
Thinking Time and Mobility: reflexions based on Ivan Illich work

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Abstract

This paper approaches the link between time and space through the concept of time that was established with space notion. This will be treated in two levels, the built space and the fluid space. Both have relations with time that enhance or make difficult the understanding of the space notion. The static building has been created by the man for the man, it is an architectural space. The roads, railways, tunnels, bridges have been created by man for the machine, which moves the man. There was a time that people measured distances by steps. As soon as man started exploring longer distances, allowing to travel longer and faster, any space reference is useless. The mean of transport that goes faster and reduces the time spent is the best choice and the total time spent to travel is the rate. Ivan Illich claims in his book *Energy and Equity* (1973) that the industry of transport inflicts an irreparable damage in the perception of the physical space. This action cycle and its consequences, synthesizes evolution, which has been improving over the years. This sequence of time after time, reduces the space presence in human beings lives and transform them in users, who operates activities in the space. But the user has lost his autonomy, he is under the time pressure. This concept is represented in the comparison case between Swiss and Brazilian mobility. Comparing a developed country and its public policy of mobility with a developing nation allows better understand of time that has different qualitative impressions and meanings.

Keywords

Mobility – Time – Switzerland – Brazil

Introduction

The space has started to be described by Cartesian coordinates system and manipulated in the analytic geometry. Points, lines and planes can be represented by equations that extract numerical information from some elements in the space. However, the Greek mathematician Euclid enhanced the description of the space with his axioms, a logical and deductive system, without formulas. Until today, it is the basis for the geometry teaching in Architectural and Engineering schools as a constructive representation of the space. In addition to this knowledge, physics has deepened the comprehension of space with mechanics and gravitation. For example, Newton's view differentiates space from body and that time passes uniformly without regarding to anything happens in the world (Rynasciewicz, 2011). Moreover, Einstein's general relativity theory implies that space is not Euclidian, however it is well represented not considering the gravitational field. So as observed by Siegfried Giedion in *Time, Space and Architecture* (1990, p. 260), the space in modern physics is conceived as of relative to a moving point of reference, and not as a static and absolute entity. Modern Art enhances the object representation analysing it from different space and time positions, as it is possible to observe in the cubism art in Picasso's paintings and in Duchamp's objects motion representation. There is an opportunity for improvement in Social and Human Sciences if space evolution comprehension is introduced in the basic physical space conception. This article explores this understanding, providing proofs of objects change comprehension in a static space and in a motion space. These examples claim the increasing importance of time over space paradigms. This direct relation of time and space in social lives allows the comprehension of some modern social phenomenon as mobility.

Kant explains, in the *Critique of Pure Reason* (2004, p.274), that reality and negation can be distinguished as "a filled or an empty time". The faithful object is connected with time. In the scheme of modality and its categories, Kant correlates it and how an object can belong to time: time-series, in a quantitative report; content of time, in a qualitative description; order of time, in a time self relation; and the sum total of time, analysing time in regards to all possible objects (Ricoeur 2004. p.92) (Kant 2004, B185 p 276). But, Kant kept believing that time with space is the basis to understand the imaginary aesthetic as a way to get out of reality.

In the end, if time keeps the relation with space, assuming that time can change space, is the opposite possible? Can space dilate, suppress or change time? The space in this paper is the physical, even built and wild, but also lived, ordered and perceived. What can this research do to increase this perception, the order and more important the living act of the modern space, that is clearly more virtual, invisible and immaterial.

The real space was conceived after the expansion of particles, which created the whole universe. Approximately 13.8 billions years ago time was already running. For architecture,

the understanding of a residential design can be as the time that people spend in its spaces (PEREC, 1974). Bedrooms are the space used for sleeping time as the dining room for eating. In his library project in Stockholm, Erik Gunnar stated that there is for the time to get to know yourself. Time can define space. Nevertheless, time dictates our days, determines if we are on time or late, guides our mobility. Time measures our lives. The objective of this paper is not to explain physics itself and its rules, but to establish a real research relation between time and social sciences.

Time is measure, a basis definition for physics. Recognizing a line segment as a sequence of points in different space positions (CHING 1998, p. 3) or its variations of positions in time introduces the movement. The Euclidean geometry confirms that points can have different positions in the multi-layer grapheme. However, the relation between two points can also be given by time. Or if "time is the only unit of measure" (BESSON, 2014), this will create a system to re-interpret the natural and architectural worlds. And the qualitative analysis of 'travel time ergonomics' in the public and private spaces can determine the urban mobility in the cities of the future.

