Ecotopia 2121: Car-freeCities of the 22nd Century

Alan Marshall [1*]

[1] *Faculty of Social Sciences and Humanities, Mahidol University, Nakhon Pathom,Thailand*

Abstract

The long-term futures of five cities from around the planet are outlined with the use of one visual image for each city. These cities are : Abu Dhabi(UAE), Denver(USA), Sao Paulo(Brazil), San Diego(USA), and Perth(Australia). These city's futures are presented in 'eco-utopian' terms in which each city studied is proffered to operate within some sort of planned (or naturally-achieved) peaceful, happy and communally-desirable setting that exists in socio-ecological harmony (that is, harmony between society, people, and the environment). The central common feature investigated for all these cities of the future are their 'car-free' or 'car-less' character. In the spirit of previous idealistic imaginings by writers and artists that have worked on formulating utopias in decades and centuries past, some explanation about how each city can get to this eco-utopian status(by the year 2121AD) is declared, along with an explanation about the social, technical, and economic background that may be present then and there.

Keywords*:* Utopia Cities/ Future Car-free/ Sustainability Society/ Abu Dhabi/ Denver/ Perth/ San Diego/ Sao Paulo

Introduction

Utopia is that place, in thought or in reality, where society is planned to be (or evolves to be) completely harmonious and peacefulandwhere the individuals therein are--to a large degree--satisfied and happy (Carrey, 2000; Segal, 2012).

To design a utopian future often means to be at once imaginative and optimistic but also critical and subversive. Thomas More(1515) was the first to carve out this pattern--being both optimistic about an imagined Christian utopia whilst also being critical and subversive regarding Henry VIII's England (Marius, 1999, Halpin, 2011). Since then, when utopian thinkers have set out to imagine or design the best possible world for tomorrow, they are usually highly critical of their present day society; often injecting their designs with large doses of both hope and satire (Claeys,2011;Segal, 2012). This is the same impulse that flows through the utopian designs presented here, below, as I seek to imagine utopia for approximately one hundred years hence.

Many utopian exercises seek to portray a city or a state where some vice is eliminated from the society so that people are allowed to flourish unfettered and free in its absence: be that vice something like crime or war, or something like poverty or prejudice. Here, I posit five cities that have abandoned or lostone common element: the automobile.

But what's so wrong, exactly, with cars that they give rise to a need to postulate a future without them? Let me cover the ground quickly using bullet points. Cars are a vice because of the following problems that they present:

-car-making leads to a giant ecological footprint all over the globe; especially with all that steel, rubber, plastic, paint and glass that's needed to give birth to a single car (Sanderson, 2013),

-during its lifetime, even the cleanest car will emit toxic chemicals and climate-changing gases (Zachariades, 2011),

-when a car dies, it leaves a decaying body that takes up space and whose parts slowly pollute the environment (Black, 2010),

-re-fuelling a car often involves the need to wage violent international activities and incur further environmental degradation (Sanderson, 2013),

-car accidents are a leading cause of death of young people around the globe (Sloman, 2006),

-exhaust gases from cars cause respiratory diseases worldwide; often paid for disproportionately in health-terms by non-car users and in financial terms by the public purse (Adam, 1999),

-the roadways needed to facilitate car-use have a) destroyed many natural environments and communities, b) caused urban sprawl into nature and countryside, and c) have ushered in further dependence on car-ownership as the only possible transport option (Sanderson, 2013),

-cars have encouraged :a) conspicuous over-consumption, b) social isolation (amongst those who own them and those who don't), and c) increased time and distance between places or work and places of living giving rise to further problems associated with long-distance commuting (Crawford, 2009),

-cars punish pedestrians by encouraging the elimination of sidewalks in suburbs and pedestrian plazas in shopping areas, and they make for a noisy, stinky, stressful and dangerous environment for pedestrians, especially for children and their minders, and for those of limited

*Corresponding author:
E-mail: sate@eng.cmu.ac.th

mobility like infants, the aged and the disabled(Freund and Martin, 2005),

-cars may be seductive to look at individually (if you don't mind the noise and stink they make as they whizz-on by) but travelling bumper-to-bumper in a chain altogether or navigating around them when they are parked all over the city, they tend to turn pretty and peaceful areas into noisy, ugly, crowded places (Sanderson, 2013).

In response to the pervasiveness of the above-stated problems, I hereby posit below five varying utopian futures of particular cities across four countries of the world with the view to imagining them without cars. In these futures, cars become extinct either by design (where cars are actively phased-out) or by default (whereby cars become impossible to operate).

Without cars, these cities have become ecotopian (using a word established by the likes of Callenbach, 1978, and De Geus, 1999), whereby humans and the natural environment exist in some form of harmony with one another. Each one of the designs contains a description of what a specific city's car-free future consists of, and also some explanation of how it may get from where it is today to how it is presented here.

The future of the chosen cities is presented in a form of 'scenario art'. Lederwasch (2012) recently announced scenario art' to be a new and developing methodology for Future Studies. For her, this is a formalized way to get decision-makers to explore alternative future plans at a small or large-scale.

