project. There is some relation between the analytical exercise here presented and the preliminary analysis of the Focus Groups with students, which despite not being the object of this paper, already gave us some insights of the deep cultural level of barriers that the promotion of cycling, particularly for utilitarian purposes in our daily lives, can face. Higher education students of this age have

been entirely raised in the era of the automobile, motorization, and automation. Particularly, for those who have always lived in urban areas and grew up in sedentary families, not having learned how to cycle or barely remembering how is not uncommon. Nevertheless, students also reveal areas of human experience where cultural triggers to promote cycling can be explored, such as the sensation of freedom, inner peace and reflection time that cycling allows, as well as its possibilities to explore landscapes and diverse itineraries in the city and to be in touch with the natural elements. These triggers are contrary to the human portrait displayed in *Do the Evolution*, they are more in line with the integral perspective of human being – bodymind – to whom cognition, emotion and movement are interrelated and in confluence.

The inclusion of some types of velomobility in Do It Yourself and resistance cultures is a background that BiPEDAI cherishes, considering our view of cycling promotion goes far beyond its simple increase in numbers, it is directed “toward human flourishing, connection and wellbeing” (Spinney, 2021, p. 3), through emancipation, citizen participation in democratic social states and in the inclusive co-construction of Educating Cities.

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