# Transitioning toward low-carbon mobility: a holistic approach to transition policy

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Dwindling oil reserves and massive greenhouse gas emissions from transport have led Tim Cresswell, head of the Living in the mobility transition research project, and his team on a worldwide search for policies and practices that could help spur the transition toward a low-carbon future. Here he shares some early insights from the project on the way forward for a mobility transition.

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MOBILE LIVE FORUM'S RESEARCH Decarbonized mobilities: a poorly initiated transition FIRST RESULTS Tim Cresswell

## The transition to low-carbon mobilities is only partly technological

We have to think about futures that are less dependent on oil and produce less greenhouse gases. This transition to low or non-carbon mobilities is what I want to talk about today. There are many ways in which we can do this: one way is purely technological. For instance, we could move exactly the same way as we do today in terms of the distances we move, the speeds we move, and the amount that we move, but in doing so, we could move using technologies that do not use as much carbon, so therefore do not produce as much greenhouse gas for instance. If we all drove electric cars, and all of those electric cars were fuelled through a renewable energy system that used wind, wave power and solar power, then we would obviously be using no oil or very little in the process, and we would be producing fewer greenhouse gases in the process. But it isn't only technological transitions that we need to think about, there are other ways in which we could promote transition towards low-carbon future mobilities. Some of them are just legislative: so we could for instance put a tax on carbon, which has been shown to reduce carbon emissions since the true cost of travelling using oil and producing greenhouse gases becomes more apparent in the way that we make our decisions because we have to take into account the fact that it costs more.

## Using existing technology differently

Another example of forms of regulation that could lead to transitions to low-carbon futures would be through changes, i.e. small changes in the ways that we move using the technologies we already have, such as air travel. For instance, in the European Union flights have to travel along specific corridors which aren't always a straight line between A & B. If airspace was freed up so that planes could travel in a more or less direct line from point A to point B, then the actual distance travelled would be

significantly less, and therefore less carbon emissions would be produced. The EU is thinking about doing this and changing the structure of travel, including even the way an aeroplane lands. If you change this from a system where the aeroplane comes in in steps (like this) and goes down and then carries on straight, then goes down until it lands—this is the way aeroplanes mostly land now. However, if a smooth decline in a straight line down to the airport was used more regularly by aeroplanes, they would use less carbon, and produce less greenhouse gases.

## Encouraging new forms of mobility through infrastructural changes

Another way of transitioning towards low-carbon futures is infrastructural. So for instance in our cities, if we make small changes to our landscape, we can start to encourage forms of mobility that at the moment seem difficult but which would become easy. One of these things that can happen—and it is happening—is the provision of safe bicycle lanes which are separated from automobile traffic so that people who are nervous about cycling amongst cars will no longer have to be nervous, and they would be more likely to travel on their bikes. Similarly with buses, if buses have separate dedicated bus lane that are reasonably fast and reasonably comfortable, where they don't get stopped by the automobiles around them and which are also timed so that traffic lights and things like that aren’t stopping them all the time so that cars can cross their path, then again people are more likely to take buses, and we can transition towards forms of mobility that produce less greenhouse gases per person.

## “Nudging” individuals to change their mobility habits

Another way that we can encourage transition towards less carbon-intensive and less greenhouse gas producing mobilities is through what we might call nudges, i.e. convincing people subtly that there might be things that they can do that will be beneficial to them and which produce less carbon emissions. One of these is for instance the provision of a kind of an eco-card, like is being used in South Korea, where people get rewards or points for taking low-carbon transport choices, similar to the way we might now collect air miles by travelling a lot in aeroplanes—which clearly isn't a good idea in terms of carbon emissions. You get a card that rewards you for, say, taking the bus instead of your car and gives you some kind of financial reward for that. You can collect green miles or eco-miles, which you can then use to buy things, like using public transport more. You get a discount by using it.

## Mobility transition through movement, meaning and practice

All of these methods envisage some kind of transitioning in movement. This can mean either less movement or different forms of movement. These are the two main ways in which we can reduce our impact on the environment through the ways that we move. And in the rest of what I want to say today, I want to focus on three facets of mobility from mobility theory that we can think about in terms of transition that are beyond simply technological changes, which is the one that most people have focused on up to now. So I want to think about transitions in movement; transitions in meaning, and transitions in practice, all of which are key parts of the way we think about mobility and mobility theory.

## Transition in movement

### 1. Transitioning by moving less

Let's start by thinking about movement itself. Clearly, there are ways in which we can transition that are really about whether we move less. This is the clearest way in which we can transition to a low-carbon future and one that is less harmful to the environment.

