

Children and Peak Oil: An Opportunity in Crisis

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1. *Introduction*

Major social upheavals and crises are notorious as catalysts for the re-evaluation of values and the erosion or augmentation of human rights. In the contemporary global setting, scarcely any issue causes more anxiety, either directly or indirectly, than the production and consumption of the world's energy resources. From the war in Iraq, to rising fuel prices, to global warming attributed to the burning of fossil fuels, energy consumption has been a central theme. This paper argues that the current concern about energy resources, particularly oil, provides an opportunity for a re-evaluation of our conceptualisation of children and children's rights.

Despite the transition from industrialism to post-industrialism, western societies are no less dependent on fossil fuels. Whilst post-industrialism usually indicates a decline in the manufacturing sector and a rise in the quaternary sector, underpinning post-industrial societies is the global movement of goods and services. Globalisation has assumed, and has been made possible by, a new dependency on transport networks, which are in turn dependent on cheap fuel. However, as the most casual observer may have noticed, when filling up their car at the petrol station, cheap fuel is no longer something that we can take for granted.

In this paper, we explore the concept of peak oil. Peak oil is the term used to describe the peak of oil production on a global scale. When this peak occurs, the global demand for oil will exceed our capacity to extract it. Some experts believe that oil has already peaked globally, while others believe it will peak soon (Campbell and Laherrere, 1998; Deffeyes, 2005; Goldie, Douglas, and Furnass, 2005; Roberts, 2004; Rutledge, 2005). Although there is no consensus on when the peak will occur, even the conservative International Energy Agency (IEA) now believes that the peak could occur as early as 2013 (Vidal, 2005), and few expert analysts expect the peak to occur after 2020. There are currently no alternative

sources of energy or raw materials that can take the place of oil to allow people in developed societies to continue to live as they are currently living.

It is difficult to overstate the impact of cheap oil on modern western lifestyles. Not only is it vital to transport, it also affects almost every facet of our lives. Peak oil will affect our ability to move people and goods, grow food and other crops, heat and cool homes, provide health care, build housing, as well as to produce plastics, medicines, synthetic fabrics, computers and toys. However, the effects of cheap oil are often more subtle, but no less totalizing and significant. The reliance on cheap oil can be linked to increased individualistic and privatized lifestyles. One example of this is the use of remote-controlled garage doors, which presupposes private car transport, and which enable residents to move from home to work and other activities with minimal interaction with their environment. This results in community relations where it is very easy not to know one's neighbours, where streetscapes become deserted, and where suburban activity retreats from the public to the private realm (Gleeson, 2004).

Very little academic discussion has centred on the implications of peak oil for children, but these implications may be profound. For example, peak oil may have implications for the ability of societies to meet human rights obligations for children in terms of "protection", "provision" and "participation", three broad categories of rights now enshrined in the United Nations Convention on the Rights of the Child (1989). If peak oil leads to global economic collapse and declining ability to produce food, then even children's right to sustenance (and hence to life)—"provision rights"—may be violated. This may put pressure on children's rights to "protection", as poverty can lead to a lack of recognition of "so-called 'universal' human rights" (Freeman, 2002, 345). For example, as Feliciati (2005, 414) argues in the case of Brazil, "poverty is 'compelling' parents to sell their children to bonded labour, prostitution or for the purpose of taking their organs". Thus poverty and hunger not only violate "provision" rights, but they can also impinge on "protection" rights. Thus in Feliciati's (2005, 414) words, hunger is "not only a violation of children's rights . . . but it is also at the core of numerous human rights abuses suffered by them."

Although Freeman argues that the "case for children's participation has now been made", including in the United Nations Convention of the Rights of the Child (Freeman, 2005, 1), little progress has been made in the advancement of children's active participation. Children have been given little voice in decisions about themselves. However, peak oil may provide opportunities for children to become more active "participants" in society. Despite some of the dire predictions associated with peak oil, the concept of peak oil provides us with an opportunity to re-evaluate some fundamental social values and activities. A particular area of this re-evaluation concerns our relations with children and their participation within society. An inability to rely on oil will necessitate new social and economic

arrangements that will provide opportunities for children to be fundamentally re-conceptualised as more than simply passive receptacles of parental consumer desires. Peak oil may provide an opportunity to conceptualise an environment in which children become important social agents, able to express themselves in the present rather than fulfilling parental expectations of successful investment and training for future adulthood.

