

MOBILITY, ROADS, DEVELOPMENT AND QUALITY OF LIFE

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ABSTRACT

It is beyond doubt that mobility and, more generally, transport are crucial elements in development and quality of life.

This work tries to clear up the true meaning of the concepts of mobility and development. Moreover, starting from the remark that an upper limit for transport is needed to guarantee its sustainability, transport patterns are looked for to be promoted for furthering the development.

An initial bibliographical research and some simple qualitative considerations seem to suggest that the transport has to be promoted at least 1) fostering economic development, quality of life and opportunities simultaneously on the one hand, and 2) in the countries with middle/low levels of welfare on the other.

KEY WORDS

MOBILITY / ROAD / DEVELOPMENT / QUALITY OF LIFE / SUSTAINABILITY.

1. INTRODUCTION

In the last years, globalization process has led everyone to widen the horizon of one's interests, usually extending geographic, temporal and social boundaries of problems to solve. The need to let general interest prevail in decisional process is more and more evident; as a consequence, this implies the need to go into the knowledge of human native needs thoroughly, supporting, in this way, their affirmation in the natural development process. In this contest, transport and mobility, being essential in every kind of dynamic activity, are very important.

The aim of this work is to look into relationships existing among mobility, transport infrastructures, development and quality of life and, in order to be brief and easy to be understood, it considers only some of the aspects involved, in a qualitative manner. So the conclusions have to be considered as an expression of current trends.

The article has the following structure. After this introduction, in the second paragraph, there are some clues all apparently converging towards the consideration that, contrarily to the thinking of most scholars, mobility is not only a derived need, but also a human native need. In the third paragraph, there is the try to study in depth the concept of development, coming to the conclusion that it has to be considered not only the economic growth but also the growth of quality of life and freedom (opportunity). The fourth paragraph points out that mobility and transport do not always go in the direction of the development and that, in this way, decision making process is very difficult, because it is affected by a context not easy to define. In the fifth paragraph, there is the try to identify the mobility and transport patterns, that supports development and, after a qualitative analysis, it seems possible to assert that among these there are at least the types satisfying native transport need and the ones in medium-low welfare countries. Conclusions and references close the work.

2. MOBILITY AS A NATIVE HUMAN NEED

For a long period, transport has been considered only as a derived need, i.e. linked to the necessity of satisfying other primary needs. In this way, commuting and freight transport for commercial reasons are typical examples. But, in the last years, many studies have been published at different times asserting that mobility is also an answer to a primary human need. In this way, many indications, coming directly from experience, seem to confirm this supposition.

First of all, TTB (Travel Time Budget) or better, TTE (Travel Time Expenditure) constancy (Moktarian and Salomon, 2001 - Moktarian 2003)., even if at an aggregated level, seems clearly to point out that a desired value greater than zero exists (equal to approximately 1,1 hours/day) for the time dedicated to mobility during the day (Zahavi and Talvitie, 1980). Surely, a part of this time has to be interpreted as the physiological answer to typical need for maintenance of a human moving being (i.e. search for food, or, in an advanced way, commuting). But, human being shows need for movement even when he has not other needs, so it appears more corresponding to reality to consider this time as the sum of two entities – first one, ATTE (Animal Travel Time Expenditure), equal to the mobility time necessary to man as an animal for his existence, and second one, HTTE (Human Travel Time Expenditure), equal to the mobility time demanded by every man as such, apart from his own needs of survival.

HTTE (time corresponding to the part of mobility satisfying not derived transport need) existence is confirmed by many indications coming from experience and from human and cultural tradition.

Experience teaches us that, in every time, the most “natural” restriction to human being is the prison, whose most evident characteristic is really mobility restriction. As a consequence, for every free man, mobility is one of the first freedoms that a civil society has to guarantee, in order to satisfy this evident primary human need (fig.1).

