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Transport and climate change on a planet near you

**Positive psychology, walking and well-being:
Can walking school buses survive a policy of
school closure?**

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Editorial

This issue contains two articles that on first reading may appear totally unrelated. This is not the case. The Kinnersly article is a comprehensive reflection on the links between economic growth, poor quality democracy, lack of will to deal with sustainability and biodiversity and the perversity of reckless decision taking that supports a business as usual (BAU) model of the world. Tranter and O'Brien show convincingly and persuasively that a child-centred policy based on listening to children, thinking about the wider issues around children and the journey to school can bring about a very different outcome to the ones currently on offer. Kinnersly's well-founded worries about BAU are neatly dealt with by the child-centred model (CCM) advanced by Tranter and O'Brien. Equally there will be other non-BAU models that raise alternative visions and perspectives and this journal want to hear from older people, those with mobility difficulties and those who live in the accessibility poor "facility deserts" that we have created in many British cities. It is clear from both articles in this issue that we cannot expect intelligent, ethical, human-centred, quality of life outcomes from our expert led, neo-classical economics, "bean counter", top-down perspectives.

The failure of the Copenhagen climate change summit last December which is dealt with by Kinnersly captures these points in a rather dramatic manner. It is clear that whatever was going on in Copenhagen it was nothing to do with a human-centred, ethical view of the world

and nothing to do with precautionarity or quality of life. We are lucky that the politicians and world leaders who drew up the failed "accord" in Copenhagen last December were not around in the first couple of decades of the 19th Century. If they had been around they would have presented a wonderful story in favour of continuing the business known as "slavery". Slavery is after all very good for the economy, it would be disruptive to ban it, any ill-informed criticism of slavery can only result in "foreigners" benefitting from the desirable business model and it will still be there anyway. Abolishing slavery was not easy but luckily there was a different mood around and it was done.

Kinnersly also represents a valuable tradition in the development of so-called western civilisation. Like David Engwicht in Australia (see end note) he has thought about his subject matter very deeply and produced a fine intellectual product with a strong policy resonance. This is lacking in the ranks of professional planners, economists, traffic engineers and others and highlights the need for "citizen science" or productive engagement between the professionals and those who have something highly intelligent to say. This productive engagement does not exist at the moment. Our professional world of science and expert evidence has produced an arrogant, dismissive model of the universe.

The dismissive model applies to children. Asking children about the journey to

school as described in Tranter and O'Brien is a brilliant way of sorting out what we should be doing for children and is more likely to produce more active travel, less obesity and happier children than high-blown waffle in official documents. Clearly we do not listen to children and like Tranter and O'Brien I have heard children speak eloquently about roads and traffic and against the closure of their school and seen a completely dismissive response. The roads and traffic policies continue to ignore children and to prioritise the needs of the person in the car to the detriment of the child on foot or bike and a very fine secondary school in Hornby (Lancashire, UK) much-loved by its local community, was closed in spite of massive protest and a unanimous vote by a group of councillors to keep it open.

This is now being repeated in the decision to close Skerton primary school in a deprived community in Lancaster UK which will produce the result of exposing children to severe traffic danger as they travel to more distant schools.

This issue contains important messages about a desirable future, the real need for alternatives to BAU and the importance of other voices and we look forward to more of this in future issues

John Whitelegg
Editor

Engwicht, D (2005) Mental speed bumps: the smarter way to tame traffic, Envirobook, Annandale, New South Wales, Australia

Abstracts & Keywords

Transport and climate change on a planet near you

Patrick Kinnersly

Creating a sustainable transport system requires more than merely reducing carbon emissions from vehicles. A superficial greening of transport is essential to the continued expansion demanded by a market-driven model of unlimited growth, inducing further carbon emissions and resource conflicts and

preventing the sustainable development required to avert climate crisis.

Keywords: Transport, climate change, carbon emissions, economic growth, environment

Positive psychology, walking and well-being: can walking school buses survive a policy of school closures?

Catherine O'Brien and Paul J. Tranter

Children provide an insight into our understanding of the link between walking and happiness, as walking is a playful experience for them. Many adults make trips simply because they are focussed on getting to a destination. Children on the other hand, are more often able to enjoy the "places" along the way, rather than being focused on the "next task." Evidence from positive psychology indicates that happiness and positive emotions contribute to our

health and well-being. Slowing down, enjoying life's pleasures, and appreciating our friends, community and environment are all linked to enhanced well-being. Despite an awareness of such benefits, government policies can often be seen as undermining well-being, even by discouraging walking to school by children. This paper examines the impact of a policy of school closures on the viability of walking school buses.

Keywords: positive psychology, walking school buses, children, community, environment

Transport and climate change on a planet near you

Patrick Kinnersly

Climate change on a planet near you

Introduction

I began this article on the first morning of the climate change conference in Copenhagen, Monday 7 December. Politicians, scientists, lobbyists and campaigners were still arriving from all over the world, from the richest nations and the poorest, from places where the melting of the glaciers is already causing drought, from nations that the ocean has already begun to reclaim. It is, to borrow and modify from Charles Dickens' novel about another turbulent time, a tale of two planets – Planet One, determined to cling to its privileges and the right to manage everything in the interests of 'business as usual' (BAU); Planet Two, already paying the price for BAU but powerless to secure the action and money it needs.

Well, we all know now that Copenhagen was a failure. To borrow from Dickens again, *'It was the age of wisdom, it was the age of foolishness...It was the spring of hope, it was the winter of despair.'* Big Carbon and the vested interests of Planet 1 (where China must now be located) got what they wanted, a postponement of the day of reckoning. Planet 2 got a piece of paper that would have embarrassed even Neville Chamberlain.

So, as the foolish little spring of hope turned into the winter of despair (and transport chaos across northern Europe), what emerged from my computer was not an academic paper on carbon emissions from transport, but an

impatient narrative of climate denial. At the end of the hottest decade in the recorded history of the planet I found myself looking back down nearly two decades spent attacking the business-as-usual approach to transport planning in the UK and forward into a decade during which we must somehow devise a transport system to meet the needs of a just and survivable planet, rather than what we have now, a system for accelerating its destruction.

I will show how transport-dependent development is already testing the limits of growth in the world's fourth richest nation and contrast this with countries where the bare necessities of transport do not yet exist, and with those such as China – now the world's largest car-maker and about to overtake Japan as its second largest economy - where the western pattern of car-dependent growth is already well entrenched and apparently unhindered by the environmental constraints that are supposed to govern development in the UK.

I have drawn on many sources including my own experiences as a campaigner for sustainable transport and, before that, against occupational and environmental hazards. The long struggle for the control and eventual banning of asbestos and other pernicious substances should help us recognise the stage we have reached in the battle against dangerous levels of greenhouse gases – denial, corporate fightback and legislative foot-dragging. If we are to prevent the greatest ever

environmental disaster we will need something stronger than the permissive laws and standards drafted to protect employers from excessive cost in minimising harm to their employees. The cost-benefit assessments used to set those standards - like those deployed in deciding if roads should be built - will not do. Here I have borrowed from European biodiversity law: the EU Habitats Directive contains the test of *necessity*. Where a plan or project could endanger a protected species or habitat, the developer must look for alternative ways to achieve the same objective. If there is no alternative, the scheme must be justified by 'imperative reasons of overriding public interest', such as public health.

Applying this test to protecting the most endangered members of the human species and their habitats would expose the needless waste in much of the world's transport activity. I have contrasted our notions of essential transport infrastructure in Britain with real transport needs in places far beyond the blacktop, in the distant lands of Planet 2. We will visit two footbridges on different continents; there are also two road bridges - one that was swept away by floods and one that has probably not been built yet. We come to that one first.

In 1991 I drove a pick-up truck from California to Nicaragua where, as I expected, they had a shortage of such necessities. It came in useful for the measles immunisation campaign. I took the nurse with the cool box of vaccine to one of the many places where the dirt road ends. Barefoot kids were waiting for us, with their medical cards. It would

have cost £100 to throw a timber bridge across a deep gully and a dried-up stream and drive further into the *campo* to immunise more children. No-one had ten old telegraph poles, let alone £100.

Back in the present, and what we insist on regarding as 'the real world', the alliance of environmental and transport groups that I help to manage has just spent nearly £100,000 to defeat a 'road to nowhere' that would have wasted £40m of public money and pushed the South West region of England even further beyond the limits of growth. I will explore the boundary where plans for car-dependent sprawl overlap with plans for expansion of the global infrastructure of ports, airports and roads, in a part of Southern England where wildlife has already reached *its* limits.

I hope that readers will be able to follow a journey and an argument that is moral as well as environmental and economic: how can we share out the planet's carbon ration over the next few decades so that everyone can have an *appropriate* transport system - and all the other necessities of life - on only two tonnes of carbon each a year? Because my approach owes as much to narrative as academic methods, I will attempt to set out the main arguments in a summary below.

Summary – why ever-expanding transport capacity is not sustainable

At the end of the first, disastrous, decade of the 21st Century the times are beginning to feel millennial at last. In place of the vacuity of the Millennium Dome and the empty threat of the 'Millenium bug', Copenhagen offered the

promise of real history. The event was unprecedented in its scale and single-minded focus on one problem: nearly 200 nations, from the richest to the poorest, assembling to devise a collective plan for tackling the most urgent of the crises facing a divided world.

I will examine the part that *inappropriate* transport has played in creating the crisis that brought the world's leading scientists and politicians to Copenhagen. I will argue that cheap transport based on cheap fossil fuels and cost-free emissions of greenhouse gases must take much of the blame for the mess we are in.

I question whether 'sustainable transport' of the kind being promoted in Britain and other developed countries offers any kind of remedy and try to explain why I believe present policies for the 'greening' of continued transport expansion are no more sustainable than the larger myth that 'sustainable growth' can go on for ever. Government strategies for curbing emissions from 'the transport sector' and making it pay its environmental costs do not begin to address the problem. Transport is not a 'sector' of industry or just a slice of the emissions pie-chart, somewhere between 'agriculture' and 'manufacturing'. Cheap and abundant transport, like cheap and abundant power, capital and labour, is an indispensable driver for a model of everlasting economic growth that can only end by consuming every resource on the planet, at the expense of every living thing.

The priority – business as usual with a green face

This may sound absurdly apocalyptic, but I have examined UK government reports on carbon and transport policy, especially Stern (2006) and Eddington (2006), and recent government decisions on transport investment and found nothing to encourage a more optimistic view. As far as I can tell, official policy in Britain and other developed countries is to go all out for 'business as usual'. That means governments will promote continuing economic growth and ensure that transport does everything possible to serve that objective. They will enable private motoring and car dependency to increase by making a show of 'greening' the automobile, while simultaneously expanding the entire infrastructure demanded by the present model of growth - a global network of vast highways, container terminals, airports, 'mega-shed' warehouses and hypermarket retail outlets. (The private car is the final link in the chain: having stripped labour costs out of the entire system - from offshore production to worldwide distribution - the car is essential in transferring selection, loading and delivery of goods to the customer.)

Governments will make a show of reducing carbon emissions from this global supply chain by encouraging 'carbon-lite' vehicles running on batteries, bio-fuels, liquefied gases, hydrogen, fuel-cells and hybrid engines. I will explore the suicidal drive to enable this expansion by feeding cars, trucks and aeroplanes with ethanol and biodiesel from the same land that is needed to feed a population expected to reach 9 billion over the next four

decades. I will argue that many other resources, not just land and water, are being 'double-booked' for different fixes and patches. For example, if agriculture is expected to double its yields per hectare by 2050, what will happen to the price of the synthetic fertilisers – already consuming 3 per cent of the world's energy - and the pesticides that will no doubt be calling on the same dwindling supply of oil as the cars, aeroplanes and ships, not to mention the manufacturers of the 'green' resin-bodied vehicles? How much farm and forest land is earmarked for strip mining, oil shale extraction, and the sand, gravel, chalk, clay and stone to make the cement and concrete for the roads, housing, reservoirs and social infrastructure needed for another 3 billion people?. How much of the land allocated for these purposes will become unusable because of regular flooding, or will be making a call on the same construction resources for its defence?

Green taxes may moderate demand and give the impression that transport is paying its environmental dues. Nevertheless, government advisers seem to agree that fossil fuels will dominate transport for the next few decades (King 2007, 2008). While it may be possible to maintain the present balance between petroleum supply and demand in Europe, it seems unlikely that supply can match the demand from a global expansion of vehicle sales that is not only predicted but actively encouraged by all governments. For example in 2009, 13.5 million cars were sold in China and sales are growing at 20 per cent a year. Less than two years' sales would equate to a doubling of the UK car fleet. China is now

Volkswagen's largest market (Guardian Financial 2010).

Making space in the greenhouse for continuing transport expansion

Whatever fixes are arranged to reduce fuel consumption in Europe, global carbon emissions can only continue to grow. To make space for transport in the queue at the oil refinery - and in the atmospheric greenhouse - governments in developed countries will invest unprecedented sums in non-fossil power generation, especially nuclear plants, tidal barrages and offshore wind farms, and technologies to capture and store carbon emissions from coal. This is nothing more than business-as-usual with a green face. I will call it 'green BAU'. In January 2010, the UK government announced a massive programme for developing offshore wind farms with a construction cost estimated at up to £100 billion. If all the offshore sites were developed they could generate a quarter of the UK's electricity (Macalister (2010)). This followed last year's announcement of plans for ten new nuclear power plants.

Even if ever-increasing growth of personal and corporate transport – cars, trucks, ships and planes - could somehow be achieved while actually reducing carbon emissions, it would not be sustainable. By concentrating on carbon emissions *from* transport we fail to account for the emissions induced *by* transport. As well as the carbon cost of building and renewing an ever-growing fleet of vehicles, which the government says it intends to add to the external costs of transport (Department for Transport 2008), the emissions bill must

include expanding and maintaining their infrastructure, which does not appear to be receiving the same attention.