Cheap oil has enabled many parents in developed western societies to engage their children in lifestyles that are aimed at preparing them for the best possible adulthood in terms of a consumerist lifestyle. To achieve this, children are fast-tracked into a range of extra-curricular activities designed to develop their future capacities. There is a cultural expectation that a 'good parent' will provide the 'best' school, sporting coach, maths tutor, music teacher or even childcare centre, even if this means driving their children extra distances. However, with the end of cheap oil may come significant changes in the ways in which we treat and conceptualise children. Peak oil will make consumerist lifestyles (for adults as well as for children) a less achievable option for many.

The concept of peak oil is not without its critics. Some sceptics argue that peak oil is a clever piece of myth making, designed to create an artificial scarcity (Adachi, 2005; McGowan, 2005). Others argue that peak oil, if it occurs, will lead to technological innovations that replace oil with other products and forms of energy (DesLauriers, 2005). However, for the purposes of this paper, peak oil does not need to happen for us to benefit from it. Envisioning a world after peak oil provides the opportunity to reflect on how children's lives could be improved in a dramatically changed society.

It has become something of a cliché to talk about the mismanagement of the present in terms of our children's prospects. According to the principles of sustainable development, we need to ensure that we have not compromised the ability of future generations to meet their own needs. Although we are sympathetic to the sentiment of these expressions, we wish to propose a different perspective. What such statements unwittingly do is ignore the *present* predicament of children in favour of a time to come. What of children's present situation? Peak oil, although it seems like a future scenario, gives us an opportunity to reflect exactly on the present, not simply on the future. What is it about our dependence on oil that we might want to change now? How does peak oil affect our social relations, our obligations and our human rights? What can we learn about improving children's lives by considering a post peak oil scenario? How does our current dependence on cheap oil affect the way we conceptualise children and children's rights?

In this paper, we begin by briefly and selectively outlining the changing conceptualisations of children. This is important because our understanding of the impacts of peak oil on children largely hinges on how we conceptualise them. As Freeman (2005, 2) has pointed out, one of the barriers to participation by

children is “the way we view children”. Thus we outline how the reliance on ‘cheap’ oil influences the way in which we treat and conceptualise children. In order to provide some insights into what a post peak oil society might be like, we then provide a case study of a society afflicted by shortages of energy and materials, namely Britain during the Second World War. While we are aware that history has proven the futility of trying to predict the future, we argue that the opportunity that thinking about peak oil provides is a *differentiation of the present*. The conclusion of the paper addresses the importance of involving children as capable social actors in responding to the challenges posed by peak oil.

2. Conceptions of Children in the Era of Cheap Oil

Before we examine the importance of peak oil for children, it is important to consider the ways in which “children” are now, and have previously been, constructed. Children in modern western societies are variously represented, either as innocent, incompetent beings in need of protection from a ‘dangerous’ and ‘threatening’ society, or alternatively, as a nuisance, outsiders, or even as dangers themselves (Malone and Hasluck, 2002; Matthews, 1995; Matthews and Limb, 1999). Children are often regarded by their own parents as in need of protection and as vulnerable to a range of “risks” posed by modern societies (particularly traffic danger and stranger danger) (Hillman, 1999). At the same time they are seen by broader groups in society as a section of society that either interferes with the efficient function of the city (e.g. traffic) or as ‘devils’ who “are apparent dangers themselves, posing threats to local places through drugs, graffiti and violence” (Matthews and Limb, 1999, 63).

In the medieval period children in Western Europe were regarded as small adults “rather than as conceptually different from their parents”, and as soon as they had sufficient strength and concentration, they were expected to undertake what might now be regarded as ‘adult’ tasks and duties (Aries, 1962, according to Valentine, 1997, 66). It was not regarded as necessary to make special places for children, as they were not even conceived of as a particular category of person.