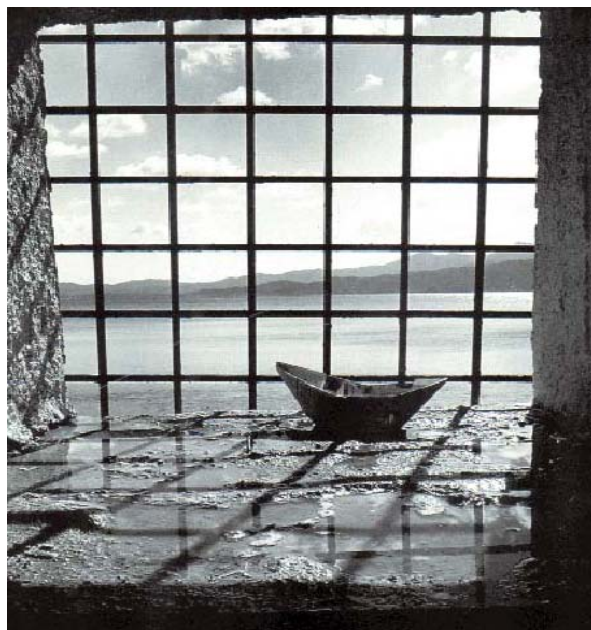


Figure 1

On the other hand, the pleasure of a walk in the “old town” of a city, or the pleasure to reach a refuge through a mountain path are only some of the most examples pointing out experimentally the primary nature of this need.

But, why does human being have this inevitable need for mobility? Evidently, the answer to this question is not simple, but the experience helps us in considering that a possible interpretation is the search for the meaning of the world and of himself, that every man has. In this way, some examples can be useful, going from prehistory till nowadays.

Man reached Australia about 60.000 years ago. At that time, since the different sea level, it was necessary to go across the sea for at least 70 km to get to this continent (fig. 2). This implies the capability of building boats ingenious enough to face high seas. But why did those men throw themselves in a so dangerous adventure? Didn't they have land enough for their existence? Maybe, we can recognize an aspect of our humanity, in this curiosity that induces man to go far from well-known habitat and places, in order to look for things beyond the horizon, for discovering mysterious and far lands.



Figure 2 – Trip to Australia

Moreover, the Classics as Sophocles or Dante often described this mood.

Acquaintance desire is moreover what often it is able to originate the action ability of the human being, like Sofocle describes very well.

Wonders are many, and none is more wonderful than man; the power that crosses the white sea, driven by the stormy south-wind, making a path under surges that threaten to engulf him. (...)
And speech, and wind-swift thought, and all the moods that mould a state, hath he taught himself; (...)
(Sophocles, Antigone)



Figure 3 –Trip of Ulysses

Probably Ulysses is the most famous traveller of all times (fig. 3). Homerus' poems introduce him as the king of Ithaca Island. During the siege of Troy he distinguishes himself by his cunning: it was an expedient thought up by him that allowed Greeks to win the war. His return voyage lasted ten years and was awfully tormented.

His figure has intrigued artists belonging to every historical ages and artistic currents. In particular, Dante Alighieri makes him the symbol of the human thirst for knowledge. People interested in understanding mobility should think over Dante's tercets describing the trip of Ulysses beyond the Pillars of Hercules:

Nor fondness for my son, nor reverence
For my old father, nor the due affection
Which joyous should have made Penelope,
Could overcome within me the desire
I had to be experienced of the world,

And of the vice and virtue of mankind;
But I put forth on the high open sea
(Dante Alighieri, Divina Commedia, Inferno XXVI)

Consider ye the seed from which ye sprang
Ye were not made to live like unto brutes,
But for pursuit of virtue and of knowledge
(Dante Alighieri, Divina Commedia, Inferno XXVI)

In a recent movie (The Truman show, 2000) the main character, since his birth, is confined, without his knowing it, in a television set, built intentionally and representing a small town. Every actor goes to play in this virtual world, whereas there main character lives in this colossal Candid Camera, where he is surrounded with every care and he does not lack anything,. But, he becomes aware of the deceit when someone inexplicably rejected his desire of a journey. Then the need for knowing the external world is stronger than the certainty of the welfare he has in the virtual world where he lives. He prefers to face up to the unknown hidden behind true life meaning, leaving television set for ever.

Every example described before converges to the theory that mobility is the concrete expression of a native human need, maybe, corresponding to the expectation of newness and to the search of the meaning of existence. As a consequence, every evaluation involving mobility can't leave out of this consideration.

