Chapter 7
The Rise of Automobility

Image 7.1 Family picnic, family picnic, Melbourne 1935 (Source: Museum of Victoria)

The automobile can inspire romantic accounts of speed, freedom, independence, status and excitement. Such an optimistic view is reflected in the statistics that show rising rates of car ownership over the last century, and the considerable economic and geographic change that has supported car use in that time. These perspectives might suggest that the growing popularity of the automobile was virtually undisputed during the twentieth century.

A more sinister counterview of the automobile has been posed by researchers and activists. They juxtapose the ubiquity of the car against an underbelly of global

With major input from Sarah Hinde

C. Banwell et al., *Weight of Modernity: An Intergenerational Study of the Rise of Obesity*,
DOI 10.1007/978-90-481-8957-1_7, © Springer Science+Business Media Dordrecht 2012

industrial geopolitics, social inequality, injury and death, pollution, environmental degradation and climate change. In a more personal sense, the car is implicated in the acceleration of daily life (in spite of the grinding effects of traffic congestion). Australians' heavy dependence on the motor vehicle was nominated by our Delphi experts (Banwell et al. 2005) as one of the most important trends contributing to rising rates of obesity. They explained that car reliance had displaced active transport and underpinned a range of obesogenic social trends.

Our intergenerational study allowed us to track the phenomenon of car reliance from its origins to the present day through the eyes of everyday Australians. The respondents from the Lucky Generation have borne witness to the almost the entire trajectory of the automobile's rise: although cars were first introduced before their time, private automobiles were not widely adopted until well after our Lucky Generation were born. Insights from our interviews with people across the three generations demonstrate that Australians didn't necessarily embrace the automobile as unquestioningly and enthusiastically as the contemporary situation might imply. Australia's adoption of the motor vehicle might be better described as open-minded and incremental.

7.1 Paving the Way for the Lucky Generation—Melbourne's First Decades

Because Australia was settled by British colonialists in the nineteenth century during the industrial age, the key economic drivers for its cities were manufacturing from agricultural and mining inputs, public utilities and suburban development. Transport, communication and the requirements of industry were therefore central concerns for urban planners. The development of land, housing and services—and therefore a labour supply—was promoted in close proximity to where factories were built (Davison 1978; Forster 1999).

The inner suburbs of Melbourne began as unattractive landscapes. They were flat, swampy, and prone to flooding. The rivers were used for waste disposal. These unpleasant spaces were deemed worthy only of factories and the homes of factory workers. The industrial activity made the areas even more offensive, fostering social and health problems such as poverty, pollution, injuries and labour disputes (Davison 1978). By the 1880s, "the inner core of working-class suburbs had become a region synonymous in public estimation with dirt, disease and poverty" (Davison 1978, p. 150). Clear geographical inequalities and class divisions had already clearly emerged in the Melbourne landscape.

British town planning values about the health benefits of escaping the dirt, disease and poverty of city life underpinned a fervour for suburbanisation. Suburbs offered hope for a happy, peaceful existence in clean, friendly surrounds. Melbourne's skilled workforce was the first to realise this dream of detached housing away from the urban core, and they led the way to new suburban frontiers (Davison 1978).

Railway lines were deployed for their symbolic and practical support of commercial pursuits. Rail was viewed as a guarantee of successful suburb development and tracks were constructed. The government introduced the so-called 'Octopus' Railway Act in 1883, which facilitated the installation of 900 miles of track the following year and ongoing construction in subsequent years (Davison 1978). At the same time, a private consortium joined with inner city municipalities to form the Tramways Trust. The tram system was built between 1886 and 1891, and displaced horse-drawn vehicles in the inner areas (Mees 2000).

Increasing residential sprawl led to a growing separation between where the labour force lived (in the outer, low-density suburbs) and where they worked (in inner city factories and commercial or administrative enterprises in the central business district) (Davison 1978). However, during the boom years of the 1880s, industry strategically shifted to outer suburbs where the labour force lived. Factory villages were established and the number of factories in the north-western sector of Melbourne quadrupled (Davison 1978).

Melbourne was the first place in Australia where automobiles were first observed driving on the roads (Knott 1994). The first commercially produced automobile in Australia was built in Fitzroy (Fredman 1975) and one of the first vehicles to be driven in Melbourne was seen at the beginning of 1897 (Tranter 2005). Still, rail remained the potent symbol of progress and prosperity. People were suspicious of the motor vehicle and nearly a half-century elapsed before the automobile was widely embraced.

7.2 Learning to Drive

As some Melbournians began to adopt the automobile, there was growing community concern about the increasing use of the car. These concerns included worry about the dangers of fast-moving vehicles and the rising number of fatalities they caused, ambivalence about the accelerating pace of life, anger about the impact of the automobile on traffic conditions, resentment towards the upper-class (the main owners and users of these ostentatious and aggravating contraptions), and dubiousness about the 'foreign' origin of automobiles, which were mostly imported from Europe (Knott 1994).

One of the Lucky Generation respondents, George, described his father's reaction to driving in a memory that captured this ambivalence.

> *He got in the car and we drove in, and he drove around the block and I was sitting with him, God it was scary, he came back, parked it, and he said "That's it, I'll never drive again. I'll keep my license, it might come in handy in an emergency. I'll keep it, but I won't drive again. I can't think fast enough—I'm used to getting on a horse, slapping it on the rump, say 'home', three miles an hour—I can't at 25 miles an hour". I always thought of that and I think that's a great philosophy.*

Around a decade after the first cars approved on Melbourne streets, the first *Motor Car Act 1909 (Victoria)* was introduced. The community concern about

motor vehicles led to a prolonged period of parliamentary debate and indecision before the legislation was passed (Tranter 2005). The Act was focused on licensing and registration of automobiles, rather than curbing or preventing their use, which might have been more attuned to community concern (Tranter 2005). Tranter (2005) argues that politicians regarded the adoption of motor vehicle as an inevitable part of 'progress.' The role of government was therefore conceived as regulatory—to facilitate what was bound to happen—rather than as an active decision-maker in the future of Melbourne's transport.

Formal acceptance of the automobile triggered industry development and began to change the urban landscape. In the second decade of the new century, plants were established in the outer western suburbs (such as Yarraville and Altona) to import and distribute petroleum products. Subsequent decades brought a huge concentration of oil refining activity in this area (City of Footscray 1984; Lack and Ford 1986). Ford and General Motors had set up vehicle assembly factories in all the Australian states except Tasmania by the 1920s (Sperritt 1987). Depression-time employment programs provided labour for road construction in the western parts of Melbourne, facilitating the influx of workers and residents to this area as industrial and residential development intensified (Lack and Ford 1986).

Although the city, its laws and economy were beginning to be transformed by the advent of the automobile, the children of the Lucky Generation continued to walk, ride a bicycle or use public transport to get themselves to and from school, to sport or social events, or to visit friends. As George described it: *cycling was a way to get around—it was the alternative to the car, because nobody had cars so the only way was to ride the bike.* Joyce commented that she either walked or cycled to school—*I don't think I was ever driven to school in my life.*

As Richard put it, walking, cycling and public transport gave them mobility and freedom which gradually diminished as the car started to take over Australian streets.