I take note of this way of imagining, debating, and communicating decisions but also, I acknowledge that art--in theory and in practice--has often reveled in intense reflection and speculation over and above any practical factors.

ABU BHABI 2121

Figure1: ABU DHABI2121

In 2010, the tallest building in the world, The Dubai Tower, was declared open. (Hoffman, 2010). Reaching one kilometer into the desert air, it was promoted as a towering visual symbol of Dubai's economic prosperity (Thomas, 2010).However, the managers never really got the finances to add up. Shortly before the opening they became bankrupt and had to be bailed-out by King Khalifa: the ruler of nearby Abu Dhabi (Bedell, 2010).The Dubai Tower was then sharply renamed the Khalifa Tower, in deference to this act of financial rescue.

Dubai and Abu Dhabi are two brotherly cities of the nation known as the United Arab Emirates. Compared to many Arab cities, they appear ultra modern and wealthy. Their individual approaches to urban planning and architecture has been rather different, though. Whereas Abu Dhabi is generally low-rise and unspectacular, Dubai is adorned with thousands of grand showy towers and large-scale megaprojects(like off-shore suburbs built on huge palm-shaped artificial islands, visible from space).

Abu Dhabi has usually looked-on with bemusement rather than with envy at such mega-

constructions. Now though, Abu Dhabi, has itself started many such projects, including the world's biggest flagpole, high-rise skyscrapers, and as a series of grand universities and art galleries.

These projects are being brought to fruition by using cheap labor from the Indian subcontinent. The laborers often suffer from what's described as atrocious working conditions(see, for instance: HRW, 2006; Allen, 2009). For decades, the Abu Dhabi and Dubai governments have justified their treatment of South Asian immigrant workers by saying they provide them with an economic opportunity that is unavailable to them in their home nations (Bedell, 2010).

Immigrants make up some 80 percent of Abu Dhabi's population. Few immigrants are ever granted UAE citizenship or equal rights on a par with the local Emiratis. They have to put up with low wages, oppressive visa regulations, terrible living conditions, and government-sanctioned prejudice. Over the future course of the early 21st century, if these workers continue to be treated so badly, then the tensions between the large immigrant majority and the local Emirati minority,may very well result in an all-out revolution.

This design presented above portrays a new Abu Dhabi many years after such a revolution; when society has fundamentally changed. Here, Indian workers long-ago overpowered King Khalifa'sAbu Dhabi government, before announcing secession from the UAE to set up their own independent democratic nation (whose first Act of Law is to grant full citizenship rights to immigrant workers).

In this future, a half-built skeleton of a tower is redeveloped into a massive artificial palm tree.The palm tree merges from the Abu Dhabi city center to shade the citizens from the desert sunshine. Usually, on a summer's day in Abu Dhabi "the sun is already so strong at 8am that your eyes start to tear up and you sneeze from the sheer burnt whiteness of the light" (Zoepf, 2007) but here the palm tree offers free city-wide relief from the sun.

At present, Dubai and Abu Dhabi are inclined to build mega-structures that serve only as either nationalist monuments or private money-making endeavors. The Abu Dhabi Palm, though, is a public good with a functional use for all and it acts as a passive cooling device to provide an eco-friendly alternative to the ubiquitous air-conditioner. This Abu Dhabi Palm is also a direct contrast to the iconic Dubai palms. Where the Dubai palms have destroyed the natural coastal environment for private benefit(Samarai and Qudah, 2007 and Salahuddin, 2009), the Abu Dhabi palm has a net-positive effect on the environment and provides a public service free for all.

In the early 21st century, Abu Dhabi is as car-dependent as any city in the Western Hemisphere (a situation fueled by the Emirati's desire to travel in air-conditioned luxury as well by cheap indigenous oil). Here in this Abu Dhabi of the future, however, the stranglehold of the car on city life is broken with the help of changes in the socio-architectural complex. The family dwellings in the foreground, partly-inspired by the domestic dwellings in the Thar Desert of India, are constructed from local sands and muds mixed with native palm-leaves and dried camel-dung. This technique makes for buildings that need less energy to construct and that also possess high passive insulation. The dwellings--meant as both family dwellings and also as small business dwellings--also serve as bases for public walkways that interconnect city streets and neighborhoods (and which also provide shade for pedestrians below). All in all, the noisy dangerous Abu Dhabi suburbs are converted into relaxed neighborhoods where people can walk conveniently on flat surfaces without the need to compete with or navigate around cars and the road-scape. The shadiness also allows for cultivation of appropriate decorative and edible plants in both privategardens and in community gardens.

Cars act as physical barriers whether they are moving or whether they are parked and their absence in a community will be a boon for those seeking a nicer neighborhood. In this design, the absence of cars along with the provision of flat quiet shaded pathways will be particularly appreciated by the young (who can then independently walk around the neighborhood without parental supervision) and by the aged and disabled (who can then independently wheel around the neighborhood in micro-vehicles). The popularity of such a car-free city environment was recently shown by the month-long 2013 Eco-mobility World Festival where pedestrianism mixed easily with micro-scale wheeled vehicles of many types(ICLEA, 2013).