In this way the opinion that enhancing transport infrastructures is always against sustainability is contrasted by the evidence that mobility is also a native human need.

3. DEVELOPMENT IS NOT ONLY ECONOMIC GROWTH

3.1. What development is?

For a long time, the concept of development has been linked to the economic condition (Hoover and Fisher, 1949), ignoring some elements essential for life and human life in common efficacy. In the 80's and 90's, Amartya Sen, economist and recipient of the Nobel Prize, explained that the development satisfying human being has to be a balanced mixture where economic benefits, quality of life and freedom progress at the same pace (Sen, 1987 – Anand and Sen, 1994 – Sen, 1999).

Sen's concept of development highlights the need for a multi-discipline approach to understand the phenomena we are studying and drives transport studies to explore also humanistic, cultural and social sectors, previously not much investigated.

In this way, in the future, GDP measure will not be sufficient for evaluating the development evaluation, but indicators able to assess welfare should be taken into account.

3.2. The role of transport infrastructure

Considering transport infrastructure, Banister and Berechman (2001) showed that infrastructure network improvement is a necessary but not sufficient condition for development, since it depends on social and political favourable condition as well.

In this way, there is no doubt that it is very difficult to assess, in a synthetic manner, whether a social and political condition is favourable but, beyond the obvious qualitative considerations, a first hypothesis could be represented by social equity indicators (i.e. Gini, etc...)

By the light of previous considerations, a hypothesis of a scheme representing relationship among transport infrastructure and development is in figure 4.