The industrial revolution involved children as well as adults in the drive to make societies and economies as “productive” as possible. Although Honore (2004, 221) argues that during the industrial revolution, children were regarded as “mini-adults who needed to be made employable as soon as possible”, a change in their conceptualisation was taking place. Children in the industrial revolution were regarded as a source of energy or labour for driving new industrial economies. Child labour in factories and mines was an important part of the productive ability of industrial societies. But by the late 1800s, children were being moved from the workplace to the classroom, “to give them a proper childhood” (Honore, 2004, 221). This move to take into account the differing developmental needs of children from adults

marks a shift in their conceptualisation. No longer seen merely as different by degree from adults, children are now conceptualised as different in kind. This change has been contextualised within the broader political-economy: "is it just coincidence that the industrial revolution which divorced the countryside from the town and which separated urban dwellers from nature also led to the divorce of adulthood from childhood?" (Cunningham, Jones, and Taylor, 1994, 93).

The modern conception of children as innocent and imaginative had its roots in the Romantic Movement starting in the late Eighteenth Century. The French philosopher Jean-Jacques Rousseau, argued that children had their own ways of seeing and understanding the world, and that it was difficult for adults to make sense of this. Arguing that play should be integral to educational programs, one of Rousseau's legacies is the modern conception of children as future adults, where children should be given every opportunity to develop into 'successful' adults. However, in this paper we argue that children should not just be seen as "passive recipients of adult investment and training" (Boyden and Levison, 2000), but as children, who live in the present, and who should be listened to as capable social actors in their own right (Boyden and Levison, 2000; James, Jenks, and Prout, 1998; Malone and Tranter, 2003). In this way we draw on these various conceptualisations of children as productive beings, with capabilities different from those of adults, but all the more valuable because of this difference.

The changing conceptualisation of children is underwritten in the evolution of international charters on children's rights. The discourse of children as vulnerable and passive pervades even those early declarations that are meant to ensure children's human rights. The United Nations through their Office of the High Commissioner for Human Rights (OHCHR) have famously sought to enshrine children's rights through the Declaration of the Rights of the Child (DRC)(1959) and the Convention on the Rights of the Child (CRC)(1989). Certainly within the Declaration (1959) a specific emphasis has been on "protection": the corresponding conceptualisation of children as vulnerable and as incompetent is underwritten in this document. In the CRC, although the conceptualisation of children as vulnerable is strong, Articles 13, 14, 15 and 31 are more 'enacting' of children as participatory. For example, in Article 13, the right to freedom of expression, encourages (but also places limits on) expression of ideas, and freedom of thought, conscience and religion and freedom of association and peaceful assembly.

The conception of children in western societies as 'vulnerable' has been underpinned by the availability of cheap oil. Cheap oil has not only profoundly influenced the lifestyles of adults and children, but it may also have reinforced the conceptualisation of children as in need of protection from the 'dangers' of modern society. Cheap oil has allowed many parents in western countries to develop a distorted understanding of the risks and benefits associated with certain childhood activities. Many parents, concerned with rising traffic dangers (and stranger

dangers) respond to this in an individualistic way by driving their children to school and to other places 'to keep them safe'. Ironically, the collective impact of many parents 'keeping their own children safe' is to create an environment in which every child is worse off, both in terms of traffic danger and stranger danger (Tranter 1996; Tranter and Malone 2003; Valentine 1997; Cadzow 2004). The fear of stranger danger is increased because when fewer people use the streets as pedestrians (both adults and children), the streets are seen as lonely, deserted and hence dangerous places in terms of stranger danger. In particular, there are few adults around on the streets who know the neighbours' children and can look out for them. As well as increasing the risks to all children from traffic and stranger danger, the strategy of driving children to school, to soccer, to ballet or to their friends' houses, also exposes children to other risks. These risks may be more devastating to children than the risks of traffic and strangers, particularly in terms of a long-term view. Parents are unwittingly exposing children to increased dangers from: lack of physical exercise, increased risk of obesity and other health problems (e.g. heart disease), lack of spontaneous play opportunities, increased exposure to pollution (indoor, in-car and air pollution), and reduced independent mobility resulting in a lack of sense of connection to the local environment and community—a lack of a sense of place (Engwicht, 1992; Tranter, 1996; Tranter and Malone, 2003; Tranter and Pawson, 2001). The strategy of 'protecting' individual children by driving them to more places has the impact of making more children "fatter, sicker and sadder" (Gleeson, 2005).