Nowadays, in the early decades of the 21st Century, the Abu Dhabi economy is largely based upon oil. In the future, though, the oil reserves will have drastically declined—perhaps hastening the decline of the automobile as well(Worth, 2010;Greer, 2013). Oil, in 2121, will probably onlybe available for the production of a few essential goods and for medicines; not for cars and transport. However, the Abu Dhabi economy can still thrive if the residents there can learn to harness the energy of that ever-present renewable resource that the city enjoys; i.e.: the desert sunshine.

DENVER 2121

The Denver of the 22nd Century has fought against car-dependence by converting the entire city into a small series of self-contained Arcology towers; each providing habitation for tens of thousands of people. Advocates of Arcology feel that their mega-structures are the perfect antidote to urban sprawl (Karakiewcz, 2005;Soleri, 2006; Grierson, 2007).An Arcological

tower would need about two percent as much land as a typical city of similar population, they say. With little or noneed for cars--or massive roadways—such urban regimes may also give rise to a less-polluted atmospheric environment and the possibility of ecosystem rehabilitation.

Figure2: DENVER 2121.

An Arcology tower also allows its citizens--regardless of age or mobility--easy and rapid access to all the shared facilities located within the tower via a network of low-powered public elevators and moving walkways.

For some, this compact self-contained city is both eco-friendliness, as well as convenience, at their best. Others, though, would say such towers are enormous monuments to planned societies which would envelop the individual in an abominable techno-prison. The obvious riposte is that 'the car' and 'the suburb' have already imprisoned us in a technological nightmare. The tower here signifies all this with its gigantic inverted 'fuel-funnel' shape.

If Arcology is to be a viable eco-architecture, then it must be place-based to some degree and the Denver example here makes some effort toward that. Encircling a central core are layers of horticultural plots that grow native edible crops, like prairie corn, wood strawberries, wild lettuce and prickly pears. The varying crops cultured in these layers gradually change in composition with altitude, depending on their natural physical limits.

Denver 2121 will strive to reinforce its global 'eco-status' by extending its 20th century Olympic Games rejection policy. In 1972, Denver became the world's first city to be awarded--and then reject--the honor of being an Olympic host city. The reasons for the rejection were both financial and environmental (Karamichas, 2013; Mangun and Dyreson, eds, 2013), and these are the same reasons that will encourage Denver's continued Olympic rejection in the 22nd Century.

Next century, the world's large cities may still clamber over each other competing for the right to host the Olympic Games. Decade after decade, the Olympic show gets bigger and bigger, and the environmental and social impact gets more and more drastic (Preuss, 2006; Gold and Gold, eds,2010). By the time Qatar gets to hold the Winter Olympics in 2120, it will require two rapidly built nuclear power plants to operate the artificial ice and snow venues and the city government will have to force half-a-million city residents out of the newly-appointed Central City Olympic area (into hastily-built peripheral shanty towns that will likely be without power and water for a year).

Supposedly, the Games offer host cities lucrative media contracts and tourist revenues (and a huge 'PR' opportunity) but the Denver authorities know something that other city authorities do not. Many of the world's people despise the Olympics; for its showiness and hype, for its domination of the airwaves, and for showcasing a form of entertainment they find boring, nationalistic, and irrelevant (Billings, 2008; Lenskyj, 2008; Shaw, 2008). To cater for these people, Denver 2121 offers 'Escape-the-Games' vacations, whereby global tourists can have home-stays in an Arcology Tower isolated from all things Olympic.

The visitors can also partake in eco-skiing holidays in nearby sustainable resorts in the Rocky Mountains. These resorts forego motorized chairlifts and instead, skiers must walk up the mountain slopes on pathways with their skis on their back. They then slalom down the slopes between replanted native Coloradan trees.

SAO PAULO 2121 AD

When the land now called Brazil was explored in the early 1500s by Amerigo, his literacy renderings of the indigenes were adorned with descriptions of their society in utopian terms. Despite their cannibalistic rituals, he spoke with admiration of their stateless liberty, communitarian spirit, and freedom from social

control (Amerigo, 2012). These descriptions, themselves, are said to have had an influence on More'soriginal book 'Utopia' (Arenas, 2003).

Five hundred years later, the crowded noisy streets of Brazil's largest city, Sao Paulo, are far from utopian.

For eight million commuters, each working day involves many hours--up to three, four or five--of tortuous travel on hot, expensive, uncomfortable, crowded buses and trains. When the government announced with fanfare that they were spending billions on

Figure3: SAO PAULO 2121

football facilities for the upcoming World Cup, it was just too much for many Paulistanosto bear, and they revolted in the streets (Watts, 2013). Because many protesters were arrested for carrying vinegar with them (as an anti-dote to police tear-gas bombs) the movement was dubbed 'The Salad Revolution'.