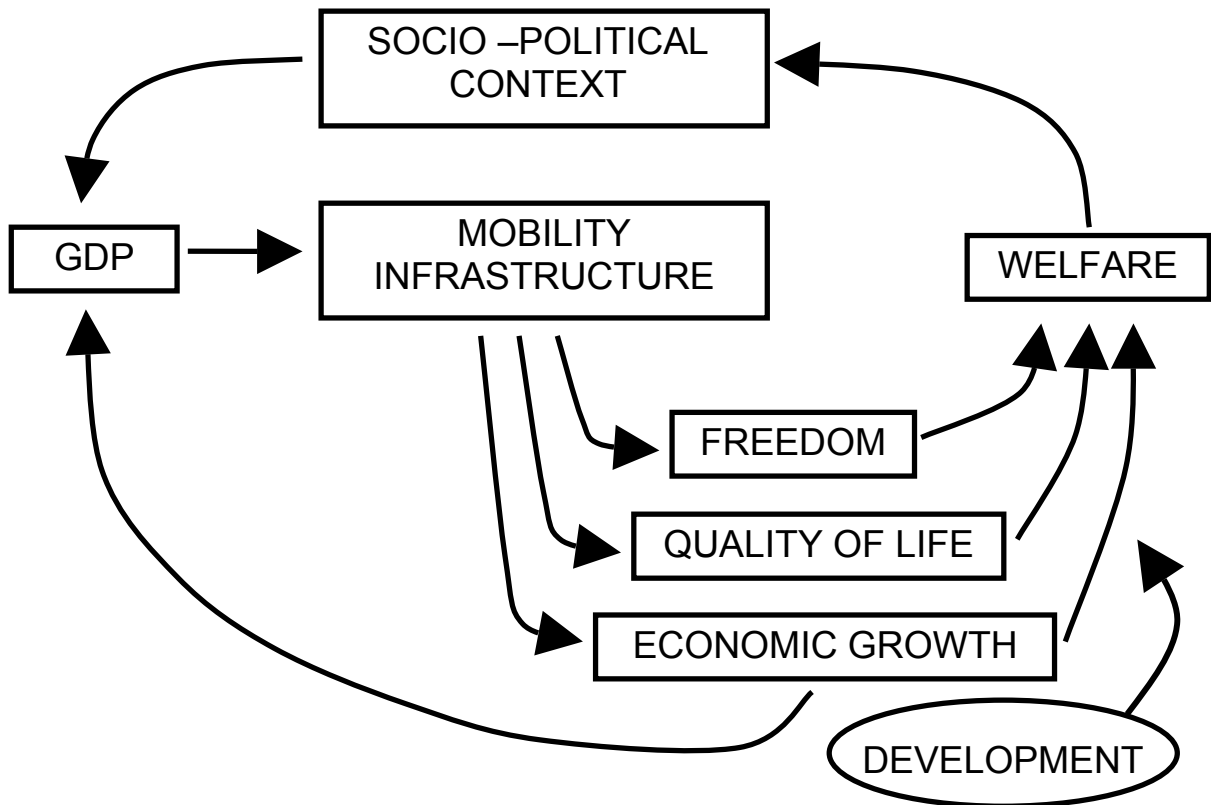


Figure 4 – Relationship between Development and Mobility Infrastructure

4. DOES MOBILITY SUPPORTING ALWAYS GO TOWARDS DEVELOPMENT?

In the last years, the evidence that mobility and transport support development has been more and more contrasted by the idea that mobility and transport excess produce negative, not sustainable effects. As a consequence, there is the problem of identifying equilibrium criteria of this process and, first of all, there is the problem of analyzing positive and negative aspects caused by road infrastructure existence.

Assembling and synthesizing the main advantages produced by new infrastructure building, we can say that these are, (Colonna and Fonzone, 2003):

- best accessibility and best reliability level;
- travel cost and travel time reduction;
- increase of freedom to choose among options;
- increase of opportunities and of social relationships.

On the other hand, the main negative effects are:

- pollution increase caused by traffic increase;
- likely alteration of flora, fauna, archaeological, historical, artistic and traditional patrimony;
- territory rigid demarcation, and conditioning of future territorial choices;
- fall of cultural identity.

Moreover, against of the simultaneous presence of positive and negative effects, the decisional process is very difficult for these circumstances:

- the evaluation of aspects of different nature, sometimes not comparable, is often necessary;
- the consequences on different subjects and on different groups of people involved are often not uniform and sometimes conflicting;
- the definition of geographical space involved is difficult and often arbitrary;
- the definition of time corresponding to the life cycle of the system is difficult and often arbitrary.

These difficulties can seem obvious when, for example, one thinks about past situations, very important from historical point of view, with enormous consequences. For these situations, such as Cristoforo Colombo and his travel to America or, more recently, new paths traced by spatial missions, no process of impact evaluation has been done (fig. 5). Today none could imagine what results and consequences this process would have had.



Figure 5 – Epochal travels: a) Colombo's Caravels

b) Spatial Missions

In any case, maybe it's important to underline that, as a consequence of the paragraph, it's really important to go on verifying feasibility of decisions in the socio-political and economic-financial specific context.

5. WHAT KIND OF MOBILITY SHOULD WE FAVOUR IN ORDER TO PROMOTE DEVELOPMENT?

If development is economy (consumptions), quality of life (services) and freedom (opportunities), it's possible to recognize (figure 6) three levels of mobility need: merely derived; of psycho-physical equilibrium (partially native and partially derived) and merely native.

