

## 1. Crossed Perspectives



# Travel time and speed

Between Yves Crozet (Économiste)  
And Michel Leboeuf (Praticien-ne)

10 December 2012

The following article provides two points of view, one from a university professor and the other from one of the SNCF's leading experts on high-speed travel. Their views, which are largely complementary – but sometimes in opposition, offer an insight into a subject that goes well beyond the question of transport and involves matters of public policy, regional development planning and individual choice.

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## 01. Is the amount of time we spend travelling increasing or decreasing?



Yves Crozet

The most popular hypothesis among researchers, known as the Zahavi conjecture, postulates the long-term stability of TTBs (Travel Time Budgets). In 1980, Zahavi posited that, given access to modern transport modes, the time spent traveling had decreased and stabilized at around an hour a day. Given the increase in the speed of travel, the logical implication of a stable TTB was that the distances had also increased. Effectively, the average today in France is 40km per person/per day, versus 4km 200 years ago.

However, these figures mask a number of contrasting situations. The TTB in Paris (one hour, 30 minutes) is more than twice that of Lorient in Brittany (40 minutes). So the one hour average is not a natural fact; it changes with age, family composition, professional and geographic situations



Michel Leboeuf

It's neither one nor the other. My belief is that it's probably constant. Human beings are subject to biological rhythms that necessitate periods of rest, which limit their ability to travel. This seemingly indicates a reduction in transport time. Meanwhile, modern technology has invented activities like television, which consume people's time and compete with transport.

However, there is also a pull in the opposite direction. People have always felt the need to travel, to explore the universe around them and meet others. Even with only the most primitive means they were able to travel across oceans. In more recent times, thinkers and artists traveled incredible distances using the means of transport available at their epoch, which often lacked personal safety. Today's rise in tourism is further proof of man's natural desire to move. In some cases, the goal is the journey itself, not the destination.



Y. C

TTB is based on logical considerations, more so than biological ones. It would be stupid to spend all of our waking hours (roughly 16) travelling. By the same token, there is no need to reduce TTB to zero if a trip is considered useful.

Our daily schedules are a combination of travel and activities. We weigh the personal benefit derived from a given activity against the implications travelwise. If the activity is truly valuable, we are willing to accept a higher 'cost', both in terms of time and money. So, when we go to Prague or Venice for a

weekend, for example, it's not unusual to spend a quarter of our waking hours in transit: we do it because we think it's 'worth' it.

## 02. Do people still expect to have ever-faster transport systems?



Yves Crozet

If TTB have remained stable and, at the same time, the distance of our daily trips has increased tenfold, it's because transport speed has also increased tenfold. The car has replaced the steam engine, and high-speed trains and planes have replaced cars for longer journeys.

Whenever a fast, affordable mode of transport is offered to people (which wasn't the case of Concorde, for example, and hence its obsolescence), there is always a demand. Look at the success of France's TGV for journeys of 300-1,000 km. For trips of more than 500 km, flying is also an attractive option, as is clear from the rise in air traffic, whereas car travel distances have remained stable over the past 10 years in France, Germany and the UK. This reflects a decrease in the average travel speed on roads and motorways, whether due to sheer congestion or the introduction of road safety measures. However, all of this shows that there is still a real demand for speed.



Michel Leboeuf

The obvious answer is 'no'. You only have to look at the debate over High Speed Rail Lines to be convinced of that. How many times have I heard the phrase "we're not – or no longer - five minutes away!" But there is a contradiction between rhetoric and the reality of people's behaviour; the love of speed is still in us. I'll offer just one example.

My 30 years of experience in the high-speed rail sector has proven to me that there is a direct link between speed and frequency of travel. In France, we not only have six high-speed lines in service today, but we have also reduced trip times for hundreds of DA (1) connections. And in every case, the resulting change in traffic volumes was exactly what we expected it to be. There isn't a single case, of the hundreds of DAs analysed, where travel time didn't have an impact on traffic volumes.

So you could make an environmental argument against speed. Fundamentally, I believe what's being asked of transport services is that they become faster, but cause less damage.

(1) From place of Departure, to place of Arrival.



Y. C

The demand for speed is still significant because time is the rarest commodity: we sleep an hour less than we did 100 years ago because we have more reasons to be awake today, and notably because of television! Lack of time increases with a rise in income, because higher income allows you to choose from an even wider range of activities. The result? We've never had so much free time, and yet, time has never been in such high demand.

