

# **Transport Policy in a Perspective of Sustainable Mobility Policy**

Paper for Expert Panel “Time politics and timescape analysis”  
FORESIGHT for TRANSPORT, Semmering, Austria, June 3-7, 2002

Martin Held, Protestant Academy Tutzing, Germany\*

## **1. Introduction**

The world of *transport* is a temporal world as well as a spatial world: forecast of demand, planning of infrastructure, discounting, travel time, waiting time, peak hour traffic, slots, seasons and holidays, speed, speed limits, just-in-time delivery, synchronizing, punctuality, timing in more general terms, time zones, standardization of time, pricing according to peak-hours and –days, real time traffic information etc. – this list could be easily enlarged.

*Foresight* is a temporal issue as well: It is an undertaking in which major trends are identified, the underlying driving forces analysed, which will influence transport as well as impacts of future transport policy to other sectors, etc.

*Sustainable development* is inherently a temporal issue: Intergenerational justice is complementing the established intra-generational view of justice and the dynamic, process-oriented view is at the core of a sustainability perspective (“development”).

While it is evident that temporal issues play a prominent role in transport and transport policy – combined with the spatial dimension – these issues are typically taken-for-granted. It is a great advantage that the FORESIGHT for TRANSPORT project is explicitly focusing on the potential of a temporal perspective for its objectives (Foresight for Transport, 2002, Chapter 8). In this paper I will address a few of the relevant temporal issues.

The arguments are based on a timescape perspective (Adam, 1998), a temporal analysis of sustainable development (Held, 2001; Reisch, 2001) and economics of time analysis (Biervert and Held, 1996).

## **2. Time = money and time = life**

Clock time and commodification of time is basic for the understanding of our topic (see Foresight for Transport, 2002, Chapter 8). Time savings are typically used in this calculus as abstract, homogeneous and divisible entity. While clocks and calendars are powerful for synchronising, scheduling etc. these assumptions are not generally valid even in our modern world. One hour at a specific time and place may be different in value and costs to another hour at a different time and place. To understand economics of time has a great potential for understanding the dynamics of transport:

a) Money can be saved. Time cannot be saved. Therefore, the “time = money” paradigm cannot taken as a precise calculus for the use of the scarce resource time. “Time = money” cannot be changed to “money = time” which is normally a sound operation if the assumptions

---

\* I have the pleasure to thank the School of Social Studies, University of Cardiff, that I had the opportunity to stay there January 20 to March 8, 2002. In this time I worked for the Tutzing Project “Time Ecology” including topics of the FORESIGHT for TRANSPORT time panel.

would be valid. Various point in time may have different values (to be too early will cause waiting time, to be late may have the effect that other economic actors already have bought the better quality supply or have made the contract, etc.). Time without the needed skills may be odd time but combined with skills, experience and the know-how of market conditions, persons, organisations etc. it may be valuable. In short: Time is not always a homogeneous commodity. Peak-hours and many more effects are basic examples in transport. “Time-savings” have to be understood in their difference to savings in monetary terms.

Even within a pure economic rationale, using time purely as a commodified resource time savings and higher speed are not *per se* better as longer periods and slower speed.

b) “There is nothing like a free lunch” (Keynes). Higher speed, better organisation of material and energy flows, transport of persons etc. may cause higher costs. In cost-benefit analysis this argument is taken into account. But in spite of that, high-speed still is attributed an implicit value in transport policy in itself.<sup>1</sup>

Time savings may have economic benefits but they have an economic advantage only if the benefits outbalance costs. Quite often, flexibility, timing and punctuality are economically more important than just higher speed and time savings.

c) Time savings are calculated in many transport studies which include only part of the whole story. Advantages on the one hand may have external effects in slowing down other parts of economy, other regions and other economic actors. Additional external effects, for example on the quality of life etc., may also be distributed not equally.

It is important to understand that higher speed has systematic effects on speed and rhythms in other parts of transport and economy: High-speed modes of transportation and corridors are inherently designed for long-distances. If there would be too many stops in short intervals the advantages of high-speed could not be realised and would be outweighed by the related costs. Therefore, some centres will be favoured and the other regions will more often than not be alone with the disadvantages. Therefore, policy prioritising high-speed transportation will favour centralisation. This in turn may further increase demand for transport, since many people working in urban centres will try to live outside in the green belts while many other ones working and living in urban centres quite often will flee in their free time as often as possible to other regions.

Time savings with higher speed, better flow of traffic etc. may have advantages but prioritising higher speed *per se* is not economical. The mix of modes with their specific speeds and rhythms have to be balanced.

d) Another differentiation is important to understand the economics of time: maximum speed and average speed for relevant periods, activities and journeys. It is one of the basic facts for transport policy that roads, tracks, stations etc. have an optimum rate of flow. Speed limits reducing maximum speed have an advantage specifically for busy traffic since the capacity may be better utilised if all vehicles have a specific range of speed. In other cases high speed may have an advantage for single actors.