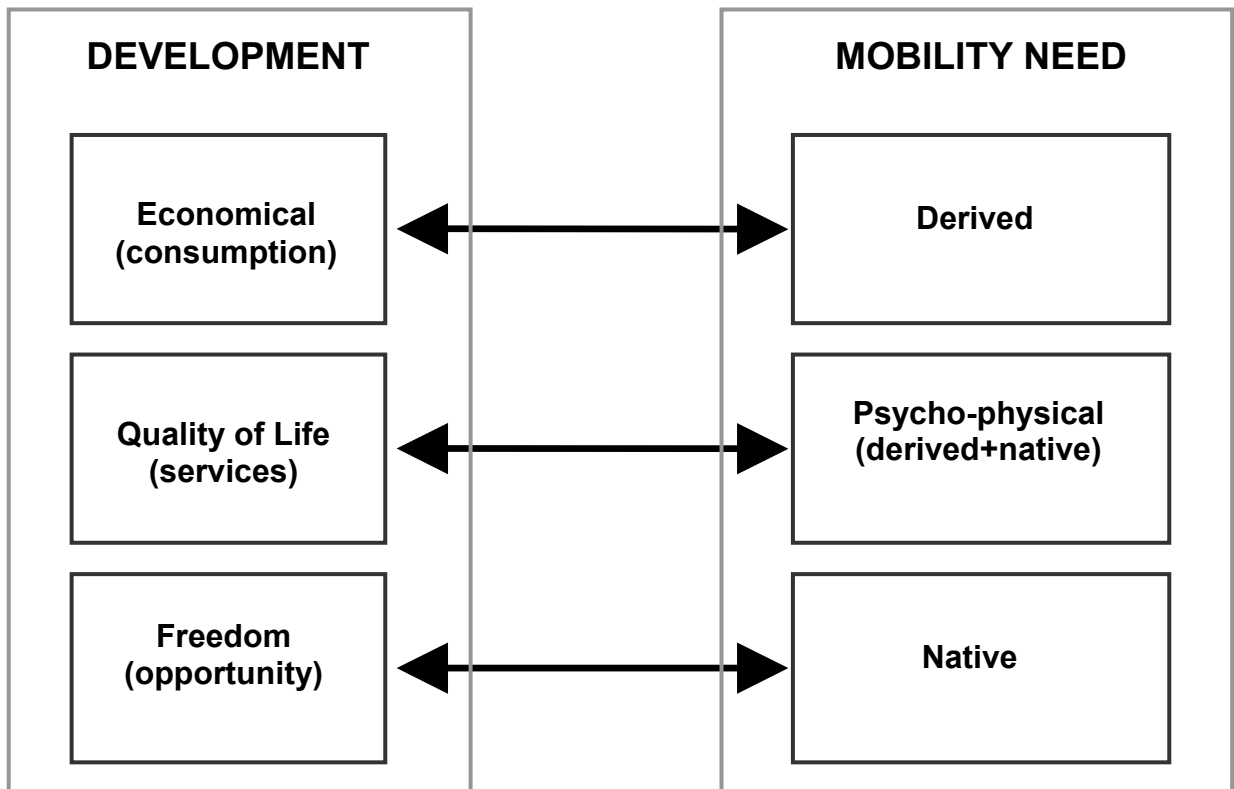


Figure 6 – Relationship between Development and Mobility

On the other hand, it's obvious that scheme represented in figure 4, if applied to low welfare level societies, characterized by low accessibility and quality of life level, produces (figure 7), in the presence of every component, a positive virtuous cycle, whereas if applied to high welfare level societies, the indiscriminate increase of transport infrastructure can also lead to a reduction of accessibility (freedom) level and of quality of life (figure 8), caused by congestion and pollution. The result is a dubious balance on total level of welfare; as a consequence virtuous cycle can stop or degrade itself.

One among the consequences of this approach is that pollution evaluation has to involve the different sensibility of the context.