Measuring Space and Time

The basis for Social and Human Sciences is the space. This is the space for human interaction, on its form, and function. Space can be defined as the three-dimensional field that includes everything that are around human beings. It is where the things of the world are and where it is possible to move: from left to right, from the bottom to the top and from the back to the front. The relations of body positions, the void between them, their parts and parts of them are established in the field. These definitions are not enough to explain the concept that space has. However, it is possible to understand this space by what man can do on it. The main role of an architect is to design buildings, human activities envelopment (Brogden, 1984, p. 131). Buildings are forms that are in the space and interact with it. Architecture as art has an oscillation between opposite tendencies, moving like a pendulum. Eugenio d'Ors claims that when they run out and saturate in a sense, they tend to the other side. From the Classicism to the Romanticism, from the Apollonian to the Dionysian, from the Mysticism to the Rationalism. The Brazilian urban planner Lucio Costa in his architectonic initiation asserts historical examples of this. But, he shows that this rhythm in the time rate is in the space that corresponds to a common basis in its formal, static and dynamical conception. For him, architecture is a “construction designed within the intention to organize and plastically order the space and the resultant volumes. It is due to a certain time, in a certain environment, with a certain technique and a certain programme” (Costa, 1972). However, this assert confirms that space and architecture changes when time passes.

To improve the knowledge about the two concepts, space and time, it is needed to understand how to measure them. As it will be possible to confirm, men are sensitive to both, the dimensions of the space and the time that passes. But the space is much closer to the human proportions or at least man think it is. In the universal human system of measurement the basis is the inch, the hand, the foot, part of the human body. However, there is also a terrestrial system of measurement, a theoretical or abstract measure unit, the metre. It corresponds to the International system of measurement and it was originally defined to be one ten millionth of the distance between the North Pole and the Equator through Paris. This abstract measure loses any connection with the men and the things that were produced by them. It was in 1799 that French revolutionaries established the meter as the unit of length measurement. This relation with the Earth size implies that the field for human beings actions is the terrestrial planet. In 1983, at the 17th General Conference of Weights and Measures (Conférence générale des points et mesure - CGPM) it was defined a less obscure procedure for measuring length. It was accepted the speed of light in vacuum as a universal constant. With this reference, a meter is the longitudinal trajectory of light in the vacuum during 1/299.792.458 on a second.

1° The metre is the length of the path travelled by light invacuum

during a time interval of 1/299 792 458 of a second.

2° The definition of the metre in force since 1960, based upon the transition between the levels $2p_{10}$ and $5d_5$ of the atom of krypton 86, is abrogated. (17th meeting of the “Conférence Générale des Poids et Mesures” - CGPM, 1983)¹

It is remarkable that the space measure conditioned to men is now referenced with the basis unit of time measurement in the International System of units (SI): the second. The second is the second division of the hour by sixty. The first division is the minute and the hour is the solar day divided by twenty-four. The day in the solar calendar keeps being an astronomic reference. As the space measurement is now related with the time, it is important to understand the empirical evolution of time measurement.

As said, time has an astronomical reference. So a precise timepiece invention was the manner to reproduce the movement of the universe around the earth, even before men realized that Earth makes part of the solar system. La Dondi is an astronomical clock invented by Giovanni Dondi of Padua, a physician and a clock-maker from Middle Ages. The astrarium² developed by him date of 1364, it describes the movements of the planets in the cosmos, in the space that fits our space, in a geocentric vision. The eccentric movement around the Earth is precisely detailed, so it was possible to know the position of the sun or other planets in any day of the year. A faithful reconstruction in 1985 done by Luigi Pippa is available at the International Museum of Horology (MIH) of La-Chaux-de-Fonds, in Switzerland. Even more important that understanding the time, this clock tried to explain the space that was around it. It is based on the movement observation of the seven planets known in 1380, being possible to forecast eclipses. This example allows a reflection of space in time, the aim of a timepiece to reproduce artificially the physical nature of the space. It exists and changes with time, changing light, temperature, colors, the rising and falling of the sea, the seasons, life spectrum changes during the time.

A more updated version of the first astronomical clock dates from the beginning of the 19th century. François Ducommun, a clockmaker from La-Chaux-de-Fonds, has done all the calculations and built by himself in order to reproduce the movement of the planets around the sun. It is a heliocentric planetarium that provided a speed-up version of the changes in the space, during one-year time.

