Anything but child's play:

Reclaiming the streets for child health and wellbeing

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A THESIS SUBMITTED TO THE FACULTY OF THE BUILT ENVIRONMENT IN PARTIAL FULFILMENT OF THE REQUIREMENTS OF THE DEGREE OF BACHELOR OF PLANNING

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ABSTRACT

The healthy development of children is beneficial for the future of society. However, there are concerns that the current generation of children is sadder, sicker and weaker than previous generations. This has been linked to sprawling suburban environments and car dependence which restrict children's physical activity. Changing perceptions that children are not as resilient as they once were and are more in need of protection are also having negative health implications. While risk aversion may protect children in the short term, the concerns for their health and well being is increasing. Many health care workers are concerned that the current generation of children may actually be the first since World War Two to die at a younger age than their parents. This thesis aims to understand the negative elements of the urban environment that result in a decline in free play and independent mobility. Specifically, it highlights the importance of parents' concerns and perceptions of the urban environment as they ultimately determine the amount of independent physical activity of young children. By better understanding parental concerns, better policy, programs and urban design can be implemented within communities to encourage a sense of safety for the healthy development of children.

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Chapter 1

Introduction

1.1 The problem statement

"In February 2007 a primary school in Lincolnshire banned pupils from playing kiss chase and tag, because of staff concerns that playtimes were becoming too rough. The prohibition has also been seen in the US, Australia, and Ireland, where in one country, half of the primary schools have banned running in playgrounds altogether" (Gill, 2007:10)

Children's lives are becoming increasingly damaged by risk aversion. As indicated with this extreme example above, it appears that society has become unable to cope with adverse situations (Gill, 2007). There is a heightened fear within Australian societies that children are at a greater risk from harm than children from previous generations. This has the result of increasing adult control and supervision and reducing independent play and mobility. The growth of adult interference in children's experiences is resulting in the minimisation of risk at the expense of child health (Gill, 2007).

Available evidence indicates that the level of children's freedom in Australia is lower than in many other Western countries (Tranter, 2006). Many Australian children have less freedom to investigate their local neighbourhoods than children living in poverty or in less affluent nations (Tranter, 2006 and Hart, 2002). Opportunities to play and experience the local area do not always improve with development. As cities develop it has the effect of further decreasing children's domains (Hart, 2002).

The shrinking domains of children are only partly a result of risk aversion. However, they are more a side effect of the broader changes that are occurring in our environments (Gill, 2007). The design of modern homes with less space for outdoor activities encourages sedentary lifestyles for children. There are also fewer adults in the home during the day as family structures are changing and parents are working longer hours. Mothers returning to the workforce mean that there are

fewer people within the neighbourhood who know children and are willing to keep and eye on them. Combined with the growth of road traffic and car dependent lifestyles there is a significant decline in children's freedom within the urban realm (Gill, 2007 and Tranter, 2006). This is adversely impacting on children's health and wellbeing. The World Health Organisation (WHO) defines health as 'a state of complete physical, mental and social wellbeing and not merely the absence of disease or infirmity' (WHO, 1948).

Gleeson (2006) believes that the evidence of changing urban environments is showing that children are getting 'fatter, sicker, sadder' than ever before. Australian studies show that while child death rates are low and life expectancy rates good, "trends in almost all other outcomes [for children] have got worse" (Gleeson, 2006:37). These include increases in asthma, diabetes, anxiety and behavioural problems.

If current trends continue it is likely that Australian children's life expectance will fall by two years by the time they have reached 20 years old. This will set them back to levels that were seen in males in 2001 and in females in 1996. The Preventative Health Taskforce state that "this is not a legacy we should be leaving for out children" (The Preventative Health Taskforce, 2008:ix). If these conditions are left unchecked, our medical care systems will find it increasingly difficult to cope. We can not wait until we get sick to address the issue, the answer lies in preventative action (Preventative Health Taskforce, 2008).

1.2 The research context

There is a clear connection between health and physical activity. Physical activity is said to be the leading health indicator for reducing most significant preventable threats to health (Transport Research Board, 2005). Some benefits of regular physical activity include:

- Reduces the risk of dying prematurely from cardiovascular diseases, such as coronary heart disease and stroke;
- Reduces the risk of developing non-insulin-dependent diabetes;
- Reduces the risk of developing high blood pressure or hypertension;

- Reduces blood pressure in those already with hypertension;
- Reduces the risk of breast cancer;
- Reduces the development of osteoarthritis and osteoporosis;
- Reduces fall-related injuries among older adults;
- Helps maintain a healthy weight and reduce overweight and obesity;
- Helps build and maintain healthy bones, muscles and joints; and
- Reduces feelings of depression and anxiety and promotes physiological wellbeing.
  (Transport Research Board, 2005).

It is recommended that children accumulate at least 30 to 60 minutes of physical activity that is appropriate to their age and ability on all or most days of the week. The activity should vary between moderate and vigorous intensity, with appropriate periods of rest and recovery to prevent injury. Children should avoid extended periods of inactivity (Transport Research Board, 2005).

Characteristics of urban environments can influence children's physical activity. Over the years there has been growing awareness and understanding of how cities, built environments and urban design can impact people's health. In particular there is an interest in the relationship between people's tendency to be active and healthy (Planning Institute of Australia, 2008). Urban environments have come under scrutiny for being potential contributors to reducing physical activity. Figure 1.1 shows the relationship between the individual and the urban environment. It indicates that the individual is located within the built environment and in a large social environment of forces that determine physical activity. It suggests that the individual is the starting point for increasing physical activity. The social environment is the neighbourhood and the societal forces that shape opportunities for physical activity and the built form has certain characteristics that either encourage or restrict the ability to undertake physical activity (Transport Research Board, 2005). It is important to understand the elements of the urban environment that restrict childhood activity in the public realm.
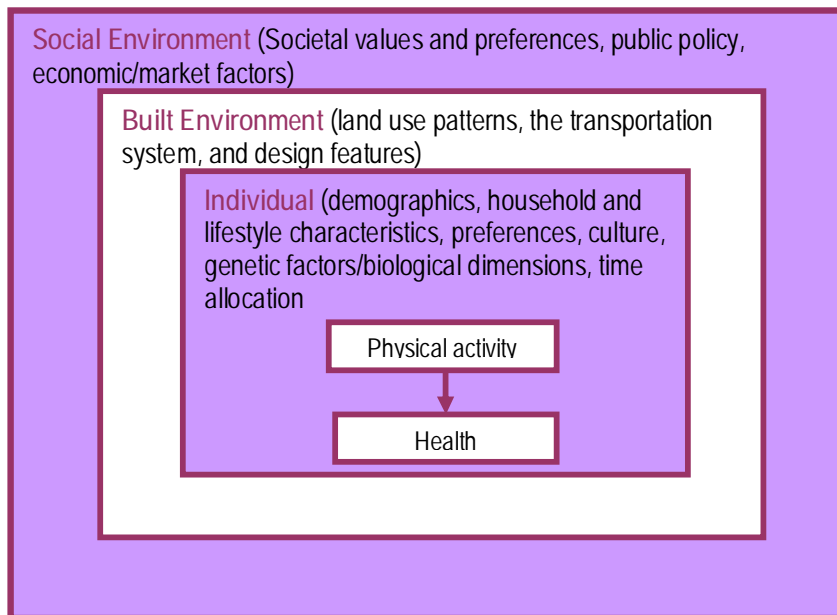
Figure 1.1

Overview of the conceptual model showing the relationship between the urban environment and health

Source: (US Transport Research Board, 2005).

Studies show that adults living in walkable neighbourhoods are more physically active. New research shows that children engage in more regular physical activity when they are able to play and walk to and from school and other destinations (Robert Wood Johnson Foundation, 2007).

Children's tendency to be physically active within their urban environments is largely determined by their social environment. Studies show that parents' perceptions of the urban environment indicate how much independent physical activity a child will participate in (Karsten and van Vliet, 2004 and 2006). Furthermore, children are five times more likely to be physically active if their parents think the neighbourhood is safe (Robert Wood Johnson Foundation, 2007).

1.3 Focus of the study

The focus of this study is based on the statement:

The urban environment is a contributor to child health and wellbeing.

In this regard, the built environment can be studied at various geographic scales from the building and site to the neighbourhood and regional levels. The focus of this study is the latter two. It will look at individual responses and actions towards physical activity and the perceptions of the urban realm that restrict children's freedom.

It is therefore fundamental to gain an understanding of the societal forces that influence children's physical activity, primarily parents. The study focuses on gaining an understanding of parents' perceptions of the urban realm and why they believe children need to be more supervised in the urban environment today than when they were children. It will involve determining what specific elements of society create fears and concerns for children and restrict them from being independent. In doing so it will be possible to make suggestions for policy, programs and urban design to create a sense of safety for children within the public realm, and therefore increase physical activity.

Physical activity refers to any bodily movement produced by the muscles that results in energy expenditure. Exercise is a subset of physical activity, defined as "planned, structured and repetitive bodily movement done to improve or maintain one or more components of physical fitness" (Department of Health and Ageing, 2008). Although most measures of physical activity focus on deliberate activity in leisure time, other forms of activity such as walking or cycling for transport or during free play are important components of overall activity. The activity associated with everyday tasks like during play and walking to school (incidental activity) contributes to health benefits. While planned exercise for children has many benefits, it is suggested that children gain more benefits from incidental activity such as in play or walking to school than in planned activities (Department of Health and Ageing, 2008). The focus for this thesis is on incidental physical activity, primarily the activity children gain through independent play and mobility in their local areas as it is suggested to be more beneficial to children than planned activities (Hart, 2002).

For this study the focus is on primary school children between the ages of five to 11. This age is critical for many important changes in social, personal and physical development. In addition, it is usually when children first start to gain some independence. Gill (2007) states that this phase generates some of the biggest debates regarding freedom, protection and responsibility.

"Yet policy makers are typically more interested in either the early years with the seductive promise of 'catching children young', or adolescence by which time problems may have become manifest but the interventions available may be too little, too late" (Gill, 2007:12).

1.4 The need for the study

Child health and wellbeing is an issue at the centre of policy making at Federal and State Government level. Policy initiatives in the area of health, productivity and social inclusion draw on the principles of early inception and prevention (Australian Institute of Health and Welfare, 2008). While the National Children's Nutrition and Physical Activity Survey 2007 indicates that nearly a third of all children do not meet physical activity guidelines, the Federal Government states that there is very little known about children's physical activity levels (Institute of Health and Welfare, 2008). Therefore, there is a need to explore children's physical activity and the barriers within the urban environment that restrict children being active.

1.5 Aims and objectives

The aim of this thesis is to understand why risk aversion and concerns for child safety are increasing. It aims to find out what parents believe is restricting their children from being able to experience freedom in the urban environment. It further aims to explore the consequences of not allowing children to have independent experiences in the urban environment. In addition, to make proposals for a more balanced approach for policy, programs and urban design of neighbourhoods that takes into consideration parents' concerns for child safety, but also the need for children to be physically active and undertake a degree of risk for their health and wellbeing. This thesis aims to determine the following:

- Whether children's physical activity levels, specifically independent play and mobility, have been declining over the past 30 years;
- What elements of the built environment are adversely impacting on child play and mobility;

- What elements of the social environment, particularly the family environment are adversely impacting on children's play and mobility; and
- Ways in which governments and planners can make improvements within the urban realm for children's physical activity and health benefits.

1.6 Structure

This thesis is structured over seven chapters. These are outlined as follows:

Chapter 1 Introduction	**Chapter 1** provides an introduction to the issue by introducing the statement of the problem, the research context, the purpose, aims and objectives of the study and the structure of the thesis.
Chapter 2 Literature Review	**Chapter 2** provides the theoretical framework which forms the basis of the thesis. This chapter focuses on the relationship between the health, physical activity, the built environment and the responsibility of planners.
Chapter 3 Literature Review	**Chapter 3** is an additional chapter providing the theoretical framework for the thesis. It presents the argument to be explored that children's social environments, particularly their parents are key determinants in children's physical activity.
Chapter 4 Methodology	**Chapter 4** provides the research methods employed for the study and explanatory notes for the thesis.
Chapter 5 Results	**Chapter 5** presents the results of the study regarding children's physical activity and parent perceptions of the urban environment
Chapter 6 Discussions	**Chapter 6** presents the results of the study and discusses what these results mean in with regards to the hypothesis and how this relates to similar research that has been conducted.
Chapter 7 Recommendations and Conclusion	**Chapter 7** provides a summary of research findings and establishes recommendations for the successful promotion of child friendly, healthy communities. This is bases on policy, programs and design that have been successful in international and local applications.

Figure 1.2 Thesis structure
(Source: Author, 2008)

Chapter 2:

Health, Physical Activity and the Urban Environment

Chapter 2

Health, Physical Activity and the Urban Environment

2.1 Introduction

In most Western countries such as Australia a baby born in the 1900s had a life expectancy of 46 years. Her great grandchild born in 1980 would look forward to seeing 74 years of life, and it has been said that the great-great grandchild born in 2003 can count on 80 years of life. For mothers in the 1900s the experience of having to bury a toddler was common, however, today the odds of survival have increased spectacularly (Gardner, 2008). Most children in Australia enjoy good health which is indicated by low and declining rates of infant death, disease and injuries. Yet, children are now experiencing new health conditions that can be accounted to low levels of physical activity and poor eating habits, such as mental health problems and long term conditions such as asthma and diabetes.

This chapter aims to provide a framework for reviewing the connection between health, the urban environment and planning. It involves a discussion of the impacts of the urban environment on child health and wellbeing. This chapter explores the ways in which urban design and planning can assist in creating healthy environments for children.

The first part of this chapter looks at the current health problems that are facing children in Australia. Of particular concern is the rising level of obesity. The second part of this chapter outlines the importance of physical activity as a leading health indicator for reducing most significant, preventable threats to health. This is particularly important for the current overweight and obesity problem, and other preventable health conditions. The third section of this chapter assesses the reasons why it is so important to increase children's physical activity. The final part of this chapter looks at the relationship between the urban environment and physical activity and the role that planners have in creating environments that encourage physical activity and healthy communities.

2.2 Current health concerns for Australian children

There is much interest in the health and wellbeing of Australian children. Children's health has been an issue of concern since the 1990s as there has been a noticeable difference between children's fitness and general wellbeing over the past two decades. Research indicates that children are getting fatter, slower and weaker than previous generations of children (Sipe et al., 2006).

The Australian Institute of Health and Welfare (2008), state that most children in Australia enjoy good health, which is indicated by low and declining rates of infant and childhood deaths, and declines in specific communicable diseases and injuries. However, there are a number of physical activity and poor eating habits, mental health problems and long term health conditions such as asthma and diabetes that children are developing (Australian Institute of Health and Welfare, 2008). Of increasing concern is the rising level of overweight and obesity that is occurring world wide and particularly in Australia. This is urging some researchers to speak of an international epidemic of obesity (Chapman et al., 2008 and Ebbing, 2002).

2.2.1 The Obesity Epidemic

According to many health professionals obesity is one of the most serious health threats facing children today. Obese children are at a much higher risk of having a lifetime of damaging health conditions. Obese children risk incurring heart disease, stroke, asthma and some forms of cancer in later life. However, they are being diagnosed with what was once considered to be adult illnesses such as type 2 diabetes and high blood pressure during childhood. The chairman of the National Obesity Forum in the United Kingdom said that obese children are two times more likely to die by the age of 50 than children of a healthier weight. Furthermore, health care workers fear that this generation of children will die at a younger age than their parents for the first time since World War II (Briscoe and Aldersey-Williams), 2008).

Statistics show that Australian children's weight is increasing. A study looking at weight changes among Australian children over three decades found that between 1985 and 1996 the prevalence

of overweight and obesity combined doubled, and that of obesity trebled (Chapman, et al. 2008 and Booth et al, 2003). Graph 2.1 below shows the increase in the proportion of Australian primary school children aged seven to 11 years old who are overweight or obese over the 1985 to 1995 period.

Percentage of 7-11 year old overweight and obese between 1985-1995
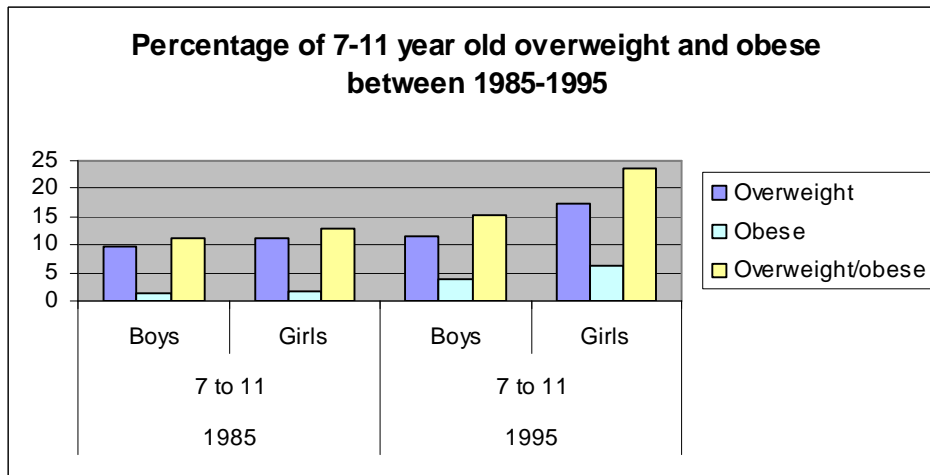
Graph 2.1 Percentage of 7-11 year old overweight and obese between 1985 and 1995

(Source: Australian Society for the Study of Obesity (OSSO) and Margary et al, 2001)

Graph 2.2 below shows the proportion of Australian children aged seven to 15 years old who are overweight or obese over the 1985 to 1995 period.