> *The bike was the form of transport I suppose. I rode a bike everywhere and so did all my mates. We used to get on the bikes and just ride. I remember once we put packs on our backs and went out and camped… for the weekend and used to ride down to Williamstown to watch the car racing on the air strip down there [and] across to Coburg lake to have a swim. So mainly it was things that you could reach and do on a push bike. Football in the street, cricket in the street… Yeah, all the kids played on the streets. Can't do it these days [because of] traffic.*

In his teenage years Richard used to walk for an hour to attend dances twice a week, where he would dance all night and then walk another hour to get home. He would *not think twice* about taking a long tram ride to see the big bands in St Kilda. To get to dances or parties further away from home, the Lucky Generation used multiple modes of transport, such as a bus and train. However, their transport plans did not always work out, as Charles remembered.

> *I can remember a party out at … a market garden and apricot orchards where we had friends. So we went out there and we were going to leave and catch the last bus into Essendon to catch the train and tram home … We missed the bus at [the market garden], walked into Essendon, missed the train from there, walked into town, walked from town down to [home]. You wouldn't do it these days.*

Joyce recalled walking to visit her cousins. She felt that the concept of a long walk has changed over time, and that during her childhood people were willing to walk longer distances. She said *we walked a lot further in those days than we do now, didn't we?*

Transport was more problematic for parents than children. If there was no home delivery, shopping was hard work for many mothers who had to walk or cycle to the shops and carry the shopping home. Alice explained:

> *The shops were miles away. My mum had to ride a bike or just walk… The shops would have been I don't know four or five k's away. There and back and carrying.*

During World War I and the interwar period, cars were expensive due to high tariffs. In 1929, 70% of General Motor vehicle purchases were financed by instalment (Conlon and Perkins 1999). Running costs were also significant. It is estimated that, compared to today's consumers, the automobile owner in the 1920s was paying four times as much for registration, double for insurance, and petrol was six times more expensive (Knott 1994). These costs, combined with economic hardship and petrol rationing, contributed to great public demand for affordable public transport. The Melbourne and Metropolitan Tramways Board was initiated in 1919 to manage centrally all of Melbourne's trams. Ongoing investment in trains continued, and a disorganised system of bus services was evolving (Mees 2000).

This was an era when cars were often shared within extended families. Barbara described how their family used her grandmother's car before her father owned his own vehicle.

> *It was my grandmother's car that we had as a child. She lived next door and she bought the car in 1936 …. When she made other arrangements, Dad must have endeavoured to get his own. We had two or three old bombs from time to time, so that was an upgrade for our working-class family… we had family holidays in the car … due to the car.*

Whilst most families did not have a car, they may have owned or had access to other forms of transport such as a truck, motor-bike or horse and cart. Edna believed that driving a horse and cart for many years had given her "a good road sense" when it came to learning to drive a car. For Alice's family a new truck brought great time saving advantages.

> *[My parents] didn't have anything. I suppose the truck would have been [exciting] when they first got it… although we never went much in the truck… that was a big asset because before that it was horse and cart. And [the] time-saving with a truck was amazing.*

The car was adopted for limited uses—mainly for getting their fathers to work, and for visiting relatives or having a day out on the weekend. Typically, the mothers of the Lucky Generation did not drive. Richard described the excitement of purchasing one of the first cars in his family:

> *I came home with a car and [my wife's] parents were there for dinner with us and she said, 'oh whose car are you driving'. I said, 'oh it's ours'. She didn't believe me, went into a great panic, dinner got turned off. We all had to go for a drive. It was a very old ex-taxi actually, it was all I could afford but it was our car.*

This gradual acceptance and adoption of the motor vehicle led to a startling increase in the rates of car ownership and use during the 1920s. In the period 1922–28, Melbourne's population increased by 22% and motor vehicle registrations increased 255%, reaching a ratio of one car per 11 people. At this time, small motorised vehicles claimed 62% of road journeys. Over the same period, there was a steady decline in the number of tram and rail passenger journeys per head of population (Metropolitan Town Planning Commission 1929).

Still, for most of the Lucky Generation driving was not the main form of transport used—the majority of their families did not own a motorcar. Pedestrians walked down the middle of the street, and only a few cars were on the road.

As young adults, Lucky Generation men might have owned a motorbike or scooter before they progressed to owning a car. One respondent noted that she *was never interested in a boy unless they had a car*. Buying a car often coincided with having children. When Martha was married, her husband had a motorbike and installed a sidecar for the family to travel with him. She explained, *I got in first, my eldest daughter got in next and my youngest daughter got on top and that's the way we went to football*. They then progressed to a truck in about 1953, followed by a 'ute' and a car some 10 years later.

Peggy got a 1928 Chrysler a year after they were married, when they had a baby. They lived in Geelong, where there was no public transport. But still their car was not used much.

> *The children were picked up by a school bus just a few yards away and the butcher called, the baker called, the grocer called, the milkman came. There was no need for such great expeditions in a car. My husband rode a bike to work, he didn't need a car.*

Although many did not own an automobile, and those who did considered it had limited uses, in the midst of an economic depression following World War I the Australian Government felt the development of the automobile industry was crucial to stimulate Australia's economic recovery. The Australian Government pursued an agenda of establishing an Australian-owned and operated car manufacturing industry throughout the 1930s (Conlon and Perkins 1999, 2001). The business sector's reluctance to engage in such small economies of scale in Australia led to threats by the Prime Minister to establish a government-owned plant. General Motors eventually led the way with the introduction of the Holden (Conlon and Perkins 1999, 2001).

Awaiting the introduction of the Australian vehicle, consumers of the 1930s continued to purchase vehicles that had been cobbled together sometimes from ill-fitting parts that had been imported or manufactured by any of the numerous, small-scale Australian operators. Conlon and Perkins (1999) argue that the high tariffs for assembled vehicles introduced after World War I were an important factor causing the fragmentation and inefficiency of Australia's auto sector in the 1930s. Automobiles were expensive and poor quality by international standards.

A number of the Lucky Generation described their first cars as *bombs* and referred to the regular repairs and modifications that they had to perform to keep

their cars operational. A man from this generation relayed to us how his first vehicle *broke his heart*.

> *If I remember, [it was] a 1927 Chrysler. I paid £100 for it… It broke my heart as well as my pocket… The fan came off and busted up the radiator, and we drove it back from Wagga back to Parramatta and I had it by that time. It ended up I sold it for £50 to a junk yard. That was the first one. Then I had a'37 Graham. That wasn't too bright either, it had an aluminium head, and of course it cracked.*

Melbourne's transition to a more car-centric city began to occur during the early adulthood of the Lucky Generation. Despite the fact that cars were expensive and poor quality, vehicle ownership rates rose and peaked in 1939 at one car per four families, before declining again during World War II (Sperritt 1987). Measures such as permits and petrol rationing curbed the uptake of the automobile during World War II (Davison 2004), and car use rates dropped to levels similar to those observed over a decade earlier in the late 1920s (Sperritt 1987).