The intermediate remedy to The Salad Revolution was for the Brazilian government to announce that billions of dollars--a figure on a par with the cost of the World Cup--would be invested into public transport in the coming years.

In this scenario, the Sao Paulo of the future has gone even further. Every single road lane becomes a dedicated bus lane. Cars are banished to the countryside, and only public transport and emergency vehicles are allowed into the city streets. But more than that, the sprawling city of Sao Paulo has become a network of pedestrian walkways. The walkways allow city dwellers to easily and comfortably traverse their surroundings on foot (and by wheelchair and perambulator). With creative by-laws, and well-designed employment rules, each walkway can allow for a pleasant trip to work in a community atmosphere, where workers can grab breakfast or dinner from street-side and roof-top cafes. Many will believe that a two-hour walk to and from work--stopping off to chat to friends and colleagues, whilst listening to sidewalk musicians--is a much more preferable way to travel than being squashed on a bus or stuck in a traffic jam for hours.

So how can such a city of interconnected pathways possibly come about? Slowly and gradually is the answer. First of all, the new bus lanes(along with increased bus quality) will encourage more people to opt for public transport; so much so, that buses become both fashionable and profitable. City planners also find creative ways to link up bus routes with new city center walkways. Over time, the city government soon realizes that every meter of new walkway decreases motorized traffic in a proportional manner since people decide to leave their cars at home and get about on foot. This may not be a conscious decision on their part but an unconscious acknowledgment that the city is somehow more accessible and habitable and enjoyable when the traffic jams and parking-problems can be avoided.

Over many years, public support for walkways will encourage more investment from the government. And since the health of the people is increased with all the walking exercise going on--as well as the healthy salads with vinegar sauces being consumed--the government is less burdened with a variety of healthcare costs and this can make further financial space for investment in further walkways.

Eventually, by 2121, the popularity of the walkway environment (where music cafes, arty food-bars, and colorful community kindergartens become the norm) encourages people to turn the lowest-level streets into walkway environs as well.

Except for a few quiet and unassuming hydrogen-powered buses for mobility-impaired citizens, motorized transport becomes less and less favored by Sao Paulo's citizens.

By abandoning cars, the city of Sao Paulo 2121 has become far more egalitarian. There's no longer a class division between those that can afford to run a car (and who tend to support a car-dependent city) and those who cannot. The youth of Sao Paulo, the pensioners, the care-givers, and the disabled, are particularly empowered by this breaking down of the 'auto' and 'auto-less' division, as they'd been far more liable to find it hard to afford a car.

In Sao Paulo 2121, convenient healthy eco-friendly mobility around the city becomes a universal right. Instead of there being a mobility war between the classes, everyone now has an equal stake in public walkway management.

A carless Sao Paulo of 2121 may also usher in another kind of Salad Revolution. Because so much urban and peri-urban space will be freed from car-related infrastructure (highways, roads, car parks, factories, service stations,etc) new city-wide urban agriculture can be facilitated. Maybe at first this will be a small-scale protest movement; people planting vegetable gardens in nearby city streets and highway islands so they don't have to travel for 3 hours to work in a job (just to get money so they can buy food).

However, at some point in time in the late 21st Century, perhaps during some particularly poor performance by the Brazilian national soccer team, great runs of tarmac will be dug-up by guerilla gardeners who claim that food is more important than football. Soon after, the highways and by-ways will one day be strewn with verdant rows of fresh peppers and tomatoes stretching as far as the eye can follow. Some people will object, of course, but many elected officials may see value in supporting these activities, especially if it means they get more votes, and so they may be inclined to support a more formal phase of this New Salad Revolution, where community vegetable gardens continue to be laid out down highways and car parks.

The importance of such consumer-managed urban agriculture may well be multifarious (as recorded in Bang, 2005; Koc*et al*, 2000; Bryld, 2002; and Cockrell-King, 2012).By converting a proportion of now defunct roadways into horticultural plots (salad-scaping, as it may be known) Sao Paulo 2121's New Salad Revolution may usher in the following benefits:

-salad-scaping will decrease 'food miles' and the ecological footprint of food consumption.

-salad-scaping can enhance food security and improve nutrition amongst the urban poor by decreasing the costs of supply and providing for healthy diets.

-salad-scaping adds greenery to the city; providing for a nicer environment and reducing harmful water runoff and soil loss.

-salad-scapingcontributes to local economic development.The activities or services rendered by these enterprises may owe their existence in part or wholly to urban agriculture. Other business services may also emerge for lower-income and middle-income families (e.g. garden services, cooking, book-keeping, low-tech transportation).

-salad-scaping can contribute to social inclusion and health quality (whereby the neighborhood comes together in a commercial or collective way to produce healthy salads and an income for the community).

-salad-scaping provides for the productive reuse of urban wastes (both solid and liquid).

