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### The hope for oil crisis: children, oil vulnerability and (in)dependent mobility

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## The hope for oil crisis: children, oil vulnerability and (in)dependent mobility

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Oil vulnerability is likely to impact upon one group of citizens – children – in critical ways, since children have borne a special brunt of a car-dependent culture. Children's freedom to explore the city has been curtailed, in large part because of the perceived risks of traffic and 'stranger danger'. Children are over-represented in road fatalities involving cars and pedestrians and cyclists. Children are also subject to chronic conditions associated with inactivity such as obesity. In order to address this situation, advocates of child-friendly cities have suggested measures to increase children's independent mobility (CIM) and encourage children's active transport. In this paper, we argue that there is a conflation of CIM and children's active transport, which perpetuates the separation of children from adults. To take both children's rights and desires seriously, as well as to take into account the concerns of parents, the active transport needs of both groups must be addressed simultaneously. One cost effective and immediately available strategy is to reduce car speeds in order to minimise the damage to all users of active transport. A holistic understanding of urban transport and children shows that reducing speeds produces the co-benefits of increased health and reduced reliance on oil.

**Keywords:** children's independent mobility; children's active transport; oil vulnerability

As oil vulnerability becomes a pressing issue for urban planners in Australia and overseas, one group of citizens – children – are likely to be affected more certainly, and for a longer duration, than any other. Even by the most conservative estimates, today's children are likely to experience the peak in global oil production in their lifetimes, feeling the effects of a life without cheap oil. In the context of highly (sub)urbanised Australian cities, this presents urgent and complex challenges for the place and role of children.

Cheap oil and the over-utilisation of private motorised transport have enabled a series of changes in Western (sub)urban lives. The separation or compartmentalisation of land uses, the centralisation of services and infrastructure, the heightened perception of risks, and the increased conception of certain citizens as vulnerable can all be directly, or indirectly, associated with availability of cheap oil. The sprawl of our suburbs and the centralisation and consequent massifying of service spaces – for example the infamous strip-mall replacing the high-street – increases the catchment that these spaces support, and so increases trip distance. The abandonment of the streetscape as anything but a thoroughfare for

motor vehicles has heightened the perception of the streets as unwelcoming for pedestrians. The exclusions that result for those who are unable to afford a car or who are incapable of driving one, means that the poor, the elderly and the young are all denied independent mobility and are positioned as vulnerable when they do take to the streets as pedestrians. Attempts have been made to critically address this narrative of Western urbanisation. Australian planning professionals have long been aware of New Urbanism (NU), Traditional Neighbourhood Design (TND), Walkable Cities (WC), Transit Oriented Development (TOD) and, germane to this paper, Child-Friendly Cities (CFC).

The question of oil vulnerability raises important questions about how liveable our Australian cities currently are for children, and how this liveability would be affected by a radical decrease in the availability of cheap oil. Although the topic of child-friendly cities has received increasing attention in urban research, there is a dearth of consideration of children and child-friendly cities in research on oil vulnerability. This is both surprising and a lost opportunity for planners, as child-friendly perspectives

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are closely aligned with the attributes of cities resilient to oil vulnerability. This paper looks at the commonalities between a child-friendly city, on the one hand, and a city that is relatively resilient to oil vulnerability on the other. If somewhat populist in its phrasing, we argue that the following statement from Enrique Peñalosa, the Former Mayor of Bogotá, Columbia, should at least be seriously considered: 'A city should be so constructed so that it is safely navigable by any seven-year-old on a bicycle'. If this statement appears idealistic, then we should ask ourselves why.

Ultimately, the mobility of children throughout cities is more than simply a transport issue, and the degree of child-friendliness of the city says much about the way that children are conceptualised in contemporary society. Does our conceptualisation of children position them as vulnerable, incompetent, dependent and passive? Or, alternatively, are they valued as participating members of society capable of ever increasing amounts of independence and activity? This paper builds on earlier research on children and peak oil (Tranter and Sharpe, 2007, 2008) and focuses on the relationship between children's mobility, current Australian urban forms and the decreasing availability of cheap oil.