Cheap oil has not only allowed for the conceptualization of children as vulnerable, but it has also resulted in changing conceptualizations of both space and time, especially as they relate to children. Cheap oil allowed us to plan cities with large-scale segregation of land uses. Each land use is reached from different parts of the city with motorised transport. Associated with this segregation of land uses came a segregation of adults and children. Children's spaces (parks and playgrounds) were created (Cunningham and Jones, 1999). Some researchers argue that the use of such spaces could be regarded as "a process of childhood ghettoization" (Matthews, 1995, 457). One purpose of such parks and playgrounds, it has been argued, has been to keep children out of the way of adults; it was the adults who did the 'real work' in cities, and children slowed this down. However, this segregation of children and adults can be seen as a disadvantage for children, leading to the loss of a sense of connection with their neighbourhood and community—a sense of alienation.

This alienation depends as much on how children are currently conceived, as on the planned, built environment. Some commentators have even suggested that the more acutely planned 'child-friendly' environments betray a lack of welcome of children in what by default has become 'adult space.' Mattern (cited by Ward 1990: 73) underlines this point:

“One should be able to play everywhere, easily, loosely, and not forced into a ‘playground’ or ‘park’. The failure of an urban environment can be measured in direct proportion to the number of playgrounds.”

The ‘concessions’ made to children indicate an unwelcoming paternalism, which regulates rather than encourages children’s play and thus development. However, Ward argues that children are not so easily dissuaded and that:

“they will play wherever they happen to be, for as Arvid Bengtsson says, ‘play is a constant happening, a constant act of creation in the mind or in practice’. A city that is really concerned with the needs of its young will make the whole environment accessible to them, because, whether invited or not, they are going to use the whole environment” (Ward, 1990, 73).

The point to take from this is that planning, even with the best intentions, may not necessarily lead to optimal outcomes for children. Rather, renewed emphasis must be placed on how the child/environment nexus has been *conceptualised* and how it might be conceptualised differently. To this end the changes that might be made possible by a change in energy use are important. One feature that has facilitated dramatic changes in modern societies, particularly in urban forms and lifestyles, is the availability of cheap oil. These changes have in turn led to dramatic changes in the ways in which some children experience their childhood.

A further, and not insignificant, impact of the increasing use of private motor vehicles facilitated by the availability of cheap oil is the decline of children’s street culture (Ward, 1977). This is not to be confused with the commercial cultures produced “for” children (music, comics, television): children’s street culture is invented by children and passed down from one generation of children to the next by children themselves. It is a collection of games, rhymes, jokes and special places (e.g. the haunted house). According to Ward, it is strongest in those parts of cities where children have the freedom to play independently in their neighbourhood. When this freedom is curtailed, so too is this street culture, and hence so too is the capacity of children to shape and disseminate their own subculture.

Cheap oil has allowed parents to enrol their children in widely dispersed extra-curricular activities, which restricts the time that children have to play freely in public spaces. Children’s free play in the local neighbourhood has been replaced with adult-organised and adult-run sports coaching, formal music or dance classes and even adult supervised ‘play’ activities in commercially operated play spaces (Valentine, 1997). This has led to the “commodification of childhood” (McKendrick, Bradford, and Fielder, 2000). Cheap oil has enabled many parents to put their children on the fast track, and by definition this has meant that children have “no time to be slow . . . many children dash from one extracurricular activity to the next, leaving them no time to relax, play on their own or let their imaginations wander” (Honore, 2004, 218). “Competition spurs many parents to rush their children. We all want our offspring to succeed in life. In a busy world,

that means putting them on the fast track in everything—school, sports, art, music” (Honore, 2004, 216). There is, however, little evidence that this ‘fast-tracking’ assists in the development of children, and such fast tracking may be difficult to achieve after peak oil.

3. Effects of Peak Oil

Peak oil does not mean that we have run out of oil. It is the time at which the world’s oil companies produce as much oil per year as they will ever produce. Because oil production follows a bell curve (as M. King Hubbert predicted fairly accurately for US oil production, which peaked in 1970) after the peak, oil production will inevitably fall (Rutledge, 2005). On the upslope of the curve, oil production costs are lower than on the downslope, when extra effort (and cost) is needed to extract the remaining poorer quality oil from deeper in the reservoirs. However, the global demand for oil may continue to grow, leading to increases in oil prices. Thus, once oil production peaks, global demand for oil is likely to exceed the capacity to produce it, prices will rise, oil-dependent economies (including the United Kingdom, the United States, Australia and New Zealand) will cease to grow (and will likely collapse) and resource-based conflicts may escalate.