### Teleworking

For instance, one thing that some people are considering in places like the Netherlands and New Zealand and South Korea is the process of telework. Telework means using Information Technology to either work at home or in some cases, such as in the Netherlands and in South Korea, to find spaces where people can go which are closer to their home than their workplace where they can meet, do work, have a hotdesk where they can get some of the work done that they need to do and go home,reducing the distance between work and home. Interestingly, one of the places where this happened was in Christchurch in New Zealand after the earthquake there when it became impossible, because of the infrastructure crumbling, for people to get to and from work—they might not even have a workplace to go to—people started to rediscover telework and think about how you can get people working from their house without having to travel through an infrastructure that has been struck by disaster. And these kinds of moment sometimes produce a creative thinking that allows us to get beyond the normal ways in which we do things now in terms of travelling to and from work.

### 2. Transitioning by travelling more slowly

Another way that we can transition in terms of movement is not so much travelling less but travelling more slowly. There is certainly a slow movement. There is a slow city movement, there is a slow food movement, and a lot of those are cultural lifestyle values, but connected to them are also issues about mobility. And in a more general sense, we can think about things moving more slowly and using less energy in the process. So cargo ships that travel around the world for instance. We sometimes forget that it isn't just humans that are travelling, it’s also goods and commodities that are travelling, and seaborne container transport is one of the fastest-growing and most polluting of all the ways of travelling. It has been estimated that if cargo ships cut their speed in half from 24 knots to 12 knots, then 40% of the greenhouse emissions could be removed. And in most cases, the things that are transported by sea are not things that have to arrive anywhere in a hurry

### 3. Transitioning by reducing transport distances

One organisation that has focused on what we might call localisation or the localisation of life is called the Transition Town Movement. The Transition Town Movement is still a small movement, but there are transition towns all over the world, and in these towns the idea is that all of the things that are part of your everyday life should be as local as possible. So the Transition Town Movement emphasises things such as locally produced food, organic and bio-dynamically produced food, local forms of democracy, local economic transfer schemes—which are economies using money other than the national currencies—so that people exchange things locally rather than exchanging things, say, by buying something on Amazon or from some producer of goods located a long way away or some supplier of goods a long way away. And so the whole of life is being more and more localised so that the distances involved for the things that you use in life, as well as where you travel to, are becoming more and more reduced, which means that, again, greenhouse gases aren't being produced in the same way.

## Transition in the meanings attached to mobility

A lot of transition theory up to now really hasn't paid enough attention to the meanings we invest in mobility. Mobility isn't always a rational choice made by rational actors deciding how to get from A to B or why they need to get from A to B. We invest mobility with sets of associations, such as progress, such as our own individual career advancement. If we know we have a fancy car and drive a certain distance to work, to a certain kind of workplace, there is a meaning attached to this which needs to be considered when we are thinking about transitions. What meanings do mobilities have? And again, with workplace mobilities, this can be a key thing. So public transit also needs to transform the meanings associated with it. In some parts of the world, particularly in the United States, public transit is seen as a choice only for those who can't make a choice, i.e. they have to, it’s a compulsory form of

travel for people who can't afford a car. It we start to think about ways in which that choice becomes something that is imbued with meanings that are positive, then people are more likely to make it.

### 1. Changing the meanings associated with driving a car

We know that in some parts of the world, and even in the United States, car use is actually reducing in major cities to some degree, and this may be because of the economic decline since 2008, but it may also be because people of a certain part of the demographic, particularly young people, from when they might get a driving licence up until they are 30, are finding it less and less important to own and drive a car. Cars have been imbued with all these meanings of power, sexiness and success because, you know, people have been measuring their success by what car they drive; people would even ask each other what car they drive in order to ascertain how successful they are. So getting rid of this automobile dependency isn't all about providing alternatives. Some of it is about making that association with owning a car less significant, and it's clear that the young people in North America are starting to find it less important to own a car in one way or another

### 2. Promoting a different image of driving: less glamorous and more family-focused

So there are two good examples of places where meanings are being given to public transit on the one hand, and to driving cars on the other, that help to change people's mobility habits so that they can move towards a greener future. One of these is in the Netherlands, in Rotterdam, where there has been a programme to advertise images of various kinds of people in order to make driving seem less like a sexy choice based on the power and prestige associated with driving a car. So they created posters and billboards and advertisements with a creature that looks a bit like a cow—not very glamorous—called the commuter animal, and this commuter animal is associated with herd behaviour: the idea that you just do what everybody else does and you end up in these large packs of car-driving animals, kind of like a herd on the plains of the Serengeti, i.e. just doing what you do because other people are doing it. There are lists of characteristics ascribed to this commuter animal, like someone that picks their nose while they are sitting in a traffic jam or who stares at other people in ways that are unpleasant. It's something that paints a picture of the person—the car driver—in a way that is very different from the way that they're being pictured in, let's say, a car advertisement where they're trying to sell an automobile and make it seem like a sensible choice for someone who wants to move around. Another example is Singapore where people are trying to promote the use of the transit system there—which is a very efficient transit system on the whole, certainly the train part of it—by selling the idea of family to people in a society where family is very important as a traditional value. This involves saying “do you want to get home in time to see your kids to bed?”, “do you want to have a nice breakfast with your family?”. The best way to do this is to efficiently use the public transit system and not be stuck in traffic jams when you can't get home or you can’t get to work on time or have to leave early. So you start to produce images of people that are sometimes slightly unkind—sometimes more subtle—which influence their behaviour through the meaning that's ascribed to the mobilities that they are made to use or not use.