Watching all the dials

But even a genuinely comprehensive approach to costing transport 'externalities' would not give us a sustainable model for the planet's future. While I would be the last to question the need for drastic cuts in carbon emissions to hold the global temperature rise well below 2 deg C, I suggest that it would be a fatal mistake to believe that this most difficult of tasks is all we have to do to avert disaster. If we look only at the temperature of the planet we risk overlooking those other resource indicators that are also far into the red part of the dial - land, water, food, wildlife, minerals, and oil itself. Our present model of transport is a hideously wasteful consumer of them all. And for all of them there are, or soon will be, far more essential uses.

The recent financial crisis showed the centrality of the auto industry to the economic imperatives of Planet 1. Too big to fail, it was next in line behind the bankers for billion-dollar bailouts. From Washington to London to Beijing, governments averted the unthinkable with virtual nationalisations, subsidies, state-sponsored order books and 'scrappage' grants. The notion that a smaller car industry, reflecting the current state of economic growth, might actually be more appropriate to the needs of the world was as unthinkable as a smaller banking sector financing appropriate enterprise and development instead of inventing 'financial products' and gambling on the price of corn.

Taxing the useless churning of money and goods

Even if the questions are not yet being asked in exactly those terms there are useful parallels in the more radical remedies being proposed for the financial crisis and the climate crisis. In finance, the tax on transactions proposed by the US economist Tobin has moved from wacky left-field notion to an idea being seriously considered by Obama, Sarkozy and even Gordon Brown. In the search for ways to combat climate change, James Hansen has dismissed cap-and-trade, international 'goals' and carbon offsets as mechanisms for cutting emissions. Instead he proposes that fossil fuels' cost to society must be reflected by taxing them at source until the rising price makes them more expensive than carbon-free and carbon-saving technologies. As sources of energy, he says, 'oil and coal would be left in the ground.' Countries that refused to levy the tax would face import duties on their goods in proportion to the carbon used to produce them (Hansen 2009).

Just as a Tobin tax would deter the socially useless money-churning of the casino bankers and overnight money traders, a 'Hansen levy' could curb the global churning of goods motivated by little more than price differentials that would vanish if carbon and other resources were properly valued.

Our failures *before* Copenhagen would suggest that neither Hansen's modest proposal, nor my extension of it will find favour in a world where business and political elites appear almost interchangeable. The most we can expect

is a process of greening the more visible face of transport. The electric car will be essential for the survival of the industrial complex built around road transport and, just as important, for ongoing engagement of the population in a process that will be increasingly destructive. Business-as-usual will need a green face if it is to pursue continued expansion while sustaining the myths of feasibility and social benefit.

I will show how, after 'new' Labour's three-year policy excursion into integrated transport at the turn of the century – see Department for Environment, Transport and the Regions (1998) – business-as-usual regained control of transport planning in the UK until we now have the bizarre spectacle of a government professing a commitment to sustainable transport investing a billion pounds a year in a bloated programme of road building. Campaign for Better Transport (2010). New roads are justified by outmoded cost-benefit calculations that continue to overestimate economic benefits and undervalue or ignore the external costs of road transport.

Stopping a damaging road project in a region at the limits of growth

I will describe how, in a rare exception to the 'rule of the rubber-stamp' for highway projects, campaigners defeated the proposed £40m A350 Westbury bypass by convincing a planning inquiry that, far from being essential infrastructure, the road's few transport benefits were outweighed by the harm it would have done to the local environment and, through increased carbon emissions, the global

environment (<http://www.corridor-alliance.co.uk/inquiry-inspectors-report.pdf>). White Horse Alliance (2009).

The Westbury bypass was a priority in the regional spatial strategy (RSS) and funding allocation (RFA) for the South West of England. Publication of the final RSS has been stalled for more than a year because of concerns that implementing it would endanger the regional wildlife sites protected by European biodiversity law.

The limits of growth also appear to have been reached in the adjacent South Eastern region. I will follow 'our' corridor along the A36 trunk road to the M27 and down to Southampton Water and the Hampshire chalk streams that feed it. Several European wildlife sites will have to be defended (Hampshire Wildlife Trust, 2009) against the revival of plans for a vast new container port at Dibden Bay – already rejected once on biodiversity grounds – an airport that the operator plans to expand more than threefold to 6 million passengers a year by 2030, BAA (2006), and continuing expansion of the motorway and warehousing networks on which they all depend.

Paying the full carbon cost of this kind of infrastructure growth – even if it were possible – would not come near to paying the full environmental cost of this model of development. It is not a bill that can be paid out of the takings from oil or carbon taxes. The migrating birds returning to the mud flats and the salt marsh, the spawning fish coming back to the chalk streams, have no use for money. A planet that cannot sustain

them will soon be unfit for human habitation.

The challenges I have raised in this article are beyond the power of individual transport professionals to solve. The Copenhagen conference showed that the necessary remedies are also at present beyond the powers of our 'world leaders'. They won't assemble for another full-scale conference on climate change until December 2010.

Not waiting for the Big Stink

Do we just wait for them to finish tackling the world economic crisis before returning to an issue that doesn't seem to appeal to their electorates much more than to the corporate lobbyists? Being more cynical, will action be postponed until climate change comes home to those who make the decisions? In Victorian Britain, the ruling elites finally decided that it was worth investing in a sewer system for London when the 'big stink' of the Thames became unbearable inside Parliament and when cholera and typhoid moved out of the slums to claim the lives of those who did not live in slums. Hurricane Katrina took out oil platforms in the Gulf of Mexico but the 'big stink' of a flooded New Orleans failed to galvanise a government more diligent in denying climate change than in mounting an effective relief operation.

My own experience as an environmental and occupational health activist over the last few decades has shown that we do not have to wait for governments to wake up, smell the smoke and start doing the right thing. In the transport corridors between the M4 motorway and the South Coast, transport campaigners

have been instrumental in preventing the construction of well over 20 miles of new highway. Some victories were undoubtedly helped by governments looking for excuses to cut transport spending. The quality of the landscapes and wildlife we defended provided better excuses here than ministers would have found in some already-blighted industrial area.

The absence of a government-sponsored strategic highway from Southampton to Bristol has not caused gridlock or economic ruin. New roads that in the early 1990s were supposedly essential if we were to absorb predicted traffic increases - indeed were forecast to be 'at capacity' by now - were never built. They reappeared in the guise of local relief roads and 'improvements' - a 'strategic highway by stealth' - and these too had to be seen off. On the parallel railway line from Southampton to Bristol and South Wales, rolling stock and services have improved over this same period.

Transport and environmental campaigners have therefore helped to save hundreds of millions of pounds, an untold tonnage of carbon dioxide and some of the finest landscapes of southern England; and we may even have assisted modal shift. In terms of *written* government policy and guidance since 1998 we have therefore reached the point that ministers and paid officials should have led us to many years ago. At great cost in unpaid voluntary labour and hard-raised cash, we have done the work of the government's statutory environmental watchdogs and undone the costly and wasteful plans of a county council and a region committed to road

building as the engine of economic growth.

None of us should have had to waste a minute of our lives in this way. We all have more creative things to do than oppose transport policies conceived in the 1980s during the Thatcherite dream-time of 'the great car economy.'

'Directing the great sources of power in nature'

Transport professionals trained in the last decade will know all this. They might reasonably expect their employers and clients to tell them to apply their knowledge to developing transport plans appropriate to the 21st Century. The case against building more large roads has been clear since the early 1990s (SACTRA, 1994). Any major highway being designed today has a payback date around 2070. That is probably true no matter whether a private operator is totting up the tolls or the state is counting the invisible benefit from a billion seconds saved driving to the supermarket. Present funding mechanisms in the UK make it easier to build a road than a rapid transit system or to enlarge a road instead of increasing capacity on a parallel railway line. Budget constraints will cause local councils to rip up a rail track and replace it with a concrete trackway on which to run diesel-powered guided buses, rather than an electric tram or a light rail network; local councils will be forced to pretend that park-and-ride counts as public transport and genuine modal shift.

We cannot expect transport engineers to risk their jobs by refusing such work and joining the forces of resistance. But the

looming disaster of climate change does give new meaning to the words in at least one code of professional conduct. In its original royal charter of 1828, the Institution of Civil Engineers defined 'The profession of a Civil Engineer' as '*Being the art of directing the great sources of power in Nature for the use and convenience of man.*' In contrast, the present ICE code of professional conduct says this about the duty to behave ethically:

*'Members of the ICE should always be aware of their overriding responsibility to the public good. A member's obligations to the client can never override this, and members of the ICE should not enter undertakings which compromise this responsibility. The 'public good' includes care and respect for humanity's cultural, historical and archaeological heritage, in addition to the duties specified in the Rules of Professional Conduct **to protect the health and well being of present and future generations and to show due regard for the environment and for the sustainable management of natural resources.** [my emphasis]*

That explicit duty to future generations would seem to rule out most of the follies described in this article.

Copenhagen and after – some notes at the turn of the decade

My original intention was to write this article during the Climate Change Conference between 7 and 18 December. I hoped the conference would be a turning point on the road to climate chaos and began a diary on the opening day. As Big Carbon won through in Copenhagen, events on the transport

front in Britain confirmed that 'business as usual' would also head the agenda for the coming decades. I found the article was following the calendar into the new year.

Diary – two weeks in December

7 December 2009: Even here, in a prosperous village in a temperate zone unmistakably located on Planet One, the climate is reminding us of its power and the feebleness of our defences. For the third winter in succession rivers have burst their banks and flooded hundreds of homes. Amid their misery and their anger against those who could have built better flood defences, ordinary people are beginning to ask if climate change could be to blame. Is it too much to hope that those planning the UK's infrastructure for the 21st Century might just be asking the same question?

My observations over the last few months suggest they are nowhere near to accepting such a proposition. You would never guess from their actions that they share a common planet, let alone a common humanity, with those in the real front line of climate chaos, whose lives are already endangered by rising sea levels, tropical cyclones, tidal waves, floods, droughts and disappearing glaciers.

Here in Hampshire (where hurricanes hardly happen - but not far from the parts of the Sussex coast where two tornadoes ushered in this millennial century) the weather today is delivering a gentle reminder of the massive bills to come. Torrential rain has found its way through the brickwork and is running down the inside of the window as well as

the outside, hail bounces off the sills, thunder rumbles, the lights flicker. The news on the radio conveys all the wisdom and all the foolishness of the times: the delegates in Copenhagen have two weeks to decide how much more business-as-usual – BAU – the planet can afford. If the big-bonus bankers of the City of London are to be believed, today's answer is 'quite a lot': many are threatening to leave, possibly taking their banks with them, if the government insists on levying a one-off windfall tax on billions of pounds of bonuses 'earned' while gambling their institutions to the edge of ruin.

The parallels are irresistible: a planet so overheated by unrestrained growth that its icecaps and glaciers are melting; an economic system that staked everything on everlasting growth and consumed itself in a bonfire of worthless betting slips. The bankers have been issued with enough money to restore confidence, erase memory and encourage a return to the casino. It remains to be seen if rescuing the thermal economy of the planet will induce the same sense of urgency, let alone attract the same lavish expenditure of public money. The portents are not good.

Massive expansion of aviation is official policy

In Britain the parliamentary select committee for transport has picked the perfect day to illustrate these parallels between market economics and environmental economics by coming out in support of the government's plan to build a third runway at London's Heathrow airport. They say the airport needs another runway if it is to remain

competitive as a top European 'hub' airport. Presumably the bankers must be able to fly to most of the nearly 200 countries represented at Copenhagen - including destinations that, whatever cuts in greenhouse gases the conference manages to agree, will be underwater in the next few decades.

Meanwhile in the small town of Workington on the Cumbrian coast, the army has today finished building a footbridge over the still-swollen river Derwent. It is 18 days since climate change came home to a town that once smelted local iron ore with coke from local coal, and rolled out the rails for the railways of the world: the river swept away the main road bridge between the north and south sides of town and left the second road bridge unsafe for traffic. Today the children will be able to walk to school instead of going on a 30-mile round trip by school bus or family car. The new footbridge will be named after the police constable who drowned when the road bridge collapsed.

Since November 30, those living on the north side of the town and in villages further up the coast have been able to cross the river by train. That was the day Network Rail opened a brand-new station, Workington North, half a mile up the line towards Carlisle. It took only six days to select a site, negotiate a lease with the local council and design and build two platforms with waiting room, lighting, footbridge and car park. The local train operator rustled up a diesel locomotive and some old inter-city carriages. The Department for Transport agreed to subsidise a free hourly shuttle service from Workington to Flimby and

Maryport until the end of the year, at a cost of £0.2m.

In West Cumbria, climate chaos brought a sense of urgency, a warlike speed of action and a realignment of priorities that bankers may expect but transport campaigners have given up even dreaming about. The normal procedure would be to spend several years, and much more than the cost of what was done in less than a week in Workington, on intricate multi-agency processes destined to conclude that the venture would not be justified. One of my colleagues has spent 23 years campaigning for the reopening of Corsham station in Wiltshire. All the myriad bodies involved in not building it have agreed for many years that it would be a good idea to do so. Corsham is one of several stations in Wiltshire known to have good prospects for attracting the required volume of passengers.

Assembling the necessary funding is a different matter. Everyone accepts that it is 'difficult', but there is nothing inherently more difficult in opening a railway station than building a road; indeed the Workington example proves the point perfectly: it may be a temporary structure of scaffold tubes and planking but its functional specification outperforms many stations and halts on the UK network and it could even outlast some of those crumbling relics. It has proved technically much more difficult to replace the road bridge across the Derwent.