Percentage 7-15 year olds overweight and obese 1985-1995
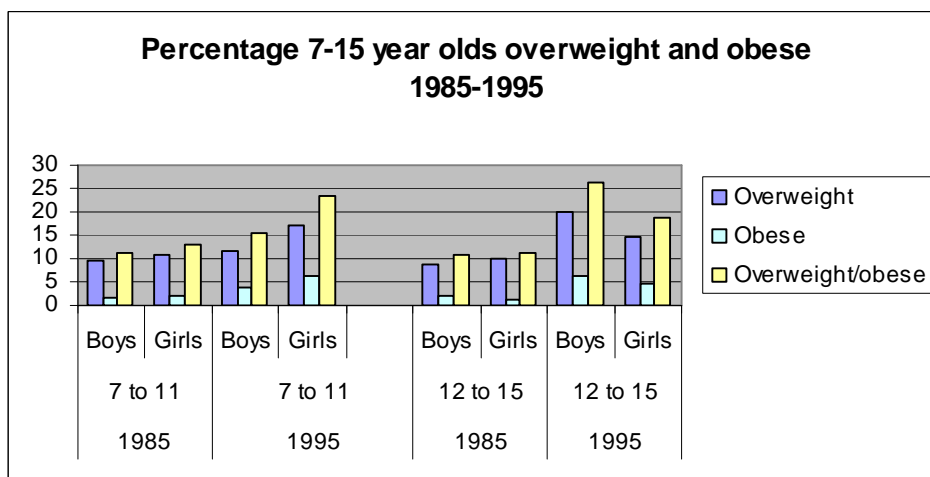
Graph 2.2 Percentage of 7 to 15 year olds overweight and obese 1985 to 1995

(Source: Australian Society for the Study of Obesity (OSSO) and Margary et al, 2001)

The Department of Health and Ageing state that around 20-25 percent, or one in four Australian children in 1995 aged 7-15 years old were considered to be overweight. This doubled the proportion recorded in 1986 (Department of Health and Ageing, 2008)

2.2.2 What is overweight and obesity

Overweight and obesity is a result of an energy imbalance that occurs from too much energy consumption and not enough energy expenditure. Often inadequate physical activity is confused with obesity, particularly in the media; however, it is more to do with eating too much food and not doing enough physical activity (Transport Research Board, 2005). The term overweight and obesity can be used generally, however, the statistical meaning relates to a measurement of weight and height. For adults this is most commonly expressed as a body mass index (BMI) which is a measurement of the amount of body fat a person carries. The use of BMI is becoming more widely used with doctors and health professionals as it provides a standard measurement for indicating body fat. BMI is calculated taking the bodyweight in kilograms and dividing this by height in centimetres squared. A BMI of 25 and over is considered to be overweight. While a BMI of 30 and over is considered to be obese.

Though the use of BMI is growing in popularity, there are many controversies regarding its accuracy. The measurement only takes into consideration weight and height and neglects to account for other important aspects such as fitness levels, muscle mass, bone structure, gender or ethnicity (Briscoe and Aldersey-Williams, 2007). Addressing the obesity problem requires examining both energy intake and physical activity.

2.3 The connection between physical activity and health

There is a clear connection between health and physical activity. Physical activity is the leading health indicator for reducing most significant preventable threats to health. A review of literature revealed that there is an association between physical activity and several diseases that is "moderate in magnitude, consistent across studies that differed substantially in methods and populations, and biologically plausible" (Transport Research Board, 2005:19). Therefore, there is a

body of evidence that supports claims that physical activity benefits many health outcomes such as reducing cardiovascular disease, colon cancer and non-insulin dependent diabetes. The results of research also confirm that regular physical activity reduces the risk of premature mortality from all causes. In addition, research shows that endurance type physical activity such as walking and cycling also reduces the risk of developing osteoporosis, depression and may even assist with psychological wellbeing and quality of life (Transport Research Board, 2005).

2.4. The need to increase children's physical activity

2.4.1 Benefits for children

The importance of teaching children to be active, particularly primary school age children, is that it is in children's lives where they learn healthy habits and develop the skills that they will use for the rest of their lives. It has also been identified that children's activity levels decline as they get older and through adolescence there is little chance to encourage secondary school students to increase their incidental activity levels. However, children of primary school age are at their most active and a study conducted by Booth et al. (2007) indicates that there is potential to increase incidental activity for this age group (Booth et al., 2007). Therefore, it is important to encourage healthy behaviour while children are at this age so that they can be taught healthy habits at a young age and carry them through to adulthood (Ziviani, et al. 2004)..

2.4.2 Benefits of healthy habits for later in life

Encouraging children to be physically active may help to reduce the risk of chronic disease in adulthood (Planning Institute of Australia et al, 2008). Regular physical activity is important for children's health and there is growing evidence that not only do overweight or obese children have high chances of growing up to be obese adults, but evidence also suggests that inactive children are more likely to become inactive adults. Recent studies show that obese children have a 25-50 percent chance of progressing to be obese in adulthood and it may be as high as 78 percent in older obese adolescents (Chapman et al., 2008 and Must and Strauss, 1999).

Increasing physical activity in children so that they can continue being active adults should be a priority in Australia as the latest evidence shows that Australia is now the fattest nation in the world (McLean, 2008). This is greater than the United States with the largest number of obese citizens. The Australia's 'Future Fat Bomb' report indicates that 26 percent of adult Australians, more than four million people are now overweight and 17.5 percent of Australians are obese. This represents an increase of two million more overweight people than in previous studies calculated in 1999's AusDiab study, and alarmingly one million more obese people from the same study. It is middle age Australians who have been recognised as being the largest with seven in ten men and six in ten women aged 45 to 64 now registering a BMI over 25 (McLean, 2008). This increase in overweight and obesity is currently having negative impacts to the health of Australians.

While childhood obesity is seeing children develop physical and psychological health problems, if childhood obesity develops into adult obesity the health conditions can be significantly worse. Among the health problems is hypertension, Type 2 diabetes, coronary heart disease, stroke, gallbladder disease, osteoarthritis, sleep and respiratory problems and some cancers, psychological disorders and social problems (Briscoe and Aldersey-Williams, 2008, The Department of Health and Ageing, 2008). Being overweight or obese is not a direct cause of death, rather, a person would be more likely to die of one of these health conditions that are caused by carrying too much body fat. Nonetheless, being overweight or obese is linked to early death. High BMI was estimated to be responsible for 7.6 percent of total burden of disease in Australia in 2003, placing it a close third after tobacco smoking and high blood pressure (Department of Health and Ageing, 2008 and Begg et al., 2007). As it is not the direct cause of death we may always be left with a wide range of illness that can be attributed to overweight and obesity. The latest comprehensive study conducted in Australia predicts that there will be an extra 700,000 heart related hospital admissions in the next 20 years due to obesity alone. The report Australia's Future Fat Bomb, mentioned above, contends that the number of heart related deaths over this time will be close to 125, 000 as a result (McLean, 2008). The World Health Organisation (WHO) estimates that more than one in ten deaths in developed nations is already a result of overweight and obesity. This suggests a figure of 20,000 deaths per year in Australia (Briscoe and Aldersey-Williams, 2008).

2.4.2 Costs of sedentary lifestyles

Concerns about physical activity levels also stem from economic considerations. Rising sedentary lifestyles and related health conditions are currently putting pressure on the economy. The associated costs of obesity are expected to impact national health services worldwide, and the direct costs encountered by the individual are also expected to be high. The Department of Health and Ageing estimated that the total financial cost of obesity in Australia in 2005 was nearly $4 billion (Department of Health and Ageing, 2008). In 2008 this figure is expected to have increased and is estimated to be close to $58 billion with 17.5 percent of Australians considered to be obese (Premiers Council for Active Living, 2008). In addition, The WHO's measurement on early deaths indicates that indirect costs are also high. It would imply that a loss of several tens of thousand years of working life and associated earnings, in addition, to the costs of incapacity benefits for those unable to work(WHO and Briscoe and Aldersey-Williams, 2008). One official report released in the United Kingdom estimates that obesity is related to approximately 18 million days off work in sickness in England. As Australia has a larger overweight and obesity problems than the United Kingdom, Australians could expect days relative to this (Briscoe and Aldersey-Williams, 2008). The significant risk for childhood obesity to continue to adulthood makes it a priority for targeted preventative action. Therefore, it is beneficial to look at the contributing factors that are causing children to be inactive within the urban environment.

2.5. The urban environment and physical activity connection

The urban environment has recently come under scrutiny for being a potential contributor to reducing levels of physical activity. Over the past 10 to 15 years there has been a growing awareness and understanding of how cities, built environments and urban design can impact on people's health. In particular, there is increasing interest in the relationship between the quality of the urban form and people's tendency to be active and healthy (Planning Institute of Australia et al, 2008). Figure 1.1 in Chapter 1 explains that the effects of the built environment on physical activity levels operate through a complex set of relationships that involve the individual, the social environment and the built form. It is important to understand the elements of the urban environment that restrict childhood activity in the public realm.

2.5.1 Urban design and the role of planers

This idea that health and urban planning are linked is not a new concept. In the 19th Century planning initiatives were launched out of the need to address health related impacts of industrialised urban areas (Barton and Tsourou, 2000). It was established that the relationship between the elements of the built environment, the home, school, and the neighbourhood greatly impacted health and wellbeing. Nonetheless, the emergence of sprawling cities has evolved over the past century. Sprawling neighbourhoods have led to a separation of connection between the home, place of work, schools, leisure activities and amenities. The separation of connectivity between daily activities results in greater dependence on the car, which significantly impacts children's lives (Gleeson, 2006). Declines in transport options for children living in suburban neighbourhoods greatly impacts children's mobility as they become dependent on being driven by their parents (Sipe et al, 2006). The dominance of the car will be discussed further in Chapter 3.

There are three main priorities for planning healthy communities. First, there needs to be an improvement for opportunities for incidental activity. Second, land use planning must ensure there are food shops selling healthy food within the neighbourhood. Third, there needs to be a return to localism for employment, access to schools and daily amenities to reduce car dependence (Capon, 2008). In addition, good urban form is considered to create walkable and safe neighbourhoods and therefore, has healthier implications for the community.

Figure 2.1 identifies the elements of the built environment that influence physical activity and people's health. It also shows how land use management at the regional and neighbourhood level directly impact on the built environment. As Australia's built environment changes so too does public health issues (Transportation Research Board, 2005 and The Planning Institute of Australia et al, 2008).

Built Environment

Building/Site
- Stairwells/ elevators
- Site design
- Other

Neighborhood
- Population density
- Street pattern
- Green/open space
- Land use mix
- Continuity
- Walkability/ bikability
- Other

Region
- Size
- Distribution of commerce/ population
- Spatial structure
- Transportation supply
- Other

Individual
- **Characteristics** (demographics, household structure, genetic factors/ biological dimensions)
- **Preferences** (lifestyle preferences, culture, time allocation)

Physical Activity

| Leisure/sports |

| Transport |

| In and around home |

| Occupation |

Figure 2.1 The elements of the built environment that influence physical activity
(Source: US Transportation Research Board, 2005)

Research conducted by the National Heart Foundation into supportive environments for walking found that the attributes that impact being active are: street connectivity and grid pattern street networks; footpaths; walking routes; safe crossing points on roads; access to public transport stops and frequency of service. However, in terms of children being able to play on the street it found that cul-de-sacs may have increased opportunities for children to play. Nonetheless, opportunities for children to play always present themselves and good urban design is said to positively contribute to children's health and wellbeing. The opportunity to move and play freely within their own environment is recognised by children themselves as a positive indicator of an urban environment (Tranter, 2006). Capon (2007) believes that the current health problems are due to the fact that there is limited opportunity for incidental activity (Capon, 2007). Urban planning issues

such as declines in connectivity, accessibility, proximity and diversity of local amenities may also contribute to declines in physical activity for children. In addition, aesthetics of the neighbourhood environment has been associated with overall activity. Public art, seating or signage, which can impact the attractiveness of a place can be influenced by planning decisions.

Figure 2.2 below indicates that the design of the built environment has many influences on a range of planning outcomes.

Design of built
environment can
influence

Accessibility

Affordability

Diversity

Connectivity

Proximity
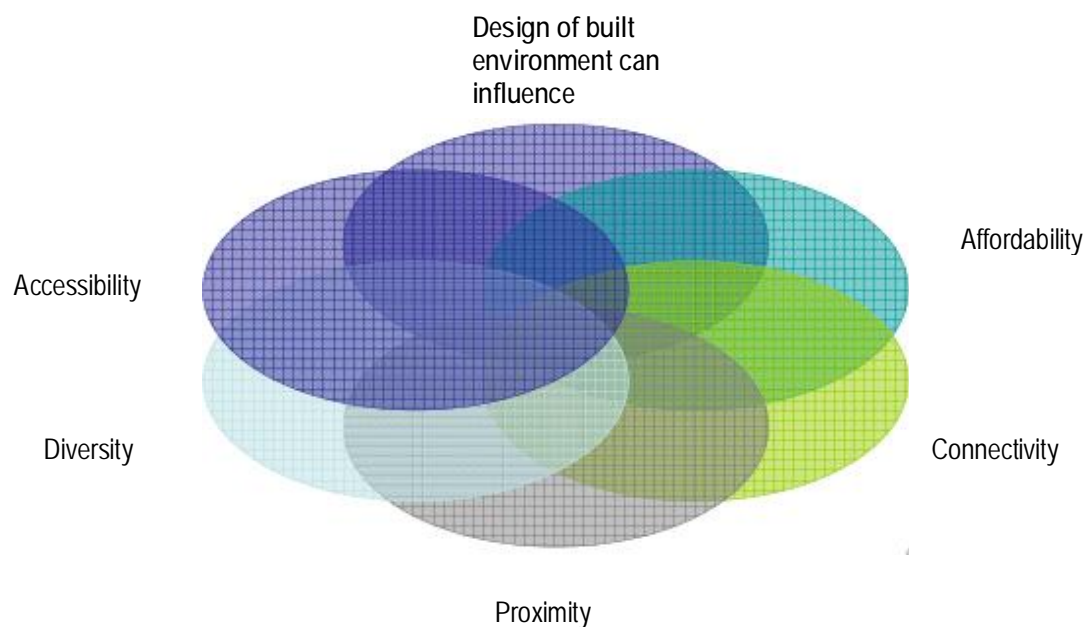
Figure 2.2 – Design of the built environment and its influences

(Source: Planning Institute of Australia, National Hearth Foundation and Planning Institute of Australia, 2008)

2.5.2. The role of planning for healthy communities

There is no conclusive evidence to prove that the built environment is entirely responsible for health and wellbeing. It is considered that urban form is only one factor that contributes to adverse health outcomes and health sensitive urban design by itself may not lead to better physical health (Sipe et al, 2006). Though people who live in sprawling cities tend to weigh more, walk less and

have higher blood pressure than people living in compact neighbourhoods, these associations do not prove that sprawl itself causes sedentary lifestyles (Harder, 2007). It may be that inactive people choose to live in sprawling cities where driving around is the best way to get anywhere (Harder, 2007). Therefore, it is also important to understand the individual and the societal forces that impact children's ability to participate in incidental physical activity such as independent play and walking to school.

2.6 Conclusion

Growing concerns for child health and wellbeing are pressing planners and health professionals to look at ways encourage more physical activity. This chapter has provided the framework for establishing the connection between health, the urban environment and planning. Current planning decisions and urban environments are having impacts on children's health and wellbeing. While it is noted that there is no conclusive evidence to support the claim that urban design and planning initiatives alone will create healthy environments, elements of good urban design can at least encourage physical activity for those who want to be active. This can reduce the prevalence of sedentary lifestyles for children, and their parents. This will be discussed in the next chapter.

Chapter 3:

The Role of Parental Perceptions and Behaviour on Child Health and Wellbeing

Chapter 3

The Role of Parental Perceptions and Behaviour on Child Health and Wellbeing

3.1 Introduction

Perceptions about what is in the best interest of the child such as the "interaction between children, family and the wider society, beliefs about what constitutes good parenting, and beliefs about the role children play in society are all part of their social environment" (Freeman, 2006:6). The built environment, as discussed in Chapter 2, is only one aspect of the urban realm that affects children's physical activity levels. More needs to be done to understand physical activity in the social context and individuals attitudes towards it. Modification to the built environment alone will not solve the public health problems currently facing children. It requires strategies that address the individual, physical and social determinants of the built environment (Sipe et al., 2006). This is particularly so for children whose lives are largely determined by their social environments, specifically their parents and families. For younger children, the family environment plays an important role in determining their risk of obesity and general health indicators. Parental physical activity levels, eating behaviour and television watching habits also contribute to health.