As Charles described, *not many places had cars… so it wasn't used for daily types of thing*. Families who did not have a garage next to their house might garage their car some way away. Petrol rationing during the war also limited car use. Consequently, the Lucky Generation's experience of cars was associated with special occasions. Kevin described how his father would save up petrol ration coupons during World War II so the family could go away on holidays:

> *There was petrol rationing then and [my father's] father had a car and … we used to borrow it for holidays and occasionally for some special occasion… he hoarded the ration coupons so we could get enough petrol to go on holidays and we always kept a few drums of petrol … They were sort of tucked away in a corner of the garden out of the way so they wouldn't be a fire risk. So that was the kind of thing you had to do during the war to have enough petrol to drive.*

Some of the Lucky Generation talked about the experience of becoming a car user, and how the car became a necessity. Edna didn't enjoy driving, saying *I only drove because I had to. I won't say I loved it but it was a necessary thing*. Barbara first learnt to drive when her children were very young *only for emergencies* but once she became competent at driving, she said, *you couldn't keep me home then*. Joyce also referred to the car as becoming *a necessity of life*. For many of the women of the Lucky Generation the car also represented independence (Davison 2004). This independence operated in a practical or material way rather than symbolically, which is the pitch of contemporary car marketing. It meant that women could shop more easily and take children to appointments.

For some men, 'working' on the car and bike was a hobby. As Joyce told us, her husband had a car when they first met.

> *His pride and joy: his Citroen. It ended up on my finger. He sold it when we got engaged. He and all his mates messed around with bombs of cars for years, you know, and he'd just bought this Citroen when I met him.*

There was a symbiosis between cars, life events and the lifecourse which helped to weave the automobile into the fabric of people's lives. Joyce described how they

had used their automobile as they gradually built their home, and eventually the car had become a fact of life for the family.

> *We were building our house and we had enough money to buy the block of land and pay to have the frame put up. Then we got married. Then we came back from our honeymoon and we decided to buy the [1934] Plymouth because each week when I got my pay, [my husband] worked Saturday mornings but I didn't, so I'd take the car up to the local joinery and spend my pay in weatherboards. Bring them home to mum and dad's, and prime them. Then Sunday morning we'd go up and nail them on. That went on for weeks and weeks and weeks… Then we've sort of had a series of cars since then over the years, because it gets so that it's a necessity of life. As a matter of fact we both have a car now, but I haven't driven mine for about three years.*

The car could offer excitement and pleasure, save time and effort, and offered a means for reaching destinations outside of walking distance or places where public transport did not go. At the same time, concerted efforts by lawmakers, government and industry meant that Australia's cities were increasingly shaped by the automobile. The distinct usefulness of the motor vehicle became increasingly apparent as public transport systems were poorly planned, while public and private investment in the automobile continued to expand.

By the time the Lucky Generation became parents, the motorcar had taken root in Australian cities. Their children—the Baby Boomers—grew up in an environment where the car was a common feature. During their lives, there were always cars on the road, cities were sprawling, and new car-reliant cultural and economic activities emerged.

7.3 Baby Boomers—The Car Consumers

The years after World War II brought a growing focus on the automobile in Australia. The congestion of public transport and general material deprivation during wartime seems likely to have predisposed Melbourne residents to adoption of the automobile (Davison 2004) once austerity eased. Although cars were not a necessity during the 1950s, the comfort and convenience they provided was soon embraced by the public (Lees and Senyard 1987).

As the public were feeling appreciative of the merits of car travel, the government, industry and city planners were also throwing their support behind this transport mode. These decades after World War II were characterised by the concentration of auto-related industry, removal of government taxes and regulations, and the active incorporation of the automobile into cultural events and settings. A dramatic transformation of the urban environment began, with the demolition of residential and green space to install freeways and large-scale car parks.

Mass production of the automobile began after World War II. With prompting from the Federal Government, various companies announced plans to produce Australian vehicle, but the most significant entrant to the car market was the Holden, manufactured by General Motors in Adelaide and Melbourne (Davison 2004).

Oil refining also accelerated during this time. For example, Petrochemical Refineries Australia established in Altona in 1949 and over the ensuing decade grew into a large oil processing complex (Lack and Ford 1986).

Changes to Australian Government policy also facilitated the uptake of the motor vehicle. In 1949, the Labor government was compelled by a successful court appeal to lift import regulations on cars, thus permitting an influx of vehicles from other markets (Davison 2004). In 1950, petrol rationing was abolished and by that stage, a General Motors Holden survey suggested ownership was already as high as 50% (Davison 2004). Although cars became a more common household possession during the post-war decades, for those respondents whose families did manage to acquire a car at this time, it was considered a big occasion because, as Doris explained, *not everyone had cars*.

Despite the growing popularity of the automobile, the significant costs of purchasing a car may account for the class and gender differences in adoption of the automobile at this time. One in three professional and managerial males owned a car; one in five white collar workers; one in ten semi-skilled and unskilled workers; and just one in 20 women (Davison 2004, pp. 13–14). Baby Boomer Patricia, who lived in a rural area, commented on the class differences of car ownership:

> *We were in a very small country town, and there were lots of quite poor people, and lots of people didn't have a car. And only two people had a TV and we were one of them… [and] we did have a car.*

Families tended to have one car, which the husband would use to travel to and from work. When wives had a driver's license, they might occasionally access the car in order to do the shopping or take children to appointments. Joyce's husband would usually drive the car to work *because where he worked public transport wasn't readily accessible*. But she said that *if I absolutely had to have the car for any reason*, such as taking the kids to an appointment, *I'd drive him to work and then go back and get him in the evening*. Other mothers did not drive and it was rare that children were driven to school or other activities.

In Michelle's family, her mother didn't drive and *dad had use of the car for his own purposes*. On weekends, Michelle said her family may have occasionally used the car to go for a picnic but generally *he wasn't a person who drove us around, like even to get to youth group and stuff. It would be a rare occasion*. It was a similar experience in Leanne's family:

> *My mother never drove so we would walk to school; walk to do the grocery shopping that sort of thing… I don't think [the family used the car] a great deal during the week when we were young. [My father] would use it for work. He would drop me at the bus stop when I went to secondary school. Church on Sunday, visiting our grandparents, family, weekend family activities, little athletics, things like that… I would catch the bus after school to the training oval [for little athletics].*

By the 1960s, car ownership was no longer seen as a luxury and had become viewed as a necessity for business and families (Davis 1980). Cars became important objects in the family. Family portraits around this time were often taken in front of the family car. The car fostered social change by facilitating access to a wider

range of leisure activities, including the Sunday family drive (which displaced the weekly trip to church), shifts in youth culture, changes in the daily lives of women, a growing appreciation and investment in the aesthetic qualities of the motor vehicle (Davison 2004).

The car also became the centrepiece of new popular cultural events. Drive-in cinemas appeared in the suburbs (Lack and Ford 1986). In 1946, a speedway opened at Maribyrnong, accommodating 8,000 spectators who came to watch Australians compete with other countries in dirt bike races (Lack and Ford 1986). When Melbourne hosted the Olympics in 1956, a Grand Prix race was held at Albert Park (Davison 2004). These events caused conflict in the community between those in favour, and those who objected to the ill-effects such as noise, pollution and crowds—indeed, such events continue to cause controversy (Tranter 2003).

