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THE LISBON OF THE FUTURE

MOBILITY AND TRANSPORTATION. Transportation, mobility and accessibility

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The future is here, it's just not evenly distributed yet.

William Gibson

0) The tatan and the crystal ball

The English writer Edward Morgan Forster wrote in 1909 "The Machine Stops," a fantastic tale that portrays a future dystopia where mankind is controlled by an omnipresent and omnipotent machine - literally, a *deus ex machina* - that reduces personal mobility to almost zero, inversely exposing the universal accessibility of objects to personal desires (Forster, 1970: 3-38). Read today, it can easily be taken as a prophetic text about the manipulating power of large digital data companies and a prediction about hyper-facilitation of distance communication technologies. Like other futuristic fictions that warn of the dangers of communion between technological development and authoritarian ideologies, "The Machine Stops" exposes the risks of the unexpected consequences of good or bad intentions of social and political engineering projects, counteracting the desire for mobility.

Examples of artists, politicians, philosophers, and scientists who have produced visionary and even prophetic scenarios are too abundant to be listed encyclopaedically. Many visions and predictions will have failed and can now be read with a condescending smile, but many others are or appear to be disturbingly accurate. If, as Yuval Harari notes (2014: 133 seq.), one of the main characteristics of the human being is our ability to collectively believe in pure products of the imagination, non-existent in the natural world, and then to conceive of future time and to believe in the possibility of it actually happening is an imperative derived from the very faculty of imagining.

Is it the prophetic genius or the simple luck of coincidence that causes the present reality to have been previously imagined in the past? The question is relevant if we want, with a minimum of reasonableness, to engage ourselves in the dilettante exercise of imagining, in the present, something in the future. It would be too laborious, impracticable and even irrelevant in this context to carry out a full statistical analysis of the correctness vs. inaccuracy of futuristic forecasting instances, in any domain of human activity - say, for example, the concepts of mobility in urban space. It is more useful simply to admit that a foresight of the future is more often than not an analysis of the conditions of the present in relation to the events of the past, in order to extract interpretations about trends and, from there, to value ruptures or continuities. Sharpness of mind may be a relevant factor in the process of analysis and interpretation, but since indeterminacy is the central feature of the future, luck is what makes the prediction accurate, and it is only perceived as accurate in that it is, itself, interpretable (put another way, we read today in the story of EM Forster what we want to read into it).

There is a great risk that this type of exercise has traps set by argumentative fallacies, especially if we give too much value to formulations of a syllogistic type. Stephen Toulmin (2003: 100-101) warns of the risk that underlies generalisation. Taking the classic Aristotelian example:

Socrates is Greek

All the Greeks are mortal

Therefore, Socrates is mortal

The philosopher is keenly aware of the bad habit inherent in generalising procedures which continually escape our supposed rationality: we may admit as proved that all the Greeks who have died are mortal; but we cannot prove how true it is, let us just imagine, that the Greeks now and in the future will die. We live with irresolution by depriving it of our awareness of the proof of truth. In turn, we confuse metaphysics and semantics too easily, attributing to conditions of thought what are in reality conditions of language: syllogism is, above all, a verbal formula, therefore dependent both on general categories of language and on specific categories of languages (Scribner, 1977: 494). In this respect, it is not too much to recall that at least in its "weak" variant, there is a place in the anthropologist Lee Whorf's hypothesis about linguistic relativity in the capacity to "make worlds", that is, to condition collective thinking: on the properties of the language of the Hopi Amerindians, compared with what he called the *Standard Average European*, he notes that "our" clear verbal

distinction between past, present and future times is not only absent in the Hopi language as temporal categories are closely associated with spatial categories (Whorf, 1978: 143-145), thus casting an indelible doubt about the universality of linear understanding of time.

These brief statements are enough for us to assume that the proposal of the exercise which we seek to answer here is a minefield, and the simple intention to visit it exposes the extreme vulnerability of our conditions to survive unharmed. We have then to:

Imagine that the future is on the one hand futile, and on the other imperative; the future being indeterminate, the correction of a prediction escapes the calculation of probabilities; imagining the future is already believing in it, and so an accurate prediction is one that is more likely to provide coherence to collective formulations of belief, thus socialising a willingness to produce the conditions for it to materialise; the construction of prediction formulas depends on specific historical, cultural and linguistic contexts, and is not subsumed to the proof of absolute truth.