## Transitions in practice

The final way I want to think about the way mobility transition might be planned for and the ways in which mobility transition policies might be more successful is to take into account the realm of practice. Practice is somewhat more difficult to grasp, and possibly more difficult to plan for, than simply forms of movement or meanings associated with movement. Practice really means how people move. In a very simple way, this means: do you drive or don't you drive? - do you take the bus or don't you take the bus? - do you decide to ride a bicycle or not ride a bicycle?, and there are certainly historical instances in which transitions have happened in all kinds of realms that are essentially based on practices or

habits changing from one to another—actually quite quickly sometimes—in ways that are really unplanned.

### 1. How to bring about changes in practice and habits

The writers Elizabeth Shove and Gordon Walker have talked about an example of this, i.e. the way in which our habits in the United Kingdom changed in terms of personal hygiene from what used to be a once-weekly bath to a twice-daily shower, and why this happens. This didn't happen because there was some new technology. The technology of showers already existed. Neither did it happen because the government decided that people should do this. There wasn't an advertising policy encouraging people to shower twice daily. It happened because of an amalgam or an assemblage of things that all coalesced in ways that were unplanned. Some of it was about meaning, like discourses of hygiene, and some of it was about changes in daily life and what was available and wasn't available: interior plumbing for instance is an important part of this—although bath's also have interior plumbing. But what they argue is that these changes occur in ways that are surprising and which don't have a single cause and that these transformations in practice are something that we need to consider when thinking about transition in mobility terms as well.

### 2. An example of a transition in practice: I.T. and the mobile phone

So one example of transitions in practice that we may not be able to have foreseen maybe 10 years ago or certainly 20 years ago is the role of Information Technology in the ways that we travel. we wouldn't have known what this would have involved. So a very simple thing is that people like to be in touch with their mobile technology, and be looking at it. If we walk down the street or go on a public transit system, we can see people engaging with mobile technology constantly and often en masse. You could take a picture in a city and you would see lots of people looking at their phones. This isn't something you can do while you are driving. This may be one reason why young people in the United States drive less, i.e. because they're more interested in the technology—the mobile phone—than they are in the car, and they're quite happy to be on a reasonable kind of public transit system or a ridesharing system of some kind where they are the passenger in the car and where they can look at their mobile phone and engage with it. We might not immediately think of the mobile phone as a transport technology, but we can see how there are changes in practice that happen quite quickly, in ways that we need to take account of when thinking about moving towards a low-carbon and less-damaging mobility futures than we have now.

### 3. Understanding why we "go" to work

Although transformations in practice can be hard to imagine because they happen in unexpected ways, there are ways in which organisations such as social groups of one kind or another or governments, particularly local governments, can start to think about this, and certainly this means going back to the example of Telework New Zealand, which is one of the organisations that's involved in telework and which is thinking about practice in a particular way. They ask why we go to work. When we say we "go" to work, even in the language there is a sense that you "go". There's some element between home and work that is really a very recent development—since the 19th century maybe—of the division between home and work in such a significant way, partly because of transport allowing that to happen and road systems allowing that to happen. But they are asking what if we don't go to work? What if we just work and use Information Technology in a particular way to allow employment to happen. Certainly, not all employment can happen this way: you can't work in a hospital as a teleworker—you have to be at the hospital. But there are many kinds of work in the contemporary economy that can be done without going anywhere. And part of that is a transformation in practice; it is thinking about how we do something differently and then finding policy ways to encourage that to happen.

## Mobility is more than just transport

# Power and justice in the mobility transition

Finally, though, there is another ingredient that I think that we need to consider for transition policies to be successful, and that ingredient is power. Transport and the ways that we move are always imbued with power in particular ways. Sometimes, these are very direct and sometimes they are indirect. Who has the power to produce the kinds of mobilities that become routine and become habitual? So here we are talking not only about the power of the State, but the power of corporations, the power of people invested in the kinds of profits you can get from the production of oil, the extraction of oil from the earth and its transformation into fuel.