¹ Reports of 17° CGPM (1983), 1984, 97 p. 14

² Astrarium or planetarium represents the cyclic nature of astronomical objects in a timepiece.

In the human history there were thousands of ways to measure time, pieces that tried to explain the world through time. The key of this understanding was provided by the Egyptians with the sun shadow provided by the obelisk, which enable to have then the time measured by the sun. One day is the leap of the Earth leap rotation. Moreover, the revolution of the earth around the sun or its apparent position in the celestial sphere is it basis for the Earth tropical solar calendar, from which the Gregorian calendar derives.

It seems so natural for the Modern society to have the comprehension that day is the space of time between two nights. The natural light allows to see the space with its all details. How imprecise and unpredictable were days and their changes during the year. Human beings were so connected with the space, with the changes that they could see and feel, as for them that was a time space. To understand that the day has started it was necessary to see the sunlight. This concept is necessary to illustrate the meaning of a timepiece for men nowadays. It is not necessary to observe the space outside to understand that now is the time to wake-up. Everybody looks at their wrist watches to see what time it is before stop to work and going for lunch. At the end of a workday, at 6:00 PM all streets are crowded, with traffic jams. It is not because we perceive that the day is over, but it is a general understanding that the work session has finished at this time. If people analyse the space conditions, either they will leave earlier or later to avoid a longer period of time to travel the same path. A lot of us lost the capacity to observe the environment, the space changes that used to influence our lives. Many others can perceive the space meanings, but they are not allowed to follow them as the ancients used to. Nowadays, time is more important than space, even if it was space that provided the meaning of time.

Returning to the Museum International of Horology it is possible to follow the timeline of clock development. It shows that a timepiece is attached to human beings, connecting the passage of time through their lives, anywhere. In the beginning, this mechanical machine for timekeeping was sensitive by the space as for the temperature, magnetism and gravitational bias. These could delay the machine movements and make it lose system preciseness. Many artifices were created to avoid any interference that allowed to record by an Omega Speedmaster watch the man's first steps on Moon surface on 21 July 1969 at 02:56 GMT. Timekeeping became independent for the terrestrial space. The time as we know, a 24-hour-day, only exists on the Earth, as the reference of the Earth rotation movement is spread by the universe as the measure of time. Now we enter in a complex understanding of time duration. Astronomy uses the Julian year that comprises 365.25 days, each day of 86.400 seconds based on the International System of Units. In the Gregorian Calendar, the year lasts 365.2425 days. One light-year is the distance that light needs to travel in the vacuum in one Julian year. In this manner, a light year is not time measure, but a length measurement. Nevertheless, time is used to measure the space, even that it is a kind of informal one.

This notion is always connected with the sidereal space. After all, doing science is impossible without considering the whole elements that are around the Earth, explained by the big bang theory. However, then again, this means that the notion of time could have been misunderstood during all human history, and we based our lives on it. Why did we stop believing the spatial evidence to accept believing in time?

The space is everywhere, as the time is always³

The timepiece was connected with the space in order to understand it, explaining the meanings of the universe. The basis was on the objects in movement in space. It was possible to analyse how time has evolved if compared to the timepiece evolution and popularization. The idea of creating the perpetual calendar, the precise time machine that never runs late puts the technique in the search for ways in which space does not influence anymore in the clock machine time measurement. The development of a machine that does not care if its user is three thousand meters deep in the sea or in the moon has changed the idea of space everywhere. Now, as timepiece does not take space in consideration, it is possible to claim that time is everywhere, always and forever.

Time is running everywhere, it is on the mobile telephone devices, on the computer screen, on the car dashboard and in so many other places that the idea of a central space needed to watch the church tower clock is no longer necessary.

In the past, people that had a portable timepiece were among the high social class. It was a symbol of status to organize the daily activities by the clock. As of today, having a wristwatch is something as normal and usual as having other basic accessories. China manufactured quartz watches have a major role in this time democracy. The global flux that allows the exchange of things and ideas focuses in the movement in a fluidity space that is measured by hours and not anymore by meters. There was a time that people measured distances by steps. As soon as man started exploring longer distances, allowing travel longer and faster, any space reference is useless. The mean of transport that goes faster and reduces the time spent is the best choice and the total time spent to travel is the rate. The Austrian philosopher Ivan Illich (1926-2002) claims in his book *Energy and Equity* (1973 - French version) that the industry of transport inflicts an irreparable damage in the perception of the physical space.