As children are shunted back and forth across Australian cities by car, the prospect of oil vulnerability provides an opportunity to reflect on the place of children in the urban environment and in society more widely. The growing body of literature on the problem of how children can become more active in their daily lives has tended to frame itself via the discourse of children's independent mobility (hereafter, CIM). While we are sympathetic to the goals of increasing children's independent mobility as they mature, part of the process of recognising children as the bearer of human rights – and especially participation rights – involves a recognition of the difference of children from adults. This might require a rethink of the much-vaunted concept of independence, since, as we argue, it might not be as high as other values on the list of children's priorities. We also fear that encouraging CIM is more difficult than encouraging active transport. Our concern is that the conflation that often occurs between CIM and children's active transport can have a paralysing effect on addressing the activity and transport needs of children. We argue that this inaction is unwarranted since fostering children's active transport is a more immediately achievable aim. Children walking or cycling to school with an adult is not 'independent mobility'. However, it does provide physical activity through regular daily mobility, as well as providing contact with nature and with people (including

children) and also helps to build social capital (Powter, 2010).

Much thinking on active transportation for children has tended to assume that the most pragmatic and cost-effective strategies will encourage mixed land use, to maximise families' access to essential services (shops, schools) and the kinds of neighbourly communities that go with them. Yet it may be that we significantly underestimate children's capacity to travel more than the most minimal distance. There is much to be said for changing our perceptions of what children can do and for taking measures to allow them to exercise their capacities for active travel. Given the multiple other factors decreasing the chance of full CIM – parents' anxieties about children's safety not being the least among them – focusing efforts firstly on children's active transport may be a more achievable strategy for building resilience for both cities and children in an era of oil vulnerability.

### Oil-dependence and the child-unfriendly Australian city

How has cheap oil affected the liveability of our cities for children? The availability of cheap oil and the subsequent extravagance in the use of private motor vehicles has increased adult-dependent mobility (ADM) and reduced children's active transport. The latter has been sharply curtailed in less than a generation (see Figures 1 and 2 for data on Australian children's journey to school). The percentage of children transported by car has steadily increased while those walking or using public transport has decreased. Alarmingly, this has occurred not just for the younger primary school students (5–9 years old) but also for later primary and junior high school students (11–14 years old).

Children, through their role as car passengers, are major consumers of petroleum. During school holidays in many cities, traffic congestion is noticeably alleviated when the school runs are not being

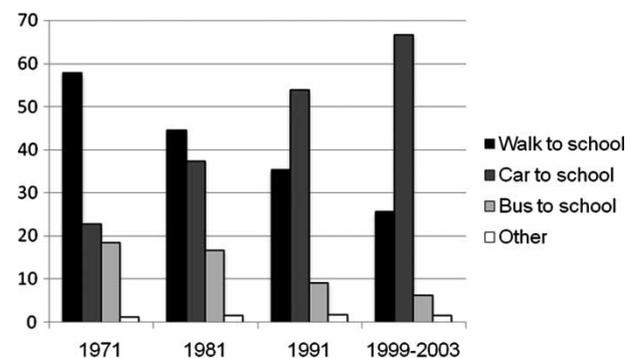


Figure 1. Mode of travel to school for children aged 5–9 in Australia. (Source: Van der Ploeg *et al.*, 2008, p. 62.)

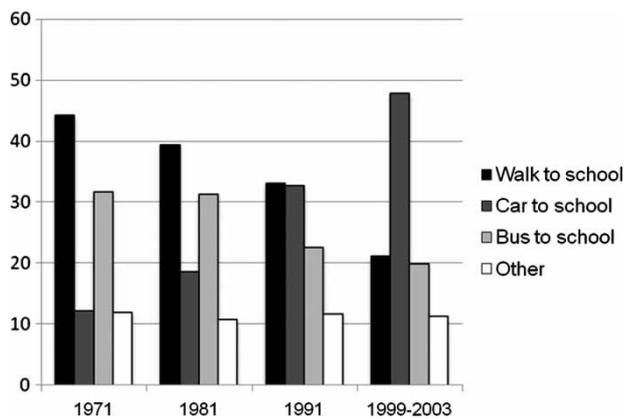


Figure 2. Mode of travel to school for children aged 10–14 in Australia. (Source: Van der Ploeg *et al.*, 2008, p. 62.)

made, since large amounts of extra traffic are generated by the current practice of driving children to school (Mackett, 2002). In some US cities, 40% of the morning peak hour is attributed to the ‘serve passenger trips’ of children being driven to school (Crider, 2003). In Melbourne, trips to take children to school make up 21% of all trips in the morning peak (Morris *et al.* 2001).