Although new technologies may help replace the energy from oil, or help maximise the efficient use of oil, most high technology solutions (e.g. solar panels, hydrogen fuel cells, nuclear power plants) require materials that are currently extracted, transported, and built using oil-powered machinery. Currently, any alternative to oil cannot be developed or constructed quickly enough to take the place of current technologies without an abundance of cheap oil.

Anyone who focuses only on more fuel-efficient cars as the solution to peak oil is failing to appreciate the enormity of the problems that will face us when peak oil arrives. Many citizens of modern societies might be surprised by the range of functions and products used in everyday life that are dependent on the availability of cheap, high quality oil. Oil is used as an energy source and/or a raw material for transport, clothing and footwear, agriculture (e.g. for pesticides and herbicides), household goods, computers, spectacles and pharmaceuticals.

“There is very little we consume or use in our lives that does not use oil in its manufacture. If we can build, sew, print or assemble it faster using machines that are reliant upon oil, generally we have. Dramatic price rises would affect the whole economy in a multitude of negative ways” (McPherson, 2005).

According to some experts, the impact of peak oil is likely to be felt quickly. Even “a shortfall between demand and supply as little as 10–15 percent is enough to wholly shatter an oil-dependent economy and reduce its citizenry to poverty”

(Savinar, 2005). Once the decline begins, production may drop as rapidly as 3% per year, or perhaps even more sharply. Unlike the oil shocks of the 1970s, this will be a permanent decline.

Despite the growing evidence for the phenomenon of peak oil (Campbell, 2006; Kunstler, 2005; Roberts, 2004), there are many who question its importance or even its reality. There is a theory that peak oil is a clever piece of myth making, designed to create an artificial scarcity that will allow the superpowers to control the growth of world population (Adachi, 2005; McGowan, 2005). Other commentators, while accepting the concept of peak oil, argue that there will be a smooth adaptation to changing conditions, or that technological solutions will emerge (DesLauriers, 2005). Some peak oil sceptics point to the 1970s' oil crisis as evidence that the longer term concerns about energy at the time proved to be unwarranted, as oil prices eventually fell, and economic growth continued after a short delay. However one prominent researcher on peak oil, Colin Campbell, likens the oil shocks of the 1970s to the tremors that herald an earthquake (Campbell, 2000). Though they were serious enough to tip the world into recession, they were something that the world's economies could recover from when oil prices eased. On the other hand, explains Campbell, peak oil is like the earthquake itself. It is not a temporary phenomenon, but a permanent new condition created by resource constraints rather than by politics. Campbell claims that peak oil will set the scene for "the Second Great Depression". Whatever view one takes on peak oil, a useful gauge of its probable effects can be gained from examining the fluctuating fortunes of oil-dependent economies.

Even before Henry Ford began mass production of his Model T Ford, modern societies began using oil to forge major changes in our society. However, at several times since the first Model T rolled off the production line, there has been a scarcity of oil. Also, many societies in the world today currently exist without high levels of oil consumption. Can we get some clues about the possible impact of peak oil by examining other times and places? Some fruitful times and places to consider include: British society during the Second World War, the Great Depression of the 1930s, the oil crisis of the 1970s, Cuba after the collapse of the Soviet Union in 1989, and present day Moscow and Iraq. All of these times and places involve(d) shortages in oil supplies. In this paper we will focus only on one of these examples as a case study: Britain during the Second World War. This case study is particularly relevant to this paper because of the ways in which children were enlisted into the cause of maintaining a war-time economy.