The occasional chance to spend a few hours strapped into a high powered seat makes him [the ordinary passenger] an accomplice in

³ L'espace est partout, comme le temps est toujours. Qui pense l'espace et pourquoi faire? Seminar Penser l'espace, Laboratoire Chôros – EPFL.

the distortion of human space, an prompts him to consent to the design of his country's geography around vehicles rather than around people. Man has evolved physically and culturally together with his cosmic niche. What for animals is their environment he has learned to make into his home. His self-image requires as its complement a life-space and a life-time integrated by pace at which he moves. If that relationship is determined by the velocity of vehicles rather than by the movement of people, man the architect is reduced to the status of a mere commuter. (Illich, 1974, p.18)⁴

So fast, the transport industry has accelerated the time that allows the space destruction.

1.1 Time as measurement of mobility

After fifty years, orthodox mobility analysis has gradually built through the methods of traffic forecasting and prediction models, very specialized, methodic and precise, but also very limited. The question of "individual choice of transportation mode" is probably the best example. When we move, we are supposed to choose means of transport or a combination of them. This choice is supposed to be based on an instrumental rationality, reducing this instrumental choice to a combination between price and time, or even looking for the optimal solution to minimize displacement time and costs.

All these assumptions do not have resistance to a critical examination. The hypothesis of an instrumental rationality reduces human action to only strategy. (Dupuy 1975, Reichman 1983 ; Duhem et al. 1995 : 247). Behaviors that escape this straitjacket of mobility rationality are considered irrational.

This debate has existed since the first prediction models. And the judgments are strongly built in the world of transport economics, which defends this doctrine and its permanent commitment to deconstruction of Social Science analysis. The orthodox arguments advocates believe in the excellence of their predictive power (Banister 2005). On the other hand, social scientists argue that we should not confuse correlation and causation (Dollinger 1972, Dupuy 1975, Flamm 2004). The existence of a statistical relationship between transport offer and human behavior can also be a coincidence (Buhler 2012).

⁴ *L'évolution humaine a pris place dans un certain cadre physique (les relations avec l'environnement) et mental (la perception de l'espace) auquel le développement de l'industrie du transport inflige d'irréparable dommages. Ainsi capable d'accélérer de temps en temps, le pauvre du monde moderne renforce lui-même l'illusion dont il est la victime toute désignée, et se rend complice de la destruction de ce cadre multi-millénaire. (Illich, 1973, p. 20)*

Mobility is a concept that put together many unities to indicate and understand the variables which allows humans beings to be mobile. If we accept that space has three dimensions, X, Y and Z, a three-dimensional ground is created to develop the human action. Even then, in all this complexity, the comprehension of space is incomplete. For Castels (1968, p.426), space organizes time. Nevertheless, space is the place of multiples human interactions.

The virtual interaction occurs in a space that we cannot see, but it exists so clearly in our daily basis that we imagine, as it is real. Even the possibility to travel in the atmosphere, the reference of distance changes as we know on Earth. No kilometres per hour, no miles per second. No space measure can be absolute, if we take the reference of earth and its translation and rotation movement.

For every example presented here, time is the most precise measure for all displacements, for all travel points in between, for all activities, for every little interaction.

When travel by train, what is the important measure, the train speed or the time to arrive to the destination? For the driver being on time he needs to go in a specific speed, calculated by the formula $s=d/t$, distance divided by time. Nowadays, traveling by car with a GPS has changed the meaning of reaching a destination. Global Position System can give so many spatial information about the itinerary that in the end it will result in one only measure: Time. The quality of time is more valuable than the quantity.

The act of drive is part of the programmed space: the act of waking up, preparing a coffee, taking the kids to the school, (Perec, 1974) and now driving during the space between private time, decompression time, relaxing, and than arriving at the space of work time.

In the virtual dictionary of Mobile Lives Forum, Emmanuel Ravalet (2013)⁵ displays that "The value of time is based on the idea that each person has limited resources of time and money, therefore they need to make the best use of them". Moreover do not limiting other measures to make their choices, but in some way, time acquires a qualitative value (Lyons and Urry, 2005).

Based on the idea of John Urry that the city is structured by the concept of mobility (2007), this concept of anthropomorphized space debates the role of the human space in the city, comparing to the space devoted to the machine. The anthropomorphic city is no longer achieved, a good city is a city that moves with the cars, buses, trains, a "machinomorphic" city, developing the landscape of transport. The fluid space is only available by the machines support. In this space, men are passengers.