With increasing use of cars to access the spaces that children use, the average distance to school has increased over recent decades. In Britain, the average distance from home to primary school increased by 19% from the early 1990s to 2005. Children are also now travelling much longer distances to visit friends. This is partly a response to the increasing size of school catchments, as local schools are amalgamated, or as parents choose the ‘best’ school. The creation of ‘super schools’ in many Australian cities has been designed with ‘economies of scale’ and ‘maximum consumer choice’ arguments in mind. In capital cities such as Adelaide, Brisbane, Canberra and Sydney, super schools have served to centralise services. Through economies of scale, the argument runs, these schools can offer a wider choice of services (for example, more subjects, more specialised teachers and more sophisticated facilities to more students). Yet, this development has given scant attention to the burden created by increased travel distances and the demise of local communities. Super-schools draw from a more widely spread catchment, reducing – but importantly, not eliminating – the opportunity for children to use active means of transport such as walking and cycling.

Yet it is not only the large and growing number of trips to school that contribute to congestion and the increased consumption of oil. ‘Serve passenger trips’ to take children to a range of destinations (e.g. friends’ houses, playgrounds, sports) have been one

of the fastest growing types of urban car travel over the last 10 years. In Sydney, the number of serve passenger trips grew at the rate of 2.8% per annum between 2001 and 2006, much faster than the growth in total driver trips (1.6%), which itself was much higher than the population growth (0.9%) (Shaz and Corpuz, 2008). Gilbert and O’Brien (2005, p. 10) note that in Toronto, Canada, the increase in car trips for children aged 11–15 was 83% between 1986 and 2001, in comparison to an increase of only 11% in car use overall by adults. The declines in CIM in Britain have also been marked over the last few decades (see Figure 3).

It is easy to see how the conflation of CIM and children’s active transport has arisen, as commentators imagine urban life post-peak oil. Many of the deleterious effects of a lack of active transport are identical to many of the deleterious effects of a lack of CIM. Certainly the effects of reduced active transport and reduced CIM are well documented. Anxiety around children’s health associated with car travel focuses on a range of acute and chronic, physical and mental conditions. The leading cause of death in Australian children aged 1–14 is external causes (36%) and the major component in this category is traffic accidents, which accounts for around 15% of the total mortality for that age group (ABS, 2008). Children and the elderly are over-represented in pedestrian fatality and serious injury statistics: around 50 Australian children pedestrians are killed per year and another 1300 seriously injured per year (Kidsafe: Pedestrian Injury, 2000).

Both speed and state-sanctioned driver attitudes are major components in these pedestrian mortality figures. The sharp rise in fatal pedestrian outcomes, relative to the increasing speed of vehicles involved in car–pedestrian accidents, is an important consideration in child-unfriendly urban landscapes. Children

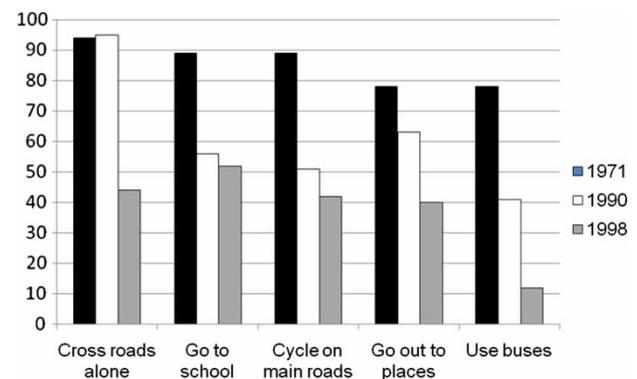


Figure 3. Proportion of British 10/11 year olds able to undertake activities unaccompanied. (Sources Hillman *et al.*, 1990; O’Brien *et al.* 2000; Barker, 2006, p. 50.)

are killed by drivers travelling at 'legal but unsafe speeds': a pedestrian hit by a car at 30 km/h has a less than 10% chance of dying, but this climbs to 50% at 44 km/h and 90% at 56 km/h (Garrard, 2008; State Government of Victoria, n.d.) (see Figure 4). A major barrier to change in this area is the argument that lowering the road speed limit will increase travel times. Garrard (2008) counters this, arguing that the evidence to support these arguments is scant and travel time increases due to speed limit reductions, based on available research, are shown to be negligible (around nine seconds per kilometre in one study). These nine seconds come at a substantial health and environmental cost (Garrard, 2008).