1) *In extremis*

On the path of anthropological studies on science inaugurated by Pierre Latour, the German Detlev Nothnagel carried out an ethnographic investigation some years ago among the scientists of the famous particle acceleration laboratory of the European Organization for Nuclear Research in Meyrin, near Geneva. Their conclusions on the processes of theoretical and experimental representation of the high energy activities of subatomic particles deserve mention, insofar as they explain, by analogy, the theoretical and experimental procedures of transportation planning and urban mobility. Part of his observation, and his reflection, focuses on the role of the *Big Men*, the highly skilled and graduated specialists who, by accumulating the authority that comes from their mastery of theoretical physics and the political-administrative control of the execution decision of experimental activities involving many hundreds of scientists, and with budgetary costs of several million Euros, define with a certain measure of randomness the future of research and scientific discovery (Nothnagel, 1997: 63). The example is relevant to the extent that, in this context (as in the scope of urban transportation planning), it is not a matter of imagining creatively, imagining inspirationally, prophesying utopian or dystopian futures with some dose of more or less sane insanity, but rather instituting more or less systematically physical and

mental infrastructures, which are difficult to reverse, the planner-*Big Men* acting as uncontrolled controllers of the future mobility of large masses of people by combining timeless theories with experimental results.

Excessive reliance on the value of the analogical argument is often a sign of mental laziness in that, forcing similarity between the terms in comparison, it inevitably impoverishes the analysis. It is evident that the laboratory reproduction of physical phenomena has no counterpart in the social (re)construction of urban mobility infrastructures: pedestrians are not neutrinos; vehicles are not molecules and streets are not atomic accelerators. The analogy proposed is, however, valuable if we understand it in a Kantian sense: not as a resemblance between terms but as a resemblance between the differences identified between terms (Kant, 1783: § 58). The production of the future in high energy physics is not equivalent to the production of the future in the planning of transportation; but the difference in the correlation between the theoretical model and experimental temporality in CERN is to some extent analogous to the difference between theoretical planning and experimental solution of problems of urban mobility. Not only do the two types of *Big Men*, claiming a scientific authority, constitute mediators between politics, administration and technology. They also claim that the experimental production of future scenarios, in both cases, implies the availability of important financial, logistical and human resources, which in turn legitimise their temporally irreversible nature.

Laboratory acceleration of subatomic particles is admittedly a very risky activity and therefore the search for results - of "discoveries" - requires a strict control of the direction which the future takes. On the other hand, the planning of urban transportation and mobility systems is – probably to the greatest disappointment of its *Big Men* - subject to a high degree of indeterminability of the future consequences of the models to be tested. The problem does not lie, of course, in the inconsistency and variability of human behaviours and imaginations, but rather in the reduced ability of the planner to incorporate them into his model. In addition, it is also assumed that a physicist is better able to understand the paradoxes of *quanta* than a transportation planner is able to understand the paradoxes of urban life: a physicist claims to know physics; a planner rarely requires a specialisation in social and human sciences.

Let us then imagine the hypothetical case of a *Big Man* of urban transportation who recognises himself as a *small man* who is intellectually cautious and moderately

aware of the advantage in implying social factors in the construction of future scenarios of mobility. What could such a rare planner say to us when faced with the challenge - puerile and yet imperative - to imagine the medium-term future of individual and collective mobility in a medium-sized city, capital of an economically, geographically and culturally *limen* country. Lisbon, for example ...

The *Little Big Man*, not being a bricoleur but a scientist, would start by looking at the general scheme of events and then focusing on the particular. He would see the structure before spending his time studying the details of the dynamics.