---

<sup>1</sup> In my paper I will not analyse these issues in a straightforward theoretical perspective. But it is worthwhile to notice that temporalities are hybrid in transport analysis and policy: On the one hand time is taken as neutral, homogeneous clock time. On the other hand temporalities are valued differently like “the quicker the better” etc.

Combined with the former argument on centralising effects this is a very important temporal characteristic for a sound transportation system. Switzerland is an interesting case since the planned high-speed corridors were not approved by the electorate in the 1970ies. People not living in the centres opposed that plan. Therefore, in Switzerland the transport system was developed with a balanced approach. There are some central lines but the system is not oriented at a maximum speed for a few corridors but it is an integrated system with a good quality in connections and attractive properties for the whole of the country.

Summarizing: A temporal perspective of clock time and time seen as a scarce, commodified resource is important to understand transport system and demand for transport and supply. For specific questions the motto “time = money” is a good proxy. But it is misleading to take it as a general rule for the transport economy. A differentiated temporal analysis reveals a better understanding with important implications for transport.

e) Up to now I have argued within a strict functional perspective. In this view time is instrumental for other ends. But it has to be understood that time also may have intrinsic properties. We are mobile since we have fun, pleasure in doing so. Motor bike rides in spring time are but one significant example for that. The level of mobility would be significantly lower if only purely functional trips would be undertaken without any emotional parts. A whole industry is based successfully on that appeal to reason as well as emotion.

A temporal perspective includes these intrinsic properties of time and time use. Economy is not an end in it itself but the needs and preferences of people are at its core. We may ride for fun, have pleasure to walk, and to be mobile on a sailing boat. The intrinsic properties of time/time use are not just a marginal part of mobility but can play a major role in all parts of mobility. Time = life has to be included to understand mobility.

### **3. Transport and mobility**

This is another major aspect of a temporal perspective for our subject: mobility.

The White Paper of the European Commission (2001) on transport policy was an important step further ahead since sustainable development plays a major role. Reading the concrete consequences drawn from the analysis in the Action Plan tells us that the sustainable development perspective is added and not integrated from the very beginning. In that view mobility is mentioned here and there but it is not the starting point. The perspective is on transport of goods and persons from A to B for *given* transport demand. The proposed decoupling of economic growth and the development of transport is difficult to realize in such an understanding. You may improve efficiency of a given level of transport but the scale and scope of mobility is out of the analysis.<sup>2</sup>

Focusing on mobility a different type of questions and issues is the starting point: Why are people mobile? What are the driving forces? What is stimulating the level of mobility? Transport is derived and no longer taken as “given”.

In such a view all persons are relevant: young children want to be mobile close to their homes. “Time savings” for specific forms of transport may actually decrease mobility since they severely restrict their mobility. Neighbourhood lanes not prioritising motorised transport

---

<sup>2</sup> Intermodality is an important issue in the EU White Paper. The level of transport is as important for a sustainable mobility policy.

are a good example for a sustainable mobility policy. Later on the radius of activities of the children will increase. Walking is the basic mode of mobility, going with the bike has its own temporal qualities and spatial features which may vary to a large extent between people with varying fitness and age. Public transport is not just a mode for the captive riders but may have its specific advantages and its comfort. Cars are not necessarily the normal mode for the people in their active walk of life but may be part of a broader mix of mobility. People may have real choices and not bound to be subjectively captive drivers. Older people may prefer to have a setting which is not oriented to maximum speed but give them a chance to be mobile for a longer time of their life, again a major topic of sustainable mobility policy in an ageing society.

In a temporal perspective *context* play a major role: The analysis is not de-contextualised of time and space. Time and place and the proper settings – *ambiente* – play an essential role. In this view it is evident that an attractive setting has an impact on the forms of mobility and the level of transport: people may start walking or biking right in front of their homes or they have to go by car for many miles to have an attractive setting for walking with the dogs, shopping, meeting friends and alike.

In such a view the level of motorized transport is not “given” but life styles may differ in the level of transport. This opens a broad potential for sustainable mobility, i.e. really decoupling economic well being/prosperity and mobility (Umweltbundesamt, 1997, Chapter III).

#### 4. Context matters – information and mobility

This broader perspective on mobility, the needs of all people, not just the active part of society, and its appreciation of setting and temporal-spatial contexts is essential for another part of the overall story, as well.

Mobility includes: energy flows, flows of material, mobility of animals and plants,<sup>3</sup> persons, information. Speed of information is now processed with speed of light, know-how and person related information and experience still in the order of the pre-network economy.