Figure 4, based on pedestrians of all ages, understates the risk for children. Children are particularly vulnerable as pedestrians as they are more likely to be dragged under a vehicle than adults, who are more likely to bounce off or over a vehicle when hit. Nor do child-cyclists fare particularly well on Australian roads. Males in the 10–14 and 15–19 age brackets make up the highest proportion of road cyclist fatalities. A marked peak in accidents fatally involving a cyclist occurred during 3 pm and 6 pm week-days; trips from school or to after-school activities featuring highly in this time period (ATSB, 2006). (See Freeman and Quigg, 2009, p. 395, for similar 'time-of-day' statistics for pedestrians in NZ.)

The child-passenger inside the vehicle fares even less well. Child-passengers are twice as likely as child-pedestrians, and four times as likely as child-cyclists, to be killed as a result of car accidents (Garrard, 2009, p. 4). Increased car-dependency for children has also led to a series of chronic conditions. A lack of physical activity has been blamed for Australian children being overweight or obese at an ever-increasing rate (1% per year) (Australian Society for the Study of Obesity, 2004). As of 2009, about 1 in 4 Australian children are overweight or obese

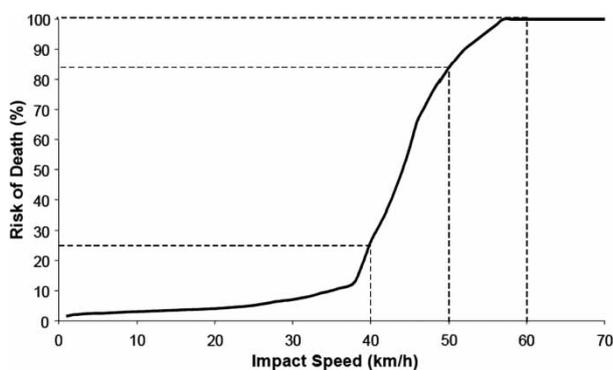


Figure 4. Relationship between risk of death in car/pedestrian accident and impact speed. (Source: Corben *et al.*, 2004, p. 26.)

(Diabetes Australia, 2009). A series of local, state and federal-government funded initiatives and campaigns have been launched to counter the 'obesity epidemic'. Importantly, lack of active transport has been identified as an important factor in obesity: as Whitzman and Pike (2007, p. 12) argue 'walking to and from school expended more calories than school-organised physical education per week.' Child passengers are also exposed to higher levels of air-pollution than those outside vehicles because the lack of dispersal concentrates pollutants (European Commission, 2002, cited by Freeman and Quigg, 2009, p. 396).

The prospect of peak oil brings to the fore some of the contradictions and traps that we seem to have laid for ourselves. Children's mobility is now not determined by their age or physical ability as much as it is by the ability of their parents to provide car transport for them. The notion of a responsible and caring parent, the idea of what constitutes immediate risk, and the role that the media plays in creating an atmosphere of fear concerning children, all have a role in shifting the expectations of what children and adults expect in contemporary society.

Will the issue of oil vulnerability force a change in the way we view ourselves and our children as consumers? Will we be forced to rethink the notion of 'social networks, and ... cultural, sporting and other opportunities'? We are not convinced that a 'return' is possible to the days of untrammelled children's independent mobility – nor are we sure it is necessary in order to achieve many of the advantages that come with active travel. Current social expectations, norms and anxieties – especially of risk – are significant and have important implications in increasing the dependence of children on adults and their motor vehicles. Advocates of CIM regularly cite the risks of traffic danger and 'stranger danger' as the reasons for limiting their children's licences to roam the streets independently. Some of these risks might be more perceived than actual. But that does not stop them having real effects in inhibiting the use of active transport in urban spaces or in inhibiting the use of certain modes of public transport. Baslington (2009), for example, found that there was a heightened perception of risks in train travel, due to highly publicised and *sporadic* media reports of train wrecks. She contrasted this to a widespread desensitisation to the risks of car travel, created by the media depicting *frequent* stories and images of car accidents (Baslington, 2009).