After 40 years of trying to persuade governments to do the right thing in occupational and environmental health I

have learned to apply a simple rule of thumb. The 'difficulty' of a thing is proportional to the desire of decision-makers and vested interests not to do it, or to do something else. If, after allowing a reasonable time to get something right, the thing is still not working then it is not *meant* to work. At this point you should look around to find those who benefit from this apparently inexplicable failure. You will find that they are well satisfied with the law or administrative system just as it is. It is working fine for them.

The meaning of 'essential'

The fruits of this paradox are well illustrated by our experience in Wiltshire. In the two decades of not managing to open new railway stations, or progress a long-projected inter-modal rail terminal or subsidise improved passenger services, the county council has constructed several miles of new highway. In addition it has spent around £8m on developing road projects that failed to attract government funding. The last of these abortive schemes was the A350 Westbury bypass. In an almost unprecedented victory for environmental conservation and the principles of integrated and sustainable transport, this destructive and pointless project was roundly condemned by a planning inspector and rejected by the government in July 2009 (WHA 2009). It cost the taxpayers of Wiltshire more than £4m to develop the scheme. Assembling an alliance of groups to fight the road, mount a professional case at the planning inquiry, retain legal representation and hire a team of expert witnesses ranging from ecologists to transport economists, kept scores of

volunteers occupied for more than two years and cost us nearly £100,000.

At the end of the struggle we have nothing to show for our victory. A beautiful and historic landscape remains as it was and as it should be – a tranquil place for humans and some of Europe's rarest wildlife; prime farmland can continue to grow the food we need; the public water supply that springs from the great chalk mass of Salisbury Plain will remain as pure as when humans first settled this valley thousands of years ago.

Additionally, by removing a key component of the ambition that Wiltshire shares with Dorset county council to create a strategic highway from the M4 motorway to the A36 and A303 trunk roads, and on to the port of Poole, we hope to have prevented an even greater increase in traffic and CO₂ emissions. We also caused a rare modal shift – regional transport planners reluctantly transferred £30m of government funding to a regionally important railway project that would otherwise have languished without funding for another few years.

Benefits counted 'far beyond the horizon which can reliably be modelled'

In the larger scheme of things none of this will count for much unless the lessons of our victory reach beyond a small market town in South West England that most people have never heard of. So unusual was our victory that we thought we might really have put down a marker: we had exposed the road as a dud scheme without a single element of the integrated transport that

was supposed to have dominated the decade of its conception, a project whose few benefits were far outweighed by the harm it would do to the environment and the cause of sustainable development. Surely this would force local councillors to think again? Would it not embarrass the regional officials who backed the project, and shame the environmental watchdogs who were ready to approve the damage to the landscape and wildlife assigned to their protection?

Beyond the region, would it not give pause for thought to the ministers and mandarins in London whose cost-benefit formula (COBA) for assessing roads so dominated the 10-year saga of the Westbury bypass? Would they not ask how COBA-scoring helped the county council justify choosing the route that most local people and businesses opposed, through the area's finest landscape, under the nose of its emblematic White Horse chalk hill figure, across an ancient drove road, over a protected water source and through the habitats of some of Europe's rarest and most endangered creatures? Would they not begin to question a methodology that assigns monetary value to every second saved on every footling trip to the supermarket *for the next 60 years* but could not recognise that the environmental costs of the Westbury scheme outweighed these benefits – let alone compute the prohibitive cost to the planet of continuing such destructive behaviour? Would they not wonder how it was that their guidance and formulae could not 'deliver' investment in railway improvements but 'inexplicably' the reels on the COBA fruit machine always came up with the winning line-up of three

Mondeos? And how was it that they ended up asking the region to transfer the Westbury road budget to the Swindon-Kemble track redoubling only at the very end of the regional funding game – when the money became 'available' – not at the very beginning?

Would the number-crunchers of the DfT and the Highways Agency reconsider a formula that relies on and encourages growth in traffic, and counts among the benefits of a new road the rising tax revenue that will accrue from the petrol that fuels the extra trips and the longer journeys? Would they read and understand the forensic dissection carried out for us by Prof Phil Goodwin of the council's assumptions about the benefits of the scheme? Would the last paragraph of his report for the inquiry give them pause for thought?

Here, under 'Other matters', was one of the government's own advisers questioning the DfT's assumptions about perpetual traffic growth:

Other matters

36. This note has focused on the elasticity test, but the demonstration how sensitive the results are to factors affecting traffic volumes also raises related questions. The appraisal is based on uninterrupted traffic growth apparently at least for 39 of the 60 years of the appraisal period, and continued presumption of fuel prices at a level which seems to be less than the current level. Lower traffic growth as a result of either circumstances or policy would both affect the robustness of the scheme. It seems that a very high proportion of the net benefits of the scheme are assumed to arise in a distant future – far beyond

the horizon which can reliably be modelled - when there will be substantial reasons for reducing traffic volumes rather than encouraging them to grow.' Goodwin (2008).

Well, you will have guessed the answers to all those questions by now. As the summer of our incredulous elation faded into reflective autumn and despairing winter, we could see that, from County Hall to Whitehall, our little local victory was less than a grain of sand in the workings of the BAU machine. At the local level, less than five months after its 'flagship' scheme was torpedoed by a planning inspector, the county council was already talking of reviving 'the project.' Wiltshire Council (2009); Local Transport Today (2009).

Finally, at the national level, it was clear that the Department for Transport had lost none of its appetite for traffic-generating, carbon-splurging new roads, bigger airports and all the other 'essential infrastructure' for extending carbon dependency and unsustainable growth far into the era of Prof Goodwin's 'substantial reasons for reducing traffic volumes rather than encouraging them to grow.'

Scientists and delegates from developing countries assembling in Copenhagen today are saying that the poorest and most vulnerable people on the planet cannot afford this carbon-guzzling model of eternal growth.

My mind flips between two cabinet meetings this autumn. On 17 October the government of the Maldives met 20ft under the sea to sign a declaration

calling on all nations to act on carbon emissions and prevent the Maldives being the first nation to vanish beneath the ocean in the course of this century.

Wiltshire Council's cabinet meeting on 24 November was held at a safe 40m above sea level and seemingly on a different planet. The council's performance director, Sharon Britton, reported that the Government's rejection of the planning application for the A350 Eastern bypass had merely 'put back the implementation of this project'. Her report, Wiltshire Council (2009), said there was an opportunity 'to bring the project back to the attention of the Government' by emphasising 'how improved transport infrastructure in the Westbury area could help to bring forward new housing development.' Local Transport Today (2009).

Getting housebuilders to construct new highways

The same BAU imperatives are found in the consultation draft of the council's third Local Transport Plan, which concentrates on 'improving journey time reliability on the A350' to the exclusion of almost every other ambition for the future. The draft Core Strategy for Wiltshire follows the same 'roads for housing estates' formula now favoured for Westbury. If the council's draft plan survives public opinion and its examination in public, large car-dependent housing estates and rashes of tin-shed warehousing will sprawl conveniently along this same route, enabling the council to obtain developer-funded distributor roads to boost the capacity of the A350 corridor adjacent to

the towns of Chippenham, Trowbridge, Melksham and, of course, Westbury.

The Wiltshire Wildlife Trust was among several conservation and transport groups objecting to the draft plan on the grounds that the council's stated policy was that large areas of housing on green-field sites would, in the council's words, '*help facilitate the delivery of infrastructure improvements, for example to the A350, therefore reducing traffic congestion.*' Objectors pointed out that the data needed to assess impacts of this policy on biodiversity, landscape and water resources were absent. Wiltshire Wildlife Trust (2009).

All this new growth is being proposed in a region that has already reached its environmental limits. The regional spatial strategy (RSS) cannot be implemented as drafted because the development it proposed could place intolerable burdens on the region's *Natura 2000* sites. Several special areas of conservation (SACs) and special protection areas for birds (SPAs) designated under the European Habitats Directive are already overburdened by traffic pollution and other stresses. The RSS remains on hold pending the results of a new sustainability assessment. Drafting it may be more than a little handicapped by the absence from the original 'strategy' of any estimates of the extra traffic and pollution by greenhouse gases and nitrogen oxides that it would have generated.

The bridge to enlightenment

After this unpleasant glimpse of 20th century development ideas still thriving in the island-like isolation of an English

shire and the uncollective archipelago of shires and city states of SW England, it is time to reconsider what we mean by 'essential transport infrastructure'. Let us visit a part of the real world where our fellow humans tread so lightly on the planet that they leave scarcely a mark. Thousands of miles west of 'Wiltshire island' - and even further from Copenhagen - in the remote centre of Honduras, dawn will soon be fingering its way through the forest to illuminate another raging torrent, another footbridge. This one is the key to the education of a whole village. Until this year the children did not go to school in winter. In summer they could cross the stream on boulders or a rickety plank bridge; in winter the river was too high. Today they too will walk to school: the community has built a sturdy suspension bridge with know-how and money from Christian Aid.

The flight from reality

Back in the not-so-real world of climate change diplomacy, and the first day of the Copenhagen conference, a lot of politicians sound as though the bridges to enlightenment have been down for all their lives. In Washington legislation is being blocked by an unholy alliance of senators who either deny that human activity causes climate change or say it would cost US businesses and taxpayers too much to fix it. Presidential hopeful Sarah Palin is cheerleader for vested interests and lobby groups that share her hunger for oil drilling in the Arctic and anywhere else on the flat earth that God gave to America. As a result President Obama will come to Copenhagen empty handed.

In London the government's Climate Change Committee is briefing the media on the report on aviation it will publish tomorrow. By midnight, correspondents are predicting that the committee will call for curbs to stop the demand for air travel expanding by 200 per cent by 2050. An intervention in the *free market* to save the planet – surely not?

The rain was still falling but I went to bed happy in the foolish belief that construction had begun at last on the great intellectual structure that must one day span between a world where the most costly form of transport, flying, is held to be an almost sacred right and a world where the market cannot deliver the most elementary item of transport apparatus, a footbridge to school in the winter.

Tuesday 8 December: Day 2 of the Copenhagen summit. I woke to the unmistakable soundtrack of Planet One: the distant breaking surf of the M27, a grumble of container trucks on the A36 and the high whining of planes hauling up out of Southampton airport. Later came the roar of fat-tired 4x4s splashing up the lane to the village school for the daily line-up of personal transport that must have a capital value well over £1m and a combined annual running cost of more than £300,000.

The myth of eternal feasibility

The voices from the radio left no room for further doubt that this was Planet One. Growth in flying would indeed have to be curbed, they said, but aviation could still be allowed to expand by 60 per cent over the next four decades without breaching our commitment to holding

emissions at 2005 levels. There would be new, lighter, planes and better engines, teleworking and taxes, hydrogen and bio-fuels. There were a few reservations: other transport sectors might have to cut their emissions to make this possible: smarter electric cars should be able to make room in the greenhouse for the smarter – but still slightly dumb – aeroplane. Uncertainty over conflicts between producing food and fuels made it prudent to limit the biofuel content of aviation fuel to 10 per cent. Climate Change Committee (2009).

Transport and environmental NGOs gave cautious welcomes to the CCC report. Reactions from colleagues in local transport campaigns were less complimentary. 'I didn't expect much of the CCC,' said one, 'but did not think it would inhabit the same fantasy world as the DfT.'

This was a reference to what we understand to be the Department for Transport's assumption that road traffic will be able to double by 2050, thanks to the electric car. The technical basis for such a belief is hard to find. The King review of low-carbon cars, King (2007 & 2008), must have helped. Further support for what I call 'the myth of eternal feasibility' would have come from the CCC's report in October 2009. The Guardian's environment correspondent David Adam conveyed the committee's electrifying vision of how road transport would look in the 2020s: *'Electric cars will zip noiselessly along roads depleted of commuters by better planning and more effective public transport. Those who do still drive old-fashioned fossil-fuelled cars will use their right feet less.'*

Needless braking and accelerating will have been eliminated by eco-driving lessons, and fleets of vehicles, stripped of excess weight, will glide along motorways at a legal and fuel-efficient 70mph. (Adam 2009).

This vision of the future is almost indistinguishable from the comic-strip images I grew up with more than 50 years ago, except that these silent vehicles can't yet take off and park on top of mile-high apartment blocks. A rapid descent to reality may be assisted by knowing that the boss of Nissan Motor Co, Carlos Ghosn, is only predicting that 1 in 10 cars manufactured may be powered by lithium batteries by 2020 (Bloomberg.com 2009). As lithium batteries are likely to be the only ones in general use by then, I take this to mean 'only one in ten cars will be electric' in ten years' time.

Returning from the lithium future to the petroleum present may also be helped by noting that Professor Julia King was not asked to examine a decarbonised future for heavy goods vehicles (HGVs), which are generally blamed for 8 per cent of the UK's carbon emissions. The fleet of vehicles 'stripped of excess weight' is unlikely to include 44 tonne trucks because it will be harder to lighten these vehicles enough for them to carry both cargo and battery for, say, 100 miles at a reasonable speed.

It goes without saying that King did not question the necessity of expanding road transport. If social need is not questioned and balanced against social cost, one is absolved from any duty to intervene in the growth of road traffic, by reducing the need to travel or – heaven forbid! – weighting the market to favour less

damaging ways of moving people and goods.

The global distribution chain

If you don't examine the desirability and feasibility of almost-limitless expansion of fossil-fuelled road freight you have excused yourself from the most fundamental task facing not only transport planners, but also anyone charged with devising a survivable planet. The wagon trains of mighty semi-trailers hauling freight around developed countries are only one link in a global distribution chain. While it would be difficult to decarbonise it as a road-based system, there would be few technical difficulties in transferring this traffic to an all-electric railway with all-electric vehicles handling final distribution from goods depot to retailers and even to the final consumer.