During the 1960s, Melbourne's urban landscape also changed dramatically to accommodate the car. Lack and Ford (1986) describe the changing local environments, as services such as petrol garages began to appear. The petrochemical complex in Altona expanded, prompting further private and government investment in housing, and the western suburbs grew. At this time, houses and land were demolished for the construction of the Tullamarine Freeway, Princes Highway and Western Highway.

Another way in which the geography of Melbourne was transforming during the 1960s was the increasingly apparent class divisions between suburbs. The inner suburbs began to be 'gentrified' as the 'slums' were demolished for high-rise public housing, and low-income residents were displaced by wealthy young people who bought and renovated houses in the area (Birch 2003; Logan 1985; Sandercock 1990). There was growing recognition of the disadvantage accumulating in the western suburbs, giving rise to a 'Deprived West' social movement in the 1970s (Lack and Ford 1986; Sandercock 1990).

Even as the motor vehicle was transforming the landscape, economy and culture, not everyone could own a car and class divisions in car ownership were persisting. Not only did people need sufficient financial resources to acquire a car, but also enough proficiency in English to pass a driving test (Lack and Ford 1986). Families living in outer suburbs had relatively limited access to services and opportunities, due both to distance and having fewer transport options compared to those in the inner areas of Melbourne.

Still, the growing dominance of the automobile had not fully filtered down to the transport experiences of children during this era. The Baby Boomer respondents described their childhood transport habits and many explained that they walked to primary school. Elizabeth said that during her primary school years, *we'd walk, just walk, without our parents, just local neighbourhood kids, we'd all just walk in a group*.

As teenagers, the majority of the Baby Boomer generation caught the bus to and from high school, and some caught the train or cycled. Only two participants said they were driven to school, but this did not happen all the time so they also used

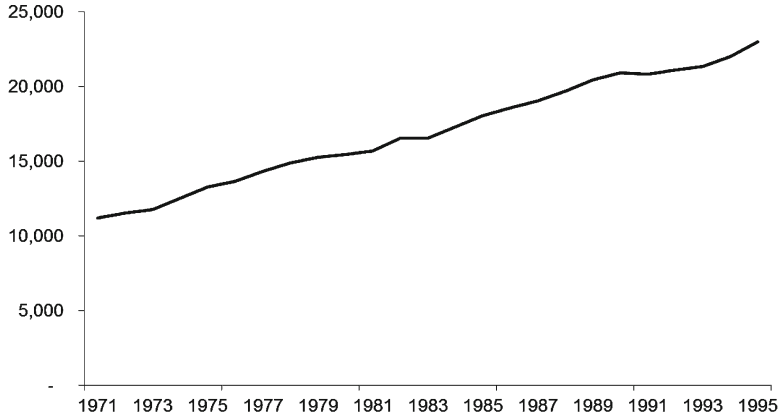

Fig. 7.1 Urban passenger vehicle-kilometre estimates 1971–1995, Melbourne (Source: Bureau of Transport and Resource Economics 1998)

public transport. Elizabeth *either walked or rode a push bike, so [I] didn't get driven like [children] these days*. Laura recalled:

> *[When I was at] primary school, my mother walked me [to school]. It wasn't that far, it was just crossing a main road, so she walked me. It was probably only a seven minute walk. High school, that was much further away but it was zoned so you didn't get a choice where you went. So I caught the bus. And when I didn't spend my bus money, I [also] caught it home. Otherwise I walked home, like all teenagers would have done, scoffing lollies.*

The Baby Boomers generally walked or cycled to travel to out-of-school activities, such as sport or socialising with friends, just as their parent's generation had done. Peter said *it was bike up to scouts, bike off to tennis*.

However, as the Baby Boomers entered adulthood cars came to be used more routinely. Support and planning for public transport systems declined further, and the car virtually displaced the other modes for most parts of Melbourne, except the innermost suburbs (Mees 2000). Figure 7.1 illustrates the growth in car use in Melbourne, as measured by the number of vehicle-kilometres travelled each year for the three decades from 1970. The chart shows a steady rise in the distances Melbourne cars were travelling during those decades.

The auto industry was expanding and prospering during these decades, which further encouraged the rapid adoption of the automobile. By 1984, the petrochemical refinery at Yarraville was expanded to cover 48 acres, employing 250 people and processing two billion litres of refined product per annum: "one of the largest throughputs of any oil terminal in the Southern Hemisphere" (City of Footscray 1984, p. 40). That same year, the 'Button Plan' was introduced, which reduced tariffs to improve the economies of scale in the Australian market and increase sales of motor vehicles (Conlon and Perkins 1999). By the time the Button Plan wound up in the early 1990s, the auto sector was the biggest manufacturing industry in

Australia—accounting for 25% of GDP, and employing 162,000 people directly or indirectly, as well as being a significant end-user of other Australian production (MacKenzie 1990).

When Jeff Kennett's Victorian state government was elected in 1992, it inherited its predecessor's plans for the construction of new freeways and city bypasses. A $A1 billion construction project (which ended up costing $A2 billion) was outsourced to a private company and became "the world's largest privately constructed, privately owned and privately operated toll road" (Davison 2004, p. 246).

Notably, these road plans did not provoke as much resistance as the freeway proposals in the road building heyday of the 1960s and 1970s. Davison (1996) suggests this is because there would be relatively minor disruption to inner city homes, where other environmental and political issues were felt to be more pressing: "now the gentry drive their Range Rovers to Gippsland to save trees, rather than walking to Clifton Hill to save inner-city terraces" (Davison 1996, p. 23). Moreover, the tolls for the new freeways were mostly incurred by Labor electorates. Consequently, the new freeways "pitted car-driving working-class battlers from the outer suburbs against cycling yuppies from the inner city" (Davison 2004, p. 254).

While road construction and car sales were flourishing, public transport systems continued to languish under poor planning and management and inadequate investment (Mees 2000). The 1996 'Transporting Melbourne' strategy recommended the separation and privatisation of train, tram and bus services (Mees 2000). The government predicted that privatisation would improve service levels, patronage and profitability, but this was not achieved (Mees 2005).

7.4 Life Without the Car Becomes Unimaginable

At the end of the twentieth century, Australia's Bureau of Transport Economics (Bureau of Transport Economics 1998) projected that Australian car ownership rates would plateau at an assumed 'saturation' rate of 520 per thousand people by 2014. This supposed 'saturation' was exceeded almost straight away. By 2005, there were over 680 vehicles per thousand people in Australia and, in 2010, that number was over 720 (Australian Bureau of Statistics 2010).

These trends in growing car sales have not been limited to Australia. In the United States, car ownership rates have begun to exceed the number of licensed drivers. Market research suggests that families are accruing multiple cars to fulfil different social purposes: the 'date' car for special occasions; utility vehicles to collect items from the hardware shop; four-wheel drives for holidays; minivans for chauffeuring children; and a fuel-efficient vehicle for commuting (Naughton 2003).

Despite their many car-free childhood experiences, at the time of interview the great majority of our Baby Boomer respondents said that they could not imagine life without a car and that life would be *much, much harder* and *so unworkable*. The car is essential for these Baby Boomer parents to ferry children to school and other activities, shopping, and above all to get between home and the paid workplace.