We argue that these perceptions of risk cannot be dismissed simply because they are inconsistent with the actuality of risk. Some advocates of CIM de-emphasize parental concerns about child-pedestrian

fatalities, citing, for example, the reduction of child pedestrian fatalities since early 1970s (Whitzman and Pike, 2007, p. 11). While they acknowledge that this reduction is probably due to the lack of child-pedestrians on the road, it is also important to acknowledge there is a perception that the roads are more risky. And to some degree this becomes a self-fulfilling prophecy. Garrard (2009) points out that, in the UK, child pedestrian fatalities per 100,000 are the second highest in Europe, almost double those countries with higher levels of CIM, such as Germany, Italy, Sweden and the Netherlands. A combination of an intensely pedestrian-unfriendly environment, combined with children's inexperience in looking after themselves or dealing with risks, serves to heighten the dangers when children do take to the streets. In a theme to which we shall briefly return at the end of the paper, children have been denied the experience to learn and derive meaning from the environment, and are thus inadequately 'street-schooled' in how to recognise, avoid or mitigate against risk. Part of the reason for may be the emphasis in planning on creating 'children's spaces' in cities.

This is a difficult area, which goes to the heart of children's place in society and to their place in urban environments. Do the urban spaces dedicated to children's recreational activities serve to separate children from wider society? By this logic, parks and children's playgrounds can be seen as indicators of child-unfriendly cities (Ward, 1977). The integration of children into society through active transport might allow for the mixing of children with strangers. Koskela (cited by Whitzman and Pike, 2007, p. 14) concludes that children less used to dealing with strangers and with members of broader society are more likely to grow up fearful of public spaces. If children rarely have contact with other citizens, they are less likely to be active participants in planning.

There is a real anxiety about children's participation in society. While rights discourses figure children as full participants, anxieties about their safety and their futures end in the denial of their basic rights to sociality as they are shuttled around in cars. Making urban areas child-friendly will involve more than the end product of zoning: children's participation in the planning process must also be taken into account. The obvious argument against the granting of children's participation rights is that they simply lack the cognitive, emotional and social development to understand what is best for them. Childhood, this argument runs, is simply the means to arrive at adulthood in the best possible state to compete in contemporary society. However, as Freeman (2007) argues, even researchers underestimate the capacity

and maturity of children to represent themselves and other children.

The changes toward an increase in ADM and a decrease in CIM, though relatively rapid and dramatic, may prove to be more intractable than we might imagine, since they have brought about a degree of cultural and political inertia. ADM is a social trap: parents drive their children as a response to the dangers of traffic, thereby contributing to the problem of traffic danger (Tranter and Pawson, 2001, pp. 42–43). Whitzman and Pike (2007, p. 13) also refer to the problem as 'a classic "prisoners dilemma"', wherein no parent wants to be the first to let their child roam freely', thus suggesting that it will only be solved by collective action. As we argue though, it may be more helpful to redefine the problem, decentering the issue of CIM and focusing instead on children's active transport.

#### **Trip to school or trip as school? Towards child-active transport**

A mixture of measures needs to be taken to increase children's active transport. Numerous formalised programmes have been established to increase these modes of active transport. Walking School Buses (WSBs) have been so popular an initiative that it has surprised their inventor, David Engwicht (2003). The WSB is an arrangement where parents ('the drivers') take it in turns to walk to school, 'picking up' children along the way. There is a tendency to elide the difference between independent mobility and active transport and to assume that dependent mobility means being driven in cars with parents. WSBs go some way to challenge this assumption. However, WSBs suffer their own problems due to their formalisation and associated bureaucratisation, especially in increasingly litigious and risk-averse societies and in light of the time pressure and complex schedules of parents (Engwicht, 2003). For us, the salient lesson from these problems is not simply that excessive regulation is to be avoided, but rather that measures need to take into account the needs and desires of adults as well as children. Whitzman and Pike (2007) suggest that a collective response is called for to address children's car-dependent mobility, but whatever the approach the concerns of parents must be taken into account (e.g. fear and time pressures) even if they are ironically and collectively self-inflicted.

In Engwicht's model, WSBs were always supposed to be an intermediate step; in his eyes the WSB has not evolved because of the lack of focus on the goal of CIM. But are these goals, and indeed the notions of community on which they are founded,

those of adults or children? The literature is ambiguous on this issue. Malone's (2007) survey of 40,000 Australian School children found that typical children's activities, such as organised sport, although well patronised by children, ranked lower in their list of prioritised activities. Ranking first on the list of favoured activities was 'spending time with family'. So how do we apply these findings in planning for a change in urban lifestyle appropriate to a post-peak oil world?