The integrated rail freight network that linked sidings, warehouses and door-to-door distribution vehicles in hundreds of towns around Britain before the dismembering of the railways and the rise of road haulage in the 1960s provides a model that could be adapted for the age of the silicon chip and the bar code. It requires no technology that is not already in use, for example to sequence the loading of container ships, distribute parcels around the world, handle baggage at airports and automate stock-picking warehouses. The obstacles to such a vision are in the corporate mind, not the technology. Constant economic expansion requires larger units at every stage from production to retail, reducing labour and other overheads and increasing profits. Bigger vehicles, such as the 80 tonne trucks being proposed for European roads, go with vast

plantations growing commodity foods, centralised food processing plants and out-of-town retail stadiums. The recent big freeze in the UK tested this model to failure: the huge articulated milk tankers serving the remaining handful of centralised dairies were unable to reach scores of farms. Millions of litres of milk were poured away.

At this point we are approaching the heart of the problem. Decarbonising the final link of the global distribution chain might be technically easy but the element of collective action required is as threatening to large corporations as the prospect of global limits on emissions, or the introduction of universal healthcare. Myron Ebell, director of energy and global warming policy at the Competitive Enterprise Institute in Washington links the 'fashionable' concern over climate change with 'the European appetite for control over people's lives' (Ebell 2009). The depth of this concern for 'people's lives' may be judged from the generous funding the energy companies have pumped into climate-denying pressure groups such as Freedom Action and Frontiers of Freedom over the last decade. Clearly, action on climate chaos feels threatening to the people who trade in fossil fuels or generate power from them. Denying the threat from carbon emissions at the end of the hottest decade in recorded history is the only moral position possible for God-fearing corporations. Accepting that unrestrained burning of fossil fuels could already be causing the deaths of 300,000 people a year around the world would mean accepting that BAU might be morally wrong.

Given time and further exposure to the gathering weight of scientific and political

opinion, the fossil-energy firms can be expected to follow the fossil-car industry into a new era of 'greenBAU'.

The greening of growth

By investing in wind turbines and solar power and turning a few redundant production platforms into offshore wind farms they will be joining the comfortable consensus of the developed world: energy demand will continue to rise, cars will be the dominant transport mode and fossil fuels will power most of them for the next four decades. Far from being dangerous competitors, renewable energy and electric cars are essential to the greening of growth. With continuing growth there is room for existing players and some new ones to harvest nourishing revenues and health-giving profits.

This marriage between the economics of the market and the economics of the environment was blessed in the foreword to the Eddington Transport Study (Eddington 2006).

Sir Rod Eddington was jointly commissioned by the Chancellor of the Exchequer and the Secretary of State for Transport in 2005 'to examine the long-term links between transport and the UK's economic productivity, growth and stability, within the context of the Government's broader commitment to sustainable development.' The study was published in December 2006. One of its most important conclusions was that transport should pay its full external costs.

In October that year the Government had published the 700-page tome it commissioned from Sir Nicholas Stern. The most important conclusion of the review was that it would be cheaper to

tackle climate change now than leaving the problem to be dealt with later (Stern 2006).

The two reports converged in Eddington's introduction: *'As the Stern Review made clear, pro-environment is also pro-growth, and I am grateful to Sir Nicholas for chairing the input of academics to this Study.'*

So, it seems that the market and the environment can exist in harmony. Transport can help economies to grow as long as it pays the full cost of any harm it does; economies can grow as long as they invest now to prevent climate disaster. Forgive me if I do not add my cracked voice to this harmonious duet. While I welcomed Eddington's restatement of the fact that we cannot reduce road congestion by building more roads, his report permitted a worrying exception when it came to relieving congestion on the approaches to ports and airports. For me this reveals a commitment to the existing model of growth. I do not see how a 'pro-growth' agenda that enables continuing expansion of a global distribution chain based on the cheap transport by road, air and sea of goods produced where labour, energy and emissions are all cheap can also be 'pro environment'.

The fatal cheapness of transport - paying for those little 'externalities'

I would be happy to go along with Eddington and Stern if I thought we meant the same thing when we talk about transport paying its full external costs. Research carried out by the consultants MTRU for the Campaign for Better Transport showed that lorries pay for between a third and two-thirds of the damage they inflict on society in terms of

congestion, road damage, environmental pollution and impact on other road users, leaving taxpayers to pick up the rest of the bill (Campaign for Better Transport, 2008). The MTRU report did not include the wider, induced costs, I examine in this article. If transport really was forced to pay *all* those still-unquantified global environmental and social costs the rising price would wean the market off the absurd practices that are in themselves major causes of our current crises.

Transport is far too cheap in all regards, not just in money and carbon. Its cheapness enables a squandering of resources of all kinds on activities that are simply unsustainable and that can appear rational only if you ignore everything but the bottom line of the financial balance sheet. 'Greening' these activities by making them bear the cost of transport emissions (even if this were to be honestly audited) would not make them rational. If we are honest, there is nothing even remotely sensible in a developed country having half its lawnmowers and most of its shoes made on the other side of the world, or in importing green vegetables by air from East Africa. We do these things because it works out cheaper and therefore increases sales volumes and profit margins in developed countries.

Obviously the cheapness of labour on Planet 2 is at the heart of the transaction, but there are other attractions. In the case of offshore agriculture there are no heating bills to pay; land and water are cheap; controls on pesticides and pollution are likely to be relaxed or non-existent.

The miraculous cheapness of tinsel

This may not be the place to examine the social cost of the work we are commissioning and the kind of development we are fostering by having our food grown on irrigated land on a continent facing worsening droughts and famines, or having whole communities become 'tinseltowns' making nothing but decorations for Halloween, Hannukah and Christmas. The weight of Christmas decorations imported to the UK from china was 60,000 tonnes in 2006 (New Economics Foundation, 2007). These are real 'externalities' that cannot be excluded from the accounts that someone will have to do – even if transport economists do not think it an appropriate task for them.

Sticking for the moment to the question of emissions, the carbon bill for the 'China trade' needs to include the high cost of 'offshoring' our manufacturing carbon to a country where energy is cheap because so much of it is generated from coal. We should also add that the low energy cost of goods manufactured for us in China relies on its coal mines being criminally dangerous and harmful to health, and its power stations free to emit soot and fly ash without proper control of stack emissions.

How far should we go in totting up the 'externalities' that are in part attributable to the cheapness of transport? Should we track those power station particulates and nitrogen and sulphur oxides down the wind to see what they do to human health and local ecology? Do we recognise (except when worrying about avian flu) that biodiversity is as much a global concern as carbon dioxide? Should a corporation sending its manufacturing to China be aware that

the country is already suffering water shortages, or ask if the decision could contribute in any way to the pollution and drying up of the Yellow River? Any transport planner tempted to say that this is not our business might like to reflect on the point made earlier – that the level of transport infrastructure and other development proposed in the draft regional spatial strategy for SW England – relatively modest by Chinese standards – would have endangered protected wildlife habitats and so breached the European Habitats Directive.

It may also be relevant that a proposed deep-water container terminal on Southampton Water, just across the border into the SE region of England was rejected by a planning inspector because of the damage it would have done to an important bird habitat designated as a special protection area (SPA) under the European Habitats Directive. Despite its love of growth, the government accepted the inspector's recommendation and refused to allow the project to go ahead. Associated British Ports has announced that it will nevertheless try again (Hampshire Wildlife Trust, 2009).

The port operator needs the extra capacity to handle expected expansion in global trade, much of which is with China. Its present container port cannot handle the very largest ships now plying the marine motorways of the world, which have a draught of 15 m. The roads and motorways serving the existing port are already overheating in peak periods. The global network of big ships, big ports, big trucks and big roads is now being equipped with 'megashed' warehouses – regional distribution centres (RDCs). The German supermarket company Lidl is planning

one a few miles from where I live, at the junction of the M27 and the A36 trunk road to Bristol. Is it worth noting that the tonnage of chocolate biscuits exported from Germany to the UK is almost exactly equal to the tonnage going in the other direction? Balakrishnan (2007).

Two more RDCs bigger than jumbo-jet hangars are also planned within a 30 mile radius of here, on another route into the SW, the A303. The railway from Southampton to Bristol, the SW and South Wales cannot handle the full size containers that now dominate world trade. Eastbound from Southampton the overloaded M27 passes close to Southampton airport. The proximity of the airport and the Ford van factory at Eastleigh limits the scope for the motorway widening that would seem to be demanded by the massive expansion planned for the airport - BAA (2006) - and the container port.

One of the specialties of the port is the import and export of cars and vans. The Ford van factory is struggling as sales decline. Could this be explained by competition from vans built on the other side of the world? In my evidence for the A36/A350 Corridor Alliance to the planning inquiry into the Dibden Bay terminal, I suggested that these were all indicators that this part of southern England had reached the limits of growth. But Eddington's review would seem to suggest the opposite conclusion - that a congested road network serving both a major port and an expanding airport should be exempt from his general injunction against trying to build our way out of road congestion.

How much of this makes any sense? If the rare and endangered birdlife of Southampton water (at one end of a

migratory route from the Far East) cannot take further pressure from expansion of the shipping trade with the Far East, might this be a timely moment to stop? Would it also be a good time to export European standards of biodiversity law to habitats around the smog-shrouded city of Shanghai?

The test of necessity

The Habitats Directive contains the useful tests of necessity: are there *imperative reasons of overriding public interest* for a plan or project and are there really no satisfactory alternative ways to meet the objectives of the scheme? If you were trying to convince the European Court of Justice that there were imperative reasons for a deepwater container terminal on Southampton Water and no alternative ways to meet the need, would you mention the Anglo-German chocolate biscuit trade? Balakrishnan (2007).

Would mixed scrap metal go from Southampton to Shanghai for manual separation and smelting and return to Southampton in finished automobiles if the transport costs were more than a marginal overhead? Would scrap lead-acid batteries from the USA have been shipped out of San Pedro to Taiwan for so many years if the shippers had known that the fallout from the lead smelters of Taipei was poisoning the city's children? Where did the trade go after the authorities closed off contaminated school playgrounds and shut down the smelters?

Cheap fossil-fuelled transport cannot be blamed for all the ills of globalisation but it does enable developed countries to stretch out and grab resources that should be out of reach and beyond the ethical pale. Cheap labour - workers

without trade union rights, child labour, bonded labour, illegal migrant labour - are obvious but unmentionable attractions. Apart from cheap high-carbon energy, other benefits in the cost-benefit equation of offshore production include cheap water and permissive regulation of waste disposal and all forms of pollution. All these combine to provide low-cost raw materials. The cost-benefit equation remains incomplete because the social and environmental costs of recreating the ethics and methods of the first industrial revolution in distant lands remain unquantified. In this respect cheap global transport enables a kind of time travel - the manufacturer is transported back to a time after slavery but before trades unions began to demand a living wage and before the more advanced nations were shamed, or frightened, into controlling the worst excesses of pollution and environmental degradation.

The trickle-down theory applied to toxic waste

The apologists for market-driven globalisation would suggest that the phenomena I have described will soon bring developing countries up to 'western' standards. This is sheer humbug. Western standards of occupational and environmental health protection remain a disgrace. We have scarcely begun to clean up the mess from two centuries of *laissez faire* industrial growth. Indeed one of the reasons for moving manufacturing offshore was that corporations could not 'afford' the levels of regulation being demanded by governments alarmed by the social and environmental costs of what the Victorians called 'unbridled

capital'. Early refugees from US regulation were arsenic-emitting copper smelting and asbestos manufacturing. Both moved across the border into Mexico. Pesticide production went from France to Brazil where it was easier to dispose of the carcinogenic dioxins removed from the finished product (London Hazards Centre, 1989).

Toxic waste disposal migrated from the US to West Africa and from Europe to the waters off Somalia. 'Western' standards of environmental performance vary according to the regulations (or lack of them) in developing countries. Surface pipelines for oil and petrol may be just about permitted within reasonably secure areas around the coastal refineries and chemical plants of Texas and the UK; ground-level flaring of waste gas would be unthinkable. In the Delta region of Nigeria both are thought acceptable by 'world-class' companies.

Is this the model of industrialisation that we think developing countries should aspire to? Could they learn from our experience and begin their own era of the de-regulation ushered in by Thatcher and Reagan before health and safety demands impose too heavy a burden on free enterprise? As wealth trickles down through society, should China, for example, continue to follow our model of a transport system dominated by the private car until it reaches the UK's enviable level of road safety and manage to achieve an acceptable toll, pro-rata, of 60,000 deaths a year?

Taking the sustainable biscuit

How much of this is necessary? How much would pass the test of 'no satisfactory alternative' in the European Habitats Directive and how much would

melt like chocolate biscuits under the spotlight of a true sustainability assessment? Champions of the free market would say that 'our' continued success is founded on 'choice' – the right to eat a cookie from anywhere in the world. Of course there is no reason why a 'German' biscuit maker should have to endure the high labour costs of his homeland when the ingredients could just as easily be assembled wherever costs are lower. If Chinese factories can replicate the hygiene standards of Silicon Valley to make faultless silicon wafers there is no reason why the country shouldn't turn out perfect biscuits. It is already making petroleum-based synthetic food colours and cereal-derived B vitamins. The choices are almost limitless for the individuals and corporations of Planet 1 – so long as you look at the world as a machine for creating and spending money.

The climate crisis has forced decision makers to look at one or two other dials on the side of the great money machine – rate of temperature rise and rate of increase in greenhouse gases. Control these, we are told, and the economic growth indicator can continue to move upwards.