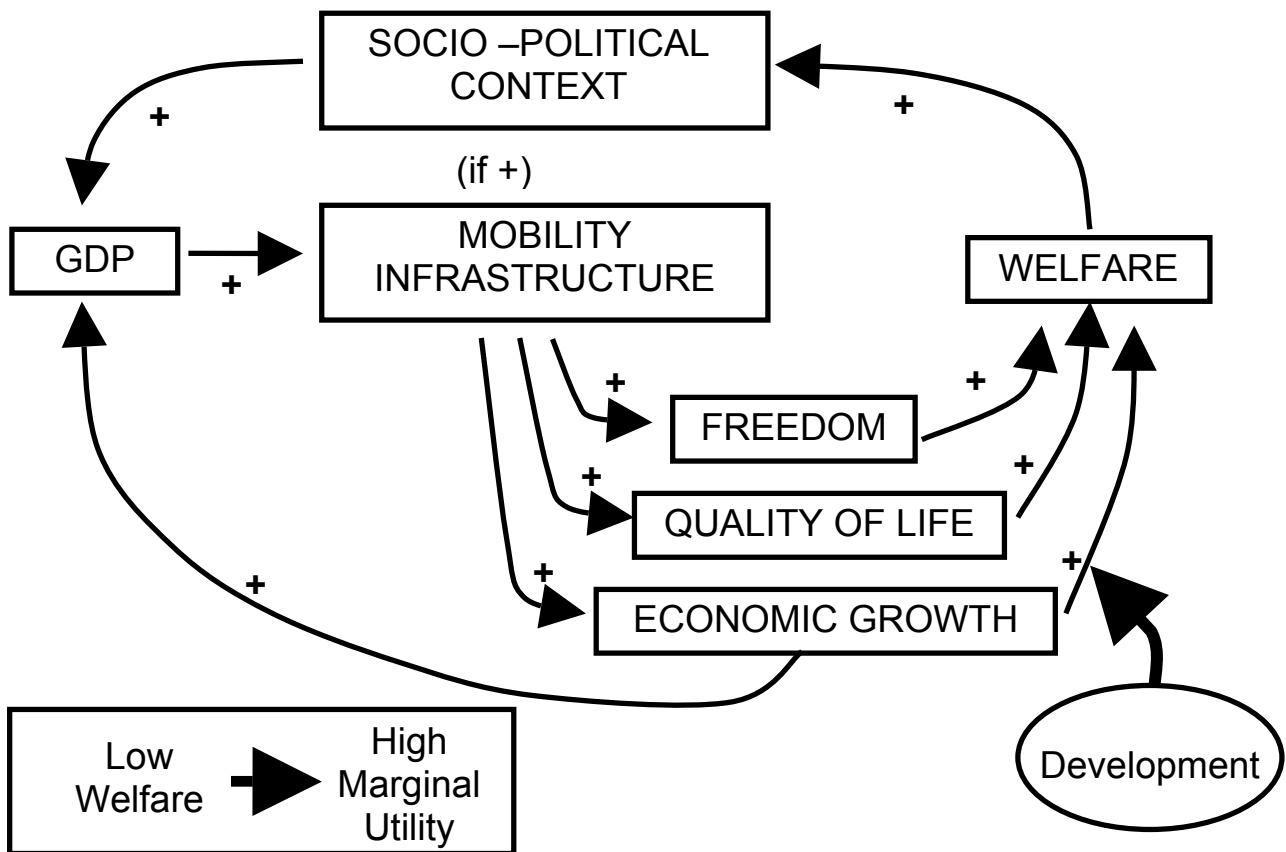


Figure 7 – Relationship between Development and Mobility Infrastructure for Country with Low Level of Welfare