3.1. A Case Study of the Effects of a "Peak Oil"-Like Situation

One of the most dramatic examples of how a "peak oil"-like scenario unfolded was during the Second World War, when rationing, local food production and recycling were introduced to aid the war effort. Oil was in short supply and

international supply routes were disrupted. In Britain, rationing was introduced for petrol in 1939, and this rationing remained in place till 1950. It was not only petrol that was rationed during this time. Products such as butter, milk, meat, eggs, sugar, sweets, jam, tea, coal, clothing, cosmetics and soap were all rationed for various periods. Shortages of oil meant that there were fewer cars on the road, and a greater reliance on walking, cycling and public transport (which was also restricted). The government encouraged citizens to grow their own food, even launching a “Dig for Victory” campaign in October 1939, which urged citizens to grow food in their own backyards, in parks, golf clubs and even tennis courts (Home Sweet Home Front, 2005). Every available piece of land was targeted as a possible site for food production. Recycling efforts concentrated on tins, metal, boiled bones (for glue and for glycerine for explosives, kitchen waste, paper, and rubber). There were even campaigns to encourage people to eat healthy food that was easy to produce (particularly carrots and potatoes). British society coped with this rationing, and was able to focus energy on winning a war. As well, wartime evacuation from cities allowed children to experience the wonder of the freedoms of the countryside (Cunningham and Jones, 1999).

When oil shortages begin occurring as a result of peak oil, it is likely that their impact will be far more profound than what occurred in Britain during the Second World War. This is because Britain (and the rest of the world) is now much more dependent on cheap oil than in the 1940s, and also because after peak oil, there can be no going back to a golden era of cheap oil. After the Second World War Britain's economy took years to recover, and this was only possible with a supply of cheap oil. Also, in the late 1930s motor vehicles did not dominate Britain's cities, to near the same degree as they do today. Most children still walked to school, public transport and cycling were still major modes of transport, and children were not ‘fast-tracked’ into a multitude of extra-curricular activities. Thus, in many ways, there was less need for major changes in society to cope with shortages of oil (and other products). Nevertheless, the Second World War showed some of the ways in which societies might have to adapt in a peak oil situation. Some of the posters used to encourage certain behaviours among British adults used clear imagery and messages associated with children to reinforce the importance of these behaviours and to show how children might be involved in the war effort (Home Sweet Home Front, 2005). For example, a “Dig for Victory” poster featured a child with a spade and a hoe. Another poster used the words “For their sake, grow your own vegetables”, and featured pictures of young children behind a picture of an adult digging (Home Sweet Home Front, 2005).

3.2. Outcomes of Peak Oil for Children

The outcomes of peak oil for children are likely to be highly variable geographically, both within urban areas, within nations and between nations. These

outcomes are also dependent on how children are theorised. Peak oil almost certainly will be seen as producing negative outcomes for children if we continue to see children as consumers and as trophies, or as vulnerable and incompetent. After peak oil children may be more vulnerable in many respects: more vulnerable to hunger and disease, and less able to access medical services and extra-curricular educational, sporting and entertainment activities. With the onset of peak oil societies will have fewer resources to protect basic human rights, including children's rights: children's right to play may be compromised by a perceived need to meet growing demand for labour in factories, mines or farms. Yet if children are theorised as beings who create play experiences from any opportunities that arise, then peak oil may prove to provide a range of positive impacts.

The important insights from this section of the paper is not what it says about our scenarios for the future, but rather what it says about the power of re-conceptualisation right now. If we theorise children as important social agents then they might provide a clue as to why we might think about *not* planning for kids in the future. In speaking of children's play we cited Ward and his understanding that the more child's play was planned for the more it betrayed a lack of welcome in urban space (Ward, 1990). Children will attempt to play anywhere, to transgress the discrete spaces we plan for them, so that their play takes on a more 'organic' character. Indeed the *attempted* destruction of this 'organic, spontaneous' play is one of the outcomes of a society premised on cheap oil. (This is not to attribute purposefulness on behalf of capital to undermine children's 'natural' attributes, but rather to realistically acknowledge the displacement of certain leisure activities by the commercialisation of others.)

The discussion that follows explores the probable impacts of peak oil. Whether each of these impacts is seen as positive or negative is largely dependent on the beholder's construction of "children" and "the urban environment". For example, if children are constructed as vulnerable, incompetent and fragile, then we may believe that they require especially designed play spaces. If peak oil means that these play spaces are occupied by more 'functional' uses (e.g. vegetable gardens), then this represents a negative impact for children. However, if children are seen as competent beings and capable social agents, then they may adapt to changing urban environments, and even find opportunities for play as well as making creative 'functional' contributions within environments that adults see only as discrete single use spaces.

