Transport and Society – 10 insights for the Renaissance

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Introduction

My contribution to this prestigious conference comes, I must admit at the outset, with no professed expertise or grand insights regarding South Africa's transport infrastructure programme and its continental perspectives.

I offer instead what I hope might be some helpful food for thought for those better acquainted with the programme.

I am a graduate civil engineer who was once comfortable within the territories of mathematics, physics and computing. However, for the past 10 years I have been a Professor of Transport and Society – turning my attention progressively to trying to understand the human condition and the attitudes, behaviours and decisions that dictate the nature of the world we live in and develop.

My contribution to the conference consists of 10 insights from the perspective I have taken to understand transport – in a UK context. I hope, through these insights, to challenge the thinking of delegates at the conference in a way that will prove helpful to progressing effectively the ambitions of the Renaissance.

Evolving perspectives

I begin by questioning the professional and political mindset. I would suggest that for too long there has been a convenient assumption that transport *serves* society. It is not for the transport professional or politician to reason why but enough for them to deliver the level of provision of transport required. However, an inescapable truth is that there is not a one-way relationship between transport and society. As we change the transport system we *shape* society and the way we lead our lives – land use patterns change and reliance on motorised mobility evolves. To suggest that transport professionals or politicians are social engineers may seem controversial. Whether or not we intend to be, the reality is that we are. My central thesis is that rather than transport serving society, we should recognise and embrace the need for transport to *support* society. This does, however, pose a significant challenge to the silo thinking that can constrain governments.

Adding social science to transport

The heartlands of transport have long been in engineering as we develop the supply-side of the infrastructure and the vehicles to run upon it. However, once the infrastructure is in place there is a need to maximise its use through traffic management – this introduces the need to understand elements of traveller behaviour and in turn the need for an input from social science alongside engineering. This input grows still further as one comes to face the challenges of a transport system in which demand exceeds supply and where the need for demand management policies and measures arises.

As transport systems have become more established I would suggest that the disciplinary centre of gravity for transport has moved ever further towards social science – reinforced by greater (tacit) recognition that transport should support rather than serve society.

As a profession we must ensure that we reflect this disciplinary mix in relation to the expertise we engage and the terms of reference drawn up

for the work undertaken to explore potential policies, measures and schemes.

Accessibility not mobility

Alongside the vehicles and infrastructure for the transport of people and goods we have entered into a new age where a 'transport and society' perspective should also consider the transport of *information*.

Textbook transport planning would indicate that travel is a derived demand – derived from people's need or desire to access people, goods, services and opportunities at alternative locations. In turn, historic trend data has suggested a close coupling between increasing economic activity (through access) and increasing amounts of traffic and travel. It came to be presumed that one could not have one without the other. However, data for Great Britain shows that from the mid 1990s until 2005 (before the current economic turmoil) there has been some uncoupling of traffic and travel growth from economic growth – the rate of economic growth was greater than the rate of traffic and travel growth.

One must then ask whether or not it is coincidental that the mid 1990s also marked the arrival of the world wide web and the opportunity for people to engage in economic activity by sometimes allowing the information rather than the person to make the trip?

For me this possibility underlines the important fact that it is *accessibility* not (motorised) mobility that governs social participation and economic activity. Society has tended to exercise much of its accessibility through physical mobility. However, this continues to change as we adjust to living in the information age.

There is a need to consider to what extent one should now invest in transport infrastructure versus investing in information infrastructure in order to support a society that can flourish from improved access.

To give you an insight into the state of the art – I will, this summer, be directing a four day *virtual* workshop for the UK research councils as a means to identify and fund new research projects. We will each interact through our avatars in a virtual world – without the need to travel to be co-present or to stay in expensive hotels!

Inclusive or exclusive society

In pursuit of access there has been a growing importance attached to trying to create a fairer and more inclusive society. During the last decade the UK gave a lot of political priority to addressing social exclusion and looking at ways to promote social inclusion. Some of our own work in this area sought to examine the role of transport and access in such an agenda. This highlighted an important illustration of the need to be aware of second-order indirect effects when thinking through policy approaches.

First of all one can observe that access to greater mobility can improve an individual's ability to participate in society. It might therefore follow that improving mobility would be an inherently worthwhile policy goal.

However, what we have seen in the UK and in other countries is that society shapes and structures around assumptions of or aspirations for high mobility. For those that gain access to such mobility the benefits in the first instance are realised. However, in an increasingly car-dependent society we have seen a secondary effect on patterns of land use and viability of businesses.