⁵ <http://fr.forumviesmobiles.org/reperes/valeur-temps-593>

The product of the transportation industry is the habitual passenger. He has been boosted out of the world in which people still move on their own, and he has lost the sense that he stands at the centre of his world. The habitual passenger is conscious of the exasperating time scarcity that results from daily recourse to the cars, trains, buses, underground and lifts that force him to cover an average of twenty miles each day, frequently crossing his path within a radius of less than five miles. He has been lifted off his feet. (Illich, 1974, p.24)

The passenger has lost his autonomy, he is under time pressure. Time and possibilities are entities which he is not in charge.

The habitual passenger cannot grasp the folly of traffic based overwhelmingly on transport. His inherited perceptions of space and time and of personal pace have been industrially deformed. He has lost the power to conceive of himself outside of the passenger role. (Illich, 1974, p.25)

The irreversible equity inquires the free time and the personal autonomy. The user needs to be conscious that accelerating in the space has a price. Understanding time and space as two measures that need to be in equity. By enhancing one, proportionally reduces the other.

From transportation studies, we get statistics on the cost of time per mile, on the value of time measured in dollars or in length of trips. But these statistics tell us nothing about the hidden costs of transportation: about how traffic nibbles away at time-life, about how vehicles devour space, about the multiplication of trips made necessary by the existence of vehicles, or about time spent directly and indirectly preparing for locomotion. (Illich, 1974, p. 38)

The time price is far from the energy used to reduce the displacement for time improving the speed. It includes the space that is lost, the liberty of movement and the free desire to move. Even if that passenger will not pay his bill, someone will do it. The space available for cars is bigger than the one for bicycles and for citizens moving by themselves: the pedestrians.

The marginal utility of an increment in the speed of a small number of people has for its price the growing marginal disutility of this acceleration for the great majority. Beyond a critical speed, no one can save time without forcing another to lose it. (Illich, 1974, p. 30)

This use of time applies discrimination, differentiating people in the space by the speed they move. "Tell me in what speed you move and I will say to you who you are" (Illich, 1973, p.33). Social success means to go faster and cars used to be the symbol for this equation. The speed also disfigures the environment, as for cars to speed, they need streets and highways that disfigure the physical space (Illich, 1973, p. 54).

In terms of mobility, the individual's characteristics are those able him to move in space. Furthermore, it is possible to measure mobility in a qualitative research of use of displacement time appropriation and use of time in mobility spaces.

The current debate on mobility overlooks the instrumental use of automobiles, focusing more on public transportation. The demands for better mobility conditions incite governments, industries, city planners and societies on the search for answers. Nevertheless, the individual himself, with his own car, waits for solutions compatible with the means of transportation he is used to. Each individual, in the pursuit of his own interests, thus aggravates the problem. This situation has been a reality in every society from the beginning of the XXI century, but it is even worse in developing societies, in which cities were planned for private cars, individual motorized machines, that have to fit in with needs of a bigger population.

In this scenario, it is not possible to focus only on the utilitarian aspect of mobility, since it is also a question of choice. This means that it must become attractive to the user. As mobility forms a part of our daily activities and we spend a lot of time in vehicles and their connected spaces, the question arises on what can be done to improve the measurement of mobility.

The practical results of this measurement are how people's lives can be improved by new design challenges. Dismantling the basis of present mobility paradigms has unlocked a perspective towards a public transportation approach, with a mobility solution that concerns our modern societies.

Spatial references

Switzerland is the country of the time, life is measured in minutes as, for example, someone who will arrive home at 5:23 PM, change clothes in 12 minutes, walk for 5 minutes until the closest bus station, wait 2 minutes, take the bus and spend other 19 minutes to reach Geneva train station and then meet someone else there at 6:01 PM. This example explores the Swiss stereotyped character, always on time, counting and controlling each movement and actions taken very accurately. Although, there rather be other fine examples of similar societies also precisely controlled by time as this prerogative does not apply only to Switzerland nowadays. Nevertheless, the best watches have embedded a Swiss Made engraving on it. Switzerland exports precision, the time measure that increases productivity and controls our lives, even if we are not so used to be on time.