The car offered not only a means to travel to important destinations, but—perhaps more crucially—it is considered the optimal mode of transport for the efficient scheduling of multiple activities into the day. As Karen explained:

> *Things are not direct and you would have no flexibility. Like tonight, when I finish work, I want to drive to another campus and go to a Pilates class. I wouldn't be able to do that! I wouldn't be able to pick up shopping. I don't think I could imagine it. It wouldn't be efficient.*

Another interviewee, Michelle, expressed a similar view about the necessity of the car for orchestrating multiple activities:

> *I wouldn't be able to fit nearly as much into a day as I do now because every single moment of my day is pretty much taken up these days. So I have to kind of finish here [at the interview], race home and then see private clients, and my daughter doesn't have a car, so I have sometimes to go and pick her up from work if she's working. Shopping—the car gets pretty constant use. So I wouldn't be able to fit all of that stuff in.*

The car was described as a time-saving device; indeed it was nominated by a few respondents as their favourite labour-saving device. As Catherine explained, *if you didn't have the car you wouldn't be able to do half the things you do. So the car is the best time saving device*. Respondents said that the car saves them time and effort because driving allows for more activities in a given period of time. Such car reliance is partly due to the relative paucity of fast public transport options. John explained:

> *There's public transport not too far from us. We could get by but we'd have to rearrange enormously and set a lot more time aside for that travel you know, an extra hour here and an extra hour there.*

When prompted to consider exactly how life might change if the car was no longer an option for them, some conceded that it might be possible with greater organisation, although many felt the journey to work would be particularly difficult without a motor vehicle. Julie described the logistical implications of what it would mean to be car-free:

> *If I didn't have my car … I can organise to have my [golf] clubs kept at one of my golf clubs and I could get a lift, like public transport. Again, I would have to organise myself and certainly allow more time, but I could still maintain golf, I could still maintain badminton. I could probably maintain yoga, but I couldn't get to work. There's no way I could get to work.*

For Belinda, not having a car would mean being less *spontaneous about getting things done,* explaining:

> *I would probably leave the [list of things to get done] until the weekend when I could get hold of the car, if we were sharing one. I'm sure I would get used to it after a while but after having a car for so long, or having two cars in one family, so as far as getting things done—it would take a lot longer.*

Belinda felt that without the car and having a young child *I wouldn't leave the house pretty much*. She thought that this situation would be like her Lucky Generation mother's situation, which she described:

> *I can remember my mum saying she didn't go out very much at all. And she didn't really socialise much at all. But that was more to do with having six children. They didn't have a*

car so for shopping and things like that they just had to wait until one partner came home and looked after the children and then you could do it on your own. But I wouldn't be getting on public transport with one baby in like a knapsack and trying to negotiate… [scream from child in background]. I think it sounds like hard work.

Other respondents, such as Nicole who lives in a semi-rural area, are very dependent on their motor vehicle because there are no other options available. Nicole recently experienced life without her car when it broke down. She also reflects on the increasing financial pressure she incurs to maintain her car, because it is so essential:

I have to use a car. My car broke down a few weeks ago, the head gasket went on it, and I was stranded. I couldn't go shopping, there is no public transport. You are totally stranded. So you have to have a car. And if you want to go and do shopping you have a 45 minute drive that way or 20-30 minute drive that way to go do shopping… [Without a car] I'd be stranded. There would be no groceries, no bills would get paid, there would be nothing. You have to have one. That makes it really hard, if you have to have it. The fuel keeps going up, you have to put it in there, you can't say 'that doesn't matter I'll catch the train for the week'. You have to have it. So when things go up, you have to cut back elsewhere.

For Peter, the consequences of not having a car would be emotional as well as practical. Racing and fixing up cars and motorbikes with his friends is a hobby and he said that relinquishing the automobile from his life:

would be like cutting off my arm… [My friends and I] just go out together and go cruising, and have a coffee together as well, because that is what we like to do. My life would be turned upside down if I didn't have a car.

Several spoke about the car's importance in terms of taking holidays, which was also a theme for the Lucky Generation. Denise noted, *when we go away on holiday, we've done a lot of trips where we've driven, and we've gone places like Central Australia*. Patricia explained: *we have our holiday property… which we drive to. I mean you can get a train and a bus, but I wouldn't do it, you'd just have to sell it. [Life] would change dramatically*, and Stephen said *we need [the car] for every second weekend, at least, to get up to the caravan… got to be able to get away*.

Although the automobile has become an essential part of the lives of most Australians, many respondents discussed their preference for minimising their car use and using alternative modes of transport. Some discussed using other forms of transport to increase their physical activity. Nicole and Belinda, who both have young children, told us how they try to walk rather than drive to achieve daily tasks, such as going to the shops, because they found it hard to dedicate specific times in the week to exercise. Nicole said *we try and walk everywhere, because I figure it's good for us.* Similarly, Gregory cycles to work:

I ride a bike to work. So that is kind of my main physical activity actually. It doesn't sound much, it is only five [kilometres] to work from here. But you know that is forty minutes a day of strenuous exercise, so I think it is quite important.

The participants who felt the least car reliant lived in the inner city of Melbourne. They had access to public transport and could walk or cycle to places they visit regularly, such as work or the shops. For example, Stephen, who cycled to work,

structured his life to minimise the travel he had to undertake during the week. Living in the inner city meant Stephen was able to cycle to work. He said *I think driving's the slowest [option], it takes me about 20 min to run, about 12 min to cycle and 35 min to walk*.

7.5 Contending with Car Dominance—Generation Y

Australian transport systems are now dominated by the automobile (Hinde and Dixon 2005; Laird and Newman 2001; Mees 2000). In 2003, there was one registered vehicle per licensed driver in Australia: 13 million cars on the road and 13 million drivers (Austroads 2005).

Adults are not the only heavy users of car transport: increasingly, children are chauffeured to school instead of walking, cycling or taking public transport. A survey of over 1,000 families from 19 Melbourne primary schools revealed that less than half of 5 and 6-year olds, and less than two thirds of 10–12 year-olds, walk or cycle to school once a week or more (Timperio et al. 2004).

Most of our Generation Y respondents embodied this trend; by 18 years of age, most of them already had a car of their own. This was often encouraged by their Baby Boomer parents, including with financial support, because it helped to diminish the amount of chauffeuring required of the Baby Boomers. For example, as each of Peter's children got old enough to drive, he and his wife lent them money to buy a car:

> *We felt if we could lend [our kids] the difference, to make up the money for a car, then they can pay us back rather than paying the bank interest. Because with their sporting interests there was an incentive to help them get cars because then we didn't have to be the taxis all the time.*

Australian cities rank among the most 'car dependent' in the world (Laird and Newman 2001). Compared to other developed countries, Australia is highly car reliant as indicated by high rates of car ownership and use, an extensive network of roads, abundant space for car parking in urban areas and very cheap fuel (Austroads 2005; Laird and Newman 2001). Unlike many European cities where public transport is the quickest way to get around, the average travel speed of Australia's urban public transport is significantly slower that motor vehicle (Laird and Newman 2001) and 80% of Australians never use public transport (Australian Bureau of Statistics 2005).