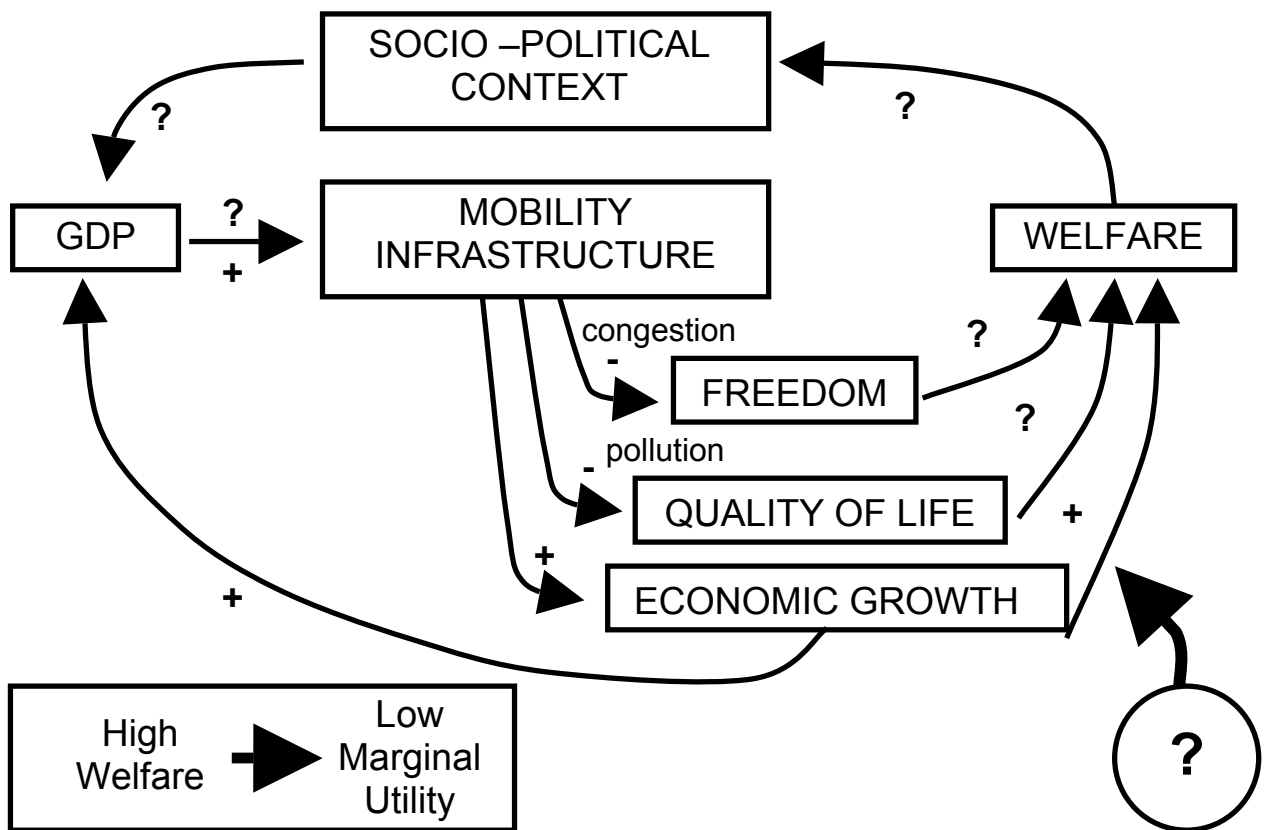


Figure 8 – Relationship between Development and Mobility Infrastructure for Country with High Level of Welfare

Another important consequence is that transport infrastructures can be considered as the necessary container able to hold GDP increase: if container capacity is minor than the possibility of GDP development, GDP grows with many difficulties, but if container capacity is major then GDP increase will take place at the presence of other favourable circumstances.

By the light of previous considerations, it's possible to affirm that the mobility supporting the overall human development (not only the economic one) is positive and, so, it's useful to implement transport politics able to produce welfare, i.e. economic, quality of life and freedom development at the same time.

Moreover, the theory of marginal utility (Lipsey, 1986), let us to consider that, starting from the comparison between figure 7 and figure 8, transport infrastructure (road in particular) have high utility especially in medium-low welfare countries.

6. CONCLUSIONS

Transport infrastructures are often considered as elements hampering a balanced process of sustainable development. But, transport has always represented the possibility to make the desire for relationships concrete. This is at the base of every kind of human development. On the other hand, the evidence of some distortion in infrastructure building and using, together with the real difficulty to take right decisions, make the need to study in depth basilar criterion for that decision more and more urgent, beyond a pure algebraic sum of benefits and costs, trying to extend to the universality the space-temporal reference horizon (WCED, 1987 – Goodwin, 1999 – Goodwin, 2002).

In this way, some helpful considerations can be done:

- Mobility is also the concrete expression of a native human need, maybe corresponding to the expectation of newness and the search of the meaning one's own survival.
- Development is not only economic but, to satisfy the human expectations, has to involve quality of life and freedom (opportunities) development too.
- Road infrastructures improvement does not always go in the direction of development, since positive and negative consequences coexist, of different type and of different importance.
- The opinion that enhancing transport infrastructures is always against sustainability is contrasted by the evidence that mobility is also a native human need.
- Decisions regarding road infrastructures are difficult, because they involve variations in opportunities sometimes not comparable, because they have different consequences on different involved subjects and groups, because they involve space-temporal systems that can't be easily defined and because they need adequate socio-economic and economic-financial contexts.

- It's necessary to improve the studies and the knowledge in order to better identify the conditions by which mobility and transport promotion supports much more development. Through bibliographic analysis and through some initial qualitative considerations, maybe it's possible to see some indications, such as supporting mobility which favours overall human development (not only the economic one) and such as taking into right account the high marginal utility of road infrastructure in medium-low welfare countries.

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