Stanley *et al.* (2009) are enthusiastic that the trip to school is amenable to active modes of travel. We agree with this sentiment, but would like to re-think some of their assumptions on how to make this trip more welcoming. Stanley *et al.* (2009) suggest that separating cyclists and pedestrians from traffic is a way of reducing the risks of active travel, making it more attractive. While we are sympathetic to the safety issues of child-cyclists we are also concerned about the narrative this constructs about the place of children (and of active transport) in our cities. Is this a similar strategy to isolating children in parks and other 'designated play areas', carrying the implicit message that the streets are unwelcoming to anything other than motorised transport? Bicycles (and other wheeled forms of transport such as scooters, skateboards and roller-blades) have bodily pleasure attached to them. Harnessing this pleasure may be an important strategy in encouraging cycling *and* dealing with the time pressures of adults during morning rush hour. As Baslington (2009) suggests, those promoting active transport need to harness the pleasure that is currently used to market cars.

There is an assumption that we cannot work with more active modes of transport because our residential densities are not high enough and trip distances are too great. Yet, residential density may be an overstated factor in determining an over-reliance on car transportation. Indeed, there is evidence that children are far more adept at negotiating greater distances by active means of transport than we might otherwise credit them. Garrard (2009) for example, argues from a study on Belgium youth, that distances of up to 5 km are not too great for active transport modes such as cycling. Garrard (2009) notes that this distance puts 77% of Australian families within the range of a school. As Stanley *et al.* (2009, p. 5) note:

Overall, about 40 percent of trips in Melbourne are less than two kilometres in length, suited to walking or cycling, while another 22 percent are between two and five kilometres, well suited for cycling, provided suitable infrastructure is in place.

How could we encourage active transport as a feasible response to oil vulnerability? The simplest,

and perhaps the most effective measure on a number of fronts, is to reduce the speed limit to 30 km/h in residential areas. Jacobsen *et al.* (2009) describe the positive association between increased speed and the disincentive to pursue active modes of transport such as walking and riding. Garrard (2008, 2009) links the lowering of speed with conveying an attitude that active modes of transport are welcome on streets. Lowering speeds would also produce reverse-induced traffic. While building 'faster' roads leads to increased traffic levels through induced traffic, the lowering of speed limits increases the use of active modes of transport, as the relative *perceived* trip speed advantages of cars are reduced.

Another advantage of reducing speeds for cars is that it will lead to reduced fuel use. Lower car speeds reduce fuel use for two reasons: less fuel used per car and fewer cars. On highways, cars travelling at 100 km/h will use far less fuel than if travelling at 110 km/h (between 10% and 20% less depending on the type of car). In urban contexts, although modelling of individual car performance might suggest that slower traffic has higher fuel use, empirical research demonstrates the opposite: the higher the speeds of cars in built-up areas, the greater the acceleration and braking, which increases air pollution and fuel use (Tranter, 2010). The fuel savings are also boosted by land-use changes that arise from lower vehicle speeds. As local services undergo a resurgence in response to greater use of active modes of travel, catchment areas shrink. Hence the pressure to use cars is further reduced.

In addition to policies aimed at reducing vehicle speeds, traffic reduction policies can be a useful strategy. There are multiple benefits in reducing the total volume of traffic. This would reduce pollution levels and fuel use (and hence reduce oil vulnerability), as well as improve road safety (Litman, 2009). While mobility management (also called travel demand management) is currently not integral to road safety policy, there is 'a strong case for mobility management strategies that reduce per capita vehicle travel being of value in reducing overall crash risk' (May *et al.*, 2010, p. 21). It would also be of benefit for children's active travel by reducing the fear of traffic danger.

Another strategy in encouraging active transportation modes – particularly the trip to school – is to have the school better integrated into a networked transport system. Schools could serve as bicycle 'parking stations' and bus nodes, creating a more welcoming image of public service space than schools currently convey (see Figure 5). Thus, a proper reconnection between adults and children could be possible, which is not just on adult terms.

Having adults go into school spaces to park their bicycles in the morning or collect them in the evenings as they alight from the bus, might force a reevaluation of the separation of adults and children.