In 2005, Australia boasted over 800,000 km of road, a system that costs $A7.5 billion per year (Austroads 2005). Vehicles are becoming more fuel efficient, while low fuel taxes contribute to the provision of some of the cheapest petrol in the developed world. Unsurprisingly, the total volume of automotive fuel consumed continues to increase each year (Austroads 2005).

The Australian Government has continued to play an active role in promoting the automobile sector. Although Australia's Industry Commission in 1997 recommended gradually eliminating protectionist car manufacturing industry tariffs in

line with the rest of the nation's manufacturing, the Federal government opted to continue them until 2005 (Conlon and Perkins 1999).

When the tariff debate emerged again in 2002, the Federal Government was pressured to act in favour of the auto manufacturing industry. As articulated by Victorian Member of Parliament, The Hon Mark Birrell (2002):

> *Australia's automotive industry, which is principally headquartered and based in Victoria, is a major contributor to our national economy and Australia's skills base. I wish to use this budget debate to urge clear-cut government facilitation of car companies and automotive companies in this state… I emphasise the need for high-level advocacy of the long-term case for our efficient automotive sector.*

The Federal Liberal Government of the time, led by Prime Minister John Howard, decided the general automotive tariff would be reduced from 15 to 10% at the start of 2005, and then to 5% by 2010, with a view to rendering the sector more globally competitive. The announcement came alongside an extension of an automotive industry assistance scheme: an outlay of $A4.2 billion between 2006 and 2015. This news was received with pleasure by business leaders (Donald 2002).

The Australian Government's enthusiasm for this sector is also apparent in the numerous other interventions which facilitate ongoing car reliance. A 2003 review of financial subsidies to fossil fuel consumption and production in Australia estimated the government incurred $A6.54 billion annually through road and car parking subsidies, and lost revenue from taxes, import duties and excises (Riedy and Diesendorf 2003).

Taking into account the gradual adoption of the car in Australia, and the depth of support car transport has received, it is unsurprising that most people travel to work by motor car. More than four out of every five people who employ one mode of transport to get to work use a car. The motor vehicle share vastly outweighs the total contribution made by the other modes including public transport, walking and cycling. Only a small proportion of these car users share a vehicle: 75% of Australian workers drive; 8% are vehicle passengers (Australia Bureau of Statistics 2002).

Most Generation Y participants in our study had owned an automobile at some point in their lives, which reflects the dominance of the automobile revealed in national transport statistics. However, when talking about the reliance on the motor vehicle, the Generation Y respondents conveyed less of a sense of dependence on the car. There are at least two possible reasons why this would be so. First, they were younger and had fewer years to become habituated to being a 'driver' rather than a passenger. Second, only one Generation Y participant had a child—and parenthood was a key moment when the parents and grandparents of Gen Y had come to appreciate the car.

The Generation Ys could imagine life without a car, but agreed with the Baby Boomer participants that it would be very difficult to continue scheduling multiple tasks within constrained periods of time. As Daniel explained:

> *I don't think I'd have as much time to do as many things, 'cos if I was having to catch public transport or wait for someone to give me a lift or something like that it obviously takes up a lot more time than just being able to drive where ever you want, so yeah that would be the biggest thing.*

Sarah works at night and also feels the car is essential for her to accomplish all of her current activities:

I am so reliant on my car. I would have to catch the bus to work and wait for my mum to come and pick me up. And I wouldn't be able to go to my boyfriend's house. It would be terrible… I wouldn't be able to work as late as I do. It would take me longer to get to uni so I probably would go less, which is probably not a good thing. I would be very reliant on friends still. I was really relying on friends when I was 17.

Compared to their parents, the Generation Ys appeared to feel a greater need to have a car to see their friends and family members. As Christopher explained:

I don't have anyone within walking distance or…I suppose if I thought about it maybe I could get public transport to a few people's houses but it would be almost impossible to time frame it, catching public transport around.

Similarly, Andrew explained how the people in his life were geographically distributed, which meant he needed a car to maintain relationships with them.

I mean public transport is alright if everyone I knew, and needed to and wanted to see, kind of lived in the kind of inner suburbs, I wouldn't need a car…But once you move out of the inner suburbs it just sucks, it really does, the trains are hopeless and there's no trams and buses and some days just don't fully don't run it, it sucks… getting out to see my family that would be harder but it wouldn't be impossible.

The extent to which public transport was used varied. Like the Baby Boomers, the Gen Y participants mainly described using active transport going to the city, because of traffic and the high cost of parking. Those who used public transport generally lived in the inner suburbs of Melbourne or worked in the city, places which tend to be better served by public transport and where car use can be difficult.

The majority of Gen Ys did not feel that using public transport was an option, as it was not available where they lived, or did not go to the places where they were employed. Emma summed it up: *where I am, we're not linked in to the train line, so it means catching the bus, catch a train to get to wherever…. so I kind of do rely on the car*.

Emma felt she relied on her car as there were no direct public transport routes to her workplace, so she would have to catch a bus, and then a train, to get to work.

I could [imagine not having a car], but I just imagine it being so much harder. More time consuming more than anything… It's just the fact that it would mean getting up even earlier than I get up and just that inconvenience. And also the safety issue, even though I'm not terribly scared, it is dark when you get out in the morning… I'd have to be more disciplined in my hours at work, like the temptations to stay a bit longer… and you'd really have to plan your time better and probably cut down on the activities that you fit into your life.

It also was not considered suitable for those who worked shift work or late hours. Rebecca explained that after she acquired her driver's licence:

I drove everywhere… Very rarely I'll catch a train to the city if there's not going to be any parking… or going out for the night or something. But usually, I drive.

So it is perhaps no wonder that the collective distance travelled by Australians each year has inter-planetary dimensions! The Australian Bureau of Statistics

reported that in a 12-month period, Australia's vehicles had together travelled "the equivalent of going to Pluto and back 23 times" (Australian Bureau of Statistics 2003 media release). Australians are spending growing quantities of time accelerating across ever-increasing distances. The total kilometres travelled in Australia grew 80% in the 20 years to 1998; this rate of growth was more than double the population growth for the period (Austroads 2000).

The significant pitfalls have become abundantly clear to the Australian public, especially over the last decade. Car reliance is implicated in a range of ill-health outcomes (Kjellstrom et al. 2003; McMichael 2001). Injuries due to motor vehicle accidents remain a prominent cause of disability and death. Pollution from cars is associated with respiratory illness such as asthma. Other negative consequences include noise disturbance and community disruption. In the longer term, the contribution of the motorcar to greenhouse emissions may have far-reaching negative health impacts. A reduction in car reliance, in favour of active forms of transport such as walking, cycling and mass transport, is therefore a worthwhile objective for public health (Mason 2000a, b).

The displacement of physical activity associated with car use is considered to be a significant contributor to rising rates of obesity and many argue that transport is essential to 'activating' the population (Sallis et al. 2004). Physical activity is displaced when people use a motor vehicle instead of an active transport mode such as walking, cycling or using public transport (Mason 2000b). Even in a car-dominated transport environment, it is estimated that the physical activity gains from regular cycling would provide a net benefit to personal health that outweighs its risk of injury by a factor of 20 to 1 (Hillman 1993). Even public transport is considered more active than car commuting, with some evidence that people who travel by train take 30% more steps than automobile users (Wener and Evans 2007).