There may be less space for children's play as our society adopts a more functional (or more desperate) perspective on the utility of urban space. Just as in World War 2, British residents were encouraged to use every available space (including their golf courses) for food production, it is probable that any open space within cities will be seen as a potential site for growing crops (either for food or for fuel) or for space for solar panels or windmills for power generation.

Of course, children may find ways of turning spaces designed for a particular purpose by adults (e.g. food production) into a play environment.

It seems almost inevitable that one of the outcomes of peak oil will be widespread poverty and an exacerbation of current inequalities. At the urban scale, poverty may be more pronounced in dormitory suburbs, particularly the newest dormitory suburbs in outer regions of cities, with little or no shops or services and little spare outdoor space that could be used for food production. Kunstler (2005) goes so far as to argue that these urban forms have "no future".

Peak oil may contribute to a 'slowing' of our lifestyles. Not only are our modes of transport expected to be slower, but our whole lifestyles are likely to change. Our current obsession with speed will prove to be too expensive without cheap oil. In a hectic, hustle bustle society, there is little time to reflect. Although it may at first seem counter-intuitive, peak oil may give both adults and children this time. When parents rush their child from one extra-curricular activity to another, their children have little time for free play. Free play, which had been eroded "in favour of tight schedules of supervised activities" (Ellis, 2004), might be once again provided for children when peak oil prevents parents from over-occupying and over-organising their children's lives. Tight schedules will be less achievable if parents cannot depend on ready access to private motor vehicles. Children will have less adult-organised interaction with other children (and adults), but this will be more spatially delimited (more restricted to locations that children can reach through independent mobility).

Sport may become more child-oriented rather than adult organised and chauffeured, with less opportunity for children to be ferried by car to organised sport. After peak oil, few 5-year-old children will be driven across cities on weekends so that they can play soccer with other 5-year-olds. This may provide benefits for children, as adult organised sport provides little opportunity for the spontaneous play experiences that children have in their own play. Adult organised sport forces children to play games under adult rules, with children of the same age and sex, and often in places that are only easily accessible with the support of adults.

Associated with greater opportunities for free and spontaneous play in the local neighbourhoods is the likelihood that children will feel a greater sense of connection to their local communities. This assumes that one response to peak oil will be a realisation that survival will depend on how well citizens can provide mutual support for their neighbours. (Citizens will be less able to depend on the state for reliable health care, food supply or power supply.) It also assumes that streets will be safer places for children when they cease to be dominated by motorised traffic. This may lead to a positive reinforcement loop, whereby fewer cars contribute to a greater use of streets by children (and adults) as pedestrians and cyclists, which will in turn contribute to a psychological traffic calming of the local streets (Engwicht, 1992, 2005). Local streets will be safer places for

children, both in terms of traffic danger and stranger danger, and children may once again feel as though they are an accepted and valued part of the local community. Residential streets may be reclaimed as children's play space (Tranter and Doyle, 1996). The degree to which children feel a part of the community may in part depend on the degree to which they are 'involved' in the productive life of their local communities. Children may well have a role in food production and distribution within their local area.

The way in which children construct their own identity (and their self-esteem) may be changed with peak oil. In a society where cheap oil provides the opportunity to accumulate personal possessions (designer or brand name clothing, mp3 players, and brand name sunglasses) (Hamilton and Denniss, 2005) children's identity is forged by global companies (Klein, 1999). However, after peak oil, fewer children will have access to a wide range of designer objects, partly because of the higher transport costs involved in bringing brand name products from across the globe. There may be less social pressure on children to conform to the current fads, as fewer children can afford them.

4. Conclusion: Children as Social Actors in a Post Peak Oil World

Summarising the UNESCO Growing Up in Cities research (Chawla, 2002), we argue that child-friendly places and cities require three main features: meeting the needs of children for food or basic services; allowing children the freedom to explore their own neighbourhoods (and cities) in safety, in ever increasing circles as they mature; and providing children with a sense of connection and involvement with their local neighbourhood and community, rather than a sense of feeling alienated in that community. These three main features of child-friendly places correspond, of course, to the three broad categories of children's rights: "provision rights", "protection rights", and "participation rights".