And we need to think about these kinds of power relations as we move ahead, but it isn't just these kinds of corporate or large-scale power relations I'm talking about. Sometimes transition policies that appear to be good for the environment and indeed might produce less carbon emissions can have negative consequences for people who are already marginalised in society. So for instance the production of a carbon tax is usually a successful way of reducing carbon emissions. We've seen this in British Columbia in Canada, for instance. But a carbon tax is also not a progressive tax, i.e. it applies equally to everyone, so poor people have an undue burden when carbon taxes are imposed; poor people and also people in remote rural areas where the use of vehicles—and given the society we live in, these are usually vehicles that use carbon-based fuels of one kind or another or things derived from oil. These people are unduly affected by a carbon tax, and we have to think about issues of justice in association with transition policies that are mainly about greenhouse gases and global warming.

# Is the impetus for transition top-down or bottom-up?

So when we are thinking about transition, then we need to think about how transition occurs. Where is the driver for it? - is it top-down? - is it a driver that is being produced either by a state such as in Singapore where there is a very centralised state system that is able to produce all kinds of amazing transport policies that people don't really have much choice in because the state is able to enact them fairly easily, such as the road pricing scheme, and considering the very large amount of money that is needed to own and run a car? These are all very sensible from an environmental perspective, but they are also slightly problematic in terms of the authoritarian way in which they are imposed.

There are other ways in which transition can be imagined that are much more bottom-up. If we think about the Transition Town Movement, although it is very small, it really is something that comes from the community, from the collective will of a small group of people in the local area where enough people are able to mobilise the idea of being a transition town. Usually these are small towns in rural areas, although some areas of cities are also trying to do it. The whole town buys into this idea of transition as a brand; that they are a transition town, which makes it a nice place to live. This is much more bottom-up driver and has interesting differences from top-down or authoritarian ways of imposing transition policies.

## 1. Top-down drivers are generally technology-focused

Interestingly, it is often the case that the top-down versions of transition are the ones that are most technological in nature. Clearly, a capitalist company that is producing, say, automobiles or forms of public transit are happy with transition policies that are technologically focused and which allow them to develop new markets. So we see the development of electric cars for instance. Many companies around the world are interested in this, but their main impulse, though, isn't really to protect the environment or to stop global warming, it is to produce new markets and produce new forms of profit. And new technologies are one way of doing this. The companies turn a new technology into something that is desired, something you need and then something that becomes impossible to do without, which is what essentially happened with automobiles.

## 2. Bottom-up drivers often refuse to embrace new technology

Bottom-up forms of transition are usually less technologically dependent, and in fact often they are more about the refusal of technology than the development of new ones and sometimes even about the adaption of old ones that have become less used. The most obvious example of this is the bicycle. There are many bicycle organisations around the world that have been pushing for the use of bicycles in cities and in small towns and elsewhere where bicycles already exist. They're pushing for some transformations in the infrastructure to make bicycling a safer and easier choice to make, rather than some grand new technology that is going to produce a lot of profit for people. So some of the bottom-up transition policies are much more about practice, much more about our changes in lifestyle, changes in the choices we make, rather than about high-cost technological transformations that top-down, particularly corporate interests, are much more interested in developing.

To conclude, from our research and from the work we've been doing around the world, trying to find ways that we can move towards low-carbon futures in terms of the ways we move. I'm suggesting that the we need to think about these transitions not just as technological transitions but transitions in movement, that is, distances, speeds, routes of movement, the meanings given to movement, that is, how we think about the ways that we move, what meanings are given to them? - what cultural associations do they have? and also the kinds of practices, which means what we do, when we do it, whether we drive whether we ride a bike, whether we walk, and how those transformations might occur. I think it is important to think about all of these things in relation to the power relations that are either producing transition policies or are produced for the result of transition policies so they we don’t end up with transitions that are unjust or that unduly impact upon already marginalised particularly socio-economic groups

## Mobility

For the Mobile Lives Forum, mobility is understood as the process of how individuals travel across distances in order to deploy through time and space the activities that make up their lifestyles. These travel practices are embedded in socio-technical systems, produced by transport and communication industries and techniques, and by normative discourses on these practices, with considerable social, environmental and spatial impacts.

En savoir plus x

## Movement

Movement is the crossing of space by people, objects, capital, ideas and other information. It is either oriented, and therefore occurs between an origin and one or more destinations, or it is more akin to the idea of simply wandering, with no real origin or destination.

En savoir plus x

## Teleworking

The remote performance of a salaried activity outside of the company’s premises, at home or in a third place during normal working hours and requiring access to telecommunication tools.

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## Lifestyle

A lifestyle is a composition of daily activities and experiences that give sense and meaning to the life of a person or a group in time and space.

En savoir plus x

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