This chapter aims to provide the framework for assessing how the role of parental perceptions and behaviours can affect child health. It involves a review of literature that suggests that perceptions of the urban environment are equally as responsible for reducing children's physical activity and their freedom to explore the urban realm. The first part of this chapter looks at the changing perceptions of parents regarding the urban environment and the natural reaction of parents to protect their children. The second part of this chapter looks at the consequences of protecting children from elements of the urban environment. The third part discusses the elements of the urban environment that are contributing to the increasing fear for children within the public realm. The fourth part of this chapter discusses the social traps that occur as a result of protecting children and removing risk from their lives. Finally, it will present the basis of ways in which to overcome social traps that will be discussed further in Chapter 7.

3.2 Parent's perceptions of the urban environment

Studies show that parents' perceptions of the urban environment are particularly important for children's physical activity levels and their health. For parents to allow their children to explore their local neighbourhoods it is more important for their parent's to perceive their environments to be safe than for the neighbourhood to actually be safe. The Robert Wood Johnson Foundation (2007) found that children were five times more likely to be active if their parents felt that their neighbourhoods were generally safe. This study also found that if parents believed their neighbourhoods to be unsafe, their children were 32 percent more likely to be overweight (The Robert Wood Johnson Foundation, 2007).

Over the past 30 years parents' perceptions about the urban environment have changed and as a result, childhood has been marked by shrinking freedom and growing adult control and supervision (Gill 2007). There is a heightened fear within Australian societies that children are at a greater risk from harm than children from previous generations. They are not being permitted to independently explore their environments. Available evidence indicates that the level of children's freedom in Australia is lower than in many other countries and is continuing to decline. Many Australian children have less freedom to investigate their local neighbourhoods than children living in poverty (Tranter, 2006). The time parents spend with their children today has more than quadrupled in almost 30 years. From 1979 parents spent 25 minutes with their children each day and in 2000 the figure was 99 minutes each day. Conversely, parents believe this to be the opposite that they spend less time with their children than previous generations (Gill, 2007). Consequently, this impacts upon the quality of incidental physical activity that children can gain through activities such as play. What makes play so valuable to children is that it is spontaneous and voluntary and much of what adults prescribe does not fit into this definition of play (Hart, 2002).

Parents' perceptions about their children's competence for play and mobility have also changed. Parents in the 1950s believed that their children were resilient and able to solve their own problems. However, parents today put more emphasis on the vulnerability of their children and think they are more in need of being protected (Karsten and van Vliet, 2004). Cunningham (2006) states that

"Children in the past have been assumed to have capabilities that we now rarely think they have… so fixated we are on giving our children a long and happy childhood that we down play their ability and their resilience" (Cunningham, 2006 and Gill, 2007:11).

Activities that children would once take part in are now considered to be dangerous or risky and the parents who still permit them are being labelled as irresponsible (Gill, 2007). Even places that are off the street such as playgrounds are a concern for the risk averse.

3.3 Risk aversion

There has been growing concern for the dangers of playground equipment. Following the death of an eight year old girl in the late 1980s, the United Kingdom Consumers Association published a report into playground safety that raised concerns about design maintenance and access which called for greater safety in playgrounds. The prominent media coverage gave the impression that playgrounds were unsafe due to hard surfaces and an accident in a playground, no matter the degree of seriousness, was considered a failure on the part of the providers (Gill, 2007).

However, playgrounds are "comparatively safe environments for children, and have been for some decades," and they were even during the time of the safety campaigns (Gill, 2007:26). Leading experts researched playground injuries in the United Kingdom from 1988 – 2002 and found comparatively low levels of injuries, particularly for serious ones. These rates have remained the same over the years despite the introduction of safety equipment and impact absorbing surfaces (Gill, 2007:26). These figures are even less for deaths that have occurred in playgrounds. While this is no consolation to a parent who has lost a child as a result of a playground accident, there needs to be a judgement made on the 'truth' rather than just to avoid risk (Gill, 2007). It will not be possible to completely remove risk in playgrounds and therefore, playground safety should be a concern but not at the expense of the design of interesting and challenging play equipment (Hart, 2002).

3.3.1 The need for risk in childhood

Physical challenges are fundamental to children's enjoyment of play and are beneficial for health and learning outcomes. Gill (2007) argues that there are four main types of positive ways in which children need risk. First, children need a degree of risk in their lives to help them learn how to manage risk. Failure to learn how to manage a degree of risk could potentially see children grow up and struggle to manage risk in their later years. Second, exposure to risk is beneficial for personal development. There is a claim that children build their character and personality through facing up to adverse situations. Third, it is argued that children have a desire for risk that if not fulfilled will lead to more dangerous risk taking. If children lack the skills as a result of risk aversion they could find themselves in a more harmful situation. Finally, children gain other benefits from being given the chance to undertake activities that involve risk. Children are less likely to develop competencies if they are permitted to practice physical activity and development skills. Allowing children to experience play involves some risk, however, they are outweighed by the benefits children gain through physical activity (Gill, 2007:16).

3.3.2 The consequences of risk aversion

The level to which this 'protection' of children is providing any benefits to health and wellbeing is questionable. Most parents are aware of the risks their children are exposed to if they are given more freedom in the urban environment. They may be less aware of the possible risk of not exposing them to risk (Tranter, 2006). We need to be careful that the promotion of safety within society does not drive out the opportunities for children's physical activity, health and also for learning and development.

Without allowing children to independently participate in physical activity they risk suffering potential physical and psychological health problems. Chapter 2 has already presented the health related facts regarding sedentary lifestyles. However, there is also evidence that physical activity is beneficial to psychological health. Louv (2007) further states that even without conclusive evidence, parents notice a vast improvement in children's stress levels and hyperactivity when they spend time outdoors rather than in organised sport (Louv, 2007).

Driving children to school denies them the chance to develop road safety skills. With children's mobility becoming increasingly restricted they miss out on discovering solutions and strategies for themselves as they are told what to do all the time. Children who have not practised walking to school at primary level have less chance to develop road safety awareness and are therefore more vulnerable when they walk to school independently at secondary level (Living Streets, 2008). The latest figures from the Australian Bureau of Statistics (ABS) indicate that a secondary school child is more likely than a primary school child to be seriously injured or killed in a road collision. If parents decide to 'protect' their children by driving them, they are also contributing to raised levels of pollution for other children and they put their own child at risk of inhaling in car pollutants. These are considered to be worse than the fumes inhaled at the pedestrian level (Tranter, 2006). The problem of driving children to school is that it adds to the already high traffic levels that impacts on other children. In Victoria, 65 percent of accidents involving four to 13 year olds happen just before or after school (Tranter, 2006).

For children the benefits of play are that it stimulates learning and is an important aspect of early life. Play promotes children's development and forms the foundation for intellectual, social, physical and emotional skills necessary for success in later life (Hart, 2002). It has recently been brought to attention in a study conducted by the University of New South Wales's (NSW) City Future's research director, Bill Randolph, that children need to experience environments outside the home to avoid children becoming clumsy and lacking physical co-ordination (Creagh, 2006). Furthermore, play with peers is important for social, moral and emotional development. During free play children learn to understand their peers, develop skills of co-operation, sharing and caring. When children experience free play in public settings they get opportunities to interact with children and adults of different social classes, cultures, ages, and they learn to co-operate with them. Hart (2002) states that research shows children's friendships are not formed in the classroom but in play. Therefore, it could be said that play forms the foundations to building civil society (Hart, 2002).

Children who are driven to and from school miss out on playful situations that arise from actively commuting. They lose opportunities to explore their environments and gain a sense of place. Children's understanding of place comes from sensory rich experiences where children need to participate in activities in the urban to understand it and the people in it (Tranter, 2006). Likewise,

removing children from public spaces also deprives adults of interaction with children. This has the impact of further marginalising children as adults are not given the chance to interact with and understand children (Hart, 2002).

Most parents are aware that their job is to prepare their children for independent, healthy lives and that this involves gradually transferring the power over to children. In this regard it has been suggested that contemporary parents need to be less protective of their children. However, while the increase in time spent in childcare is suggested to be part related to growing parental anxiety, it is largely a result of a range of changes occurring in the physical, social and cultural environment which, are making the transfer of power difficult (Gill, 2007).

3.4 Changing societies

Children's social environments are important determinants in physical activity levels, particularly their parents. Children's physical world is limited to them and their social environments drive what they can and cannot do. Family structures have been changing over the past two decades and it is affecting the amount of time children can engage in physical activity (Tranter, 2006 and Gill, 2007). Family structures are no longer considered to be what was once known as the nuclear family. It is said that in society today the prevalence of the 'nuclear family' has decreased and only 40 percent of Australian families still fit into this category (Simpson, 2004). This is changing as mothers are choosing to return to the workforce after having children, also there has been an increase in single parent, single income households. This means that as parents are working, there is less supervision from adults within the community for children to experience the urban realm. In addition, couples are choosing to have less children or no children at all which significantly reduces the number of children who provide surveillance for others (Simpson, 2004). Increased working hours and affluence within some communities has resulted in more children undertaking activities in 'pay to play' situations, rather than participating in free and spontaneous play (Hart, 2002).

Gleeson (2006) believes that there is a growing emphasis on the individual in society, and this is having a negative impact on children (Gleeson, 2006). This also means that there is a lack of caring adults within society as people continue to concentrate on their own lives. The removal from

children from our environments has created a situation where adults no longer know how to respond to children and in some instances even fear children. This is particularly so for the elderly who have grown to believe that children in public spaces are a danger to themselves resulting from a minority of troublesome youths (Gill, 2007). This, combined with the ageing population, means that funding is being placed into programs for the elderly rather than into policy for children (Hart, 2002).

3.4.1 The dominance of the car – perceptions and use

Perhaps the most important change in children's freedom of play and mobility within their neighbourhoods is the private car. Until the age of the motor car it was accepted that residential streets were the domain of children (Tranter, 2006). When cars were first introduced, streets were asphalted and traffic speeds increased. Playgrounds were introduced as a way to get children off the streets and into a contained environment for the benefit of the motorist. Hart (2002) believes that this still occurs today and that children's domains have retreated to within the home to improve the efficiency of traffic without regard for children's health and wellbeing (Hart, 2002). Today in localities where children live, play and go to school the increase in traffic takes away space and freedom of movement, even to the playgrounds that were established to re-direct play (Tranter, 2006).

Today when children do engage in outside activities they will usually be driven to them by their parents. The private car has provided parents with greater flexibility and choice as it allows parents to make decisions about their child's life. Schools can be selected based on the convenience of parents' place of employment rather than being within the local area. Consequently, sending children to school outside the local area means that friends and extra curricular activities such as sport will also be there and require being driven outside of school hours (Freeman, 2006). This has two notable effects on the urban environment; it increases the level of traffic, and reduces the number of children and adults present in the community. In turn, this reduces children's safety and prompts parent to take more responsibility for children inside the home or by chauffeuring them everywhere and parents create 'social traps' for themselves (Tranter, 1996 and 2006).

3.5 Social traps

Tranter (2006) states that parents are caught in 'social traps' that affect decisions they make regarding their children's freedom. Parents feel unable to give their children freedom of mobility as they fear for children's safety from increased traffic around schools as a result of other parents driving their children to school. Parents feel that they must protect their children from potential accidents that result from the increased traffic (Tranter, 2006). Figure 3.1 indicates the cycle of increasing traffic and if not addressed will continue to cause traffic onto the roads.
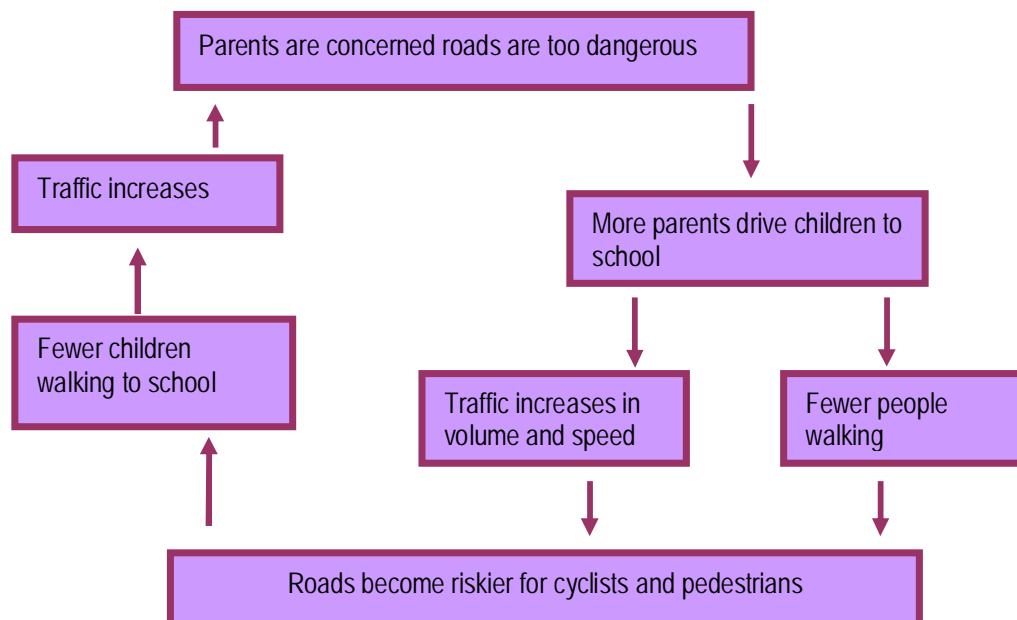
Figure 3.1 The cycle of increasing traffic
(Source: Mason, 2000)

This diagram indicates that rather than addressing the issue of accident prevention, traffic congestion, pollution and physical inactivity, the fear of traffic danger encourages more traffic on to the roads (Mason, 2000 and Tranter, 2006). If parents allowed their children to walk to school they would in fact be safer from traffic as there would be less cars on the road near schools. In addition, if more children walked to school and within their local environment, there would also be increased safety from strangers (Tranter, 2006).

After fear of traffic, parents cite the fear of strangers as being the biggest concern for their children's safety. Tranter (1996) contends that there is a link between traffic levels and the perception of fear and abduction from strangers within residential areas. As traffic level increase, and children and adults presence on the street decreases, it highlights the reduction in pedestrian activity and consequently heightens the fear for safety (Tranter, 1996). This has also been conditioned by increased media coverage which leads parents to believe that there is an epidemic of child abductions by strangers. The concern for children's safety from traffic is legitimate as the dominance of the car in our environments is dangerous and unpleasant. On the other hand, the perception that children are at a heightened risk of being abducted by a stranger is not (Tranter, 1996). Children are no more at risk today of being abducted by a stranger than they were 20 years ago. It is the impressions the urban environment and the media create (Louv, 2007 and Gill, 2007). Children are however more at risk of being abused, molested or even killed by someone they know, particularly a parent (Gill, 2007). Nonetheless, perceptions of the urban environment are having a negative impact on the level of physical activity children are participating in, which is having a negative impact on their health and wellbeing.

3.6 Overcoming social traps for children's health and wellbeing

Some people do not understand the collective impact of many individual decisions and those that do understand them often feel they are unable to do anything about them. Parents need to be aware of the impact their actions are having on children. Tranter (2006) believes that once parents are told about the impact of driving their children everywhere is having on other children they become more open to decreasing their car use. When parents are informed about the impacts they are having on their own children they are often more open minded to changing their behaviour to decrease car use. However, before they do this they need to come to a collective agreement with other parents to change their behaviour for the benefit of all children within the local community (Tranter, 2006).

This is where it is important for a collective response from planners, government agencies, transport and health sectors to come together to implement actions for reducing cars and encouraging children to reclaim their domains in the public realm. Fortunately for children, new

policy, programs and design philosophies have emerged over the past 20 years which have led to a revolution of how urban environments can be perceived (Tranter, 1996). There are a number of successful initiatives that have been brought into residential areas they have had the benefit of increasing physical activity and the health and wellbeing of society. Some of which will be discussed later in this thesis. However, it is firstly important to gain an understanding of the specific issues about the urban environment that form parents' decisions regarding their children's safety in order to make the necessary changes to urban environments.

3.7 Conclusion

From the literature presented in this chapter it shows firstly that urban environments can determine children's ability to explore their neighbourhoods. In particular, how parents view safety within the local area can impact upon play and mobility for children. Secondly, that changing perceptions of the urban environment are provoking parents to remove risk from their children's lives at the consequence of children's health and wellbeing. It shows that if parents continue to remove the risk from children's lives it can have potentially bad consequences for their health, learning and development. Thirdly, growing parental anxieties about their children within the urban environment are only partly responsible the decreasing freedom of children. It is the changing elements of society and increasing dominance of the private motor car that are impacting upon parent's decisions. Fourthly, this chapter has shown that the dominance of the car has been responsible for the cycle of social traps that encourage more traffic onto the roads and less caring adults into residential areas. Finally, it has presented the foundation for later discussion that these social traps can be overcome through a collaboration of multidisciplinary strategies in which to create healthy communities. However, it is firstly important to understand parents' perceptions of their environments in order to change the way their environment is viewed.

Chapter 4:

Methodology

Chapter 4

Methodology

4.1 Introduction

Chapters 2 and 3 provide the framework for analysis regarding lack of physical activity due to the elements of the built environment and parental fears of the urban realm affect children's health. It demonstrates that in order to understand activity levels it is essential to look at individual, societal, and physical characteristics that restrict or encourage physical activity. Therefore, to assess the relationship between these forces it is beneficial to conduct further empirical research to ascertain how much children's physical activity is affected by the urban environment and parental perceptions.