Those with cars are able to access larger more distant facilities for shopping that offer more choice. Correspondingly, local businesses – such as post offices – struggle to remain commercially viable and face closure. For those individuals who have not engaged in high mobility, their potential for social exclusion is reinforced rather than mitigated by mobility.

The law of unintended consequences

The last example is just one amongst countless other examples of the law of unintended consequences at work. This was something popularised back in the 1930s by a sociologist Robert Merton. It is the observation that when

we take actions there can be unexpected or unintended reactions.

Consider another brief example. In Athens in Greece in the 1980s a scheme was introduced to tackle congestion and pollution which consisted of only allowing any given vehicle, according to its number plate, to enter the city on alternate days. The short term effect achieved the goal. However, over time people sought to acquire additional vehicles in their households to ensure they had number plates allowing access on all days (often acquiring or retaining cheaper more polluting vehicles). This unintended consequence saw congestion and pollution return.

Merton identified five different reasons why we are exposed to unintended consequences:

(i) A lack of adequate knowledge (incomplete analysis)
(ii) Error (incorrect analysis of the problem)
(iii) Imperious immediacy of interest (wilful ignorance)
(iv) Basic values (no consideration of further consequences)
(v) Self-defeating prediction (a prediction that prevents what it predicts from happening)

In my own analysis of a selection of examples of unintended consequences associated with transport my deduction is that the first and the third of these are most commonly at play.

In pursuit of the African Renaissance I would strongly encourage investment, alongside the expensive consultancy studies of policy and investment options, in the commissioning of think-tank visioning that looks to at least anticipate potential consequences that would be unintended in the hope of making decisions that are more resilient to this 'law'.

Inside the mind of the traveller

As we seek to shape and support the use of the transport system there is a need to understand and potentially influence how travellers behave. I have been particularly focused on this matter working with the UK Department for Transport in the development of traveller information services. In this field I have observed a particular professional mindset that seems to have endured – one of 'build it and they will come'. We have tended to accept without question that people would want information to support travel choices. The challenge became one of how to deliver the services it was presumed were needed. I would caricature this take on behaviour as that of the Vulcan Mr Spock in the science fiction series Star Trek: "for every trip the individual wishes to have as full a knowledge as possible about all the options and to make a set of decisions which maximises the utility (attractiveness) of the trip".

Research reveals that in practice most people most of the time do not consult travel information services. What underlies this is the prevalence of another caricature of behaviour within the travelling public. Here we turn to the popular American cartoon series – The Simpsons and Homer Simpson himself – or 'homo psychologicus'. For Homer, "many trips are 'no big deal' and so long as they work out there are plenty of other things to occupy the mind".

This popular psychology depiction underlines our need to embrace the social sciences to gain insights into the behavioural consequences of the preponderance towards 'technology fix' solutions (perhaps born of the transport discipline's origins in engineering).

Understanding social dilemmas

While Homer may lack the apparent logic of Spock it can be argued that both are behaving rationally. Rational behaviour can underlie another challenge we face – the incompatibility between *system optimum* solutions and *user-optimising* solutions. In short social dilemmas are at play in the use of our transport systems.

Consider the following illustration. People travelling to work along a route, including myself, can either go by car or public transport. Many people go by car and public transport is underutilised. The result is congestion.

Suppose I decide to take public transport instead of using my car. There is a marginal benefit to everyone else with one less car on the road – but I have the inconvenience of being on public transport instead of enjoying the comforts of my car.

However, suppose many other people leave their cars at home and join me on public transport. The benefits for all are appreciably reduced congestion and improved journey times.

However, suppose I stay in my car and allow other people to leave their cars at home and use public transport – I benefit from the comforts of my car *and* improved journey times.

Since I cannot control what other people will do, rationally I choose to stay in my car – just as many others do – returning us to the situation of too many cars on the road, perversely meaning that we are all disadvantaged.

Fiscal measures become important in overcoming such social dilemmas – as was the case with the introduction of the London Congestion Charge.

Travel is more than a means to an end

In the transport profession we can be guilty of functional thinking, allied perhaps to the 'transport is here to serve' mentality. A key premise of investment cases for new transport infrastructure and services remains that of transport being a disutility – the time (and monetary) cost of transcending distance to reach a destination. By making journeys quicker it is taken that we are able to 'release' saved travel time for its use in economically productive activity.