From the discussion in the preceding section it is possible to identify a range of outcomes of peak oil for children that could be regarded as supporting child-friendly environments. We argue here that this reflection on a post peak oil future might help us to identify ways of improving children's lives in the present.

In addition to the rights of children to be protected from dangers and to be provided with basic needs and opportunities, there is also their right to be consulted on matters that affect their lives (Matthews and Limb, 1999). We argue that children should be seen as capable social actors, and as such children should be given a say in the way in which our societies respond to peak oil. Just as "it is important not to underestimate the potential contribution to be played by children themselves in generating innovative solutions" to switching to more active and sustainable modes of travel (Morris, Wang, and Lilja, 2001, 12), children may have a vital role to play in generating innovative solutions to peak oil. As

Freeman points out, even researchers may underestimate “the capacities and maturity of many children: for example, their ability to represent themselves and, indeed, other children” (Freeman, 2007).

If we do not involve children in our response to peak oil, we may simply lock ourselves into the mechanistic worldview that has led to the current reliance on technology and efficiency as a solution to our problems. Also, we may be victims of the cognitive dissonance that is evident when individuals and policy makers refuse to accept the possibility of peak oil even existing (Adachi, 2005; McGowan, 2005). Considering the needs of children and taking their views into account may help provide longer term solutions to peak oil than adults might be able to generate on their own. If we theorise children, not as vulnerable, dependent and incompetent, but in another way—such as important social agents—then we can see children as part of the solution to an impending peak oil crisis. If children are to become important social actors in a post peak oil world, then they might be more involved in local food production, local composting and recycling, or repairing solar or wind powered generating systems. Children will be more likely to walk or cycle to school, and hence provide an important source of social contact for all local residents. They may have a role in selling local produce. Whatever roles they have, they should be encouraged to be involved in shaping society’s response to peak oil. Schools will not simply be places where children are taught how to become successful adults in a consumerist world. From a purely functional perspective, schools may need to be places where children are taught some of the skills needed to survive in a world where ‘the state’ cannot provide all our needs: children may need to be taught about self-sufficiency, conservation, cooperative activity. Schools may also become important sources for local food production (vegetable gardens and fruit trees) and they may also become the foci for local neighbourhood community groups, for sharing ideas of food production, energy production and the creation of local employment or bartering systems.

Thinking about peak oil allows us to conceive of a cultural shift. In the same way that parents might be encouraged to change their driving behaviour when they are told about the negative effects of cars on children (O’Brien, 2001), perhaps key decision makers may be more likely to take peak oil seriously if they consider the impacts on their children. This may allow us to face the possibility that the solution to peak oil is not another cheap form of energy, or a technological fix, but it is the recognition that our current ways of living will need to fundamentally change. Existing human rights declarations already imply an obligation to consider the implications of peak oil for children. The International Covenant on Economic, Social and Cultural Rights (ICESCR), Article 11(2) discusses the right of everyone to be free from hunger, but also the obligation “to improve methods of production, conservation and distribution of food by making full use of

technical and scientific knowledge”. This scientific knowledge now includes knowledge about the diminishing energy resource that currently fuels our economic growth and our cultural and political system (Campbell, 2006).

A focus on children and their needs allows us to see that making changes now, before we are forced to by peak oil, may produce a happier, healthier and more livable society for both adults and children. We are not arguing that the whole world is heading in a negative direction with the coming of peak oil. However, there are competing elements. Therefore, using the concept of peak oil, and considering the impacts of peak oil on children allows us to promote what could be argued to be the positive elements of a post-peak oil society, at the same time as ameliorating some of the negative impacts of peak oil.

The current energy policies of the developed world have clearly resulted in the oppression of children. The war in Iraq, now widely acknowledged to be based on US plans for the control of oil supplies (Deffeyes, 2005), has been estimated to have led to an avoidable under-5 infant mortality rate that is about 100 times greater in occupied Iraq than in Australia. Over 200,000 children under five have died in Iraq since the 2003 invasion of that country (Polya, 2005). Peak oil may provide the impetus to develop an energy supply strategy that is mutually beneficial to both adults and children. Involving children as capable social actors, through a recognition of their rights to participation, may help provide the creative responses we need to cope with the world's looming energy crises.

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