There is a very interesting potential of the new information & communication technologies to coordinate/synchronise activities and improve efficiency of existing modes of transport. There is also hope that transport may substitute some physical traffic. As it is pointed out in Chapter 7 on information society (Foresight for Transport, 2002, 7.3.7) this is not as easily realized as it may be expected. For example, e-commerce may even stimulate a further increase in transport demand since home delivery may overcompensate reduction of shopping trips.

Focusing explicitly on the timescape analysis of mobility will improve understanding.

In studies on information society a de-contextualised perspective is dominating in which time and space are seen as no longer relevant.<sup>4</sup> In this view the established communication technologies like telephone overcame “the dependence of the place” and the internet will overcome “the tyranny of time” (Foresight for transport, 2002, 7.1.2). In this view time – and

---

<sup>3</sup> Time savings for some economic actors quite often have effect to decrease chances for mobility of animals. Rhythms and specific times of animals are also important temporal issues for a sustainable mobility policy (with links to BSE etc.).

<sup>4</sup> Bauman (1998) is a typical example. Castells (1996) is a more differentiated analysis but the second half is turning to such a de-contextualised view, too.

space – is an enemy, limiting freedom of movement. Information & communication technologies are the final cornerstone to free ourselves from these limitations.

In a temporal perspective we understand that we still live in time and space – and ever will be – and that physical mobility is not changed in its speeds and rhythms. In more general terms: *context matters*.

In this view we may better understand what is really new: information can be transmitted at a totally different order of speed compared to physical transport of goods and persons. This is not a miracle but according to the laws of nature. Psychologically we are at the very beginning to understand the new qualities and specifically to cope with the different order of information mobility and personal exchange face-to-face and physical movement of goods.

Psychologically the far distant is closer now which stimulates the expectations and needs to see far distant places ourselves, to have personal contact to persons and organisations we work electronically together. If information flows are increasing in scope and scale markets will increase which in turn will increase material flows as well. “The larger the markets the better”-attitude is not according to a sustainable mobility policy but information & communication technologies then will inevitably increase physical transport. Therefore, if sustainable development is taken seriously as a guiding principle globalisation has to be added to the agenda.

With information technologies place and time do not disappear. Therefore, it is no surprise that these technologies may help to improve coordination of transport in time and space (GPS etc., Foresight for Transport, 2002, 7.3.8) which is evidently not possible in a world out of time and space.

Summarizing: If we intend to realize the substitution potential of electronic devices we have to realize that context still matters and that we cannot “free ourselves” from the laws of nature as long as we are living beings and not angels. Time and space are not just limiting constraints but basic to all life on earth. Technologies allows transmission of information at unprecedented speed. Personal know-how, experience etc. is still related to persons which have the need to understand each other, know each other to have trust, a major economic factor of transactions.

## **5. Climate change, energy flows, and sustainable mobility**

A temporal perspective is also essential for the environment/ecology part of sustainable mobility. As is pointed out in the chapter on environment and energy (Foresight for Transport, 2002, Chapter 5) and summarized in Annex III energy consumption of the transport sector and related emission of CO<sub>2</sub> are still on the rise.<sup>5</sup> Improvements of specific efficiency per mile were overcompensated by up-sizing, increasing motorization and related effects. The dependency on oil has further increased in transport since the time of first oil-price crisis at the beginning of the 1970ies.

---

<sup>5</sup> It has to be stressed that this is true for all industrialised countries. On the contrary other sectors of energy consumption are successfully on their way to de-coupling economic growth and energy consumption in some countries. CO<sub>2</sub> emissions in these sectors are declining in absolute terms whereas transport sector is still increasing.

Climate change has a specific temporal feature: Effects are delayed in the order of decades. Therefore, there is typically a big time-gap in reaction time to begin with the needed measures. Mobility is the main sector causing problems since the attractiveness of high mobility combined with the high level of captive drivers bound to long-distance journeys according to their life styles, place of living and work etc. When measures will be enforced there will be again a long delay in effects. Psychologically this temporal feature of climate system is a major block for the acceptance of measures to protect world climate in a world turning closer to a short-termism economy and society.

A temporal perspective is essential to understand the other side of the game as well. We are using deposits of hydro carbons which were built up at a scale of million of years in the order of only some hundred years. Again it is difficult to experience that as long as the prices are as cheap as they are today.<sup>6</sup> The economies of industrialized countries, the division of labour, the spatial patterns of settlements, urban sprawl and alike are the results of the low relative prices of this fossil energy source, oil.