On the other hand in Brazil, a developing country, time has a different understanding. Although being commissioned by a Brazilian, Alberto Santos Dumont, the first pilot wristwatch seems to have a different impact on how Brazilians deal with time. In Brazil, time does not have the same "precision" as it has in Switzerland. Time has different qualitative

impressions and meanings as to travel around Amazon area is completely the opposite from the time taken to circulate in the frenetic city of São Paulo. The plane is never on time, the bus stops do not have timetables, the meetings start only when everyone has arrived, and it can be any time. It does not mean freedom of time, as time itself keeps running late, controlling our lives. Dumont has also invented another machine, which saves days, weeks and even months when traveling: the airplane. There is still until today some conflicts on the airplane patent as the North Americans Wright brothers also claim this amazing invention as their own, although this is not a field which will be debated as for now. The important aspect to be considered is the consequence of this invention, a manner to save time or even add time as it depends on the point of view, moving faster and continuously is the shortcut to run away from the time slavery that controls our lives. On the other hand, we have never been so attached to time as nowadays, running to not miss a flight, standing up our seats seconds after landing at Santos Dumont airport in Rio de Janeiro, just to save some minutes on the disembarking procedure. Time is dictatorship that measures our lives. The more we move, the more we are attached to time, and the less to our space.

Geneva in Switzerland and Rio de Janeiro in Brazil, what an unexpected comparison. Different space relations, even having a similar combination of mountains, waterscapes and urban societies. The first, a developed country and the other a country in development. As was proposed by Illich, mobility issues unveils the same social destructive effects, automobile dependency, time control and spatial disconnection. It is important to remember that men are born almost equally mobile.

Traffic⁶ is also a model for the convergence of worldwide development goals, and a criterion by which to distinguish those countries which are lamely underequipped from those that are destructively overindustrialized. (Illich, 1974, p. 30)

This comparison between Brazil and Switzerland aims to foster the comprehension about travel time ergonomics, as well as the relation between man and machine in different urban mobility scenarios. It can stand comparison on what is to have a comfortable and meaningful use of time in the public and private spaces, but mainly its impact in the means of transport. This can be achieved by analyzing different users and how they spend their time in cars, buses, trains, aerial cable cars and other machines used for transport. Nevertheless, walking or

⁶ French version: “Ce mouvoir inné de l’homme nous servira de critères de distinction entre les pays sous-développés du point de vue de l’industrie du transport et ceux où la même industrie est sur-développée au point d’avoir des effets sociaux destructeurs”. (Illich, 1973, p. 54)

even cycling from one location to another can be a parameter to improve time quality in the urban mobility of the future. Once this is comprehended, time will be the comparative measure. Ergonomics from the Greek "ergon" that means work, on the pattern of economics, study the efficiency of man in the workspace. As people more and more move themselves in the cities, with different proposes and different means of transport, analyze mobility efficiency of the user viewpoint will be the basis for the future of the transport.

Cars are still the desire objects for an independent and comfortable mobility in many countries. These means of transport have a private space, in which users can spend time in an individual manner, without being annoyed by any other passenger in the same space. But how can we allow that millions of people have access to the individual comfort provided by a car in a large scale? When Le Corbusier conceived the city for the cars, he knew that the majority of humans would dream about this object, aiming to have a better life. Unfortunately, cars created a time prison for the great majority of drivers who travel alone, during long periods of time, in the comfort of their cars, but without allowing a more qualitative use of time by reading, entertaining, interacting, texting, working and a lot of other activities.

John Urry (2004, p. 33) affirms that the current car-system could not be disrupted by linear changes but only by a set of interdependent changes occurring in a certain order that might move, or tip, the system into a new path. What is the new path? "An array of political, policy and social transformation, a veritable new urbanity". This new path needs to be determined now to be followed with security and confidence. Comparing a developed country and its public policy of mobility with a developing nation allows to better understand different scenarios where a new practices can be successfully worldwide implemented. Time is pressuring to an urban mobility response that can support human development.

Conclusion

Nowadays, the idea of space and time means that spatial reference is so weak in our busy life, that is difficult to related one with another. Even that it was shown that time has the basis reference on earth movement in the space. Time has improved our feeling of belonging to a place that matches with a unit that is globally synchronized and even with an interstellar reference. It matches with our lives in constant changes, in a flux of activities that limits the time available to do them. However, it is necessary to establish again the space reference in human lives, so it can certainly improve time quality. As proposed by Illich, a balance between convivial and industrial tools is not only an alternative to change quality of life but reduce energy consumption. The coexistence of two concepts, time and space, is the sign of a new mobility. The quality of time widely refers to the space, to its ergonomic comfort and the well being it provides.

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