However, this demand for speed isn't just a question of transport. Another way of saving time is using Information and Communications Technology (ICT). The telephone and Internet can save us precious time, which we then immediately devote to other activities or connections. The net effect is that these technologies are both a way of saving time and a way of making it a resource in an increasingly short supply. QED!

### **03. Should we/can we continue to travel faster and further, given the economic and energy crises we're currently facing?**



Yves Crozet

If you take the trend we've witnessed over the past 100 years and extrapolate it 100 years into the future with a one-hour TTB, our great grandchildren will travel at least 250 km a day, at an average speed of 250 km/h! That's the average speed of a plane flight today between two cities in the United States door to door. Such trips would have to be made by plane, including taking kids to school! It's monstrous. However, the rise in travel speeds is coming up against logical problems linked to how we structure our activities – which require slower speed activities as well, such as walking.

This logical constraint is the most important, and reflects not only climate and energy constraints, but also those relative to urban development. Towns and cities are gradually questioning investments that extend the distance people travel. We've entered an era wherein gains in speed will not come from transport systems but from the telecommunications sector.



M. L

Towns and cities aren't gradually beginning to question investments that extend the reach of journeys. There are numerous examples in France of the opposite being the case, such as the metro/VAL in Rennes, the new Line 14 of the Paris metro or the extension of the capital's RER E line – which are all faster than existing public transport services.

Nor is the desire for faster transport being transposed to telecommunications. On the contrary, telephones have become mobile and now help people make better use of transport services! At the Gare du Nord in Paris, the SNCF has opened an internet shopping kiosk; telecommunications can help pass the time during trips but cannot replace it.



Michel Leboeuf

Globalisation is taking place. The only limit appears to be the physical dimension of the Earth, at least until we've found a way of travelling to other planets! The climate and energy crisis are very serious. It's not a question of *whether* we must do something about it, but of how. To do so, we can imagine two scenarios. In the first, society finds regulatory or fiscal means to limit mobility in an "authoritarian" way. In the second, society finds ways to encourage people to reduce their travel carbon footprint without resorting to authoritarian regulation.

In all probability, mobility will be greater in the second scenario than in the first.

Some will say of the second scenario that "the sky will fall on our heads sooner", and that ultimately our increased mobility will be reduced in an "authoritarian" way not by society but by nature. But how can you prove that? How can you show that by reducing the amount of contact between people through reduced mobility, that you don't also end up slowing down technical progress (including the kind of progress that is helping to develop alternative energy sources), which is the only way to reach the famous 4 Factor(1).

The choice largely comes down our faith in scientific progress and citizenship. It's about not putting the brakes on scientific and technological advance by not restricting mobility too much, but about educating people to reduce needless consumption of fossil-fuel energy.

(1) Reduction of CO2 emissions by a factor of 4 by 2050 from 1990 levels, a feature of the Kyoto treaty.



Y. C

Works on ways to reduce CO2 emissions in the transport sector show that technology will get us halfway there. The kinds of cars we'll see in the near future will be very economical and not designed for long trips. As for reducing CO2 emissions fourfold by 2050, technological advances will offer a twofold improvement. For the rest, people's behaviour will have to change: by optimising all of the different modes of transport, developing public transport services and using less energy-consuming forms of transport (such as cycling or walking) for short trips –which, let's not forget, are also the most frequent ones.

The rise in CO2 emissions is largely due to air travel. If rationing were ever to be introduced, it would be in this sector (cf. tradable emission permits).

- Aspirations
- Futures
- Rhythms of everyday life

## Policies

- Ecological transition
  - Public transport
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Yves Crozet

### Économiste

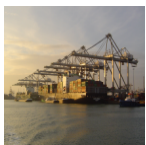
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Michel Leboeuf

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With a diploma from the Ecole Centrale de Paris and a masters in economics, Michel Lebœuf spent most of his career with the SNCF – where he was Head of the Economics Department and Director of Major Projects and Advanced Planning. He later became President of the UIC High-Speed Group and Adviser to the President of the SNCF.

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To cite this publication :

Yves Crozet et Michel Leboeuf (10 December 2012), « Travel time and speed », Préparer la transition mobiliétaire. Consulté le 20 May 2024, URL: <https://forumviesmobiles.org/en/crossed-questions/464/travel-time-and-speed>



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