Occasionally, he would try to escape the dehumanising corset of technical vocabulary. He would readily admit that predicting the future is a risky activity in an era of rapid change. More than visions, he would look at trends, and group them into three broad themes: energy, technology and politics, being almost certain that these areas have a direct influence on the cost of urban mobility. And, because the economy always knocks at the generalist's door, he would assume that cost evaluation is one of the most likely factors to change a mobility paradigm. And because imagining is an imperative, he would choose as a method to establish futurological narratives with an archetypal flavour in order to keep alive the legitimate hope of controlling destiny.

Inevitably, he would confront the Great Syntagmas of present times: "globalisation" and the "digital age". He would evoke their intricacies to show how the inherent entropy of human responses to accelerating technological novelties render a linear prediction of the future of mobility unfeasible. He would see in the social and technological changes that result from a profound change of scale the danger of the multiplication of discontinuities and inequalities. It would be unacceptable to perpetuate the practice of previous visionaries who, accommodated to the presupposition of historical linearity, who entertained themselves predicting the future by inspecting the past. He would take upon himself Nassim Nicholas Taleb's warning against "mediocrist" analyses in an "extremist" context (Taleb, 2007: 32-37), and against the attempt to continue to describe and analyse people and events through modal distribution mechanisms because new players with global impacts will have increased the standard deviation of most phenomena. He would thus conclude that extreme events and large-scale discontinuities, whose nature are unpredictable, will dictate the "future" without the certainty of being able to rely on the springboard of the "past".

The corollary of such a position would be to give up, immediately, the game of futurological prediction. But as the urge is imperative, soon *Little Big Man* would find a way out of his dilemma. Because, he would reflect, human behaviour will always be human behaviour, in a context of the market economy, it always tends to be governed by its (real and perceived) cost. Exceptions aside, where the consumer opts for a more expensive product because of emotional issues, he knows that large numbers (especially in freight) are usually determined by cost. He would, of course, distinguish between price and transportation cost to introduce the concept of 'generalised cost', a safe index from which to begin to 'predict' - assuming at least one constant factor: that the principles of the market economy are not going to crumble completely in the era of "Extremistan".

Current wisdom states that "generalised cost" includes, in addition to the conventional price determined by the direct costs of transactions, includes other costs not usually perceived by users of transportation. For those who are travelling or for those who send goods, the decision to make the trip or the expedition is conditioned by a set of factors other than the monetary cost of the trip: the time that will be spent in completing it, the level of comfort and quality provided by the means of transport, and the opportunity and possibility of carrying it out. The *Little Big Man* knows, or believes, that this "generalised cost" depends on three major interdependent factors: energy, technology, and politics.

II) *In situ urbis*

The party is over

Physical mobility needs energy: this is an unquestionable platitude. The hydrocarbons that have so strongly conditioned life in the last century have allowed a growing percentage of humankind to make disruptive dreams of dizzying speeds, and have induced "modern" urbanized societies to quasi-comatose states of drunkenness from consuming cheap energy. A *Little Man* will not have a clear conscience over this, but a *Big Man* has an obligation to integrate in his calculations the basic assumption that three tablespoons of crude is sufficient to obtain the energy of eight hours of manual labour, and that the energy present in the full fuel tank of a motor vehicle is equivalent to two years of "blood motor" activity that we are made of. It is therefore reasonable for the *Little Big Man* to choose the notion of "energy crisis" as a problematic pillar of analysis. Experts studying the oil industry

approach it obsessively, although they do not agree upon when the peak oil production occurred or when it will occur, and what will happen when it occurs (if it has not already occurred). The oil crisis is also an excellent illustration of a complex and unquantifiable system, conditioned by agents on a world scale: while not even knowing what the present level of the crude reserves of the most important regional source is, Saudi Arabia (Simmons, 2005: 137 seq.), the overall total quantity of "black gold" can hardly be estimated. Of course, this indeterminacy does not prevent one from establishing that oil consumption depends on price changes, which in turn interfere with global economic health and, in parallel, when the world economy slows down the price of cheap oil. The production of new technologies (electric cars, nuclear fusion, solar energy, etc.) has the potential to influence not only the price of oil but also the continuity of its production (take for example tar sands, fracking, deep-sea subsurface wells and other oil reserves too expensive to exploit until a certain price-per-barrel). It is safe to assume that the state of the world economy influences consumption but so does the investment in technologies available for the extraction and refining of oil.