### Research, policy and planning

Oil vulnerability and the almost certain end of cheap oil need not be greeted with unbridled angst and dread. It may also provide us with the opportunity to take stock of the way we configure our urban areas as well as how we conceptualise children within the urban environment. Anxieties about children's health are usually dealt with by trying to involve children in more extracurricular exercise or sport – and so exercise is yet another activity that has to be factored into over-committed car-ferrying schedules. But more incidental activity such as cycling to school (even up to 5 km distances) would help to respond to a number of issues – including health and oil vulnerability, and also the problem of the increasingly disembodied nature of children's sociality and education.

According to Robinson (2006), our current modern schooling system arose to meet the needs of industrialism. Schools still operate within a mechanistic model on the assumption that the industrial/consumerist society has a future. This mechanistic model includes such features as the built form of the school, the regulation of bodies within the school environment and segregation at various levels (children from other children based on age and gender; children from adults; the school from the community; the classroom learning from nature). In planning for a post-peak oil world, the model of the school needs to be challenged. Our current school model prepares children for a system we know to be broken. Planning

for a post-peak oil society should promote an ecological model of schools, where learning occurs throughout children's lives and throughout children's environments (not just at school) (Steen, 2003). We need research that examines, and policy that responds to, some of the connections between children's environments and their capacity to learn. The way children travel to school also has implications for children's physical, social and emotional development. Children travelling in the back seat of a car learn little about their own environment, and miss out on the opportunities for exercise that come with active transport to school. They also miss out on valuable opportunities for contact with other people, which provide important social learning experiences (Hillman, 1993).

Research needs to be conducted into the time that would be gained in parental schedules if sociable forms of exercise were integrated into the routines of getting to and from school, rather than treated as extra-curricular activities to which children must be transported. The separation and compartmentalisation of land-uses is mirrored in the political process by the separation of ministerial portfolios and departments. What is eschewed in the current policy process is holism. A decision to centralise schools, for example, seems to be made in relative isolation from the transport decisions that might determine how children travel to and from school. And, as we have argued in this paper, the trip to and from school might be as rewarding and as educational as what occurs at the destination. By taking a more holistic perspective on both transport and children's well-being, peak oil may well provide opportunities for creating cities that are more liveable for all city



Figure 5. A less than welcoming school: note the fence with the barbed wire pointing inwards, clearly symbolising the separation of adults and children.

residents. Irrespective of which scenario for peak oil described by Newman and Wight (this issue) plays out, developing more child friendly cities will be an attractive option for policy makers in dealing with the challenges.

The implication for policy and planning is that coping with oil vulnerability is literally a matter of 'child's play'. If planners create more child-friendly cities, cities where children are freer safely and playfully to explore their neighbourhoods and cities, in ever-increasing circles as they mature, they will also be creating cities that are more resilient in terms of the looming scarcity of oil. Child friendly cities will be less reliant on private motor vehicles, will have stronger local communities, and will help develop resilient and adaptable citizens.

Our practical recommendations for the first planning steps to make our cities more child friendly are:

- (1) To reduce motor vehicle speeds in urban areas to 30 km/h. This has been successfully employed in European cities, for example in Graz, Austria (Tranter, 2010).
- (2) To implement traffic reduction policies to reinforce speed reduction policies. These have been argued to be an important part of a holistic approach to road safety (May *et al.*, 2010)
- (3) To develop policies to increase children's active transport, such as safe routes to school, and parents (or adults) walking and cycling to school and other places with children. For example, the transformation of schools into active transport hubs, as parking places for bicycles (for adults and children) and as minor public transport nodes may break down the separation of adults from children, leading to a more active transport environment for all.
- (4) To re-evaluate the closure of local schools and services (and the centralisation of facilities) in the name of economic rationality and efficiency.

Once these changes are in place, and children's active transport is facilitated, it is likely that children's independent mobility will also increase. This will be as a consequence of a move to an urban landscape where children's safety from traffic is assured by lower speeds and fewer cars, and children's personal safety is supported by the presence of larger numbers of people on the streets as pedestrians and cyclists. From a child-friendly perspective, oil vulnerability does not need to be regarded with angst. In peak oil we can spy opportunities for urban-dwelling children and adults. The recommendations we outline

here are likely to provide significant co-benefits: making cities more child-friendly, more liveable and healthier for all city residents, and more resilient in the face of oil vulnerability.

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