While there has been some discussion of the role of transport in physical activity levels, there has been relatively limited research to confirm and quantify this relationship. One important UK study showed that walking for transport offers the greatest quantity of high-intensity activity for children (Mackett et al. 2005). Although physical education classes at school offered slightly more intense exercise, these contributed fewer hours of activity across the week, rendering walking for transport the overall greatest source of exercise for children.

Apart from offering direct activity benefits, walking for transport also has an indirect relationship with other kinds of physical activity. In a study of physical activity in 10–13 year-old children, Mackett et al. (2005) found an interesting relationship between walking for transport and levels of physical activity:

> Children who walked to sport, rather than travelling by car, experienced greater levels of exercise intensity at those events.

Car use tends to be the most frequent mode of transport for attending structured events outside the home (e.g. organised sport), whereas children more often walked to unstructured events (e.g. playing). Unstructured events—i.e. those usually attended by walking—generally resulted in greater intensity of activity.

In our interviews with Gen Y and their parents, we found that Gen Y used a variety of transport modes during their childhood to get to and from school. Active modes of transport were more common among our respondents than the literature might suggest. During primary school the majority either walked or rode a bike and then, on entering high school which was usually farther from home, public transport was common. The mother of Gen Y children, Lisa, recalled:

> *As soon as [my kids] went to secondary school they had to travel for an hour on public transport to go to school. Prior to that, they were at the local primary school, so they walked.*

When it came to getting to and from sports, or other out-of-school activities, the parents of Gen Y drove them—and often long distances. Although Lisa did not drive her children to school, she and her husband spent a lot of time driving their children to social events:

> *But [my kids are] incredibly committed to the cross-suburbs [friendships]… partly because of what schools they went to. They travelled quite far to school… You could send your kid an hour-and-a-half away for school and people are sending their kids an hour-and-a-half away from other directions. I think the last party we drove [my son] to was an hour-and-a-half drive, dropped him and his mates off, came home and then sat for an hour and then drove out to pick them up again, so it's the nature of where we send them to school.*

Baby Boomer Peter also talked about how his children's sporting commitments required a lot of driving, and that these demands increased as the children grew older:

> *They were being taken around by us, until they were old enough to have cars, then they took themselves. They had bikes for going to school; they went to school on bikes. But that was about it, the novelty wore off for going any further afield [laughter]. And with their athletics they couldn't, it was too far and wrong times of the day. It was 8.30 on a Saturday morning and it was way over in bloody Burwood. And parents had to be helping out anyway… And the time pressures got tighter too. It was: leap up in the morning, belt them over to little athletics, get home by such and such a time because you were playing soccer in the afternoon. There probably wouldn't have been time for them to ride home and get changed any way. So it became a convenience thing as well. And a safety thing as well. Society changed a bit as well… you know where they are, you're having time with them, and helping them out, and they are not coming to any harm.*

Sandra's car reliance decreased as her Gen Y children grew up and her time was no longer as committed to driving them around.

> *I guess I do more walking now, I mean during the day I do more walking, because I don't have to look after the children and do things, you know. … I had to save time and drive to wherever you picked them up … It is easier not having the children… I guess the time constraints are not so rigorous. I mean, when the children were at home, you sort of meant to have dinner at a fairly reasonable hour and be a bit more organised … running around, things to do for them.*

In a survey of over 10,000 people, Frank (2004) demonstrated that daily time spent in the motor vehicle is correlated with risk of being overweight or obese. For every hour spent in the motor vehicle, the risk of obesity increased by 6%.

Disturbingly, time spent in the car ranged up to more than 5 h per day for a small number of participants, translating to a 30% increase in risk of obesity for those people. Another survey revealed that active transport is less common amongst people who are overweight, than those who are not (Gordon-Larsen et al. 2005).

While the acquisition of a car might reduce the time that Baby Boomer parents spend driving, a number of Gen Y respondents told us that buying a car has led to a rapid decline in their use of active transport. For example, Christopher told us that he got his car the day he turned 18 and that his bicycle *hasn't been touched since*.

The Lucky Generation reflected rather negatively on today's car dependence; one participant saying *it's sad really*. In contrast to the two younger generations, the Lucky Generation were not as car reliant over their lifecourse. Although most of them still owned a car when we interviewed them, they described the amount of driving they did as having decreased to the point that they rarely needed to drive. Irene said:

> *I just gave [my car] up last year. I was just using the car less and less. It got to the stage where I hadn't used it for a couple of months. I used to just use it at night for driving to church functions, then they decided they'd have the function… in the afternoon so it's easy for people to get to… and so I just found I was using it less.*

As they got older, the Lucky Generation preferred to leave the car at home when they could. They preferred walking and catching public transport, as is evident from Chap. 5 about physical activity. As Irene put it:

> *I refuse to have anyone pick me up when I'm walking to church or up the street shopping or whatever, that includes the night too. I like to walk to meetings at night. While I had the car I used to pick up people and drop people home and then when I gave up the car I just said, 'I don't want any lift home, I don't want anyone stopping to pick me up' and there's no variation. Anyone who offers I just say, 'no thank you'… Because the walking gives me more time away from the house, more of an outing. Like coming here today, for example—if someone could just drive me here and drop me off in 15 minutes, well it wouldn't be the same. I enjoy going on the train and looking around and seeing things.*

7.6 Conclusion

The introduction of the automobile was met with both excitement and ambivalence. As people became accustomed to driving and found the means to acquire and run a motor vehicle, cars gradually entered aspects of family life. The car was somewhat useful to the Lucky Generation as they grew up, started families, built homes, pursued careers, provided for their families and enjoyed leisure activities. The adoption of the automobile depended on its usefulness in helping people to achieve the usual priorities in life—family, work and recreation. At the same time, a building momentum of legislative, economic, cultural and geographic change was encouraging wider adoption of the automobile. So, while the Lucky Generation were putting the automobile to use pursuing a good life, their lives—and the lives of their offspring—were also being shaped by the advent of the automobile and its industries.

The Baby Boomers were born into a suburban lifestyle which increasingly depended on the car. Cars and traffic were an ever-present backdrop. Although their childhoods were largely car-free except for special occasions and holidays, by the time the Baby Boomers left home the car had become almost essential. The 1970s and 1980s consolidated the dominance of the automobile. Now, when asked to conceive of their lives without a car, the overwhelming message is that such a scenario would be extremely difficult, if not unimaginable. The car is essential to maintain the pace, scale and intensity of their lives.

Gen Y similarly have grown up with the constant backdrop of automobility, beginning with being chauffeured as kids, but also with the flow-on consequences of that automobility, including: the fast pace of life, traffic, and emerging concerns about peak oil, petrol prices, climate change and, more recently, economic strife. Perhaps this is why the Gen Ys have returned to the more ambivalent attitude of their grandparent's generation: accepting the positive benefits the car offers, a view which is leavened by awareness of the pitfalls of the car's dominance over ways of living.

Over the course of the entrenchment of the motor vehicle in Australian society, the people we interviewed from the Lucky Generation appear to have remained relatively unmoved by the enthusiasm that industry and government might have wished them to feel. They retained a relatively sceptical attitude towards the car, and while they are not necessarily as frightened or intimidated as their parents had been at the car's first introduction, many have gladly relinquished driving from their daily lives. For the Lucky Generation, as Chap. 5 attests, walking and not car use is associated with freedom and the good life.