The *Little Big Man* can thus set a first level of prediction on mobility: developments in the price of oil in particular and energy in general will largely determine the future of transportation systems and urban mobility. If the near future results in high energy prices required for transportation, conversion to smaller, hybrid or fully electric vehicles will be faster. If this results in extremely high prices, new global financial crises may occur, reducing consumption and moderating price increases - with the double effect of slowing investment in alternative technologies and renewing interest in them. The risk for some utopianist trend writers is that as the peak oil approaches (if we are not already living it) the world economy may enter a period of strongly undulating price increases. These high prices, or oscillating trends towards high prices, can also lead to a change in collective habits: to the detriment of the private car, the use of public transportation, the bicycle and more hunger for walking can increase.

The historical distrust of urban populations towards certain less rewarding forms of mobility and the tendency to join alternative modes of transportation may alter collective behaviour (for example, a succession of strikes in public transport favours the purchase of private cars). If the high prices of fossil fuels persist over time, they have an indirect impact on the distribution of the urban population, preferring, for example, densification against dispersion. In an age that is advertised as extreme, it is dubious to invoke past experiences to calculate future social behaviour. But the

Little Big Man would admit its heuristic value as an element of counter-proof to the reliability of a forecast. The fact is that, in this case, the rise in the oil price may not lead to the benign vision referred to above of dense, cycling and walkable cities in the future. At present and on average the energy waste in the use of the private car is so high that there is a lot of manoeuvring space to maintain the same levels of urban and peri-urban displacement (and hence dispersed cities) using more efficient technologies. It is only with very cheap energy that the globalisation of the use of one-ton machines for single-person movements within cities can be democratised globally, with 85% of the fuel being spent on bottlenecks and caloric greenhouse emissions. If, as a result of the worldwide democratisation of this mode of displacement, the price of fuel increases, it is as possible that the urbanised humankind shall be forced to reduce the extent and intensity of displacement radically and painfully, as it is possible that humankind shall try to maintain the situation by making the engines more efficient, making the vehicles lighter and/or using alternative energy (electricity, hydrogen cell, for example). It is even possible to conceive that the generalised cost of travel will fall drastically if, by using autonomous vehicles, the time gained for driving can be diverted to working, socialising or resting during the journey.

Tele-auto-mobiles?

From the user point of view, driving is not only a waste of energy but also a real loss of useful time, it being normal for an urbanite to spend up to 60,000 hours of his life commuting. For the service provider, accessing the wealth of 60,000 hours of life for an urbanite is a real manna. A driver who does not drive becomes the most desirable mobile consumer of digital services - he is not distracted by locomotion as a pedestrian, nor is he disturbed by strangers on the Underground or on the bus. He is available to provide and consume information, strengthen data networks, acquire, change and communicate, provided, in the name of personal security and individualistic onanism, he agrees to surrender his intangible rights to freedom and privacy.

The *Little Big Man* could not but seek to equate the contrasting benefits and perils of such a paradoxically sedentary mode of transport, in which the naïve Forsterian opposition between mobility and accessibility is dissolved. The promise of the autonomous automobile risks, in a sense, being the unstoppable machine where "thing" and "service" connect to the internet to better subjugate the "person." The

mobile telephone has the potential to free humanity from one of the greatest factors of trauma - the road accident pandemic, which in the 20th century claimed more than 45 million lives, now causes, annually, the death of 1.25 million people and serious injuries in 50 million others. It is also offered as a means of rationalising travel, optimising routes, minimising consumption, reducing travel times without resorting to increasing speed at the expense of the most fragile users of the road; the tele-automobile epitomises, rather than the "internet of things", the "internet of services": Marshall McLuhan referred to the car as the "mechanical wife" (2003); its autonomous version may well be called "mechanical-digital harlot".