This chapter outlines the methodology that was used for the research. It is divided into four sections. The first section presents the focus of the research. This sets out the key research questions and aims of the research project. The second section indicates the approach that was taken for the thesis research. This provides an explanation of the various research methods that were employed. The third section of this chapter discusses the ethical and political considerations. Finally, it outlines some of the strengths and limitations of the research project.

4.2 Focus the research

The aim of this thesis is to determine whether the elements of our urban environments that actually exist, and those that are perceived to exist, have an impact on children's health and wellbeing. The thesis aims to understand these elements and perceptions that parents have of the urban environment so that suggestions can be made for the creation of safer and healthier places for children to experience the urban realm. As parents cite fear from dangers within society as being the primary reason for restricting children's independent activity, then if the local environment

appears safer, children may be permitted to explore their environments more freely. This will have positive benefits for their health and wellbeing.

The literature presented in Chapter 2 indicates that there has been a shift in children's health issues over the years. Child health that was once measured by the absence of injury and deaths is now more concerned with conditions that can be attributed to a lack of physical activity. These include obesity type 2 diabetes, high blood pressure and mental health disorders. Therefore, in order to answer the first question that was presented in Chapter 1, it is essential to find out if children's physical activity that they gain through free play and independent mobility has declined over the past few decades.

In order to answer the second and third questions that were presented in Chapter 1, it is essential to find out what dangers occur within the urban environment and the elements of the physical environment that parents perceive as being barriers to their children's freedom in their own neighbourhoods. This will assist in answering the final question discussed in Chapter 1 and make recommendations for policy, programs and urban design of areas that promote safety and healthy communities.

4.3 Research approach

The research methods used in this thesis satisfy the fundamental principles of social research. Social research uses many different methods in order to understand social life and as this thesis is based on a social or human problem it is considered that a range of data is required to be obtained (Blaxter, et al., 1996). Different research methods were employed for different purposes and qualitative and quantitative research methods were chosen for this purpose.

4.3.1 Qualitative research

This thesis draws on qualitative data to understand personal experiences and describe meaning rather than drawing purely on statistical conclusions. In order to understand parental perceptions interactive data collection is considered beneficial to gain real life responses.

The various qualitative methods used in this thesis include:

◆ Discourse analysis – the review of various documents including academic literature (books and journal articles), relevant government planning documents, media articles and websites.

◆ Key informant interviews – including in-depth, semi structured interviews that were conducted in person with key informants. This primarily included interviews with parents and teachers.

◆ Key informant lectures – attended Child Friendly City conferences. This included listening to children, parents, academics and government officials regarding the issues facing children in urban areas.

◆ Field observations – observed parent and child physical activity levels within the urban environment. This primarily included how children are going to school and how they use their environments for play.

4.3.2 Quantitative research

This thesis also draws on quantitative methods. In order to gain the perspectives of a larger target group it was considered that quantitative methods would be most suitable to collect and analyse numerical data.

Accordingly, the various quantitative research methods that were used in this thesis include:

◆ Statistical surveys and questionnaires – surveys with parents across two local government areas.

◆ Secondary analysis – Analysis of existing studies on related topic areas

◆ Structured observation – Observation of children's participation in the public realm, particularly in parks and playgrounds. Observing how they react on particular play equipment.

4.3.3 Literature review

The literature review involved discourse analysis of local and international academic literature. This aimed to form the theoretical basis for presenting the current issues with regards to child health and the elements in the urban environment that contribute to poor health and wellbeing. Furthermore, to explore and analyse theory that has previously been presented regarding the current health and wellbeing problems of children how physical activity is a key indicator to these problems, and how the urban environment and parents are contributing factors to children's physical activity.

The review was conducted using a range of discourse analysis of texts sources of books, scholarly research, journal articles, media articles and websites.

4.3.4 In-depth interviews

Interviews with information rich participants were used to determine whether there have been changes with regards to children's play and mobility over the past few decades. Current information suggests that children's outside play and mobility range has decreased and interviews with parents were set up to find out whether their children's outdoor play and mobility throughout their local areas is different to that of their own childhood experiences. In addition, it was important to find out what elements of the urban environment are contributing to parents decisions to restrict children's outdoor play if there are in fact any.

In total, three interviews were conducted with key informants regarding the play and mobility patterns of their children. Whilst the interviews were unstructured, a range of interview questions were established under specific headings prior to the interviews. This was in order to provide some structure and a guide to the interview process. Interview information including the Project Information Statement, list of respondents and list of questions are located in Appendix B.

Table 4.1 Issues raised and rationale of in-depth interviews

ISSUE	RATIONALE
Introductory question	Establish participants name and about where they live now and as a child
Parents freedom within the urban realm as a child	To determine the level respondents could experience the urban environment including but not limited to play environments, play range, and commuting to school.
Comparison to their children's freedom within the urban realm	To ascertain if participants had more freedom than their own children do and to ask the parent's reasons for not allowing their children the same freedom.
Perceptions of the urban environment	To find out if participants believed that the elements of the social and urban environment have altered from their childhood and impact contemporary children's freedom
Consultation with children	To ascertain if respondents saw benefits consultation with children for planning decisions, if they were aware of any consultation within their LGA and if they would let their children participate.
Closing question	To provide respondent the opportunity to add anymore information they think they have left out and to end the interview.

(Source: Author, 2008)

Selection of participants was based on engaging a diverse range of informants that were considered to be information rich respondents. The interviewees were chosen because of their personal experiences and the experiences of their children. Two interviewees were selected because they have children of primary school age and one was selected because they were a grandparent and had grandchildren of primary school age. The parents were able to provide a comparison of their level of freedom and physical activity within the urban environment to that of their children today and the grandparent was able to provide a comparison of children's freedom within the urban realm that have occurred over three generations.

Interviews were conducted at the private residence of the interviewees. The interview was audio tapped with the permission of the respondents. All respondents have provided their permission to be quoted in this thesis. Following the interviews, the audio tape recordings were transcribed which, was later coded for reoccurring themes.

4.3.5 Survey

To accompany the in-depth interviews it was considered important to conduct quantitative research in the form of a questionnaire survey to reach a wider target group. This was used to gain new

ideas and understanding of the issues (Fry, 1981). The data was used to determine parent's perceptions of their children's health, physical activity levels and compare it to their own childhood activity. In addition, perceptions of the built environment and what cause parent's concern for their children in the urban realm.

The survey questions were posed as a combination of multiple choice questions and others where parents were asked to tick the boxes of the appropriate response that applied. Respondents were selected at random to take part in the survey. People were approached within public spaces such as shopping streets in the North Shore and Eastern Suburbs. The survey was also placed on the internet via a company known as Free Online Survey's. It was uploaded onto a webpage where respondents could answer the questions. The respondents were asked to inform other participants about the survey and in total 100 surveys were collected through both the survey methods. The survey project information statement and survey questionnaire is located in Appendix C.

Table 4.2 indicates the issues that were covered in the survey and the rationale behind the questions.

Table 4.2 Issues raised and rationale of surveys

ISSUE	RATIONALE
Establish demographics of child	To ascertain age group of children
Children's physical activity and commuting patterns	To determine children's level of physical activity both incidental and planned
Built environment questions / perception of safety	To determine what parents thought of the urban environment where they live now and as a child
Parent's physical activity and commuting patterns as a child	To determine parent's level of freedom as a child for comparison to their children's

(Source: Author, 2008)

4.4 Ethical and political considerations

There are ethical and political considerations that must be addressed in order to conduct the research. Formal ethics approval No. 85039 was received on 5 July, 2008 (See Appendix A for ethics approval). To ensure that the concerns of voluntary participation, confidentiality, anonymity and objectivity were addressed, the following was established:

- A formal letter that outlined the project description and purpose was sent to each participant;
- A formal Project Information Statement outlining the relevant details of the project and contact details to both the survey and in-depth interview questions (see Appendix B and C);
- Prior to the commencement of in-depth interviews, consent from participants was obtained so that discussions could be recorded;
- Participants were provided with the option to withdraw their consent from the research ay any stage; and
- It was not necessary to record details of survey respondents to ensure anonymity and it was ensured that respondents were over the age of 18 years old.

4.5 Strength and limitations of the research

The research aims to understand the elements of the built environment that restrict children's ability to play and move within their local neighbourhoods. The empirical evidence shows that there is an association between the built environment and physical activity. However, there are few studies that look at the specific characteristics of the urban environment that are most closely associated with physical activity and therefore, remain to be determined (Transport Research Board, 2005). This research aims to determine the characteristics of the urban environment that parents consider to cause barriers to their children's physical activity levels.

In addition, the society in which an individual resides is a driving factor in determining physical activity levels. Most literature reveals that the physical elements of the built environment can restrict or encourage physical activity such as land use planning, main roads and poor urban design to name a few. However, there is limited research that takes into consideration the social aspects at the individual level of the urban environment. The Transport Research Board (2005) state:

> "Preliminary research provides some evidence that such factors as access and safety and security are important for some forms of physical activity, and for some of the population groups. However, the findings are not definite because it is not known whether these characteristics affect a person's overall level of physical activity" (Transport Research Board, 2005:28).

This thesis looks at the societal forces and impressions of the urban environment that restrict children's experiences in the public realm. Furthermore, whether people's attitudes towards physical activity are driven by the existing and perceived elements of the urban environment, or whether the decision to let children be physically active is an individual choice.

Limitations to the study were that ethics constraints restricted the research to adult participants only. A fundamental argument of this thesis, and one that is recognised by the United Nations Convention on the Rights of the Child, is that in order for children to be accepted into society as citizens with rights, they should be consulted and given the opportunity to express their opinions on matters that concern them. Nonetheless, as adults and parents perceptions ultimately determine the amount of activity children gain in the public realm it was beneficial to gain and understand their perspectives.

A further limitation to the study is that only three parents were able to take part in the semi structures interviews in the timeframe provided for the research. In addition, the participants were approached by a person known to the author. It is possible that the participant's points of view are biased or likeminded in their response. Nevertheless, the discussions with the informants were beneficial and much of which confirmed the theoretical research. Likewise, the online survey

questionnaire was distributed by word of mouth in a 'snowball' sampling effect and is therefore, possible that responses are representative of a biased sample. However, it was beneficial to combine the both research methods to confirm data.

4.6 Conclusion

This chapter has provided a description of the research methodology for this thesis. It has outlined that a range of research methods were used. This included outlining that the literature review provided the theoretical framework for the research questions. This chapter has also provided an outline of the research approach of qualitative and quantitative methods and how the selection process was made. In addition, this chapter has illustrated how the ethical and political considerations have been addressed, and finally, this chapter shows the strengths and limitations of the research to provide an objectively based approach to the analysis process.

Chapter 5:

Childhood physical activity, parental perceptions and behaviour

Chapter 5

Childhood Physical Activity, Parental Perceptions and Behaviour

5.1 Introduction

The previous chapters have discussed the theoretical framework that indicates that children are currently experiencing the affects of actions that are potentially damaging to their health and development. It has been suggested that the decisions parents make with children's best interests in mind are resulting in a reduction of independent physically activity and an increase in supervised, sedentary activities. Therefore, it is considered imperative to understand parental perceptions and actions regarding their children's physical activities in the urban realm. This chapter presents the results of my study conducted to determine if parents' perceptions of the urban environment and attitudes towards risk are adversely impacting on child play and mobility.

The data collected for this thesis can be used to assess the levels of physical activity and levels of independence children experience in the urban environment today. It presents this in terms of providing a comparison with parents' childhood activity and freedom within their local areas. This is beneficial for determining whether there has been a decline in children's freedom and physical activity over the generation. This study can also be used to understand parents' concerns regarding their children's safety and their actions to remove risk from their children's lives.

This chapter presents the results of the survey that was conducted with 100 respondents. As discussed in chapter 4 these responses were gathered via the internet and from respondents who were approached at random in shopping streets. Respondents primarily had children of primary school age; however, some were starting primary school in the next few months. They were asked to answer some general questions about their child such as age and health. They were asked to provide some comparative responses about their child and their own childhood experiences with regard to physical activity and perceptions of safety within the urban environment. The analysis will provide the basis for making suggestions to improve child health and mobility through policy, program and urban design improvements that promote safe environments.

5.2 General questions

5.2.1 Age of child

Graph 5.1 shows the age distribution of respondents' children. The majority, 55 percent, had children five or under, that had either started primary school or who were starting in a few months. The proportion of parents who had children aged six to nine made up 20 percent of the survey, while parents who had children between the ages of 10 to 14 made up 25 percent of the respondents.
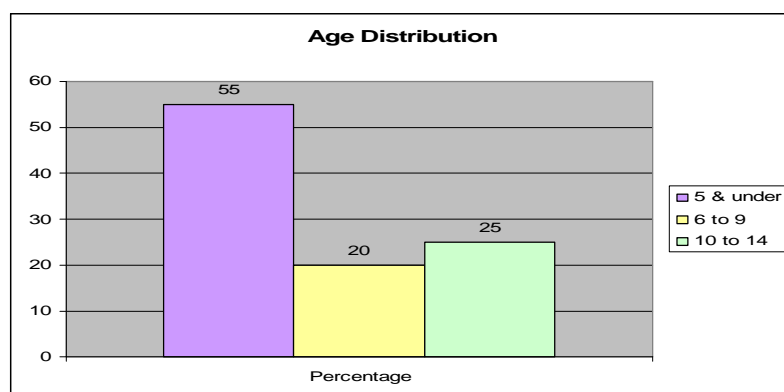
Graph 5.1: Age of Child
(Source: Author, 2008)

5.2.2 Child's weight range

Of the parents surveyed the majority stated that their child was of an ideal weight, while five percent stated that their child was slightly overweight (Table 5.1).

Table 5.1: Child's weight

Would you say your child is:	Responses	Percentage
Underweight	0	0.0%
An ideal weight	95	95.0%
Overweight	5	5.0%
Obese	0	0.0%
Don't know	0	0.0%
Other	0	0.0%
Total	100	100.0%

(Source: Author, 2008)

5.3 Childhood activities undertaken

5.3.1 Time child spends with electronic media

Graph 5.2 shows the amount of time the current generation of children spend with electronic media such as watching television, being on the computer or playing video games. The largest proportion of children, 40 percent, spends between 60 to 90 minutes a day in sedentary activities. A quarter of children spend up to two hours a day with electronic media. This is close to exceeding government recommendations for sedentary activities for children (Local Government Association, 2008)
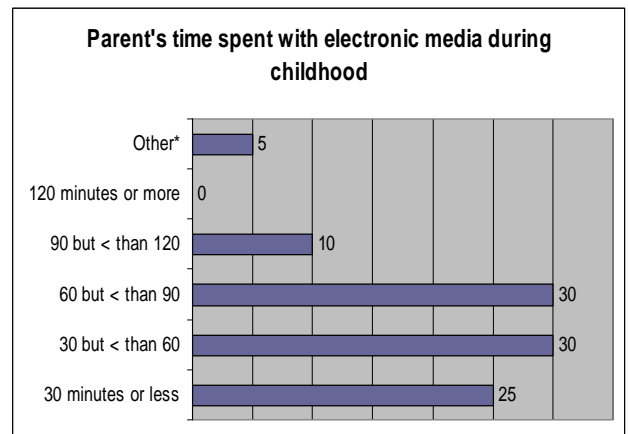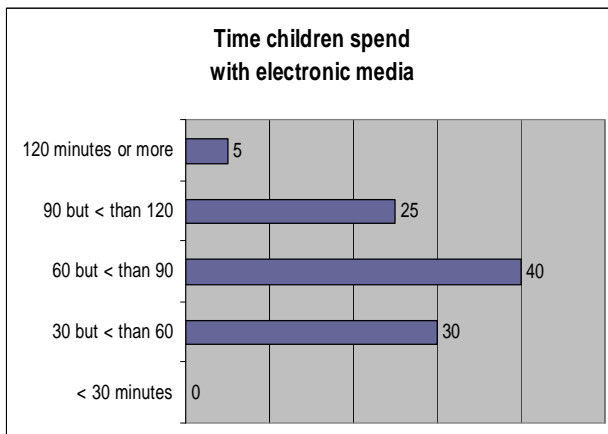
Graph 5.2: Time child spends with electronic media
(Source: Author, 2008)

Graph 5.3 Time parent spent with electronic media

5.3.2 Time parent spent with electronic media as a child

Graph 5.3 above shows the amount of time parents spent with electronic media as a child. During their childhood parents would spend around 30 to 60 minutes, or 60 to 90 minutes with electronic media. This is relatively similar to that of children spend today; however, parents generally did not spend as much time with electronic media. Only 10 percent of parents said they would spend this amount of time with electronic media compared with 25 percent of children today.

5.4 Physical activity levels

5.4.1 Physical activity

The majority of respondents stated that their children participated in at least 30 minutes of physical activity on five to seven days of the week (Table 5.2).

Table 5.2: Level of activity children participate in

How often does your child get at least 30 minutes of physical activity?	Responses	Percentage
5 - 7 times a week	70	70.0%
2 - 4 time a week	30	30.0%
Once a week	0	0.0%
Less than once a month	0	0.0%
Total	100	100.0%

(Source: Author, 2008)

5.4.2 Child's participation in organised sport

Of the parents surveyed almost all claimed that their children had been involved with organised sport or exercise within the past year (Table 5.3).