-salad-scaping may not completely replace the need for rural agriculture but it will complement it; and will allow for a general increase in the efficiency of the regional food-supply system.

-salad-scaping contributes to the betterment of urban and regional ecology (including habitat preservation) and encourages the decrease of ecologically-dubiousmeat-based agriculture.

SAN DIEGO 2121AD

At the same time that NASA was drawing up plans to colonize the Moon and Mars in the 1960s and 1970s, some intrepid adventurers were drawing up plans to colonize the oceans. What for? What is the reason--ecological or otherwise--to colonize the oceans? Some cite over-population. Some cite the need to find new resources for the world. Some cite scientific exploration and curiosity. In an oft-repeated phrase (that shows up marine experts' envy of the 1960s Apollo project) it's said that we know more about the dark side of the moon than we do about the floors of our oceans.

Within a decade or two from now, though, all that may change as exploration and exploitation of the ocean becomes economic; and countries and companies look for minerals on and in the sea floor.An'ocean floor-grab'seems to be on the cards as nations like Russia, the U.S., China, Japan, and Canada position themselves for claiming and exploiting future resource possibilities. Some envision the oceans as becoming the new frontier and that they will be colonized like other parts of the Earth were in earlier centuries.

Amidst this growing interest in developing the seas of the world for industrial and economic purposes, and in response to global sea-level rises, some cities may be encouraged to reassess their relationship with the sea. Such is the case, here shown above, with regards to San Diego 2121. By early next century, global sea levels may rise to drown or erode much of the coastal city of San Diego. This would make living and working there so troublesome and risky that many families and businesses might well venture to move to a

more constant environment just offshore under the sea (Church*et al*, 2001).

In this design, a small scale suburb of San Diego is resurrected in 2121 within the sea. Using the technology fashioned and perfected from one hundred years of oceanic exploration and development, these community structures--suitable for about ten people each--are tethered like giant California kelp onto the rocky sea floor using robust holdfasts.

Mobility between the households(and to other oceanic and terrestrial facilities) is via free public submarine minivans, which stop regularly at each household (in the vein of minivans zooming around a university campus or retirement village on land).

The idea of such a sea-bound community is not just to hedge bets so that SanDiego may survive drastic sea-level rise but also to promote eco-friendly lifestyles in the sea using traditional and novel techniques of mari-culture.It will still be an expensive enterprise, however, but there's a commercial impetus from the growth of the Algae biofuel industry (Aizawa, *et al*, 2007; Bruton*et al*, 2009) which by the early 22nd Century may serve to fully replace fossil fuels.

Figure4: SAN DIEGO 2121.

PERTH 2121

The long-term future of Western Australia's capital city, Perth, is in serious doubt. The climate is getting hotter and drier and the soils thinner and saltier. To fight against climate change, and make huge amounts of money at the same time, the Western Australian government will probably soon approve the opening up of uranium mines all across the state. The uranium will then be used, they will argue,to power 'climate-friendly' nuclear energy stations around the globe.Nuclear plants, they say, do not produce carbon dioxide.

As far as the Western Australian government is concerned, they just want to help save the World by mining as much uranium as they can in order to fuel the world's nuclear plants. But unfortunately--sometime in the late 21st century--one particular uranium mine, hundreds of miles away from the city, ends up contaminating the rivers that flow through Perth with vast city choose to evacuate to other towns rather than face the high cancer risk.

Alas, despite this uranium-push, global climate change is not halted and the city of Perth is not only contaminated with long-lived radiation but also ravaged by extreme drought, devastating wildfires, and disastrous soil loss. When water comes, it arrives in flash-floods, which not only sweep away buildings and roads but they end up washing more contaminated sludge into the city. Any human survivors will have to downscale or

de-develop the city and they will have to learn to live on remaining local resources in order to survive.

According to this design; two reliable resources will be Balga grass-trees and mud. Here, survivors of a long-term ecological tragedy build their houses out of mud, sourced from the nearby earth and mixed with rocks, shells, fish bones and dried plants. The mud may serve as infrastructure but the economy in general is based on the cultivation of Balga, a type of grass-tree adapted