It makes "the car thing" ownership less attractive without necessarily reducing the amount of travel, while offering several extra services, and reduces the danger of shocking contagion to almost zero. But new costs must be incorporated into this type of mobility: they are the costs associated with the digital era itself, in which the networks of computer memories do not forget information, rather accumulate it, exploit it and monetise on it. It is now said that if oil was the "black gold" of the 20th century, - an unfortunate expression that camouflages its origin: the slavery of millions of Africans by Europeans over four centuries -, computer data is the "black gold" of the 21st century. There is some unintended irony in this metaphor about the immense control and power that the large supra-national IT data management conglomerates progressively hold over humankind: the immense value of digital data lies in the predatory and monopolistic nature of a scheme that effectively enslaves individuals on a global scale, not only by making them dependent but by exploiting their continuous workforce and the systematic provision of information of all kinds without a fiduciary counterpart. The magnitude of the problem is so great, and the number of vectors so vast, that it will be very difficult for the *Little Big Man* to calculate the widespread costs of automated vehicles circulating in urban areas accurately. He will probably need help from complex computational algorithms owned by one of the supra-national conglomerates.

(In)conscience

Unless artificial intelligence overcomes the natural stupidity of the human being and we definitively teleport our minds and identities from the prison of the organic body to the digital ether, (as the obtuse post-humanists seem to want), urban mobility planning will continue to require political dialogue to consecrate collective imaginary scenarios, and these will continue to depend on processes of sacralisation of

centralizing power and uni- or multi-personal figures that represent it. The *Little Big Man* would be seen as a conduit between the needs and aspirations of the masses and the dual decision-making and representational role of political managers. However, these will be strongly committed to the management of limits (environmental, territorial, economic).

At the end of the 20th century, the planning and management of transportation systems sought to materialise, with different shades in different regions of the planet, the pattern known as "predict and provide". The starting assumption was that, by studying the past and extrapolating the demand (through analysis of land use, travel behaviour and supply of transportation), the theoretical models elaborated could be applied in a brutalist way to the predicted points of tension in the transport infrastructure of cities or even entire countries. These models of American origin, initially produced in Chicago in the 1960s, offered technicians and politicians the illusion of control of the future. As is always the case, these models (called "four steps") became paradoxical prophecies of self-realisation: in trying to anticipate the supply needed to meet anticipated demand, they promoted the construction of highways that, in turn, generated the demand that had been forecast.

The notion of limits was conspicuously absent in these early traffic models. Later, when urban populations began to question the rationality of continuous road building and expansion, the notion that supply should be somehow limited entered into political discussion and ideals. More recently, environmental capacity to pollution overload and the limits of automobile access to sensitive or fragile areas have become priority concerns in urban management. These "four-step" modelling tools and the "predict and provide" mantra became a matter of public controversy, eventually discredited by practitioners and discarded by politicians. Yet both still distrust the validity of alternative modes of planning and management of transportation systems. Until very recently, walking and cycling were absent and invisible in most Euro-American modelling and decision-making efforts, with most transportation models not including walking and the use of the bicycle in their algorithms.

The generalisation, by urban populations, of the awareness of limits (environmental, resources, physical space) and the social energy necessary to confront them have the potential to condition the future planning of transportation systems. In terms of resources, the price of energy can be crucial both for theoretical planning and for the political approach. It is true that environmental indicators are now beginning to be

included in certain transportation management models. Public pressure and response from policy makers may delay the internalisation of real transportation costs and reduce consumer price increases - for example by reducing fuel taxation in the event of dramatic shortages. Thus, it is expected that the demands of electoral cycles will continue to have the power to suspend or delay the solution of such problems.

It is therefore not inconceivable that the price of resources will continue to be kept artificially low until the situation is recognised as unsustainable and structural changes become unavoidable. But it is also reasonable to expect the price of fossil fuels to rise due to carbon taxation in the near future, at least until other non-carbonic energy sources effectively replace them in propelling urban transportation systems. The *Little Big Man* could not fail to be attentive, in his humble and discreet planning activity, to the signs of change in the priority of investments in the road networks that politicians and populations will follow. No less attentive should he be to the realisation so dramatically evoked by director Adam Curtis in his recent documentary *Hypernormalisation* (BBC, 2016) that today political life runs the danger of escaping from the control of politicians and populations only to fall into the hands of the trifacial Janus of globalisation: financial power, digital platforms and warrior castes.