Table 5.3: Child's participation in organised sport

In the past year has your child been involved with organised sport or activities such as swimming, dance or football?	Responses	Percentage
Yes	95	95.0%
No	5	5.0%
Total	100	100.0%

(Source: Author, 2008)

5.4.3 Parents' participation in organised sport

Table 5.4 results show that parents also participated in organised sport.

Table 5.4: Parents' participation in organised sport

Did you regularly participate in organised sport?	Responses	Percentage
Yes	95	95.0%
No	5	5.0%
Total	100	100.0%

(Source: Author, 2008)

5.4.4 Child's journey to school

Graph 5.4 shows the commuting patterns of children today. The results indicate that 55 percent of children are driven to school or kindergarten each day. There were 40 percent of children who walked to school.

Child's journey to School

Category	Value
Private vehicle	55
Public transport	5
Walk	40
Cycle	0
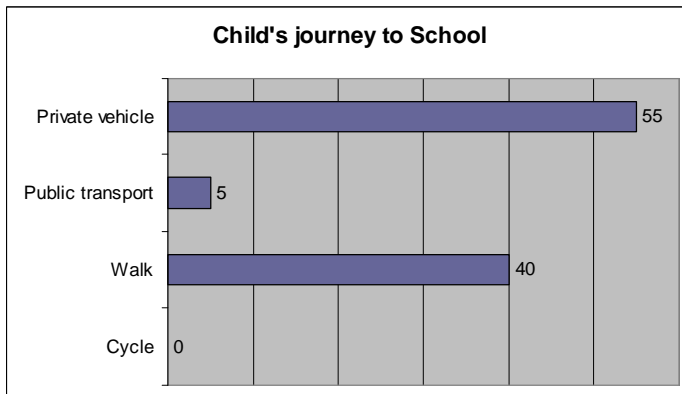
Graph 5.4: Child's Journey to School
(Source: Author, 2008)

5.4.5 Parents' journey to school

Graph 5.5 shows the comparison of the respondents commuting patterns when they were children. There has been a significant rise in commuting to school by private vehicle for children today. Only five percent of parents were driven to school compared with 55 percent of children today. This shows an increase that is 11 times higher. The largest proportion of respondents, 60 percent, indicated that they walked to school.

Parents' journey to School

Category	Value
Other*	5
Private car	5
Public transport	30
Walk	60
Cycle	0
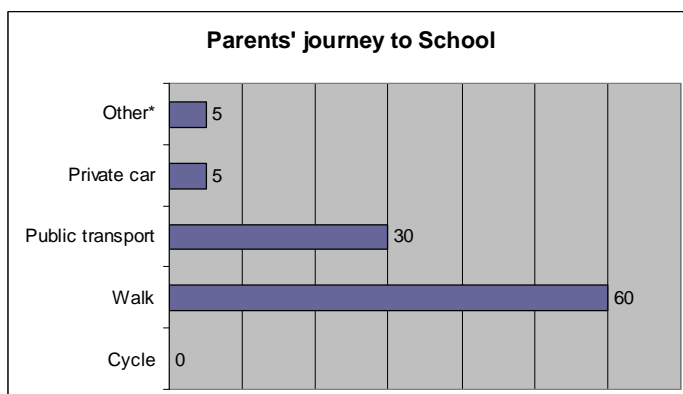
Graph 5.5: Parents' journey to school
(Source: Author, 2008)

5.4.6 How often child walks to school

The vast majority of respondents, 70 percent, indicated that their child never actively travels to school.   There are 20 percent of children that actively travels to school five days a week. There are 10 percent of children that actively travel at least 2 days a week. Graph 5.6 below shows the distribution.

How often child commutes by active transport

5 days	20
4 days	0
3 days	0
2 days	10
1 day	0
Never	70
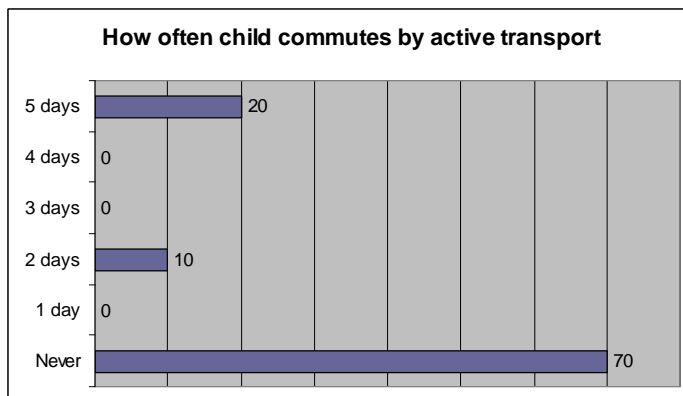
Graph 5.6: Number of days child actively travels to school
(Source: Author, 2008)

Of the proportion of children who are driven to school, there is still 55 percent of parents that would not allow their children to walk, cycle or catch public transportation even if their child wanted to actively commute. Alternatively, 45 percent stated that they would allow their child to actively commute if they wanted to (Table 5.5 below).

Table 5.5: Parents' willingness to allow their child to actively travel to school

Would you let your child walk or ride a bike o school if they wanted to?	Responses	Percentage
Yes	45	45.0%
No	55	55.0%
Total	100	100.0%

(Source: Author, 2008)

5.5 Comparison of supervised play

Parents were asked whether they were permitted to play within the local area without an adult present when they were a child. Of the parents surveyed, 85 percent stated that they were always permitted to play outside without an adult present. Only ten percent stated that they were 'somewhat' permitted to play out in the urban realm without an adult present. Five percent were not permitted to play independently 'very much' (Graph 5.7).

Parents were asked to compare this to the amount of time their own children spend within the urban realm without an adult present. Half of the respondents said they would not permit their children to play outside without an adult present. There were 35 percent of respondents who claimed that they would allow their children to play outside the home 'somewhat' without an adult present and 15 percent who stated that they would 'not very' much allow it (Graph 5.8). This indicates that there has been significant a decline in the level of independence that children today have compared to the previous generation of children.

Parents' supervision during play

Category	Value
Never	0
Not very much	5
Somewhat	10
Yes	85

Child's supervision during play

Category	Value
Not at all	50
Not very	15
Somewhat	35
Very	0
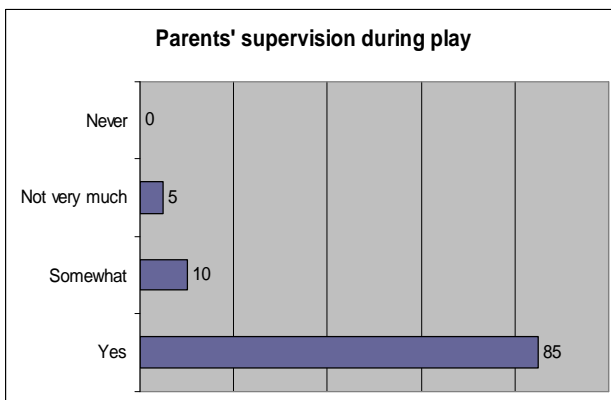
Graph 5.7: Level of supervision parents received as a child (Source: Author, 2008)
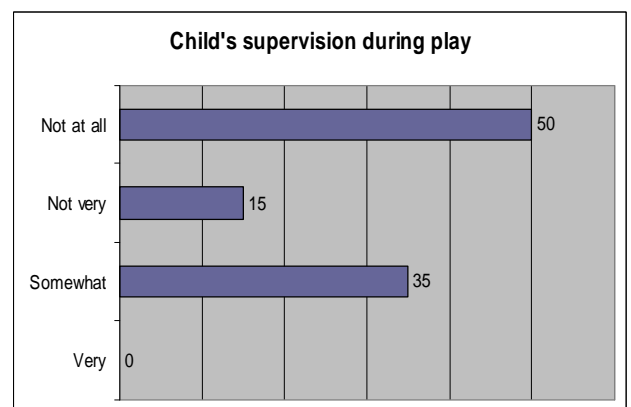
Graph 5.8: Level of children's supervision

5.6 Parental perceptions

5.6.1 Concerns for child safety on the walk to school

Parents were asked to state what concerned them most in allowing their children to actively commute to school. The majority of respondents, 35 percent, indicated that fear of stranger danger is the most concerning. The second was fear of traffic (30 percent of responses). Twenty percent of parents cited that it was too far to allow their children to actively commute to school. The 'other' responses were that the school is located too far at the moment, however this might change as children got older.
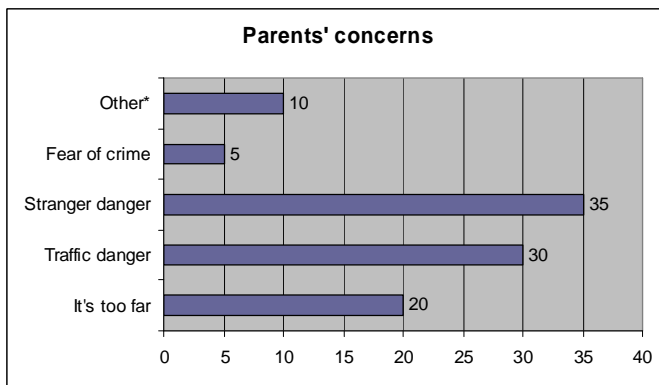
Graph 5.9: Parents' concerns for children actively travelling to school
(Source: Author, 2008)

5.6.2 How walkable is the neighbourhood?

The majority of parents thought their neighbourhood was walkable with 40 percent stating it was 'very' walkable and 40 percent stating it was 'somewhat' walkable. Only five percent stated that it was 'not at all' walkable.

Table 5.6 Parents' perception of neighbourhood walkability

Do you think that the neighbourhood that you live in now is easy to walk around?	Responses	Percentage
Very	40	40.0%
Somewhat	40	40.0%
Not very	15	15.0%
Not at all	5	5.0%
Total	100	100.0%

(Source: Author, 2008)

5.6.3 Perceptions of neighbourhood safety

Parents were asked to identify how safe they believed their childhood neighbourhood to be. The majority of respondents, 75 percent, stated that their childhood neighbourhood was very safe, while 25 percent stated it was 'somewhat' safe. There were no respondents who perceived the neighbourhood they grew up in to be unsafe (Graph 5.10).

Childhood sense of safety

- Not at all: 0
- Not very: 0
- Somewhat: 25
- Very: 75
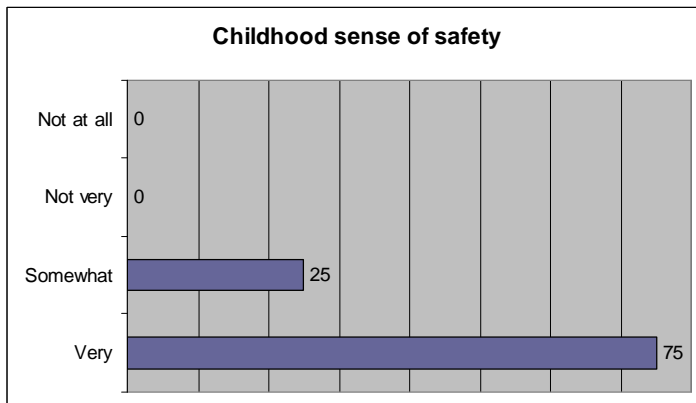
Graph 5.10: Parents' perception of safety in their childhood neighbourhood
(Source: Author, 2008)

Parents were asked to indicate how safe they believed their current neighbourhoods to be. The majority believe that their neighbourhoods are 'somewhat' safe with 55 percent of the respondents citing this. Twenty percent still believed their neighbourhoods to be 'very' safe. However, perceptions of neighbourhood safety have decreased with 15 percent saying that their neighbourhoods were 'not very' safe and five percent said that it was 'not at all' safe.

Sense of safety in current neighbourhood

- Other*: 5
- Not at all: 5
- Not very: 15
- Somewhat: 55
- Very: 20
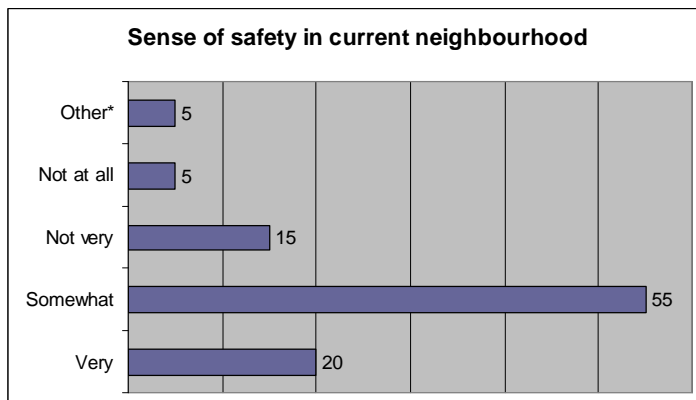
Graph 5.11: Parents' perceptions of current neighbourhood safety
(Source: Author, 2008)

5.6.4 Perception of childhood abduction rates

Parents were asked whether they believed their children were at a higher risk of being abducted by a stranger today than when they were a chid. The majority of respondents, 60 percent, believed that their children are at a greater risk of being abducted today. However, 20 percent said that there was in fact no difference between the generation of parent and child.

Are Children More at Risk of Abduction Today
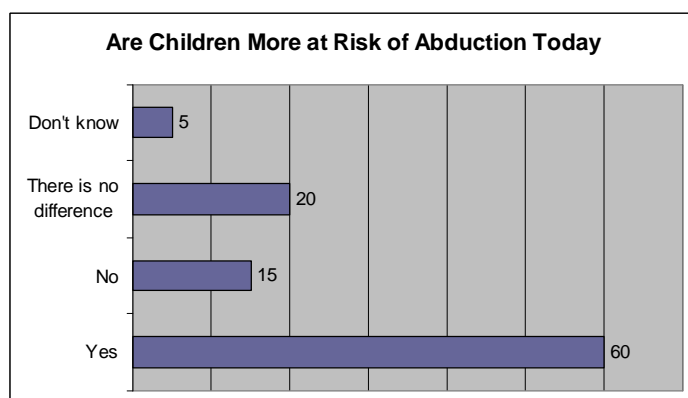
Graph 5.12: Perceptions of abduction
(Source: Author, 2008)

Seventy percent of respondents believed that physical activity is the leading health indicator for reducing most preventable threats to health. Thirty percent of respondents believed it was somewhat the leading reducer of preventable threats to heath. Nonetheless, all respondents held the impression that physical activity is beneficial for health.

Table 5.7: Perceptions of health and physical activity

Q19. Do you agree with the statement: Physical activity is the leading indicator for reducing most significant preventable threats to health	Responses	Percentage
A lot	70	70%
Somewhat	30	30%
Not much	0	0.0%
Not at all	0	0.0%
Don't know	0	0.0%
Other	0	0.0%
Total	100	100.0%

(Source: Author, 2008)

5.7 Conclusion

The results presented in this chapter provide an understanding of parents' perceptions in today's society. It indicates parents' decisions and actions towards their children's freedom to actively experience the urban environment. It provides a comparison of this current generation of children's physical activity compared to parents' physical activity levels as children. It reveals that there are differences in the level of freedom parents' experiences in the urban environment when they were children compared to their own children today. It shows that children's play and play range is different to that of their parents. Children are spending more time with electronic media than their parents' generation. Children's ability to walk to school as most parents did, have decreased and children are being supervised more than their parents were. This could be attributed to the changing perception of the urban environment that parents hold. Many parents believe that their local neighbourhoods are not as safe as the neighbourhoods they lived in as children.

The following chapter discusses these quantitative results in conjunction with qualitative, in-depth interviews. The interviews provide a more in depth understanding of the barriers that parents believe to exist within the urban environment that minimise children's activity.

Chapter 6:

Barriers to Physical Activity: Perceived and Actual

Chapter 6

Barriers to Physical Activity: Perceived and Actual

6.1 Introduction

Chapter 5 presented the results of my quantitative research. In order to better understand this statistical data, qualitative, in-depth interviews were also conducted. This provided a complimentary balance between statistics and real stories of people's experiences. Qualitative research is a way of understanding people, place and relationships in a number of environmental settings (Thompson, 2006). The qualitative research aims to describe life worlds from the view point of parents that are currently experiencing the difficulties of deciding how much freedom to allow their children within the urban realm. It aims to better understand the social realities of the elements of the urban environment that cause concern for contemporary parents. As discussed in Chapter 4, the information relating to the qualitative and quantitative data can be seen in Appendix B and C.

This chapter discusses the results of the previous chapter with regard to parents' "world views, shared norms and social relationships and associated life circumstances" (Flick et al, 2004:4). This chapter also discusses the findings of this primary research and other studies that have been conducted. This will provide an understanding of my research.

6.2 Parents' perceptions

Parental perceptions were a key indicator for the level of freedom children experience in the urban realm. Over the past 30 years parents' perceptions regarding raising children have changed. The growing perception that children are vulnerable, combined with the belief that urban areas are not as safe as they were when parents were children, is creating an element of fear. This fear is a key element in creating the risk averse society (Altheide and Michalowski, 1999). Today there is more emphasis placed on 'protecting' children and doing the right thing by them. Activities that children

once took part in are now considered dangerous and the parents that allow them to happen are being labelled as 'bad' parents. One mother made the comment:

"I think that there are too many parents that once their kids get to about 10 or 12 they tend to lose interest and then they just go off and let them fend for themselves. I've seen that quite a lot. I see kids catching buses, just being allowed. It seems to be something there, I don't know, there is just something I don't like" (Hoadley, 2008).