Image 7.2 Cars near major shopping street, Melbourne, 2012 (Source: J. Dixon)

References

Australia Bureau of Statistics. (2002). *Census basic community profile*. Canberra: ABS.

Australian Bureau of Statistics (2003, April 8). Driving to Pluto and back: Australians drive 190 billion kilometres (Media Release Cat. No. 9208.0). Retrieved October 15, 2003.

Australian Bureau of Statistics (2005). *Sales of new motor vehicles, Australia. Table 1: New motor vehicle sales by type, All series*. Catalogue No. 9314.0.55.001 (electronic file). Canberra: Australian Bureau of Statistics.

Australian Bureau of Statistics (2010). *Motor vehicle census Australia* (Cat 9309.0). Canberra: Australian Bureau of Statistics.

Austroads. (2000). *Road facts 2000*. Sydney: Austroads Incorporated.

Austroads. (2005). *Road facts 2005*. Sydney: Austroads Incorporated.

Banwell, C., Hinde, S., Dixon, J., & Sibthorpe, B. (2005). Reflections on expert consensus: A case study of the social trends contributing to obesity. *European Journal of Public Health, 15*(6), 564–568.

Birch, T. (2003). The best TV reception in Melbourne: Fitzroy 'lowlife' and the invasion of the renovator. *Traffic, 3*, 9–29.

Birrell, M. (2002). The Australian Automotive Industry (A speech on the strength and future potential of the nation's car and automotive component industry). *Budget Papers 2002–03*. Canberra.

Bureau of Transport Economics (1998, October). *Forecasting light vehicle traffic* (Working Paper 38).

City of Footscray. (1984). *City of Footscray 125th anniversary celebrations*. Melbourne: City of Footscray.

Conlon, R., & Perkins, J. (1999). Australian governments and automotive manufacturing, 1919–1939. *Australian Journal of Politics and History, 45*(3), 376–391.

Conlon, R., & Perkins, J. (2001). *Wheels and deals: The automotive industry in twentieth-century Australia*. Aldershot: Ashgate Publishing Ltd.

Davis, P. (1980). Motoring. In *Australia in the 1960s*. New York: Rigby.

Davison, G. (1978). *The rise and fall of Marvellous Melbourne*. Melbourne: Melbourne University Press.

Davison, G. (1996). Melbourne's triple by-pass. *Arena Magazine, 22*(April–May), 19–25.

Davison, G. (2004). *Car wars: How the car won our hearts and conquered our cities*. Crows Nest: Allen and Unwin.

Donald, P. (Writer). (2002). *Tariff cuts, assistance in new car package*. Australia: ABC Radio National.

Forster, C. (1999). *Australian cities: Continuity and change*. Melbourne: Oxford University Press.

Frank, L. D. (2004). Economic determinants of urban form: Resulting trade-offs between active and sedentary forms of travel. *American Journal of Preventive Medicine, 27*(31001), 146–153.

Fredman, M. (1975). The horseless doctor—transition from horse to motor transport. *Victorian Historical Journal, 46*(1), 283–302.

Gordon-Larsen, P., Nelson, M. C., & Beam, K. (2005). Associations among active transportation, physical activity, and weight status in young adults. *Obesity Research, 13*(5), 868–875.

Hillman, M. (1993). Cycling and the promotion of health. *Policy Studies, 14*(2), 49–58.

Hinde, S., & Dixon, J. (2005). Changing the obesogenic environment: Insights from a cultural economy of car reliance. *Transportation Research Part D, 10*(1), 31–53.

Kjellstrom, T., van Kerkhoff, L., Bammer, G., & McMichael, T. (2003). Comparative assessment of transport risks—how it can contribute to health impact assessment of transport policies. *Bulletin of the World Health Organization, 81*(6), 451–457.

Knott, J. (1994). Speed, modernity and the motor car: The making of the 1909 motor traffic act in New South Wales'. *Australian Historical Studies, 26*(103), 221–241.

Lack, J., & Ford, O. (1986). *Melbourne's Western region: An introductory history*. Melbourne: Melbourne's Living Museum of the West and Melbourne Western Region Cultural Heritage Study.

Laird, P., & Newman, P. (2001). How we got here: The role of transport in the development of Australia and New Zealand. In P. Laird, P. Newman, M. Bachels, & J. Kenworthy (Eds.), *Back on track: Rethinking transport policy in Australia and New Zealand*. Sydney: UNSW Press.

Lees, S., & Senyard, J. (1987). *The 1950s: How Australia became a modern society, and everyone got a house and car*. Melbourne: Hyland House.

Logan, W. S. (1985). *The gentrification of inner Melbourne: A political geography of inner city housing*. St. Lucia: University of Queensland Press.

MacKenzie, A. (1990, July 11). Industry report: Cars. *Australian Business*, pp. 37–48.

Mackett, R. L., Lucas, L., Paskins, J., & Turbin, J. (2005). The therapeutic value of children's everyday travel. *Transportation Research Part A: Policy and Practice, 39*(2–3), 205–219.

Mason, C. (2000a). Healthy people, places and transport. *Health Promotion Journal of Australia, 10*(3), 190–196.

Mason, C. (2000b). Transport and health: En route to a healthier Australia? *Medical Journal of Australia, 172*(5), 230–232.

McMichael, T. (2001). *Human frontiers, environments and disease*. Cambridge: Cambridge University Press.

Mees, P. (2000). *A very public solution: Transport in the dispersed city*. Carlton South: Melbourne University Press.

Mees, P. (2005). Privatisation of rail and tram services in Melbourne: What went wrong? *Transport Reviews, 25*(4), 433–449.

Naughton, K. (2003). Three for the road. *Newsweek*, p. 34.

Riedy, C., & Diesendorf, M. (2003). Financial subsidies to the Australian fossil fuel industry. *Energy Policy, 31*, 125–137.

Sallis, J., Frank, L., Saelens, B., & Kraft, M. K. (2004). Active transportation and physical activity: Opportunities for collaboration on transportation and public health research. *Transportation Research Part A, 38*, 249–268.

Sandercock, L. (1990). *Property, politics, and urban planning: A history of Australian city planning, 1890–1990*. New Brunswick: Transaction Publishers.

Sperritt, P. (1987). Cars and the people. In A. Curthorys, A. W. Martin, & T. Rowse (Eds.), *Australians from 1939*. Sydney: Fairfax, Syme & Weldon Associates.

Timperio, A., Crawford, D., Telford, A., & Salmon, J. (2004). *Perceptions about the local neighborhood and walking and cycling among children preventive medicine, 38*, 39–47.

Tranter, P. (2003). Motor racing in Australia: Health damaging or health promoting? *Australian Journal of Primary Health, 9*(1), 50–58.

Tranter, K. M. (2005). The history of the Haste-Wagons': *The motor car act (1909) (Vic.), emergent technology and the call for law. *Melbourne University Law Review Association, 29*(3), 843–879.

Wener, R., & Evans, G. (2007). A morning stroll: Levels of physical activity in car and mass transit commuting. *Environment and Behavior, 39*(1), 62–74.