III) *Olissipolis*

Little Big Man is the epithet of Jack Crabb, the main character in a 1964 novel by Thomas Berger, who became world famous thanks to Arthur Penn's film with the same title. Crabb, raised by a Cheyenne family, was said to have reached the age of 120 and the story he told mixed reality and fiction, truth and fantasy. A literary tool of revisionist criticism to the inequities of the "conquest of the West", the *Little Big Man* was a man without any identity characteristics, ill at ease among Indians and cowboys alike.

It is not that he was a planner of transportation, he only moved between contrasting cultural settings and an immense territory still untouched by the overwhelming urbanisation and industrialisation of the United States' east coast. A worthy heir to the caustic *flaneur* Fialho de Almeida, the *Great Little* Reinaldo Ferreira (who signed as "Reporter X"), imagined in 1926 Lisbon visited by another American, this one a Mephistophelian urbanist, who had in the holster a Great Plan to solve the problems

of the mobility and sanity of a city that since the end of the 19th century had been attempting to remake itself in the image of Haussmannian Paris or of Cerdàian Barcelona, because of the acne of its seven hills and the old pre-and post-Pombaline flayings.

His plan was to endow the city with vertical lifts that overcame the hills, demolish one in every two blocks of the *Baixa* (Downtown Lisbon) to create large boulevards, obliterate every physical and visual obstacle between Rossio and Rotunda as for instance between Praça da Figueira and the top of Avenida Almirante Reis. He would move the urban centre of the riverside zone to the then distant suburb of Avenidas Novas (Ferreira, 1926: 20-21). He would bring, in a word, the American dream of modernist car mobility to Lisbon. Reinaldo Ferreira, a cynical spectator of the juggling Euro-American planners, knew that he was powerless to do more than a passive witness - like Jack Crabb watching the massacres of Indians by General Custer's cavalry.

The history of urbanism in Lisbon since the time of Fontes Pereira de Melo is a tragic anecdote of big projects of *Big Men*, most often manufactured by illustrious Italians, French and Catalans unknown in their homelands, drawing lines with the ruler and set square without regard for the human fabric of the city, of municipal indecisions determined by chronic lack of funds, labyrinthine bureaucracies and perpetual lack of vision and consideration for the interests of the citizens. The Polis Program, launched as a blind cavalry charge all over the country at the beginning of this millennium, had an effect equivalent to the placement of lipstick on the lips of an old scaly-skinned gorilla with protruding haemorrhoids. Now, the Polis Program has done to the secondary Portuguese cities what has been done to the capital for a hundred years: uncertain lipstick on Avenida 24 de Julho, strident lipstick on Passeio Público, lipstick for chapped lips in Martim Moniz, and cream for treatment of haemorrhoids in the Avenidas Novas and Alvalade.

The General Custers and enlightened urban planners are foreign fictions that go about the city as if it were a worn-out kindergarten toy, going from one child's hand to another. Lisbon resists stoically, silently suffering the fatalities of modernisation, tourism, sustainability and rehabilitation - and the narcissistic fingerprints of mayors who in the past 30 years have seen the high chair that is reserved for them in the City Hall as a springboard for more ennobled destinations and more universal ambitions.

What will the future of Lisbon be like, they ask us? With more or less dead Indians, it will be more or less the same as it has been until now. A city made up of a mass of people with no great history of urban identity who have always been treated as a bunch of imbeciles by the pseudo-meritocratic elites, people who will accept without complaint but will silently hinder the grandiose dreams and scenarios of enlightened foreigners. Without anyone shouting out a single "Oi", the municipality of Lisbon built the largest network of motorways in Europe (and a handful of tunnels that make car traffic heavier), but there is no-one to take charge of the program or anyone who knows how to minimise its consequences. The only evidence is that the Mephistophelean dream of the American urbanist imagined by Reporter X was only a matter of modesty. Without a reasonable voice, in the last 30 years an extraordinary web of underground car parks has been excavated in the most fragile and archeologically richest area of the "historic" city, a mere hundred meters apart. If in the next 50 years they are buried or flooded, it will not be by voluntary human action, but by the work and grace of an ever-awaited but never prevented natural cataclysm caused by sudden slides on the intercontinental tectonic plates.