For parents, altruistic fear, or fear for others, is more common and intense than personal fear. The strength of parental love and the belief that children are weak and vulnerable results in some parents taking extreme measures to protect their children (Warr and Ellison, 2000). This is indicated with the reaction of some to remove their children from experiencing independent activity outside the home.

My research found that parents believe that the neighbourhood they live in now is not as safe as the neighbourhood they grew up in. This creates altruistic fear for their children. The survey results show that 75 percent of parents perceived their childhood neighbourhood to be 'very safe' and 25 percent stated it was 'somewhat safe'. This compares to only 20 percent of parents who believe their current neighbourhood is 'very safe'. Fifteen percent state their current neighbourhood is 'not very safe' and five percent said it was 'not at all safe'. When a parent was asked to explain the reasons behind restricting his children's experience in the urban environment, he explained, "because, um… well, safety issues. You don't want your children out on the streets because you feel like its not safe anymore like when we were young" (Leeds, 2008).

Children have lost their freedom of play and mobility within their local environments because of a fear for their safety, primarily from strangers and traffic. The highest proportion of survey respondents, 35 percent, indicated that strangers were the biggest threat to children today. In addition, 60 percent of parents believed that children are more at risk of abduction by a stranger than they themselves were as a child, regardless of the fact that abduction rates have remained the same over the last 30 years (Gill, 2007). This is 'Precisely because the crime is so rare, it can be stated with near certainty that there are no more predatory child killers at large today" (Gill,

2007:49). However, the changing nature of society and often sensationalist media coverage of negative events that concern children, increase the fear of abduction.

Of the recent attempted abductions in Sydney (Ramachanderan, 2008), one respondent said, "Have you heard of all these recent child snatchings? It is not safe for children these days" (Thompson, 2008). Though the newspaper headlines read "Spate of Child Abduction", no child has actually been abducted. The inaccurate media report creates panic and fear in society. While the attempted abduction of a child is a serious issue, the media report should indicate the fact that all the children have got away to raise the alarm about the attempted abduction. This could draw attention to children's resilience and quick thinking to get away but would contradict the media's message that "dangerous, predatory strangers represent a significant or growing threat to children" (Gill, 2007).

On the other hand, parents' fear of traffic is of even greater concern. Traffic danger was reported as being the second biggest concern for parents (30 percent). When asked why she though there were more dangers to children from traffic one respondent stated: "Ah, basically media. You hear bits and pieces in the media" (Hoadley, 2008). Ironically, a natural instinct of parents to protect their children is to drive them everywhere. This causes more traffic in residential streets and around schools and further puts children at risk (Living Streets, 2008). A parent made the statement about their concerns for child safety,

> "yes, stranger and traffic. You know you wouldn't want to go around on your bikes. There are a lot of driveways around here that go out because the houses are smaller. Its not like the houses are massive with the occasional driveway, these are all long skinny ones. So that's definitely, you know, so if they were to take the dog for a walk that would be a drama because you are worried about all the traffic" (Hoadley, 2008).

The results of my study indicate that because of parents concerns for their children's safety, their freedom within the urban environment has decreased. Though children are still participating in planned or organised sport, there has been a decrease in incidental physical activity that they achieve through play or walking. This is evident in both the qualitative and quantitative research.

6.3 Play and play range

My research results relating to play and play range are similar to studies conducted by Karsten and van Vliet (2004 and 2006), Valentine and McKendrick (1997), and Bouw and Karsten (2004). Parents reported in my study that their children play outdoors less often than they did themselves. Parents understand the importance of physical activity for health. This is evident by the proportion of survey and interview respondents whose children participate in organised sport and activities. While parents also understand the benefits of play for health and development, half of the survey respondents said they do not allow their children to play independently outside of the private residence. Children today play closer to home, such as in private gardens. This move towards play within the home can be understood in relation to the increasing number of cars and a decrease in the number of children on the street (Bouw and Karsten, 2004). One parent made the comment:

> "Well, I think there were more young people my age everywhere. Where as here it is probably not as much. But then I have (children of) different ages so like for Fynn's age, there is no one of his age… they are either babies or they're older" (Hoadley, 2008).

The results of the research undertaken for this thesis provide evidence that supports a study conducted by Karsten and van Vliet (2006). This study made three observations regarding contemporary children's play and play range. Firstly, play has moved from outdoors to indoors. When asked to discuss their childhood play experiences all parents remembered playing independently in their local areas, such as playing out on the street and on bikes. However, when asked about their children's play they commented that their children still enjoy the same activities, but they are more restricted to the private home or garden if an adult was not present. Parents also indicated that their children are playing inside the home more. When asked how much outside play she participated in, one interview respondent indicated that she spent much longer outdoors than her children. She stated that she spent,

> "All day. Well not while I was at school. Yeah, but a lot more than what the kids do now. But we didn't have TV shows on all day. I think we had a couple in the morning and a

couple after school. We didn't have all that 24 hour kids' television. Even Nickelodeon Junior is now 24 hours" (Hoadley, 2008).

Both my survey questionnaire results and the interview responses indicate an increase in the amount of time children spend with electronic media. The levels indicated in the survey almost exceed government recommendations for using electronic media which is up to two hours (Local Government Association et al., 2008). One interviewee made the comment:

"If I didn't… didn't encourage them to go out, which happened the other day when I was crook, um, Brittany and Braedon were basically on the computer for hours. Ellese did bits and pieces and Fynn watched television all day. But I was crook. It's not like they found themselves something to do, they were happy to do that. It's only the eldest that found something to do" (Hoadley, 2008).

The task that the eldest child found to do was reading a book. It could be viewed that this task is still quite sedentary and was undertaken within the home. However, the eldest child is a teenager. This confirms research conducted by Merom et al (2004) that shows physical activity levels decline through adolescence and that sedentary activities are established during childhood (Merom, et al, 2004). In my respondents case, although the eldest found something to do, she was still restricted to being inside the home as her mother was sick and unable to supervise play outside.

The second observation made by Karsten and van Vliet (2006) is that children's freedom outside the home has decreased. Their daily territory has reduced and the number of places they travel to independently has shrunk. The places that were once considered to be the domain of children, such as parks and playgrounds, are becoming less accessible and appealing as concerns for children's safety rises (Karsten and van Vliet, 2006).

My study also found that children's play range has decreased and that parks and playgrounds becoming less appealing to children. As some children are not permitted to take themselves to the park or playground they rely on parents to take them. This becomes a planned event and does not fit the definition of spontaneous play (Hart, 2002). One parent in my research made the comment:

"in Five Dock there is a skate park, but my kids aren't interested in that… the one at Moore Park is good, there is a big kids and a small kids one which is great, they are next to each other" (Hoadley, 2008)

Recently there has been collaboration between youth skateboarders and planners to design spaces for their use. However, this indicates that though skate parks are beneficial to some children, they do not represent the needs of the entire child community. In fact, they have been a response to one sub group that communities find difficult (Hart, 2002). The family must travel to Moore Park to a playground that is better. However, while it is better in terms of the safety surfacing, even parents note that the equipment is dull in comparison to their own childhood playground equipment. The parent further stated:

"they both have that soft cover… but they don't have all the equipment we used to have. I think our equipment was fun" (Hoadley, 2008)

The third observation made by Karsten and van Vliet (2006) is that the increased involvement of parents to accompany their children has resulted in more children being driven by car. Children's mobility patterns today are similar to that of adults. Children are travelling further and into other neighbourhoods, however, their experience in their own neighbourhoods and sense of place has diminished (Karsten and van Vliet, 2006).

As well as driving children to playgrounds that are several suburbs away, parents are also driving to locations that are closer to their homes. This has changed significantly over the generation of parent to child. When asked how parents accessed places as a child they all remembered walking or riding their bikes. For their own children they are mostly driven. This not only impacts children but their parents also. Parents do not always have time to supervise their children or to drive them everywhere. They then stop their children from going outside on their own. Parents realise the benefits of play and mobility but are unable to find a solution. Initiatives that support the sharing and supervisory responsibility would help parents (Karsten and van Vliet, 2004). However, trusting relationships within the community are often hard to initiate. Earlier generations of parents were supported by a wide range of social support from neighbours, shopkeepers, family and even the

police. Parents today have become isolated. Karsten and van Vleit (2006) contend that there is a need for planning to acknowledge this change and put supports in place to reduce the isolation (Karsten and van Vliet 2004 and 2006).

To reduce this isolation, children need to be able to access a range of play environments close to the home so that parents can casually monitor them. This involves policy, programs and urban design initiatives to create residential areas that promote safety while allowing children to play in areas such as roof terraces, courtyards and on footpaths in front of the home (Karsten and van Vliet, 2006). To re-engage children in playgrounds and parks the installation of safety equipment should not be done at the expense of child enjoyment, and ultimately their health and development. More interactive environments need to be created where children can create their own play. Planners have realised the importance of consulting children in the design of open space, as with the skate park example. However, it is important that they truly listen to what children want with regards to play, rather than just making consultation just part of the process that must be conducted for the development process (Walsh, 2008). Recommendations for policy, program and urban design initiatives will be further discussed in Chapter 7.

6.4 Journey to school

The research outcomes for this thesis confirm other studies which show that independent child mobility is decreasing. Children are being labelled the 'backseat children' because they are isolated in cars (Living Streets, 2008). This is shown in the responses of parents I interviewed who noted a drop in the prevalence of walking to school on their own. Ming et al (2004) suggest that parents' perceptions of safety, the distance to school, limited access to public transport, increased out of area school choice and time pressures are some of the factors which have influenced parents to drive their children to school (Ming et al, 2004).

Parents were asked how they commuted to school. Sixty percent stated they walked, followed by 30 percent who said they travelled by public transport. Today, the children of the respondents are primarily driven with 55 percent commuting in this way. Forty percent of the survey group walked, representing a decline of 20 percent over the generation. Alternatively, Ziviani et al (2004) contend

that how parents commuted to school is a key determining factor of how contemporary children commute to school. The results of my research contract this as only five percent of parents were driven to school, compared with 55 percent of children today.

Nevertheless, the findings of my research are consistent with other studies. For example Merom et al, (2004) state that in NSW, car use for educational trips increased from 41 percent to 51 percent over the period from 1991 to 1999. Walking decreased from 32 percent to 24 percent over the same period (Merom, et al, 2004). Likewise, Booth et al (2007) and Salmon et al (2005) found that of Australian children aged between 9 to 13 years old in 2001, 38 percent never walked, 36 percent walked at least once a week and 26 percent walked more than five times a week (Booth et at, 2007 and Salmon, et al 2005).

The Household Travel Survey Report Data 2006 shows the mode share by age group zero to ten years old on an average week day. Graph 6.1 shows reducing levels of active transport.
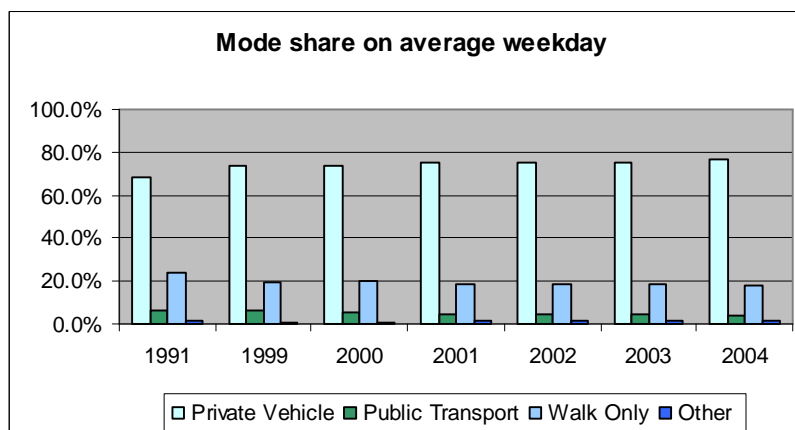
Graph 6.1 Mode share on average weekday
(Source: Household Travel Survey Report Data 2006)

The National Public Health Partnership (NPHP) identified active transport by walking or cycling to be a high priority for achieving daily physical activity requirements. Health promotion strategies have included infrastructure support to encourage more active transport. 'Event' days such as 'Walk to School Day' have also been initiated in NSW since 2000 and have been growing in popularity ever since. Therefore, with the wide acceptance and promotion of the benefits of active transport, it is concerning that these trends exist (Corpuz et al, 2004).

The biggest decrease in active transport was for five to 14 year olds. Van der Ploeg et al (2007) provide statistical evidence of the declining active transport which is indicated in the Graphs 6.2 and 6.3. These graphs show commuting patterns of travel to school and travel from school for the age groups five to nine and 10 to 14 over the period 1971 to 2003. Between 1971 and 2003 the proportion of children that walk to and from school in Sydney almost halved. The proportion of children being driven more than tripled over the same time period (van der Ploeg, 2007). This has serious implications as travel patterns are developed during childhood, whether healthy or otherwise and are likely to be carried into adulthood (Corpuz et al, 2004).
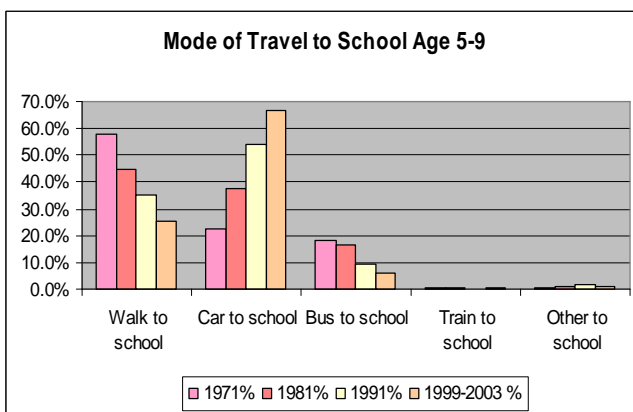
Graph 6.2 Journey to school age 5-9
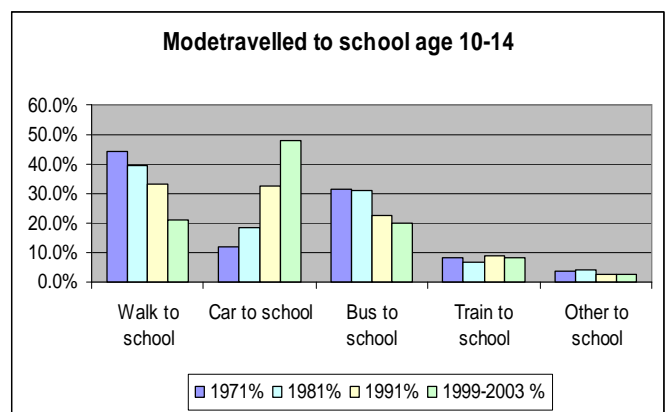
Graph 6.3 Journey to school age 10-14
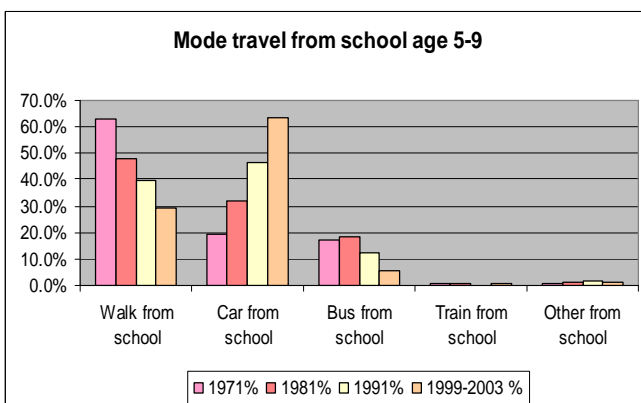
Graph 6.4 Journey from school age 5-9
(Source of graphs: Van der Ploeg, 2007)
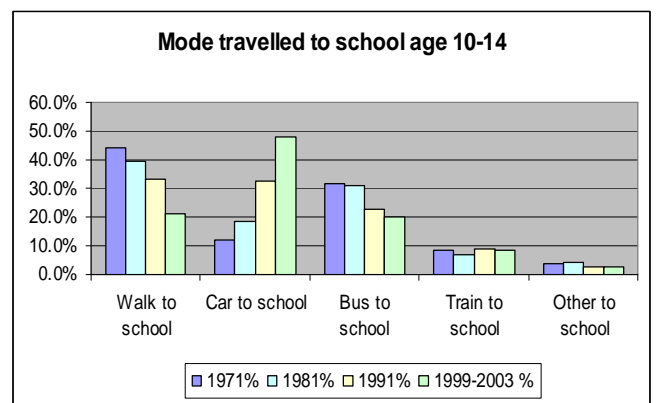
Graph 6.5 Journey from school age 10-14

Even with the known benefits of physical activity, statistics show a decline in active transport. This is despite the median travel distance being just 600m (Yeung et at, 2007). The NSW Government

provides a free bus pass to year three to six students living 2.3 kilometres from their school which means that students living within that distance would partake of and benefit from active transport. In addition, Corpuz et al (2004) found that the average trip time equates to about one kilometre which is well within the minimum home to school distance set by the Government (Corpuz et al, 2004). The results of a 2002 study on the travel of primary school students in NSW shows that the proportion of students who did not actively commute doubled from 22.8 percent to 44.8 percent as the distance from home to school increased from 0.75 kilometres to 1.15 kilometres. In addition, those doing five or more active trips a week dropped by more than a third from 69.3 percent to 43.1 percent (Corpuz et al, 2004).