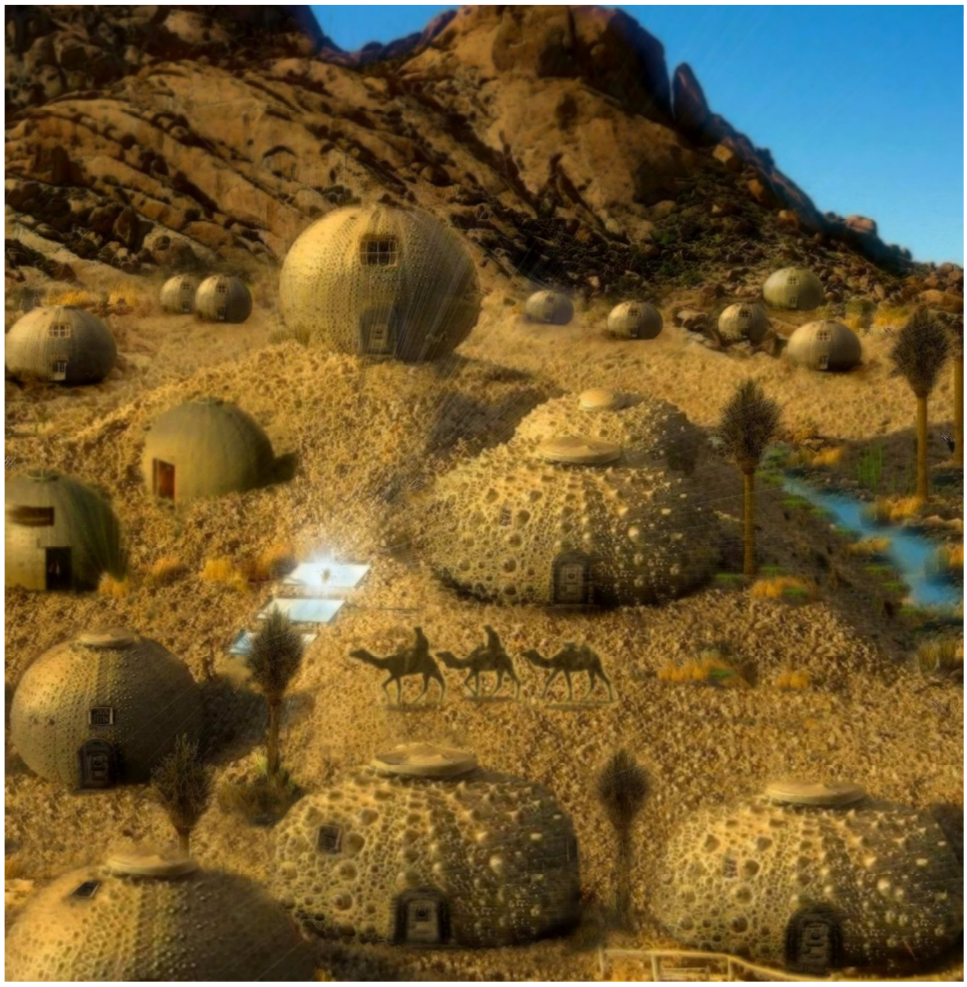

Figure5 : PERTH 2121.

cultivation of Balga, a type of grass-tree adapted perfectly to dryAustralian environs. The Balga can supply the practiced cultivator with all manner of products and services. The resin for instance can be used as an adhesive in tool-making, the floral nectar provides for a sweet drink, and the floral spike can make a great fishing spear. For strength, as well as decorative appeal, the dwellings are biomorphic, these ones being inspired by the skeletons of local Sea Urchins.

Alive, Sea Urchins are covered with an array of formidable spines. But when desiccated and denuded, the striking radial structure of the sea urchin is exposed. With warm contaminated seas lapping at the future Western Australian coast, there may be plenty of sea urchin skeletons lying around to serve as inspiration for the sturdy structure of the mud huts.

As for transportation, the Post-Oil age in Western Australia will allow the reemergence of a once popular form of Australian Desert transport, the camel. Currently there are three-quartersof a million camels in the Australian outback. Camels were imported to Australia in the 19th century from Arabia for transport and heavy work in the rural areas. But when the internal combustion engine came along and they were no longer needed and several thousand were released into the wild. By 2121AD, after Peak Oil, it will be time to enlist camel-power once again for both eco-friendly transport and for heavy-lifting. Adorned with solar panels to power all manner of electronics, as well as cooling and heating devices, camel transportation will be organic and sustainable but not technophobic.

Nowadays, camels are currently employed by Governments in desert regions around the world. In modern day Africa and Asia,

they transport materials and medicines, they are used for security and policing operations, and they are used for food distribution (Knoll and Burger, eds, 2012; Gauthier-Pilters and Dagg, 1981). In Perth 2121, caravans and squads of camels will take on these roles and more, acting as mobile libraries and schools, health clinics and markets, and stock exchanges and security systems. Many will also serve as free-service taxis, transporting passengers of all mobility-levels to friends and facilities around to the non-contaminated areas of Western Australia.

Conclusions

One person's vision of utopia may well be another person's vision of hell (as noted, for example, by Bloch, 2000; Carrey, 2000; Dehaene and De Cauter, 2008; Levitas, 2010; Halpin, 2011; Segal, 2012). If you are loathe to lose your car (laboring under the idea that it provides you with security, convenience, and freedom, or that you just absolutely need it to get to work or take the kids to school) it is likely Abu Dhabi 2121, Sao Paulo 2121, Denver 2121 etc., will not be of much value to you. And this attitude is, for sure, extensive across the world; supported and bolstered within economics and culture by governments and the auto industry.