Perhaps it is time to run this embarrassment of choices past some people with a better grasp of necessity and choice, the Turkana people of Kenya. As the years of drought succeed each other these nomadic people are running out of choices. It is likely that global climate change is responsible for the absence of seasonal rains, and that worse is to come for the whole continent. Imagine a Turkana woman looking up from the parched grass and seeing a trail of vapour across the sky that will never

turn into rain: might we be just a little embarrassed to tell her that the plane is carrying pallet-loads of little green beans from Nairobi to northern Europe? Some very smart people did the cost-benefit calculations that showed it would make economic sense to do this. If pressed they will tell you they have done the carbon sums as well: less fossil fuel is used to grow beans and flowers in Africa and fly them home than to grow them in heated polytunnels in England.

This is the kind of decision you get from watching only one or two of the dials. The poorest on our other planet have to do much more complex assessments every day; their survival depends on it. There is more to sustainability than just money and the carbon emitted in making it. If we don't watch all of the dials we will blow it, persisting in asking selfish and single-track questions, such as *'Which is more cost- and carbon-effective, growing vegetables and flowers with tropical sun or northern fossil fuel?'* we will end up choosing one or the other. The point is that both represent a squandering of energy. But there is more to sustainability than saving precious energy and controlling dangerous carbon emissions. For a start, what tonnage of irrigation water is permanently removed from east Africa in crops flying north to Europe? A full sustainability audit would look at the long-term social and economic costs to local communities and their environment of providing the labour, land and water that could be sustaining their lives by less convoluted means.

At this point one can usefully cut out a stage and go back to the tests of necessity in the European Habitats Directive. If the objective of this trade

were to be defined simply as 'feeding people' you can see at once that there are countless other satisfactory ways to do it in both the UK and Africa. Indeed, more people could be fed by using African land and water to nourish Africans than by sending shrink-wrapped Kenyan snap peas to compete - on price - with UK produce in your local Tesco or Wal-Mart. 'Imperative reasons'? 'Overriding public interest'? Hardly! The 'bean counters' who decided that free heat, cheap labour and cheap transport could deliver a profitable product to market should be asked to justify the sustainability of this operation to the Turkana people on the parched grasslands below the flight path to northern Europe. The Turkana could give them lessons in the day-to-day, life-or-death decisions that must be made when drought pushes your way of life to the very edge of sustainability. A workshop session could examine some of these practical questions.

If you kill a cow for its meat you do not have its milk and blood to drink, nor the wealth it represents. When the cow is starving it gives no milk and can spare little of its blood. If you sell it, the wealth soon goes in buying other food, or the necessity of the moment, such as medicine. How long dare you wait before the beast is too frail to walk to the market where a live animal will get the best price? The executives could explore the boundary where the desires of corporations and 'the individual consumer' must somehow be moderated by the needs of the collective good: Too few cattle and the people starve; too many and the pasture turns to dust and the people starve. These are the ancient rules of the commons (Fairlie, 2009). The

global commons deserve similar understanding and stewardship.

I wonder how anyone considers themselves qualified to decide the fate of the planet until they have seen and shared in decision-making in the world beyond the blacktop road, the water main, the sewer and the last electricity pole. The poor and starving may even appear stupid and self-destructive from the comfort of a developed country where 'surviving, thank you' is a light-hearted response to 'How are you?' If you use all the nearby trees for firewood, you have no shade, no wood for building, nothing to hold the soil together; if you don't burn wood each day you cannot boil water or cook food. How much energy and food and water would you invest in finding more distant trees or brushwood? How early should you set off so as to be carrying the load back before the sun is too hot? Should you go for the nearest and dirtiest water and boil it, or go for cleaner more distant water and save the firewood?

At the other end of its flight the ageing Russian freight plane is now on the ground. The airport needs more warehouse space, another runway. Our snap peas are held up on the way to the megasheds and supermarkets by other refrigerated trucks bearing flowers from the polytunnels of the Altiplano, Nile perch from Lake Victoria, avocados succulent with water from the Jordan, Someone at the Highways Agency will have to decide if this is one of those places close to key airports where selective road enlargement would be permitted under the 'Eddington rules' for ensuring that transport will not handicap

'the UK's economic productivity, growth and stability, within the context of the Government's broader commitment to sustainable development.'

Where Eddington and Stern and the Government see this kind of growth as a benign process (as long as the term 'sustainable development' is used at regular intervals), spreading wealth around the world, I favour a less optimistic view. The apparently self-evident benefit of transport improvements in fostering growth at the regional and national level was questioned by government experts nearly 20 years ago (Standing Advisory Committee on Trunk Road Assessment, 1999). In my more malign vision I see the global transport network as a mycelium that behaves like dry rot, sucking moisture and nourishment out of the world and transferring it up to the luxuriant growth of the fruiting body. Unless you look under the floorboards and walls you can be quite unaware of any problems - until the structure collapses.

Lessons from the struggle against occupational and environmental hazards

As someone who has spent too long over the last two decades trying to stop roads being constructed I am used to being on the 'wrong' side of the contest between the imperatives of growth and the needs of the environment. Gradually the outrageous things we said in the 1980s and 1990s have moved closer to acceptance. The Standing Advisory Committee on Trunk Road Assessment (1994) helped a gradual recognition that new roads just fill up with more traffic;

but it did not actually stop Britain's massive and continuing programme of new road construction. My earlier experience as a campaigner against the hazards of work taught me to recognise the symptoms of a dominant mythology resisting challenge. As Tom Paine said in the introduction to *Common Sense*, 'a long habit of not thinking a thing *wrong* gives it a superficial appearance of being *right*, and raises at first a formidable outcry in defence of custom.'

As well as outcry there is denial, delay and, in more enlightened quarters, a recognition that compromise can enable business to continue more or less as usual. Hazards could be cleaned up and controlled to a more acceptable standard, especially if the obvious conflict between employer and worker could be softened by a semblance of consensus and consultation that fosters the myth of 'identity of interest' (Kinnersly, 1973). A similar myth underlies our looming crises of energy and climate: small ingenious modifications and a wealth of discussion will put off the day when radical change will be unavoidable..

I am reminded of a cold day several winters ago in the straw-bale lecture theatre at the Centre for Alternative Technology in Machynlleth, North Wales, when a popular environmental consultant described a range of devices for cutting energy consumption in the home, such as voice-activated switches that would turn off the lights and the heating in rooms you were leaving. With homes as smart as this we could, he believed, save so much energy and CO₂ that owning a second car would be 'do-able'.

This went down much better with the advanced energy and environment MSc

students than my talk on hazardous building materials and the need to assess all inputs to and outputs from a building before beginning the design. I hoped someone would take on the task of developing a single environmental index covering the resource and health implications of materials from cradle to grave. My combined index would have included not only obvious considerations such as embodied energy, but the hazards encountered by workers producing, installing, maintaining and dismantling the materials.

A lethal material that scored well on embodied energy and carbon emissions

My thesis was that a sustainable building could not be made from unsustainable or dangerous materials. If you consider only the insulation value of asbestos it is indeed a 'miracle fibre', as claimed in the industry's marketing in the 1970s and 80s. Having been turned into fibre by the heating and cooling of the planet, it also scores better than man-made mineral fibres on embodied energy. If we were to consider nothing more than energy and climate change everything possible would be made of asbestos by now. In fact we were well on the way to that point in the heyday of the material when it lurked in toasters, hairdryers, ironing boards and a hundred other places in the home.

Fortunately the voices of those dying of asbestos diseases eventually prevailed over the whining of lobby groups claiming that banning their pernicious substance would endanger safety in the home and on the roads, ruin fine industries and, according to the Canadian government, breach the rules of free trade. Thousands of tons of the stuff

remain embedded in our buildings. In the UK alone thousands who inhaled asbestos at work and in the general environment will die of asbestos cancers over the next two decades.

Denial and delay

The story of the asbestos disaster contains two lessons. The first is the inevitable denial of danger. Sickness of the lungs was first observed among the asbestos shroud weavers of ancient Greece. In France towards the end of the nineteenth century many of the first machine weavers of asbestos cloth died early. By the middle of the twentieth century we knew it scarred the lung and caused cancer. By then industry was hooked and there were countless reasons for delaying action to control or ban the material.

So it is with climate change: we know full well that it is already taking lives on an unimaginably larger scale. On the day in August 2003 when the temperature exceeded 100 deg F for the first time in Britain (appropriately a measurement made at Heathrow airport) the heat claimed an extra 363 lives. That same heat wave took 35,000 lives across Europe. It has been estimated that climate kills 300,000 people a year around the world. As with asbestos, 'we' are addicted to the fossil fuels that have become 'essential' to our way of life. And as with asbestos – and the fossil fuels themselves – those who decide the meaning of 'essential' are not the ones who suffer most from the harmful effects.

The second lesson of the asbestos tragedy is even more challenging. That disaster was possible because we did not give due weight to all the factors making

up what we would now call 'sustainability'. The myth of necessity was kept alive long after alternative materials became available. The brakes on racing cars and the Concorde supersonic airliner employed non-asbestos friction materials at a time when the industry was still trying to persuade us that motorists' lives were at risk if we spurned the 'miracle fibre'.

This is where we are with climate change. We know that what we are doing is dangerous. We know there are alternative ways of doing all the things that add to the danger, meeting all the needs of the planet. Unfortunately the cost of those alternatives is unthinkable to those who benefit most from the dangerous business of business-as-usual. We are now in the phase of denial and procrastination that characterises every disaster in occupational and environmental health. In the case of dangerous substances this phase is accompanied by corporate fightback and media work to convince the public that the danger is non-existent or exaggerated by troublemakers who do not care about the workers but are exploiting them to attack responsible and caring corporations; that the process can be made safe; that prevention would be exorbitantly expensive and the price would be paid in money and jobs and lost freedom of choice by the ordinary individual.

This phase of the game – call it 'injury time' – lasts as long as you can keep public and political attention focused on just one or two of the indicators of sustainability. With asbestos, the dials gave healthy readings for technical and economic necessity. This worked as long as we were not shown the shameful price

being paid by the individuals who made it possible for us to enjoy those technical and economic benefits – those who mined the rock, crushed it to release the fibres and, in one South African plant, the children who were required to jump up and down inside the sacks to compact the dusty fibres.

With climate change we are asked to focus our attention on carbon emissions and global temperature and the cost of keeping these out of red zones that have been defined by those in the richest countries. This follows the precedent of asbestos and other occupational and environmental hazards: those who believe they have most to lose financially from strict and effective exposure limits are the ones who get to set standards for an 'acceptable' level of risk. By not consulting those at risk on the meaning of 'acceptable', and with the help of bent science and a compliant enforcement system, dangerous levels of pollution are within the law; illegal levels will either go undetected or unpunished. Result: business as usual, until the scale of the disaster can no longer be hidden.

It did not take long for the Copenhagen conference to reveal this fundamental conflict in the politics of climate change. For the rich countries the climate crisis is a future event that we should start to prevent now. To paraphrase Stern, the longer we delay the more it will cost to fix it. For the developing countries the disaster is happening already as a result of the mess made by the rich countries that put 80 per cent of the carbon into the atmosphere in the process of getting rich. For the developing countries the risk is already unacceptable, the dials already well into the red zone. Those who 'can't afford' the financial cost of cleaning up

are head-to-head with those who cannot afford the human cost of not having it fixed.

Sharing out the carbon ration – two tonnes each

On 13 October 2009, almost exactly three years after publication of his great tome on carbon economics (Stern 2006), Professor Nicholas Stern wrote a short sharp guide for the world's energy and environment ministers meeting in London that day (Stern, 2009)

Stern distilled his ideas down to a few essential numbers the politicians would have to accept if they were to have any hope of stopping the planet's temperature rising by more than 2 deg C. Of course we now know that no such deal was struck at Copenhagen, but his numbers, clearly expressed in billions of tonnes a year, still provide a clearer guide to the scale of that failure than the fog of percentages generated by the conference.

Keeping the planet out of that red zone would mean reducing global emissions from their current 47bn tonnes of carbon dioxide equivalent a year to 44bn tonnes by 2020; to well below 35bn by 2030 and well below 20bn by 2050. On present plans we haven't a snowball in hell's chances of meeting those levels. Stern said we were currently held below 50bn tonnes a year by the recession. 'Business as usual' would take us up to somewhere between 55 and 60 by 2020. The best laid plans on the world's negotiating tables might bring this down to 49 by 2020. So we were 5bn tonnes a year over the limit for keeping the planet out of the danger zone.

Far more radical action would be needed to curb deforestation and emissions from transport; developing countries would need subsidy from the developed if they were to afford not only the technologies and infrastructure for a low-carbon economy but also the means for adapting to changes that it is already too late to prevent. Rich countries would need to be paying out \$100bn a year by the early 2020s, as well as – not instead of – existing commitments on development aid.

While I do not share Stern's belief in the necessity of growth or his optimism that markets can deliver it at the same time as cutting emissions and contributing cash to poor countries, there was a welcome moral dimension to his argument. He pointed out that even an apparently large contribution of \$200bn a year 'represents only 0.5% of the current gross domestic product of the rich countries ...' He highlighted the big variations between per capita emissions in rich and poor countries – about 24 tonnes per head per year in the US and less than 2 tonnes in India. He also stressed that it would not be possible to overcome poverty in poor countries without also tackling the threat of climate change: the two issues were closely bound together.

Assuming that the world population rises as predicted to 9 billion by 2050, he said an equitable share per person would be 2 tonnes a year. If we accept a moral duty to meet this 'ration' in the next few decades, truly radical changes will be needed in our present approach to transport. Today's average British motorist driving the average mileage of

around 15,000 km a year in the average car (emitting around 180g of carbon dioxide every kilometre) would use up all of this ration in under nine months of motoring.

A full year would leave you with a debt to your fellow humans of 0.7 tonnes a year. That would be before you counted carbon-heavy motoring consumables such as lubricants, tyres and spare parts. Your carbon debt would continue to mount if you wanted to go on heating your home, and consuming food, water, clothes and manufactured goods – especially those imported from distant countries. It is difficult to see how you could make room in your carbon budget for even a single private car, let alone a foreign holiday or two.