Walking to school can add up to 20 minutes of physical activity per day, if a child walks home from school this can add up to 40 minutes of a child's daily physical activity requirements. Children are recommended to have between 30 to 60 minutes of physical activity on most days of the week (Department of Health and Ageing, 2008). If a child walks to and from school they are accumulating valuable physical activity. In light of the current health problems concerning children, particularly overweight and obesity, the walk to and from school would seem an appropriate chance to partake in physical activity (Corpuz et al, 2004). In addition, it has been suggested that children that actively commute to school are more likely to be active at other times of the day (Cooper et al, 2005). This provides evidence in support of policy initiatives to promote active transport as a means of increasing children's activity levels (Cooper et al, 2005).

My survey results show that while 45 percent of respondents were willing to allow their children to walk to school if they wanted to, 55 percent still would not allow their children to walk. Young Transnet and The National Children's Bureau in the United Kingdom run an online survey about children's views on transport, particularly the journey to school. By the beginning of 2004, around 43,000 young people had entered data about their preferred modes of travel. Around a third of the survey sample was driven to school and half of those stated they did not want to travel by car. In addition, nearly a third of the sample wanted to cycle to school, ten times the number that actually did so (Osborne, 2005). My study found similar results. When asked about her grandchildren's journey to school she said, "Well, they are driven to school now, but they may walk when they get older. Maybe when they start high school" (Thompson, 2008). Children today have less

opportunity to experience their environment and are more in danger from traffic risks in the long run as they have not developed road safety skills (Living Streets, 2008).

There is a growing body of evidence that suggests the move to later independence is one of the main causes of high teenage road accident statistics (Living Streets, 2008). The Australian Bureau of Statistics (ABS) shows that ten to 14 year olds experienced higher rates of accidents compared with one to nine year olds (ABS 2003). Rather than practising the walk to school during the primary school years, children are not allowed to have independence until they are in high school. If children are to grow into healthy and resilient teenagers they must undertake a number of journeys independently (Living Streets, 2008). However, until children are ready for independence, there must be programs in place so that children can walk to school and practise their road safety skills with responsible adults. This will be discussed in Chapter 7.

6.5 Conclusion

Parents are the key to determining levels of physical activity for their children in the urban realm. Parents ultimately decide whether to allow their children more freedom or if they need to be protected. This decision is be based on a combination of elements such as whether parents believe that their children are more vulnerable today than they were in the past. This is very much perceptions about of how safe society is for children. The research reported here indicates that while some elements of the urban environment are legitimate concerns, children still need to experience some risk in their lives so that they can learn to deal with the risks. However, some elements of the urban environment are only perceived to exist resulting in the benefits of physical activity not being gained at the expense of risk aversion.

Nonetheless, planners and policy makers have the potential to make changes to the urban environment that create a sense of safety, sense of place and sense of community that have the benefit of increasing children's freedom in their local areas. Examples of real life successful implementation of policy, programs and urban design initiatives that have re-claimed the street for children's physical activity are discussed in the following chapter.

Chapter 7:

Recommendations and Conclusion

Chapter 7

Recommendations and Conclusion

7.1 Introduction

The purpose of this thesis has been to explore whether the urban environment affects child health and wellbeing. In particular it has focused on the elements of the urban environment that present barriers to children's ability to be physically active within the urban environment. This includes physical elements of the built environment and the actions of parents who perceive the urban environment to present barriers to children. This concluding chapter seeks to establish ways in which governments and planners can make improvements within the urban realm for children's physical activity and health benefits. It firstly summarises the research findings. Secondly, it presents key recommendations for ways to reclaim the urban environment for children's physical activity, health and development.

7.2 Key findings

The empirical data collected for this thesis highlights some key differences between the activities of contemporary children compared with their parents. Children's freedom to experience physical activity in the urban environment has decreased over these two generations. Key findings of children's play and play range found three fundamental changes.

◆ First, play has moved from outdoors to indoors. Children are spending more time in the private residence, and more time with sedentary electronic entertainment rather than physical play.

◆ Second, children's play range has decreased and the places that children used to play such as playgrounds and parks are becoming less accessible to children. This is because their play range has decreased and they are often not allowed to travel far from home due to physical restraints (such as urban development and busy roads).

Also that there are some play spaces that are losing children's interest because they are not suited to the majority of children's play needs.

◆ Third, play is more supervised and controlled. This means that play becomes a planned event and is not spontaneous as it should be. Children's freedom to walk independently to school has also decreased as parents are driving their children more often.

This research found that the reasons for this are related to changing parental perceptions. The two primary reasons that were discovered from the research are:

◆ Parents believe that children are not as resilient as they were a generation ago
◆ Parents perceive the urban environment to be less safe than it was when they were growing up.

When parents do not allow their children to gradually increase their independence they are delaying the learning process for children to be able to learn to judge risk for themselves. In addition, they are not experiencing physical activity which is beneficial to health and wellbeing. The desire to remove risk from their children's lives can potentially have greater damaging effects than the perceived risk for their child.

The urban environment is changing and does not appear to be as safe as it was in parents' generation. Parents' primary concern for safety relates to strangers and traffic. It has already been established that strangers present no more of a threat to children today than from parents' childhoods. However, traffic is a legitimate threat to children. Ironically, parents themselves are contributing to this danger. A natural reaction of parents is to protect their children, and by driving them everywhere parents believe they are doing the best for their child. This research shows they are damaging their child and other children. As traffic levels increase, more parents feel they must drive their children. This has the impact of creating more traffic volume, removing physical activity from children's lives, restricting their ability to learn road safety, and being a potential threat to other children who are permitted to walk. In addition, the more parents drive, the more people stop

using the streets. This creates a feeling of emptiness and desertion that increases parents' fear of strangers (Tranter, 1996).

7.3 Consultation with children

A good environment for the majority of the community is one that is based on the principles of social inclusion. It is considered that inclusiveness, equity and participation for all groups, including children, are essential for planning outcomes (Hart, 2002). However, Freeman (2006) believes that some planners can view participation as something that gets in the way of making decisions. When considering that children make up a significant proportion of the community it is important to take into account their needs in the planning process (Freeman, 2006).

Consultation with parents and children
(Source: Wyenot News, 2006)

Hart (2002) believes that a weakness in providing play spaces for children is that they have not been consulted or observed to find out what they need and want. Often adults do not differentiate between their own needs and the needs of children (Hart, 2002). Prior to the 1990s planning had not considered children and parents to participate in the decision making process. Today consultation with children and parents is a part of the process, however, there is still the danger

that children's voces are not being heard (Bartlett, 2005). Coming up with policies and practices that fulfil the needs of children requires an ongoing response that includes training, monitoring and assessment to ensure they benefit the majority of users (Bartlett, 2005).

There are examples of successful consultation from international experiences that illustrate how children are capable of researching and providing information for decision making. Bourke (2005) shows that through the use of visual techniques children are able to show their relationship with place and space with imagery rather than text. This method provides pictures of children's play environments and how they might be designed to enhance learning, social behaviour, health and well being. In addition, it allows children to be involved with the design and planning process (Bourke, 2005).

Using children in the design of spaces allows planners and designers to see how children want to use the space rather than being primarily concerned with the technical elements of space. Bourke's (2005) study shows how children can use photography to highlight ways of playfully using space. It shows the meaning, feelings and personal histories of children's places. Furthermore, what adults may see as insignificant can be vital to children (Bourke, 2005).

Bourke's (2005) study raises three points. First, children are able to be involved with the planning and decision making process from a very young age. They are able to research their environments and provide information about their play for the benefit of better planning outcomes for themselves and other children. Second, the use of visual techniques is particularly effective to allow children to show their play experiences and to explain the choices they make with regard to their play. Finally, regardless of the actual and perceived barriers within society, children will always play. Children also want to participate in the same type of play as they always have, even in their parents' generation (Bourke, 2005). It is up to adults to remove some barriers so that they can.

Participation should not be used on its own to attend to the growing problems that children have. Evidence from international experience shows that there is no guarantee that these problems will go away by incorporating consultation into the decision making process. In the United Kingdom where inclusion is a requirement of planning decisions, only 12 percent of children felt that they

were truly being heard in local planning decisions (Bartlett, 2005). In addition, in Sweden where local governments have the process of including children in the decision making process, only three percent felt they could assist in local decisions (Bartlett, 2005).

The success of participation is not to give up on working with children and young people. Even the most promising projects can fail. The critical part of success is to have a good attitude towards problems and mistakes. Rather than deciding not to try again, it is beneficial to learn from mistakes and try different things the next time (Bartlett, 2005). The fact that children do not have political power in most instances limits decisions to be conscious of their age limitations and therefore, they need to be able to be heard in other ways (Freeman, 2006 and Bartlett, 2005). In doing so we can ensure that children have the opportunity to play in environments that are beneficial to the entire community.

7.4 Play spaces for children

Where places to play in urban neighbourhoods are difficult to access due to traffic, busy roads and a lack of open space, playgrounds and parks can be valuable assets to the community. They provide a place for adults to meet, children to play and senior citizens can observe and feel a part of the broader community. The problem with playgrounds and parks is that they often lack the elements that encourage spontaneous free play and that they are not always practical for all age groups within society (Walsh, 2006).

Children benefit from a range of play settings and equipment that the traditional playground or contemporary safety playground can offer. Rather than assume what play spaces children will want to play in, the desired outcome should be to establish the places for children to be creative and independent about their play (Hart, 2002). By creating the potential for a range of childhood activities it will encourage children to be self directed, imaginative, independent and physically active during their play (Hart, 2002).

Walsh (2006) states that there are three starting points for planning of play spaces. First, is to remember that children are a part of the community and they have a right to play. Their needs

should be considered in any new development. Second, children develop at differing levels and a range of ages and needs must be accommodated for. This also requires flexibility and variety of design. Third, play spaces need to be designed to encourage children's use. This also needs to support the adults who look after them (Walsh, 2006).

A combination of parents' fear of their child injuring themselves in playgrounds and authorities' fear of liability has seen the play standards, number and quality of playgrounds diminish (Gill, 2007). Over exaggerating the need to reduce risk in playgrounds draws attention to children's safety and creates panic among parents. One mother commented on why her local playground was much better after it had been made safer and said, "before, the surfacing was quite hard...but now, they can jump around, they can fall, and it won't hurt them at all. They love it" (Gill, 2007:37). Parents from the in-depth interviews took a similar view that playgrounds with safety surfacing were better. Parents who take this view may find that their children lack the skills to be competent in other abilities and as a result may take longer for children to develop independence.

For examples of successful play spaces for children it is beneficial to look to European cities. Playgrounds in Denmark, the Netherlands, and Sweden typically look less concerned with safety and rarely feature expensive safety surfacing (Gill, 2007). Playground designers in Sweden take the view that accidents will occur occasionally and that safety is just one of the factors that need to be considered when planning and designing playgrounds (Gill, 2007). One playground authority from Sweden said:

> "We follow the European standards and check all playgrounds once a week. The municipality is responsible for keeping all play equipment in good shape. Although we can't avoid accidents, where there is a problem that we have known about but not done anything about then the municipality is responsible. But if somebody falls and breaks an arm that is just something that happens. Of course it worries us but there is always a risk when you play and move your body… You are there are your own risk" (Gill, 2007:32).

Likewise in the German city of Freiburg, playground designs have been based on natural elements that encourage creativity such as logs, boulders and sand. The Deputy Director of Parks at the local authority commented on playground safety in these more natural and wild settings and said:

"clearly there are more hazards, and they are more varied, in natural play spaces compared to traditional play areas. In general children learn to take more care and responsibility for their safety in the nature play spaces and as a result accident rates have not increased" (Gill, 2007:33-35).

The Danish landscape architect Helle Nebelong who has designed award winning public play spaces in Copenhagen and have also been inspired by natural environments said that in her view:

"When the distance between all the rungs in a climbing net or a ladder is exactly the same, the child has no need to concentrate on where he puts his feet. Standardisation is dangerous because play becomes simplified and the child does not have to worry about his movements" (Gill, 2007:35).

The pictures below show playgrounds that use natural elements to encourage children to be creative in their play.

Playground for young children, Frysja, Kjelsås, Oslo
(Source: Nolan, 2008)

Kindergarten playground in Berlin

Lessons learned from European cities are that playgrounds are for children's enjoyment. There is great importance in providing children with opportunities for risk. Therefore, playground providers and planners should strike a balance between these associated implications for health and development of children. Accidents and injuries are a normal part of growing up and have positive impacts on child development (Gill, 2007). Children are more resilient than adults believe and possess a range of competencies and abilities that need to be exercised in order to assess and manage risk (Tranter, 2006. and Gill, 2007).

The pictures below are of landscape designer, Helle Nebelong's adventure playgrounds in Denmark. They encourage children to learn physical skills and encourage learning, development and independence.

Helle Nebelong adventure playgrounds, Denmark
(Source: Nolan, 2008)

As well as having a right to play, children should have access to the public realm and not be forced into playgrounds. Research shows that children prefer not to be isolated in playgrounds but more interactive environments (Walsh, 2006). Therefore, it is beneficial to create environments within the urban environment that allow children to play and be mobile.

7.5 Reclaiming the streets for play and mobility

7.5.1 Traffic Calming

European cities have been successful in reclaiming streets for play space and mobility for children. One strategy that has been beneficial falls under the general category of 'traffic calming'. There are a range of initiatives to reduce volume and speed of traffic in urban areas. For residential areas and the streets around schools, traffic calming involves techniques to reduce and slow traffic and to change the psychological feel and use of the street (Tranter, 1996). These techniques can include changes in road surfacing, paved streets, speed tables, neckdowns or narrowed streets, speed humps, changes in direction, street plantings and chicanes, all of which support reduced speeds that can be 15km per hour in some areas. It has been shown that the most successful reductions in speed have been combated through physical or engineered means rather than lowered speed limits by themselves (Tranter, 1996).

One important aspect of traffic calming for children is the potential reduction in road accidents. Many Australian parents feel that they are unable to let their children play in the streets, even in reduced speed limit areas. However, the evidence from European cities suggests that there was a dramatic reduction of 50 to 60 percent of accidents involving injury (Tranter, 1996). This does not mean that children living in traffic calmed environments should become blasé about low traffic speeds. They still need to learn to be aware of the potential danger of traffic.

Though traffic calming is not an absolute guarantee for reducing traffic volume and speed, in many instances in European cities they have provided parents and children with the perception they can use the streets for play. Traffic calming may also assist in changing society's perceptions that streets are intended entirely for motorists (Tranter, 1996). Examples from the Netherlands, Germany and Denmark show how the adoption of a two tiered approach to reducing traffic speed in residential areas is effective enough for children to play in the local area. The first tier reduces speeds to 30km per hour in residential areas. The second tier further reduces speeds to 15km per hour in streets where children are allowed to play (Tranter, 1996).

For examples of successful implementation of traffic calming measures it is worth mentioning the approach taken in Denmark. During the 1970s Denmark had the highest rates of traffic accident related child deaths in Western Europe (Osborne, 2005). Since then Denmark has invested significantly in safe play, walking and cycling for children. A law was passed that forces local governments to protect children while they are within the urban environment by implementing changes to highway and road design and placing investments into walking and cycling infrastructure (Tranter, 1996 and Osborne, 2005). This has had the result of reducing traffic related accidents involving children by 82 percent (Osborne, 2005). It also has the result of increasing activity and active transport rates.

Traffic calmed street in Denmark
(Source: US Department of Transport, 2008)

Accordingly, Denmark's obesity rate is only eight percent for adults. This is low in comparison to Australia's which is 26 percent (Yeung et al, 2005). Research in Denmark shows that continued investment in infrastructure to increase activity has more than paid for itself in terms of healthy benefits for the community (Osborne, 2005). It was found that for every US one dollar that was put into child services, a return of US 13 dollars was given back (Walsh, 2006). Other initiatives that have been beneficial in European cities are 'home zone' areas. These are discussed below.

7.5.2 Home Zones

Home zone streets have been successful in leading to greater independence of play and mobility. Deriving from the Dutch 'Woonerf', or living street, they are achieved by making modifications to the built environment. Modifications such as removing the division of the street and footpath to change the character of the street. The street is then seen as an area that is used not only for cars but for social interaction (Tranter, 1996). These modifications encourage parents to allow their children to play as there is a reduced sense of fear resulting from an increase in social interaction. They give the road space back to children and pedestrians (Tranter, 1996).

The picture below shows a home zone street in the United Kingdom. Modifications to the street have been made and traffic calming devices have been put in place for safety for children.

Home Zone Neighbourhood
(Source DPTAC 2008)

However, evidence in Munich shows that there needs to be more than just one home zone street in a neighbourhood for it to be effective at reducing traffic speeds. Also, that it is not enough just to

employ engineering and reduced traffic speeds to be successful. Children and pedestrians need to make use of the street and claim occupation; otherwise motorists would (Tranter, 1996).

As car ownership has increased it is often difficult to establish home zones. Most people are in favour of social life in streets, but when they are given the choice the convenience of cars will often win out over play space for children (Karsten and van Vliet, 2004). Before any substantial grounds can be gained for reclaiming some residential street space for children, there needs to be a change in societal attitudes so that children's rights are seen as being as important as motorists. Traffic calming should be seen as one part of a strategy for achieving change in communities that make streets safer, with more active transport and reinstates the social aspect of the street (Tranter, 1996). This is where travel change behaviour programs can be beneficial for changing people's attitudes towards their own travel patterns. Changing attitudes can require some community education regarding alternative transportation modes.