However, a utopian society—as it is brought into being or evolves over time—acts to change or revolt against the dominant economy and culture, encouraging each and every person (over some period of time) to learn and adapt to the new or evolving utopian form.For example, an evolving ecotopian city will offer citizens a chance to pursue other forms of freedom beyond the superficial freedom of mobility that a car pretends to offer. Citizens can thus teach themselves (as individuals, as communities, and as societies) to be happy—even happier—without cars.

Despite insistence by car-lovers and by the car industry, cars are not universally loved. This is especially the case for those who cannot afford or cannot operate cars. Cars create a strongly-divided society. Those people with a car in a car-dependent city exert great physical power, on a daily basis, over those who do not have a car—threatening them with injury, risking their safety, cutting off their options to walk or cycle freely, and poisoning the air they breathe.

The car-free cities imagined above aim to break down these divisions and redistribute convenience and safety and health and quality-of-life more fairly; positively improving the happiness of less-mobile citizens. Young children, and the immobile-aged, as well as single-parents of infants, students, the disabled, the poor and low-paid, and the unemployed--all will feel stronger and happier if they can more equitably travel around their own cities without having to suffer the degradations thrust upon them by cars.

The environmental effect of car-free cities is also positive, at least in principle. In the Abu Dhabi, San Diego and Perth of 2121, nearby natural coastal ecosystems can re-emerge to be healthier and grow over and around the abandoned infrastructure of highways and motorways that once dominated these cities. The air will be cleaner and healthier, too, and water and land pollution will likely decrease in a profound way. In Sao Paulo 2121 and Denver 2121, ecofriendly urban agriculture both within, and just outside, the residential areas, can be fostered and developed thereby cutting the ecological cost of long-distance transport and also enabling people to be nearer to the various benefits of the countryside.

The designs collected above highlight different social, technological and environmental experiences that are likely to confound future peoples in urban settings. But are these five varying expressions of ecotopia really meant to be earnest and serious or are they mere satire and speculation? Are they asking for us to identify a specific car-free future for a specified city or are they just showing-up the short-comings of the public policies and social practices of today in order to warn us of where we are heading?

Because this paper involves art as well as scholarship, I'm inclined to let readers answer these questions for themselves. However, I'm also inclined to suggest that the visions presented above reflect varying versions of utopia (one of which may or may not be dystopia). It's possible that the five scenarios above could well be interpreted formally as distinct visions for distinct cities. But equally possible, they can be interpreted together as a montage of an unspecified future city that combines various characteristics of each. Maybe, even, every city in the world in 2121 will exhibit a few of the features that appear above; perhaps subtly, perhaps dramatically.

References

Adams, J. 1999 The Social Implications of Hypermobility, project on Environmentally Sustainable Transport: The Economic and Social Impications of Sustainable Transportation: **Proceedings from the Ottawa Workshop**. OECD: Paris.

Aizawa, M. et al, 2007. Seaweed Bioethanol Production in Japan: the Ocean Sunrise Project, in **Proceedings of the IEEE Oceans 2007 Conference** Vancouver.

Allen, L. 2009. "Dark side of the Dubai dream"**BBC Panorama**. 6 April 2009.

Arenas, F. 2003. **Utopias of Otherness: Nationhood and Subjectivity in Portugal and Brazil**. University of Minnesota Press, Minn.

Bang, J.M. 2005. **Ecovillages: A Practical Guide to Sustainable Communities** New Society Publishers.

Bedell, G. 2010. BurjKhalifa—A Bleak Symbol of Dubai's Era of Bling, **The Observer**, Jan 10th issue

Billings, A.C. 2008. **Olympic Media: Inside the Biggest Show on Television Olympic.** NewYork:Madison.

Black, W.R. 2010. **Sustainable Transportation: Problems and Solutions**. New York: The Guilford Press.

Bloch, E. 2000. **The Spirit of Utopia** CA: Stanford University Press.

Bruton, T. et *a*l 2009. **A Review of the Potential of Marine Algae and a Biofuel Source in Ireland** Sustainable Energy Ireland.

Bryld, E. (2003) Potentials, problems, and policy implications for urban agriculture in developing countries, **Agriculture and Human Values**. 10(1): 79-86.

Cockrell-King, J. 2012 **Food and the City: Urban Agriculture and the New Food Revolution**. Prometheus Books.

Callenbach, E. 1975. **Ecotopia**. Banyan Tree Books, Berkeley California, USA.

Carrey, J. 2000. **The Faber Book of Utopias** Faber: London.

Church, J.A. et al. 2001. 'Changes in sea level', in J.T. Houghton *et al*. (eds), *Climate Change 2001* **The Scientific Basi**, Contribution of Working Group I to theThird Assessment Report of the Intergovernmental Panel on Climate Change, Cambridge University Press, pp. 639–693.

Cleays, G. 2011. **Searching For Utopia: The History of an Idea**, Thames and Hudson.

Crawford, J.M. 2009. **Car Free Design Manual** International Books.

Cugurullo, F. 2013 The Business of Utopia: Estidama and the Roadto the Sustainable City, **Utopian Studies**. 24(1):66-88.