The trouble with this kind of personal carbon budgeting is that it does not cover all the emissions for which we are responsible even in our own country, never mind the 'induced emissions' we summon up in other countries. At the simplest level of domestic transport, if road and air traffic expand at the rate envisaged by the CCC and the DfT, we will each have to share the carbon cost of the infrastructure required to accommodate the expansion. Converting the entire vehicle fleet to electric power will only increase our personal emissions unless the new vehicles are all charged by power from non-fossil sources. We will have to share out a hefty carbon bill for re-engineering electricity generation and distribution; and for manufacturing an ever-increasing number of electric cars and the infrastructure for them.

The missing dials

Survival means watching all the dials all the time, not just energy, carbon and money. Finding greener, 'carbon-lite', ways to continue doing each destructive thing is the evolving strategy. In Britain the government is spending millions on advertising to persuade us to 'Act on CO₂'. As well as spending less time in the shower we are urged to 'Drive five miles less a week by combining your journeys'. The advert has an aerial view of an imaginary town with a car-shaped ring road and some destinations that could be combined into a single circuit of the ring. Neither the town imagined by the government nor its slogan invite us to walk, cycle or take the bus. Welcome to the world of greenBAU!

The electric car is the emblem, the sexy pin-up, of this movement. Let us take this little beauty into the gridlocked freeways of Shanghai: the thick smog hanging over the city clears slightly but the traffic is still jammed, the once ubiquitous bicycle still banned from main roads. OK let's see what she does for that community in Honduras we visited earlier. Well, it didn't get far along those dirt roads and now the battery is flat. But hang on a minute – here comes a hybrid SUV! She'd get through all right, and if we cleared some jungle for sugar cane or palm oil we could run her on bio-ethanol or bio-diesel and the folk would have a nice haul road to the plantation to drive on, and they wouldn't need an electric car!

At this point the competition for and between resources begins to complicate things. The UK climate change committee report on aviation (2009) admitted there might be 'land-use' conflicts between greening air travel by running planes on

10 per cent bio-fuel and the need to grow more food. This conflict was one of the reasons for the food price spike in 2007: demand for cereals for the energy-intensive process of making ethanol coincided with flooding that wrecked rice harvests and the drought that wiped out the Australian cereal harvest. Prices rose. Speculators did the rest. Food riots followed in Latin America. There was a general increase in food prices around the world. People were surprised that so many products – from beef to butter – relied on cheap cereals. Drought – now exacerbated by dust storms as the soil blows away - continues to affect Australian cereal production and ruin the country's farmers. Those who speculated on food futures survived the financial crash of 2008-09 and went on to make a killing in sugar in January 2010.

Feeding the cars and the waste bins

A billion people around the world are underfed. With another three billion to feed by 2050 we are told we will have to double the production of food. How are we to do this? We are getting to the point where there are more questions than answers: there are not enough dials on the infinitely complicated machine we are trying to manage. It seems doubtful that 'the market' can resolve the intensifying conflicts between different users of the same resources [see 'Some questions', below]

Indeed, the market and its favoured methods of production, distribution and selling appears to be one of the drivers for an unforgivably wasteful system based on maximising the volume of apparently cheap food the consumer can be persuaded to buy.

UK growers discard 30 per cent of fruit and vegetable harvests because the produce falls short of supermarket standards for uniform size and appearance (Stuart, 2010).

Food wastage in the home varies between 20 per cent in the UK and 40 per cent in the USA. According to the government's 'Act on CO₂' web site, a typical UK household throws away more than £400 worth of food a year. 'Advanced' economies are suffering an epidemic of obesity and the diseases it causes.

The precautionary principle would suggest that we cannot afford to mortgage another square inch of land to the feeding of cars and planes. If we think we can avoid famine by using more synthetic fertilisers and pesticides to boost production - currently 3 per cent of energy use goes into agricultural chemicals - should we be setting aside oil reserves for that purpose? If we think the future relies on genetic modification of crops, have we estimated the amount of oil needed to make the proprietary weedkillers to which patented strains are resistant?

I am beginning to realise that the dominant politics of climate change and the agenda in Copenhagen are driven almost entirely by a market model of 'carbon feasibility'. We are not looking at the converging conflicts between and for resources of all kinds – land, food, water, minerals, and breathable air. Land itself is needed for growing food, conserving biodiversity, holding water, growing trees, trapping CO₂, producing oxygen. We also need it for the social infrastructure for another 3bn extra people – their housing, education,

healthcare, culture and tranquillity. Or do we assume that this extra population is all in the developing countries and so will be satisfied with a few shacks and a tinshed school doubling as community centre, library, theatre and clinic? Is it acceptable for us to pave our farmland for roads, parking, retail malls and housing estates and import our food from distant lands where the pressures of conflicting needs will be far more intense?

We have an individual ration for carbon, (Stern, 2009), but what is our ration for these other commodities and necessities of life?

Maybe the question is not, 'How do we keep 9 billion people travelling, profitably, without overheating the planet?' (The infrastructure of transport serving profitable global markets) but 'How do we help societies achieve the level of social development and justice at which populations begin to fall?' (The infrastructure of primary needs).

How much of the 'sustainable growth' envisaged by Stern, Eddington *et al.* might be sustainable in terms of carbon, but cannot possibly be sustainable in terms of other resources *and* the financial demands of subsidising developing countries as they move to low-carbon and transitional technologies *and* forgo the logging and forest clearance that our hunger for timber, soya, palm oil and beef is partly responsible for?

The conflict between economic and environmental models for managing the planet's future becomes clearer at this

point. Currently the free market encourages developing countries to clear forests, sell the timber and grow cash crops for export. The environmental model suggests we must pay them not to do these things so that the forests can continue to absorb greenhouse gases and conserve biodiversity while meeting local needs for food and other necessities of life. It seems unlikely that the corporations will welcome an arrangement that involves contributing more tax towards the global collective good while forgoing the monocultural commodity plantations they wanted in place of the forests.

If we insist on pursuing the dominant myth of Planet 1 - that infinite economic growth is feasible, necessary and inherently virtuous - these conflicts can only intensify. It is surely a fantasy that everyone on the planet can have a 'five planets' California lifestyle on an equal ration of only two tonnes of carbon a day. Coming to terms with this reality and devising a single, just and sustainable planet has to begin by kicking the addiction to cheap transport that lies at the root of so many of the world's problems. Carbon emissions would begin to fall. And on the other gauges that we have not been watching, the readings should begin to move towards the 'sustainable' end of the dial.

Copenhagen and after – business as usual

It is now 7 January 2010 and a month has gone by since I began this article, in the aftermath of torrential rain and widespread flooding that some took as a warning of what climate chaos could do, even in a temperate part of the planet.

The warnings became more severe after that – Britain is now officially in the grip of the hardest winter for 30 years. Snow blankets most of the country, thousands of schools are closed, local authorities do not have enough grit and salt to keep side roads open. The country has burned a record amount of gas today and supplies were reduced for 100 factories. Forecasters are predicting that temperatures could fall below -15 deg C tonight in southern England; more snow is on its way. In Florida it is so cold that the iguanas - immigrants from tropical climes – are going into a kind of hibernation and falling out of the trees. Runner beans are on sale in my village shop. They did not come from the UK, where the cauliflower crop has turned to pulp in the frozen fields.

The hottest decade in recorded history has ended with a big chill that seems paradoxical only to those who believe that global warming - if it exists at all - would bring a welcome Mediterranean heat to British summer holidays and cheaper winter heating bills. Climate scientists have been telling us for years that global warming will in fact destabilise weather systems, unleashing more extreme events in every part of the world. They took this truth to Copenhagen in December but failed to persuade the rich countries and 'Big Carbon' that urgent action was needed. .

Joss Garman, Greenpeace activist and co-founder of the pressure group Plane Stupid, reported how members of the G77 bloc of developing countries streamed out of an anxious debate about the way the conference was going 'only to see Obama on the television

announcing that the world has a deal.' Garman had also received reports of Japanese opposition MPs 'popping champagne corks as they savoured the possible collapse of their government's carbon targets' (Garman, 2009).

James Hansen (Hansen 2009), described it as 'the imagined Copenhagen Protocol', lumping it together with Kyoto as another of the 'worthless scraps of paper' that attempted to 'cap' emissions.

Delegates trying to save some carbon by taking the train back to Britain joined thousands of others waiting for three broken-down trains to be removed from the Channel tunnel. Blizzards in northern France had driven snow into the trains' computer systems. Both running tunnels were blocked. Five trains were stuck before the chaos was sorted out. Another train broke down in the tunnel on 7 January.

On the British side of the Channel, snow and ice has brought motorways and trunk roads to a standstill all over the country. In Hampshire the M3, the M27 and Southampton airport were closed on 14 December, 21 December and 6 January. On the last occasion the army was mobilised to clear 1000 vehicles from the M3. One business federation estimated the big chill was costing firms £600 million a day. In most areas local authorities did not have enough salt. Side roads and pavements were not salted; hospitals were overwhelmed by the resulting injuries.

Despite these humiliating setbacks, road transport and airport expansion

continued to dominate the minds of transport planners.

On 16 December the UK Department for Transport authorised a £91 million road in Norwich, which will, with associated development, greatly increase carbon emissions. The Norwich Northern Distributor Road is linked with business parks and a so-called 'eco-town' that will, on current plans, be entirely car-based with no new public transport. Transport campaigners feared that this would be paid for by holding up £92m of spending earmarked for buses and low carbon city transport (Campaign for Better Transport, 2009).

On 21 December the Scottish government gave the go-ahead to the Aberdeen Western Peripheral Route, a massive project which even Transport Scotland has estimated could cost up to £395m and produce a nine percent increase in emissions of carbon dioxide by 2026. William Walton, Chair of the Road Sense group, said 'Clearly the First Minister's recent trip to Copenhagen was just grand-standing and green-washing [rather than] actually try to meet the ambitious targets set in the Scottish Climate Change Act, and live up to the rhetoric that he cynically spouts at the rest of the world (Road Sense, 2009).

The campaigning year ended with a phone call from a transport campaigner in Northern Ireland on 29 December. He wanted advice on stopping the devolved government and the Republic of Ireland building 60 miles of new dual-carriageway road up into Donegal. (AAA campaign 2009, Personal communication to author, 29.12.09).

A New Year hangover

The New Year and the new decade open with the sobering realisation that no 'peace dividend' will follow our defeat of the Westbury bypass. Unless campaigners can persuade Wiltshire Council to move on from the mindset of the 1980s, it will build – or have developers provide – more than 20 miles of bypasses and 'distributor roads' along the A350 corridor.

Whatever kind of government emerges after the election in May we expect BAU to dominate its ideas on transport: spending cuts at the DfT will be more helpful than the green pretensions of the Labour or Conservative parties.

As if to illustrate the incoherence of Labour's policies, all the indications are that Wiltshire Council's strategic planning committee will on 20 January approve a new visitors' centre at Stonehenge. English Heritage, the government's guardian of historic sites (including the White Horse and the iron-age Bratton Camp hill fort on the escarpment above Westbury), wants to put a showy new building and a 500-space car park inside the boundary of the World Heritage Site. The UK office of the UN heritage body, ICOMOS, objects to the plan as it stands.

Environmental details required to assess the scheme's impact on two European conservation sites, Salisbury Plain and the River Avon, are not available. It is clear that the government is pressing for approval because it wants the centre open in time for the 2012 Olympics. The games are designed to be a car-free event but placing a hypermarket-size car park within the setting of the world

heritage site is not seen as an anachronism. The planning application is not accompanied by a green travel plan. Wiltshire councillors are unlikely to object to a project that will provide free road improvements including two new roundabouts, one of them giving increased capacity where the adjacent A360 joins the already congested A303 trunk road to the SW.

In the village the 4x4s that normally roar down the lane creep along as nervously as Bambi out on the ice for the first time. The local shop is thronged with new customers, suddenly aware of the necessities of life and eager to fill their freezers with reserves of bread and to corner any last supplies of salt. Those who normally drive to distant supermarkets wonder why the main roads have been gritted but it is not safe to walk the lanes and pavements where they live.

A liberating tranquillity has descended on the village. The school is closed. The main road and the skies are quiet. The recreation ground is bright with children learning that it takes the power of the collective to roll up a really big snowball. This won't quite do as a vision for the future but it reminds us what matters. The necessities of life fall back into their proper order. The weather instructs us that we normally have the hierarchy of need upside down from the only way that works for those with nothing - and still works best for those of us on Planet 1 who have more than our share of everything ... including transport.

Conclusions - some modest proposals

Fossil fuel is too cheap. As a result, private motoring and trucking, shipping and flying goods around the world are also far too cheap. Cheap transport enables us to do things we would not dream of doing if the price of fuel reflected the harmful side-effects of burning it and the true value of what is now one of the prime raw materials for the things we will really need over the next few centuries.

A tax on fossil fuels - as proposed by Joseph Hansen (2009) would shrink demand, curb carbon emissions, reduce traffic and remove all but essential freight from global transport and offshore manufacturing networks built on cheap oil and emissions. After pouring scorn on most offset schemes and dismissing 'cap and trade' Hansen proposed a rising tax to be levied on production at source. 'As time goes on, fossil fuel use will collapse, coal will be left in the ground, and we will have arrived at a clean energy future,' he said. Countries that refused to apply the levy would have their products taxed on import. Duties collected could be distributed to countries with good policies on social development, for example on women's rights and education.

The financial crisis has brought forth similarly radical proposals for dealing with another system in desperate need of regulation. Adair Turner, chairman of the Financial Services Authority, shocked the City of London by saying that some of its activities were 'socially useless'. He proposed introducing a 'Tobin tax' to control transactions that served no purpose other than making money. On

11 December President Sarkozy explicitly linked his support for a Tobin tax to financing a reliable transnational fund for climate assistance.