To a point this is undoubtedly true. However, my own work and that of others has contested this premise in being an absolute. What our research reveals is that travel is more than a means to an end – it can be an end in itself. Travel time represents an important time of transition and preparation between different life settings. It can represent a 'gift' to the traveller: time for oneself away from the expectations of others at either end of the journey; time to indulge and for which one is less accountable; time to focus and be productive in a different environment.

Through inclusion of questions in a major national survey of rail passengers in Great Britain in 2004 and 2010 we have found that a growing proportion of passengers consider their time on the train to have been very worthwhile with only 13 % considering their time on the train to be wasted.

Travel it seems is more integral to our lifestyles than its functional purpose, as sometimes understood by transport system providers, might suppose.

Gearing up acceptability

My last two insights move from travel behaviour to public reactions to policy propositions and policy implementation.

In a strongly democratic society, governments will struggle to bring forward what may be effective and necessary policy measures unless they are sufficiently acceptable to the electorate. We have seen this especially in relation to the introduction of forms of road pricing.

In a major study we undertook for the UK Department for Transport on the topic of public acceptability of road pricing we learnt a number of things including that: (i) acceptability changes over time and can be changed; and (ii) there is a need to look upstream from proposed solutions to the problems themselves in order to understand the root causes of people's attitudes.

In our research we suggested a 'gearing up' model of acceptability of road pricing in which it was first necessary for members of the public to accept that there was a problem to be solved before then considering acceptance of the need for some form of demand management solution. In turn demand management would need to be accepted before road pricing as a concept was accepted. Only then might one explore acceptance of a specific road pricing scheme.

There is a tendency in practice to 'jump in' and cut directly to the electorates' view on the specifics. From our research it appears that meaningful insights lie upstream. We learnt in fact that people do not necessarily accept that congestion is a problem. Even if they do, their 'sticking point' in the gearing up model is that in their experience congestion is insoluble in spite of repeated claims by local and national politicians to do something about it. Accordingly they are opposed to the artificial hand of demand management and would prefer to accommodate the 'problem' in their own way.

Adaptability to change

I want to remain with road pricing for my final insight which concerns what I consider to be an unsung strength and opportunity of human nature, namely adaptability to change. This trait is often overshadowed by another: fear of or resistance to change. We are creatures of habit and do not like the idea of our patterns of behaviour being disrupted. This is something fuelled by the media.

In the lead up to introducing the London Congestion Charge the media were only too pleased to act as doomsayers. Traffic charge chaos was anticipated. However, the reality was that immediately after the introduction of the scheme in February 2003 there was a 30% reduction in congestion in the charging zone and concurrent with this the proportion of Londoners opposing the scheme reduced from 41% to 27%.

In spite of the fear of change, the change proved effective as people were able to adapt their behaviour and the scheme's effectiveness in reducing congestion was met with a positive change in the acceptability of the scheme itself once implemented and experienced.

Sadly, political nervousness all too often falls victim to fear of change rather than having the resolve and political timescales to capitalise on human adaptability to change.

Concluding remarks

That brings me to the end of my offering of 10 insights for the Renaissance. I hope very much that my observations have not come across as patronising. In my own mind having discovered or developed these ideas during my own career they no longer seem startling and some can border on feeling rather obvious. However, what I have also observed during my career is how intractable or poorly recognised or engaged with some or all of these issues appear to be. Therefore I hope you have indeed found some food for thought to take away.

My summarising remarks are as follows. When embracing change, be alert to different interpretations. Remember that while change may be enabled through policy, investment, infrastructure and technology, it is ultimately *governed* by human behaviour. Be receptive to a 'transport and society' perspective in your thinking; and finally, take the time to anticipate the unintended.

Biographical note

Glenn Lyons is Professor of Transport and Society and founder of the Centre for Transport & Society (CTS) at the University of the West of England, Bristol (UWE), UK. He was CTS Director from 2002-2010 and is now Associate Dean (Research and Knowledge Exchange) for the Faculty of Environment and Technology. His research has focused upon the role of new technologies in supporting and influencing travel behaviour and on attitudes towards transport. A former secondee and expert advisor to the Department for Transport's Transport Direct initiative, Glenn has led major studies for the DfT and UK research councils into traveller information systems, teleworking, virtual mobility, travel time use, user innovation, road pricing and public and business attitudes to transport.