DeGeus,M .1999. **Ecological Utopias: Envisioning the Sustainable Society**. International Books Netherland:Utrecht,

Dehaene, M and De Cauter, L. 2008. **Heterotopia and the City**. Routledge: UK

Freund, P. and Martin, G. 2005 Driving South: the Globalization of Auto Consumption and Its Social Organization of Space, in **Environmental Sociology: From Analysis to Action** (L King *et al*,eds), Rowman and Littlefield, pp226-239

Gauthier-Pilters, H. and Dagg, A-I. 1981. **The Camel: Its Evolution, Ecology, Behavior, and Relationship to Man** Univ' of Chicago Press.

Gold, J.R. and Gold, M.M., eds, 2010. **Olympic Cities: City Agendas, Planning, and the World's Games** 1896 – 2016, Routledge.

Gossling, S. *et al*, eds, **Sustainable Tourism Futures: Perspectives on Systems, Restructuring and Innovations,** Routledge.

Greer, J.M. 2013. **Not theFutureWeOrdered: The Psychology of Peak Oil and the Myth of Eternal Progress** KarnacBooks.

Grierson, D. 2007. Arcology and Arcosanti: Toward a Sustainable Built Environment, **Global Environment: Policies and Problems** Atlantic Books, p194-199

Halpin, T. 2001. Utopianism and Education: The Legacy of Thomas More British **Journal of Educational Studies.** 49**(**3): 299–315.

Hoffman, A 2010. Dubai's BurjKhalifa, **The Globe and Mail,** Jan 04, 2010 edition.

Human Rights Watch. 2006. **Building Towers: Cheating Workers: Exploitation of Migrant Construction Workers in the United Arab Emirates** HRW: NY

ICLEA.2013. **Eco-mobility World Festival 2013: One Neighborhood, One Month**, No Cars. ICLEA and UN Habitat.

Intergovernmental Panel on Climate Change. 2007.**Synthesis Report: Contribution of Working Groups I, II, and III to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change**. Cambridge: Cambridge University Press

Jackson, H. and K. Svenson 2002. **Ecovillage Living: Restoring the Earth and Her People** Green Books.

Karakiewcz, J. 2005. The City and the Mega-structure, in N. Dempsey, **Future Forms and Design for Sustainable Cities**, pp137-152

Karamichas, J 2013. **The Olympic Games and the Environment** Palgrave Macmillan.

Knoll, E-M.and Burger, P 2012. **Camels in Asia and North Africa: Interdisciplinary perspectives on their significance in past and presen**, Austrian Academy of Sciences Press.

Lederwasch, A. 2012. Scenario Art: A New Futures Method that Uses Art to Support Decision-Making for Sustainable Development, **Journal of Futures Studies**. 17(1): 25-40

Lenskyj, H.J. 2008. **Olympic Industry Resistance: Challenging Olympic Power and Propagand**, SUNY Press.

Mangun, J.A. and Dyreson, M., eds, 2013. **Olympic Legacies: Intended and Unintended** Routledge.

Marius, T 1999. **Thomas More: A Biography**, Harvard Univ. Press, Cambridge MA.

More, T. 1515. **Utopia**. Reprinted in 1982 by Penguin Books, Harmondsworth, UK.

Preuss, H. 2006 **The Economics of Staging the Olympics**. Edward Elgar Publ.

Salahuddin B. 2006. **The Marine Environmental Impacts of Artificial Island Construction, Dubai.**UAE [dissertation].Duke University.

SamaraiMA,and Qudah LM. 2007. Planning Sustainable Mega Projects in *UAE*. **World Housing Congress 2007: Affordable Quality Housing***; 2007* Jul 1-5; Malaysia. p.1-20.

Sanderson, E.W. 2013. **Terra Nova: The New World After Oil, Cars and Suburbs** Abrams.

Seba, J. 2011**. Ecotourism and Sustainable Tourism: New Perspectives and Studies**. Apple Academic Press.

Segal, H.P. 2012. **Utopias: A Brief History from Ancient Writings to Virtual Communities**. Oxford: Wiley-Blackwell.

Shaw, C.A. 2008. **Five Ring Circus: Myths and Realities of the Olympic Games** New Society Publishers.

Sloman, L. 2006. **Car Sick: Solutions for Our Car-Addicted Culture** Green Books.

Soleri, P 2006. **Arcology: the City in the Image of Man** Cosanti Press.

Spanos, C. 2008. **Real Utopia: Participatory Society for the 21st Century**.AK Press:

Thomas, L. 2010. Dubai Opens a Tower to beat All, **NY Times** Jan 04, 2010 issue.

Watts, J 2013. Brazil protests erupt over bus fares and World Cup costs, **The Guardian**,Tuesday 18 June edn.

Worth, K.D. 2010. **Peak Oil and the Second Great Depression**. Outskirts Press.

Zachariades, T. 2011. **Cars and Carbon**, Springer: Berlin

Zoepf, K 2007. **The Abu Dhabi Experiment** The New York Observer, 10th October edn.