Bailed-out bankers celebrating the prospect of bonuses-as-usual responded to Adair Turner's criticisms by giving him the nickname 'Red Adair'. While a suggestion of leftwards leanings was no more appropriate to this conservative figure than to Nicolas Sarkozy, another interpretation of the nickname was more appropriate in the context of this article: Red Adair was one of those people the oil industry called for when a wellhead fire was out of control. The other hero of this dangerous trade was 'Boots' Hansen – no relation as far as I know of the scientist who would bring carbon emissions under control by making coal and oil too costly to burn.

Some simple questions

* If we allow traffic in the UK to double by 2050 where will an extra 25 million [total 50 million] automobiles park? Even if we gave them no more than 10 sq m each, they would need 250 sq km - nearly 100 sq miles. If all of them were to drive to work (or a park-and-ride site) they would need the same area at the other end of the journey.

* Can we really afford to *burn* one of the prime manufacturing materials of our age? What is your computer made of? How much of it is metal and how much plastic?

* How many times over have we 'double-booked' each barrel of our declining oil reserves and each hectare of land? Mineral oil for gasoline and resins, pesticides and pharmaceuticals; maize for tortillas and biofuel; corn starch for

cooking and biodegradable carrier bags and cola bottles; palm oil for margarine and soap and a thousand other uses including bio-diesel.

* Do 'we' have enough bauxite for all the new planes and other things we plan to make out of aluminium?

* If we are going to make them from carbon fibre-polymer composites will we have enough oil to make the fibres and synthetic resins?

* Do we have enough copper for the electric motors and wiring in the electric cars and enough lithium for batteries for 6m of them by 2020 and maybe 100m every year by 2050?

* Will we make all the tyres from natural rubber or from oil-derived synthetic polymers?

* Will Bolivia be allowed to retain government control of more than a third of the world's lithium reserves, or will Evo Morales be the next target for 'regime change'?

* Has anyone done a risk assessment of the toxicology and explosion hazards of lithium, from mining to disposal? (Remember the self-igniting laptop crisis a couple of years ago?) The world's roads already carry millions of packages of a flammable and explosive neurotoxin travelling at collision speeds of over 100mph. Do we want them joined by (and eventually replaced by) packages of another neurotoxin that can react violently with tiny quantities of impurities derived from its own refining and manufacture, never mind large-scale contacts with over 40 other chemicals, many of them likely to be released in road accidents or used as everyday fire-extinguishants?

* If we expect to supply high power permanent magnets for all the electric

vehicles and all the wind turbines where will we get the neodymium from? What other countries apart from China have any significant reserves of ore? <http://www.independent.co.uk/news/world/asia/concern-as-china-clamps-down-on-rare-earth-exports-1855387.html>

* What are the world's reserves of the other another rare earth elements (REE) needed for a low-carbon future? For example, lanthanum is a major ingredient for hybrid car batteries (each Prius uses up to 15kg), while terbium is needed for low-energy light bulbs, and cerium for catalytic converters, where the long-established catalyst, platinum, now faces shortages as the world's expanding population of cars competes with other industrial products and processes for the earth's dwindling reserves of ore..

* Do we have a cradle-to-grave plan for recycling these materials without damaging workers, and the environment?

** The above are only a few random questions out of the thousands that should be prompted by the market model of everlasting growth. Let us hope that the masters of the universe know the answers and can think of something better to do with them than speculate on the price of platinum.*

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Positive psychology, walking and well-being: can walking school buses survive a policy of school closures?

Catherine O'Brien and Paul J. Tranter

Introduction

Over the last decade we've witnessed some exciting paradigm shifts with respect to urban planning and transportation. One of the most significant is the recognition that public health and planning are interconnected (Killingsworth & Schmid, 2001; Sallis et al, 2004). Advocates of active transportation, walkable communities, and liveable communities can point to research that supports the health benefits of creating less automobile-centric environments. Health authorities recognize that there are limitations to promoting active living in environments that are not conducive to an active lifestyle.

In Canada, the former medical officer of health for the province of Ontario reinforced the link between health and urban form with the following statement.

An epidemic of overweight and obesity is threatening Ontario's health.

...We are now living in 'obesogenic' environments: communities, workplaces, schools and homes that actually promote or encourage obesity.

Dr. Sheela Basrur

Children are bearing a broad range of adverse physical health impacts from transport and land use practices that favour motorised transportation. (Gilbert & O'Brien, 2005; McDonald, 2007a; Nelson & Woods, 2007; WHO, 2005).

While studies related to emotional well-being have generally focused on adults, indicating that social engagement and social capital are influenced through urban form and transportation planning, there is growing awareness that transportation also plays a role in children's emotional well-being (McDonald, 2007b; WHO, 2004). Heavy traffic may reduce opportunities for spontaneous play, restrict the range of children's play activities (Huttenmoser, 1995) and limit independent mobility (Tranter & Pawson, 2001). There is also evidence that children are taking more trips by car than children did ten or fifteen years ago (Gilbert & O'Brien, 2005; Tranter, 2006). Indications are that many of children's car trips are replacing trips that were once taken by walking or cycling. This may affect both physical and emotional well-being.

Traditionally, children's travel needs and aspirations have not been a preoccupation for transportation and urban planners (O'Brien & Gilbert, 2003; McMillan, 2006). However, as paradigms shift towards the creation of healthy communities it is evident that we need an ongoing process for integrating the most recent health-related research with strategies for healthy, child-friendly, community design. Moreover, results from research in positive psychology hold intriguing and inspiring promise for such discussions because investigations into

subjective well-being (happiness) are shedding light on the health benefits of happiness. Meanwhile, studies with children indicate that happiness is integral to their experience of walking to school. This paper builds on the happiness studies and introduces the concept of planning for sustainable happiness with perspectives from the lives of children in Canada and Australia.

Putting Theory into Practice

While we are witnessing a progressive shift toward the integration of public health and urban planning, putting theory into practice has been slower to take root. Policy decisions continue to be made that do not take into account the vast body of knowledge we have about sustainability and healthy communities. For example, local governments and boards of education build and close schools, and create transportation plans that determine whether children will be able to walk or cycle to school, or even whether they will be able to attend school in their community. Municipal transport planners route traffic and expand roads through neighbourhoods that were once quiet, making them less walkable and less liveable communities.

Canada's Centre for Sustainable Transportation has taken steps to influence policy and planning practice through the development of *Child- and Youth-Friendly Land-Use and Transport Planning Guidelines* (Gilbert & O'Brien, 2005). The Guidelines outline the harmful impacts that transportation and urban planning can have on children's health and provide recommendations for facilitating their travel as pedestrians, cyclists, and transit users. Suggestions

are also offered for reducing motorized transport. The first guideline sets the conditions for all of the others:

In transport and land-use planning, the needs of children and youth should receive as much priority as the needs of people of other ages and the requirements of business (Gilbert and O'Brien, 2009, p.29).

The Centre is currently working with various municipalities in Canada to integrate the Guidelines which have been endorsed by the Ontario Professional Planners Institute. These child- and youth-friendly planning guidelines are representative of the paradigm shift that is happening in many countries. Just ten years ago, children's needs were barely considered or not considered at all by planners. Today, it is more widely accepted that a city that provides for children's well-being will be more successful for all of its citizens. The child-friendly city movement has played a significant role in this. Walking school bus programs have also been a critical factor in transforming both policy and practice. Nevertheless, the progress to date is far short of what is needed. The grave and extensive adverse impact of motorized transport on children's health and the health of communities warrants greater attention and more effective action. In addition to these impacts it is vital to consider the *positive* health benefits of facilitating children's ability to walk to school and other destinations. Children's happiness and well-being while walking appears to have more far-reaching health benefits than is currently recognised.

Health, happiness and child-friendly planning

Child-friendly planning encourages the participation of children and youth in the planning process. What do young people want? Would they prefer to be chauffeured as car passengers or would they rather walk and cycle in their neighbourhood? The Ontario Walkability Study (O'Brien, 2001) surveyed more than 6,000 elementary students on International Walk to School Day 2001 (IWALK). The study found that *nearly 75% of Canadian children surveyed would prefer to walk or cycle to school regularly.*

As we begin to incorporate the needs and aspirations of children we are discovering that their views may even be transformative, challenging adults to evaluate our assumptions. Children's experience of transportation, while walking to school, is that of *wonder, discovery, adventure, connection and happiness.* As one five year-old who participated in IWALK said,

"We walk to school because we can see a kitty or a pup and sing along with the birds."

It's easy to imagine the playful sense of adventure that children bring to walking trips. They are very much engaged in the journey. They are living in the moment, the very thing that we aim to achieve through the practice of mindfulness (now shown to be linked to positive emotions and physical well-being) (Kabat-Zinn, 2004). They are immersed in what Kabat-Zinn calls the "nowscape." He recommends that we bring this level of

attention to all of our daily activities and literally 'come to our senses.'

Orsini (2006) reports that students at a New Zealand school named walking as their preferred travel mode. They describe the enjoyment of walking with their friends. Some also stated that they like the quiet time that it gives them at the beginning and end of the day. An earlier study by Orsini (Orsini & O'Brien, 2006) investigated the influences and motivation of Canadian youth who cycle regularly to school. The top three motivations were that cycling is fun, fast and increases fitness. It appears that when we ask research questions that engage child and youth perspectives on walking and cycling, happiness emerges as both a motivator and an important component of their experience. Thus the groundbreaking research on happiness has great relevance to discussions regarding child and youth travel.

In recent years, psychologists have turned their attention towards the study of what contributes to life satisfaction, sustained happiness and well-being. The literature from this new field of positive psychology points to the benefits of happiness for physical and emotional well-being and the relationship between spiritual well-being and happiness (Diener and Seligman, 2004; Veenhoven, 2006).

The science of happiness has tapped into an aspect of life that has meaning for everyone. Emerging evidence suggests that happy people live longer, recover from illness more quickly, and are more likely to seek out and act on health information than people whose subjective

experience of happiness is lower (Diener and Seligman, 2004). The Canadian Health Network (2005) wrote in their on-line bulletin, "the facts are in, happy people are healthier! Medical science now has evidence to support something most of us have known intuitively for awhile - happiness, including feelings of joy, pleasure, contentment, and our physical health are linked." The bulletin continues with statements regarding happiness and social wellness.

It is not surprising that social relationships are prominent factors for happiness and life satisfaction.

Happiness and sociability go hand in hand...research has also shown that we have a higher quantity and quality of social interactions when we are happy...Happy people find social encounters more satisfying, they adopt a less cautious social style, and they are more inclined to be cooperative and generous. What is more, this link between sociability and happiness works both ways; sociable people, become happier and happy people become more sociable, creating a virtuous circle (Martin, 2005, pp 30-31).

We can hear this experience of social connection in the voices of children who participated in IWALK (see IWALK web site <http://www.iwalktoschool.org>)

I liked walking and talking with my friend and my stuffed bear. It WAS more fun than taking the car. (Grade 5 student, Canada)

I really like to walk. It's a time when me and my friends can talk. (Grade 5 student, Morton Way Public School, Canada)

Children are expressing feelings of happiness and connection with others and their environment during their trip to school. There is also evidence that the very activity of walking can elevate one's mood and contribute to both emotional and physical well-being (Thayer, Godes, Lobato, et al, 2003).

In an era when parents are struggling with extracting children from television, computer and video games it is encouraging to hear that children garner enjoyment from socializing with friends on their way to school. We have, readily at hand, an opportunity to nurture social engagement, physical well-being and emotional well-being - even better, children are telling us that this mode of travel is their preferred mode! Furthermore, rising concerns about school violence and bullying, remind us that mechanisms for supporting healthy social relationships and empathy are sorely needed.

Enabling children to walk to school will not resolve every social and environmental issue that we face locally and globally. However, the sustainability of children's trips to school is also a microcosm of many wider issues related to individual, community and global well-being. Walking is sustainable transportation and linking sustainability with happiness leads us to a concept that has far-reaching implications. O'Brien (2008) describes sustainable happiness as "happiness that contributes to individual, community and/or global well-

being and does not exploit other people, the environment or future generations.” It emphasizes interconnection and interdependence. On a daily basis each of us is ‘touched’ and ‘touches’ the lives of people both near and far, even children who are not yet born, through the products we consume, the resources we use, and the nature of our relationships. The aim of sustainable happiness is to generate reflection on how we are pursuing happiness as individuals, as communities, in nations and as a global community. And perhaps more important, knowing the impact that our daily choices have for our own well-being, for others and the natural environment, how can we make choices that contribute to well-being rather than detract from him?

Drawing back from this “big picture” view of happiness we now turn to the very real implications of this discussion in the lives of children.

Walking School Buses in Canberra

The discussion above has demonstrated the positive contribution that walking can make to children’s happiness. The discussion that follows provides a case study showing the potential of Walking School Buses (WSBs) in an Australian city to promote well being and happiness amongst primary school children. It also outlines recent government initiatives that have arguably reduced the child-friendliness of Canberra, Australia’s national capital.

Unlike many Walking School Bus (WSB) programs, Canberra’s WSBs are not organised as part of a government program, but instead are under the

auspices of the YWCA of Canberra, a not-for-profit organisation. Despite the lack of sustained government funding this, Canberra’s WSB program has achieved considerable success. It was awarded first place in the Sustainable Transport category, ACT Sustainable Cities Awards in 2006, for its contribution to encouraging walking amongst Canberra children. The first WSB started in 2003 in Canberra, and by 2008 18 schools were actively participating in the program, with 33 routes being walked 71 times per week with 126 volunteers. In 2008 the number of children actively participating in the program reached the 300 mark. The significance of this achievement can be more fully appreciated when the proportion of primary school children who are driven to school in Canberra is considered: 58 percent of children are driven to school, with only 13 percent of children walking or cycling to school. Walking School Bus coordinators are actively encouraging more schools to start them. One of the key aims of the WSB program run by the YWCA of Canberra is “to encourage the development of strong, safe, friendly and supportive communities” (YWCA, 2006). Research by Rooney (2006) included an exploration of perceptions of WSBs by children and adults. Rooney interviewed parents and children at two Canberra schools that had WSBs. Children were interviewed in focus groups that involved the “rich picturing” technique based on children’s drawings of their journey to school. This research identified some important links between children’s involvement in Walking School Buses and happiness.