To begin the needed transition to a sustainable mobility policy has to take the future developments into account which we can experience in its beginnings today. Price of oil is beginning to become very volatile with very adverse economic and social consequences, since only a few countries can export oil. But the tendency is still dominating to keep prices of gasoline down since this is a major political issue in all industrialised countries. The longer we will try to come along with that attitude the higher the probability of a “hard landing” with steep increases in oil prices.

The White Paper on transport policy (European Commission, 2001) is ignoring this part of the future trends. This is due to the fact that it is still mainly sectoral in its orientation. If the objective of sustainable mobility is taken seriously the Green Paper on a European strategy for the security of energy supply (European Commission, 2000) has to be integrated.<sup>7</sup> It is a major fact to be included in the Foresight for Transport exercise that the dependency on a single non-regenerative fossil resource is a basic obstacle to a sustainable mobility policy. The Green Paper is explicit on the threats to peace, climate and security of energy supply for transport which in turn is essential for the functioning of modern economies and societies.

Temporal perspective stresses that it is a major task for any strategy for a sustainable mobility policy to begin the transition period to regenerative, climate-friendly and peaceful energy regime for mobility today and not just wait-and-see. This task is in the order of the transition of planned economies to market societies and will take at least one to two generations: it is another “Great Transformation” (Polanyi). To understand its dynamics and evolution is another interesting and important temporal issue.

A temporal perspective also will make explicit other major issues of transport and mobility. For example: Sealing soils for transport infrastructure is performed within short periods of months and years. Regeneration of soils is in the order of hundred and thousands of years. Soils are essential for life on earth. Therefore, soil degradation as an effect of increasing transport is a major issue like climate change. The new soil policy of the European Commission (2002), which is now at its beginnings has to be integrated into the Foresight for Transport analysis.

---

<sup>6</sup> Adjusted to inflation prices for gasoline are lower compared to the beginning 1960ies.

<sup>7</sup> It is interesting that the Foresight for Transport (2000) paper for Semmering consultations is also not mentioning this Green Paper at all.

## 6. Conclusions

A temporal analysis can substantially contribute to all aspects of the objectives of Foresight for Transport. Within the scope of a short input-paper to the Timescale Panel I could address only a few items. Some concluding remarks can be derived for a more thorough discussion in the Panel itself:

- Decoupling economic prosperity and transport is the overall objective.
- To realize this objective is it important not to focus on a given transport demand but to analyse mobility.
- Time is not just an abstract, homogeneous, divisible resource but it has different qualities.
- Attractiveness of settings and contexts are important.
- All types of mobility and all modes of transport has be integrated with their specific features. A balanced approach is a consequence taking into account the differences in rhythms and speeds.
- We are well advised to see time and space not as enemies and limitations but as the very basis of our existence.
- Then we can realize potential of new information & communication devices for a sustainable mobility. Otherwise positive effects to substitute physical transport by information flow in the networks will be overcompensated by the complementary effects on physical transport.
- Existing and still dominating trends of transport system are unsustainable. We have to begin now to re-orientate the whole setting for mobility.
- The transition period of the existing transport system to a sustainable mobility economy and society is in the order of one to two generations.

Transport policy has to be understood as part of a sustainable mobility policy.

## References

Adam, B. (1998), *Timescapes of Modernity: the Environment and Invisible Hazards*, London, Routledge.

Baumann, Z (1998), *Globalization. The Human Consequences*, Cambridge, Polity Press.

Biervert, B. and Held, M. (eds) (1996), *Zeit in der Ökonomik. Perspektiven für die Theoriebildung*, Frankfurt/New York, Campus.

Castells, M. (1996), *The Rise of the Network Society*, Oxford, Blackwell.

European Commission (2000), *Green Paper, Towards a European Strategy for the Security of Energy Supply*, COM(2000) 769. Brussels, Commission of the European Communities.

European Commission (2001), *White Paper: Transport Policy for 2010, Time to Decide*, COM(2001) 370. Brussels, Commission of the European Communities.

European Commission (2002), *Communication, Towards a Thematic Strategy for Soil Protection*, COM(2002) 179. Brussels, Commission of the European Communities.

Foresight for Transport (2002), *A Foresight Exercise to Help Forward-Thinking in Transport and Sectoral Policy Integration*, Inception Report for Expert Panel Consultations, Semmering, Austria, June 3-7, 2002.

Held, M. (2001), Sustainable Development from a Temporal Perspective, *Time & Society* 10 (2/3): 351-366.

Reisch, L. (2001), Time and Wealth: the role of time and temporalities for sustainable patterns of consumption, *Time & Society* 10 (2/3): 367-386.

Umweltbundesamt (1997), *Nachhaltiges Deutschland. Wege zu einer dauerhaft umweltgerechten Entwicklung*, Second Edition. Berlin, Erich Schmidt Verlag.