It was in Lisbon, in Praça do Rossio, in 1848, that Lieutenant General Eusebio Cândido Pinheiro Furtado directed the shackled prisoners of Limoeiro prison in the work of paving the 8,712 m² of the Rossio "with Portuguese style cobble-stones". Since then, the country has embarked on an absurd project of indiscriminate spreading of irregular the limestone cobblestones on all the soil available to be trodden on by boots, shoes, sandals and suitcases with casters. The consequence of this inane sacralisation of the white pebble as a symbol of national identity is that it fills collective thinking in such a way that it does not release enough neuronal activity to plan multimodal mobility dispassionately. As had already happened in Rossio in 1848, tourists will continue to hover over our (in)urban consciousness as legitimisers of the state of affairs of the "white city."

Three scenarios

Three possible scenarios are as much as the *Little Big Man* can offer to the small stage of these pages: depending on the dose of business-as-usual or stratospheric increase in the price of motorised transportation, the Lisbon of 2050 could balance between the scenario of "local sustainability", that of "regional caciquism" and the post-human u(dis)topia". If technological reconversion makes it possible to maintain low costs in motorised transport, everything will continue as before, in Lisbon and in

elsewhere. The lines of traffic will be more orderly, the journeys less neurotic, but the Lisboans will continue to live part of their life in mobile cocoons. Our natural stupidity will progressively put us under the umbrella of *intelligent transport systems* (i.e., of the cybernetic algorithms and global sharks that control them), and we will continue to fatten sitting in a city whose outer limits will widen every day.

But if the price of transportation becomes prohibitive before the materialisation of global technological diets, the city can redensify, retract, and repopulate. How it will do so will depend on the quality and creativity of politicians, the social solidarity of the urban masses, and the solidity of the marriage between tentacular cybernetics and populist messianism. Between these two poles, three hypotheses of the city may result:

1. The compact demography favours mobility on a bicycle saddle with smiling urban gardeners cycling and using environmentally friendly public transportation to go to sell their tomatoes in the local market in exchange for reconditioned mobile phones and rare books. The democratically elected neighbourhood committees proliferate, and participation in the city's decisions seems shaped by the myths of the Roman *gens* and the fantasies of the Platonic republic. Holographic panels fed on methane from the faeces of free-range chicken installed in the Terreiro do Povo notify the residents of Lisbon daily of the reduction of the ozone hole and global cooling.
2. Global warming and depletion of resources cause the disintegration of national state institutions and Lisbon, known as the *Nova Mogadicho* (New Mogadishu), is torn between areas of influence of the various parish caciques who maintain order in their neighbourhood under the barrel of rusted AK47 machine guns; tuk-tuk mafias guarantee transport between Uptown and Downtown, negotiating visas for passage between checkpoints; rare children make holes in the barbed wire to smuggle visitors from the countryside into the city, third-degree relatives of Lisbon-dwellers; Closed condominiums are defended by drones and laser guns from the mobs coming from surrounding neighbourhoods.
3. The machine wins. Digital information systems control any minimal movement of Lisbon's residents in public space from Beijing. All mobile devices (with and without wheels) communicate with each other and with the infrastructure. Info-excluded pedestrians are only detected as marginal elements to be avoided

by mobile devices. The new central tax system guarantees the viability of the privatised mobility system through automatic micro-payment taxation of the fraction of kilometres travelled, the centimetres of ground occupied, and the minutes spent on the mobile device. A statue dedicated to E. M. Forster opens in Old London Square, meanwhile renamed Brexit & Portexit Square (previously Praça de Londres). The countryside has long been declared extinct.

The reader should toss an old pre-Euro coin into the air and if it lands on its side, the reader can be sure that the prophecy he chose will come true.

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