From the children's interviews, the things that children valued most from the walking school buses were "fun, engagement, empowerment, and [doing] the 'right thing'" (Rooney, 2006, 21). These were the same factors identified by children who were not yet on the WSBs, but wanted to be. The negative comments of children about driving included: "bad for the environment, stressful, disempowering, anti-social" (Rooney, 2006, 21).

Rooney (2006) identified consistent differences in the comparison of children's drawings between those who were driven to school and those who walked in the WSBs. In particular, children who walked had much more detail: indicating a greater level of engagement with their local environment and community. These differences were also evident in children's comments, such as "we see lots of plants that are really nice," "I like it because of the nature outside," "when you're in a car you just go straight past, I never noticed the flowers on the hedge when I was just driving past," "I like to walk because I can walk with my friends", "we have lots of fun together," "more time to look at stuff" (Rooney, 2006, 31). Apart from the constant reference to having "fun," one comment in particular indicated the impact that involvement in the WSB had on children's happiness: "I like walking, I don't worry about anything, I don't even know I'm walking, it's better" (Rooney, 2006, 40).

Both the children and the parents involved with the walking school buses in Rooney's research identified some key advantages of the WSBs that relate to

key aspects of happiness: connection and belonging, empowerment and a sense of making a positive contribution to the environment. As Rooney (2006, 48) explains: "Belonging helps to establish a sense of wellbeing and is thus considered a motivator for participation." One parent explained the impact of her involvement in the WSB on her happiness, when she explained that without community "I'd be a very depressed person." Parents also saw the "belonging" aspect as important to their children: "I think that's the biggest benefit [of the WSB] that sense of being a part of something" (Rooney, 2006, 49).

Unfortunately, the numbers of children walking to school, and the Walking School Bus program in Canberra, have an uncertain future. In a move that stunned many Canberra residents, the Australian Capital Territory government announced its *Towards 2020: Renewing our Schools* report in June 2006. One of the most controversial aspects of this plan was to close 39 schools across Canberra, including almost a quarter of the Primary schools. (Primary schools in Canberra provide education for Kindergarten to Year 6, or ages 5-12). A well-organised public opposition to the school closures, largely organised by the *Save Our Schools* group in Canberra, led to only 21 schools being closed (nine pre-schools, 11 primary schools and one high school). However, the closure of these schools is still considered to have significant negative and largely un-researched impacts on the local communities (Cobbald, 2009). The ACT government is now considering re-opening some schools.

An integral component of Canberra's urban planning, is the "Neighbourhood Planning Unit" (Johnson, 2002), which in Canberra is based on a suburb, with a population large enough to support local shops, a primary school and community facilities, all of which were located at the centre of the suburb and accessible by walking. Many see the local "Neighbourhood Centre" as the "heart" of their community. The closure of local primary schools is likely to lead to the closure of local shops, as these local shops depend on the patronage provided by the local schools. When the shops (and other services such as post-offices) close, local residents will find it very difficult to access shops, schools and services by walking. More and more residents will be forced to drive, from their dormitory suburbs, to the nearest school or shops. As one parent of children at Giralang primary pointed out: "without the shops, without the school, it's essentially a dead heart" (Doherty, 2006). Or as another resident explained: "Cook Primary and Preschool are the heart of a thriving local community ... our vibrant local community is put at risk by the proposed school closures" (Cook Primary Parents and Citizens Association, 2006).

The feeling amongst local residents about the way in which the school closure issue will affect communities is reflected in letters to the editor in the *Canberra Times*, such as:

"The neighbourhood schools, especially older ones, offer a cultural and historical continuum that binds generations together through a common experience of place – a benefit that is certainly hard to

quantify, but of real value to our fractured society ... Stanhope's 20/20 vision for our education system is an attack on the fabric of society and what makes our city very special" (D'Amico, 2006).

The closure of primary schools discourages the idea of supporting a local, neighbourhood-based community. Instead, it encourages residents to use motorised transport (particularly private motor vehicles) to access the things they need. In doing so, streets and neighbourhoods become less child-friendly, as traffic levels increase, and the numbers of pedestrians who can keep an eye out for children decreases. Children will be unlikely to be allowed to walk to their nearest school if they have to walk 3 km or more (which is likely to be the case for many of the proposed school closures). Closing local primary schools will make it increasingly difficult to operate WSBs in most cases, unless the "drive and drop" option is introduced (whereby children are driven to the start of a WSB).

The child-friendly modes of transport are walking, cycling and public transport. (Other modes such as skateboarding could also be included here). These are child-friendly because not only can children use them independently, but also when adults use them, this does not reduce their attractiveness to children. Indeed, the more adults who walk and cycle in a neighbourhood, the more supportive this becomes for children. The presence of adults provides passive surveillance for children. A number of studies have demonstrated that children who actively commute to school are

more likely to use transport modes to their other destinations (Dollman & Lewis, 2007; Watson & Dannenberg, 2008).

Yet the school closure policy has led to fewer children walking to school, and an increase in the numbers of children being driven to school. The school closure policy may also terminate already successful WSBs. Several schools identified by the ACT government for closure had WSB programs. As the organisers of the Canberra WSBs point out, "introducing the WSB into schools in such a time of change will be challenging, and long term funding will be even more difficult to find and maintain" (YWCA, 2006). Some school communities that had been thinking of introducing a WSB have transferred all their time and energy into fighting the government's plans to close their school.

Not only has the ACT government announced a policy that will reduce the numbers of children walking to school, but it has other policies that can be construed as not being child-friendly. A new arterial road – the Gungahlin Drive Extension – though widely criticised for its negative impact on the environment and community, is being built at a cost of over \$100m, much more than the \$34m that the government hopes to save with its school closure policy. This new road will encourage greater use of cars, and any policy that encourages more use of cars is clearly not a child-friendly one (Tranter, 2006).

In Canberra, the ACT Children's plan provides a commendable list of proposed principles, including:

- The best interests of the child should be of primary importance. Children need to be given the opportunity to contribute, according to their age and ability;
- Recognition of the positive potential of people and their community and emphasis on their strengths;
- Services need to focus on all aspects of the child's life including individual, family, community, society as well as the environment in which they live.

The school closure policy undermines these principles. If this plan was taken seriously by the ACT government, it is arguable that more effort would have been put into maintaining the viability of local schools.

The ACT government's claims for improving the quality of education in government schools do not seem to consider the value of education that occurs outside the classroom, and even on the way to school. Rather than taking a holistic view of education, health, happiness and sustainability, the ACT government is focused on outcomes related to the efficiency of the formal educational provision. Children walking to and from school can experience the joy and wonder of the trip to school, as well as having a valuable educational experience. For many children, such opportunities will be lost. Many Canberra residents value the social activity and sense of community that local schools provide, a point made by one of the ACT government members, who argued: "Local schools are often the focus of many activities in a suburb, they have a

great impact on the whole community – not just in an educational role” (Berry, 2006).

The school closure policy suggests that the ACT government lacks foresight. For example, the likely combination of the effects of peak oil and global climate change (DiPeso, 2005, Heinberg, 2005, Kunstler, 2005) will produce challenges likely to require more locally-based solutions, including transport solutions (those based on walking and cycling). Local schools may be a vital part of the response to these challenges (Tranter and Sharpe, 2007), yet if schools are closed and the land converted to other uses (e.g. housing), and local shops and services close as a result of the domino effect, “it will be then too late for the ACT Government to put Humpty Dumpty back together again” (May, 2006).

The likely impacts of the government’s planned school closures on children’s happiness do not appear to have been considered. Such policies will decrease the numbers of children walking, either in Walking School Buses, or independently. Rather than contributing to individual and community well-being and happiness, this will have the impact of making Canberra’s children fatter, sicker and sadder. A letter to the editor from a Cook Primary school student summed up the mood of affected children:

“Dear Editor,

I am writing mainly about Cook Primary school and also a tiny bit about the other ones. Question? Why don’t you ask the kids what their opinion is? My opinion is ... I feel sad

and I think lots of other kids are too” (Canberra Times, 2006).

Conclusion

School closures and merging of schools to create super-schools is generating opposition from communities in cities in Australia, the US and several other cities where neo-liberal policies are dominating education systems. Opponents of the school closures in Australia argue that the government’s aim is to sell off land as a revenue raising strategy, and that decisions rarely consider the educational and social impacts of closing and merging schools. The impacts on the happiness and well-being of children and adults is understood by local communities, but is often ignored by decision makers.

In the US, the impact of school closures is exacerbated by a trend to construct large school facilities in remote out-of-town locations, often on productive farmland. Such a policy effectively rules out the possibility of anyone walking to school (Beaumont and Pianca, 2002).

The situation in Canberra is not as dire as in many US cities, where many children have been forced to travel long distances and mothers average more than an hour per day driving children around (Beaumont and Pianca, 2002). Some policies in US cities are biased toward forcing local school boards to build new schools rather than renovating older ones, even if renovation is cheaper.

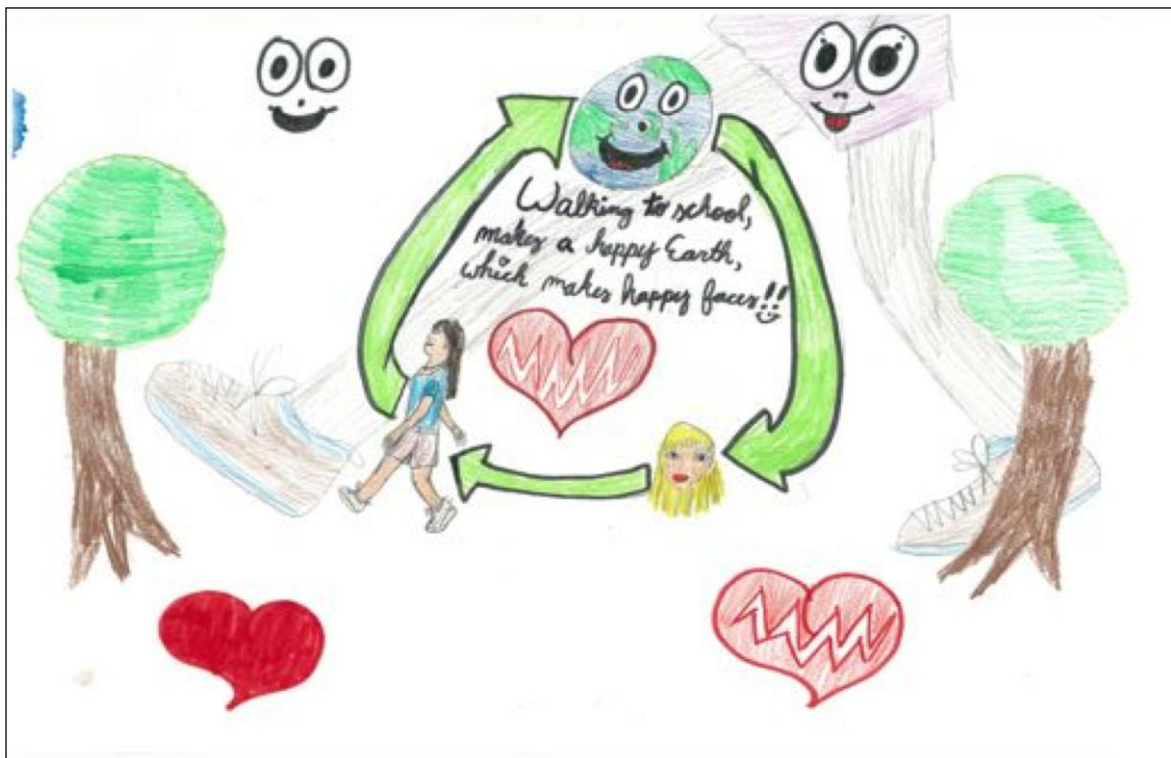
In Canberra, decision-makers should learn from the mistakes in US cities, where removing established community schools can destroy neighbourhoods and

generate huge motorised traffic growth. There is now a widespread recognition that you have to have a school to have a neighbourhood. Schools are part of the glue that holds communities together.

It would be unrealistic to argue that no schools should ever be closed. And it is equally unrealistic to ignore the role of local schools in promoting the livability of a city. In Canberra, as in cities throughout the world, any program to encourage walking to school, including walking school bus programs, is seriously undermined by a widespread school closure program. As well as considering the wider costs to the community of school closures, local communities could

appear to coincide with these travel choices. We know that walking, cycling and happiness have the capacity to contribute to children's health and to healthy communities. Policies and practices that support walking and cycling for children, youth and adults enable us to foster a legacy of sustainable happiness. These policies should include those that assess more holistically the benefits of keeping local schools open.

To let a child's voice have the final say, we have included this drawing, from the "Active and Safe Routes to School Manitoba Clean Air Day Poster Design Competition 2009".



be involved in finding innovative ways to maintain the viability of smaller schools. This could include renting part of the school space to compatible users. In summary, children are telling us that they prefer active modes of transportation. Experiences of happiness

(Source: Jackie Avent, Active and Safe Routes to School Programme Coordinator, Resource Conservation Manitoba, 3rd Floor – 303 Portage Avenue, Winnipeg, MB R3B 2B4) www.resourceconservation.mb.ca

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