7.5.3 Travel Behaviour Change Programs

In Australia, there are a range of programs aimed at voluntary travel behaviour change. They aim to empower people to reduce the number of car trips they take and replace them with walking, cycling or public transport. In addition, they provide the support networks to make community changes (Tranter, 1996). The aims of the travel programs are to encourage a sense of community that allow families to work together and change their travel behaviour for children. This involves using more active ways of commuting within the local area (Tranter, 1996).

The Government of Scotland identify the process of travel change (Figure 7.1). Firstly, parents need to be made aware of the problem. Secondly, they need to accept responsibility of the problem and to recognise that they need to change their behaviour to make a difference. Drivers then need to be made aware of alternative modes, if they are viable and experiment with using different modes. The experience meeds to be positive for any permanent travel behaviour change to take place (Government of Scotland, 2006).

7. Habitual Behaviour
Adoption of sustainable modes

6. Experimental Behaviour
Try out new travel choices

5. Making a Choice
Really intend to modify behaviour

4. Evaluation of Options
Is there a viable option

3. Perception of Options
Perception of sustainable modes

2. Accepting Responsibility
Accept personal responsibility

1. Awareness of Problem
Aware of the issue of traffic

Figure 7.1 Process of Travel Change

(Source: Scottish Government, 2006)

Changing travel behaviour is best implemented in the school community to aim to break car travel behaviour for the journey to and from school. Before parents can break the social traps of driving their children to and from school they need to be able to understand the collective impacts of their individual actions (Tranter, 2006). The advantage of a focus on schools is that children can be involved in finding ways of increasing their own physical activity levels. Children have creative ideas for travel change and changing children's attitudes towards sedentary travel at an early age may be carried through with to adulthood. Even if trips to school account only for a small amount

of overall travel activity, encouraging active transport will give children confidence and road sense, and give their parents confidence that they can actively commute for other trips (Tranter, 2006). This can also be achieved through children participating in the walking school bus program.

7.6 Walking to school for daily physical activity

The potential to increase children's physical activity presents itself everyday with the journey to school. Parents see this as providing health benefits and children enjoy walking to school. Research shows that most children would rather walk to school than be driven (Young Transnet, 2008). However, evidence from my research indicates that children are increasingly being driven to school. This is due to parents' concerns for their safety within the urban environment.

To address parental fears about child safety, walking school buses (WSBs) have become popular in many Western countries. However, they have been most successful in New Zealand (Karsten and van Vliet, 2004). Before looking at the strengths of the WSB program in Auckland it is worth mentioning that that New Zealand currently lacks any traffic calming system of low speed zones near schools or places where children can gather (Kearns and Collins, 2006). WSBs involve adults supervising groups of children walking to school along a set route with specified stops where children can embark or disembark. Adult volunteers, usually parents, guide the bus and provide discipline and guidance for children while they learn road safety skills (Kearns and Collins, 2006).

WSBs are no substitute for children travelling with peers or in larger groups. However, they offer safe and reliable alternatives to the car and they get children walking in the neighbourhood. They encourage children to learn the basis of road safety skills so that they can gradually increase their independence and eventually walk to school without an adult (Kearns and Collins, 2006).

Addressing the issue of child pedestrian safety has tended to focus on either institutions educating children about safety, or by structurally altering the built environment, such as through traffic calming devices (Kearns and Collins, 2006). Teaching children road safety will only be effective through education if children are permitted to be walk and experience the neighbourhood

environment. Likewise, educating children and encouraging independent mobility in areas of higher traffic volume can create potentially dangerous situations (Kearns and Collins 2006).

Some take the view that WSBs promote more paranoia among parents to always be with their children outside the home (Tranter, 1996). However the success of WSBs in Auckland can be accredited to the level of parental support for the program. This combined with support from schools and teachers who have been involved with co-ordinating WSBs, public agency grants and training offered by local government will see that WSBs in Auckland survive (Kearns and Collins, 2006).

Walking School Bus in New Zealand
(Source: The New Zealand Ministry for the Environment, 2008)

There are several ways in which WSB's in Auckland have been successful and provide initiatives that can be adopted in Australian cities. Kearns and Collins (2006) state that "ongoing evaluation of the initiative has been critical to success" (Kearns and Collins, 2006:116). This has been provided through government agency such as the Auckland Regional Transport Authority who funded a study regarding the success of WSB's. As a result of the findings, WSB's were able to approach a travel company and convinced them to fund schools who adopted the scheme. This provided incentive for schools to encourage walking and has further resulted in additional funding from governments.

Secondly, "incentives for children have been important in increasing and maintaining support" (Kearns and Collins, 2006:116). For instance children gain points based on how many days they walk or the distance they travel to school each day. This recognition of children's achievement has helped children to own the initiative and encourage them to continue walking to school (Kearns and Collins, 2006). This would also have the benefit of children being responsible for their active transport which could be a healthy habit they can carry with them to adulthood.

The third lesson is that "WSB activities have yielded neighbourhood improvements which illustrate the symbolic clout that institutionalized walking may bring" (Kearns and Collins, 2006:116). Upgrading neighbourhood infrastructure has been provided due to the operation of WSB's in Auckland. Most common improvement were upgrading of footpaths, including trimming of trees, maintenance of broken pavements and the removal of obstacles. This indicates a step towards making urban environments more child friendly for their walk to school (Kearns and Collins, 2006). Similar improvements to the urban environment could be implemented in Australian cities if WSBs increase in popularity.

7.7 Conclusion

From the empirical research conducted for this thesis, it has emerged that parental fear influences children's experiences of the urban environment. Aspects of the urban environment appear more risky and dangerous today than it did when parents were children. A natural reaction of parents is to protect their children from risk by removing their independence within the urban environment. However, removing children from the urban environment removes the potential for them to gain experiences that are beneficial to their health and development (Gill, 2007 and Tranter, 2006). This creates a cycle where parents feel under pressure to intervene in children's lives, leading to less physical activity, learning and development. This can potentially leave children sicker and more unable to cope with life situations on their own.

What presents more of a threat to children's safety, notably the private car, is not being treated with the same degree of control that is placed on decreasing children's freedom in the urban realm. It appears that the importance of the car is being placed higher on the agenda than child health and

wellbeing (Gill, 2007). In an ideal world a radical reorganisation of the way we live, travel, and use the urban environment might be the best solution. However, it is not always possible to make such radical changes. This chapter shows that there are some urban planning initiatives, policy and programs can be beneficial for environments that encourage child and pedestrian activity as well as accommodating for motorists. Examples from international and local experiences show that it is possible to reclaim the public realm for children's health and learning potential. They also show that while the costs may seem expensive initially, money put into child health and wellbeing will pay for itself in the long run.

This thesis has implications for child health and wellbeing which is an issue at the centre of Federal and State Government policy making. Policy initiatives recognise the principles of preventative action and early inception are fundamental to deal with the current health and development issues facing Australian children (Preventative Health Taskforce, 2008). Physical activity has been identified as preventative action that is beneficial to the health of children. Physical activity in the urban realm is also beneficial for children's learning and development, particularly, learning to deal with a degree of risk.

In this regard, this thesis also has implications to local government, planners, urban designers, policy makers, health professionals and those responsible for caring for children. However, for local government, planners and designers it presents the basis for making necessary changes to remove the physical barriers that present problems for children's ability to be physically active from our environments. In addition, to create safer environments, increase social interaction and a sense of community which, could help to remove the barriers that parents' perceive to exist and that restrict children's physical activity in the urban realm.

References

Altheide, D. and Michalowski, R. 1999. "Fear in the news: A discourse of control". *The Sociology Quarterly*. V40 (3): pp475-503

Australian Bureau of Statistics. Available at http://www.abs.gov.au

Bartlett, S. 2005. "Good governance: Making age a part of the equation – An Introduction." *Children, Youth and Environments*. V15(2):1-17

Barton, H & Tsourou, C, 2000, *Healthy Urban Planning: A WHO guide to planning for people*, London, Spon Press on behalf of the World Health Organisation Regional Office for Europe.

Blaxter, L; Hughes, C; and Tight, M. 1996. *How to Research*. Buckingham: Open University Press.

Booth, M. et al. 2007. "Characteristics of travel to and from school among adolescents in NSW, Australia." *Journal of Paediatrics and Child Health*. V43:755-761

Bourke, C. 2005. "Play in focus: Children researching their own spaces and places for play." *Children, Youth and Environment*s. V15(1): 27-53

Briscoe, S. and Aldersey-Williams, H. 2008. *Panicololgy.* United Kingdom: Penguin Group.

Capon, AG. 2007. "Health Impacts of Urban Development: Key considerations", *NSW Public Health Bulletin* vol. 18, nos. 9 and 10:155-156.

Capon, T. 2008. "Sick cities, sick people." *Urban Connection*. April Quarter:8-11

Chapman, K., Nicholas, P. and Supramaniam, R. 2006. "How much food advertising is there on Australian television?" *Health Promotion International*. V21(3)172-180.

Cooper, et al., 2005. "Physical activity levels of children who walk, cycle or are driven to school." *American Journal of Preventative Medicine*. V29(3):179-184

Corpuz, G., Hay, A. and Merom, D. 2004. "Walking for transport and health: Trends in Sydney in the last decade." 28th Australasian Transport Research Forum. Department of Infrastructure, Planning and Natural Resources, NSW Australia

Cunningham, H. 2006. *The Invention of Childhood*. London, BBC Books

The Department of Health and Ageing. 2008. Promoting Healthy Weight. Available at: http://www.health.gov.au/internet/main/publishing.nsf/Content/health-pubhlth-strateg-hlthwt-obesity.htm

Department of Health and Ageing. Healthy Weight 2008: The National Action Agenda For Children and Young People and Their Families. Available at: http://www.healthyactive.gov.au/internet/healthyactive/publishing.nsf/Content/healthy_weight08.pdf/$File/healthy_weight08.pdf

DPTAC Home Zone Street, 2008. Available at http://www.dptac.gov.uk/pubs/pm/homezones/images/ac-04.jpg

Flick, U., von Kardorff, E. and Steinke, I. (eds)(2004) "What is Qualitative Research? An introduction to the field". In A Companion to Qualitative Research, Sage Publications, London.

Freeman, C. 2006. "Colliding worlds: Planning with children and young people for better cities." In Gleeson and Sipe, eds. Creating Child Friendly Cities: Reinstating Kids in the City.

Fry, G. 1981. "Merging quantitative and qualitative research techniques: Toward a new research paradigm." *Anthropology and Education Quarterly*. V12(2):145-158

Gardner, D. 2008. *Risk: The Science and Politics of Fear.* Toronto, Canada: Scribe Publications.

Gill, T. 2007. *No Fear: Growing Up in a Risk Averse Society.* London: Calouste Gulbenkian Foundation.

Gleeson, B. and Sipe, N., eds. 2006. *Creating Child Friendly Cities: Reinstating Kids in the City.* London; New York: Routledge.

Gleeson, B. and Sipe, N. 2006. "Reinstating Kids in the City". In Gleeson and Sipe, eds. Creating Child Friendly Cities: Reinstating Kids in the City.

Gleeson, B. 2006. "Australia's toxic cities: Modernity's paradox?" In Gleeson and Sipe, eds. Creating Child Friendly Cities: Reinstating Kids in the City.

Gleeson, B., Sipe, N. and Rolley K. 2006. "Pathways to the child friendly city." In Gleeson and Sipe, eds. Creating Child Friendly Cities: Reinstating Kids in the City.

Harder, B. 2007. Could smart urban design keep people fit and trim? *Science News.* V171(3) 43-45

Hart, R. 2002. "Containing children: Some lessons on planning for play from New York City." *Environment and Urbanization.* V14(2):135-148

Karsten, L. and van Vliet, W. "Increasing children's freedom of movement: Introduction." *Children, Youth and Environments.* V16(1)69-73

Karsten, L. and van Vliet, W. 2006. "Children in the City: Reclaiming the street." *Children, Youth and Environments.* V16(1):151-167

Kearns, R. and Collins, D. 2006. "Children in the intensifying city: Lessons from Auckland's walking school buses." In Gleeson and Sipe, eds. Creating Child Friendly Cities: Reinstating Kids in the City.

Living Streets. 2008. "Backseat children: How our car dependent culture compromises safety on our streets." Available at: http://www.livingstreets.org.uk/cms/downloads/0-1-final_backseat_children_report.pdf

Louv, R. 2007. "Leave no child inside: the growing movement to reconnect children and nature.' *Orion Magazine.* March-April 2007.

Magarey, A., Daniels, L. and Boulton TJC. 2001. "Prevalence of overweight and obesity in Australian children and adolescents: Reassessment of 1985 and 1995 data against new standard international definitions". *Medical Journal of Australia*:174-564

Mason, C. 2000. 'Healthy people, places and transport'. *Health Promotional Journal of Australia* v10 (3):190-196

McLean, T. 2008. "Australia is world's fattest nation". News.com.au. June 19, 2008

Merom, D., Tudor-Locke, C. and Bauman, A. 2006. "Active commuting to school among NSW primary school children: implications for public health." *Health and Place.* V12:678-687

Nolan, 2008. Helle Nebelong playgrounds available at: http://micalene.blogspot.com/2008_03_16_archive.html

The New Zealand Ministry for the Environment, 2008. Walking School Bus. Available at: http://www.mfe.govt.nz/publications/ser/enz07-dec07/html/chapter4-transport/images/walking-school-bus.jpg

Osborne, P. 2005. "Safe routes for children: What they want and what works." *Children, Youth and Environments.* V15(1)234-239

Planning Institute of Australia, Local Government Association and the Heart Foundation. 2008. Health Places and Spaces: Towards a National Planning Guide. Available at: http://www.planning.org.au/index.php?option=content&task=view&id=668

Premier's Council for Active Living. 2008. "Obesity costs continue to expand." Monthly Bulletin.v2(7)

Preventative Health Taskforce. 2008. "Australia: The healthiest country by 2010". Available at: http://www.preventativehealth.org.au/internet/preventativehealth/publishing.nsf/Content/discussion-healthiest

Ramachanderan, A. 2008. "Spate of child abduction bids." Sydney Morning Herald, 17 September 2008. Available at: http://www.smh.com.au/news/national/child-abduction-alert/2008/09/17/1221330906651.html

The Robert Wood Johnson Foundation, 2007. "Design for active living among children." Available at: http://www.rwjf.org/pr/product.jsp?id=23455

Salmon, J, Timperio, A. and Cleland, V. 2005. "Trends in children's physical activity and weight status in high and low socioeconomic areas of Melbourne, Victoria 1985-2001." *Aust. N.Z. Public Health.* V29::37-342

Scotland Government. 2006 Travel Behaviour Change available at: http://images.google.com.au/imgres?imgurl=http://www.scotland.gov.uk/Resource/Img/47176/0032504.gif&imgrefurl=http://www.scotland.gov.uk/Publications/2003/09/18178/26366&h=553&w=277&sz=10&hl=en&start=9&um=1&usg=__a40JRuuJryq3c2obBxTmSWMXgXE=&tbnid=JV3azfW7bCBnCM:&tbnh=133&tbnw=67&prev=/images%3Fq%3Dtravel%2Bbehaviour%2Bchange%2Bprogram%26um%3D1%26hl%3Den%26sa%3DN

Sipe, N., Buchanan, N. and Dodson, J. 2006. "Children in the urban environment: A review of research." In Gleeson and Sipe, eds. Creating Child Friendly Cities: Reinstating Kids in the City

Thompson, S. (2006) "The Quest for Heartful Environments: A Qualitative Researcher's Journey", *Urban Policy and Research*, V.24. 1:17-38.

Tranter, P. 1996. "Reclaiming the residential street as play space." *International Play Journal*. V4:91-97

Tranter, P. 2006. "Overcoming social traps: A key to creating child friendly cities." In Gleeson and Sipe, eds. Creating Child Friendly Cities: Reinstating Kids in the City.

Transport and Population Data Centre. 2006. "2004 Household Travel Survey Summary Report". The Department of Planning

Transport Research Board Institute of Medicine of the National Academies. 2005. Does the Built Environment Influence Physical Activity? Examining the Evidence. Available at: http://onlinepubs.trb.org/Onlinepubs/sr/sr282.pdf

TravelSmart. Safer Routes to School, available: http://www.travelsmart.gov.au/

US Department of Transport, 2008. Traffic Calmed Street available at: http://www.tfhrc.gov/pubrds/04may/08.htm

van der Ploeg, HP., Merom, D., Corpuz, G, and Bauman AE. "Trends in Australian children travelling to school 1971-2003: Burning petrol or carbohydrates? *Preventative Medicine* V46:60-62

Walsh, P. 2006. "Creating child friendly playspaces: A practitioner's perspective." In Gleeson and Sipe, eds. Creating Child Friendly Cities: Reinstating Kids in the City.

Warr, M. and Ellison, C. 2000. "Personal and altruistic fear in family households." *The American Journal of Sociology*. V106(3):551-578

White, R. and Stoecklin. 1998. 'Children's oudoor play and learning environments: returning to nature.' While Hutchinson Leisure and Learning Group available at http://www.whitehutchinson.com/cgi-bin/printer.cgi?p=/children/articles/outdoor.html

World Health Organisation. Available at: http://www.who.int/en/

Wyenot News, 2006. Available at: http://www.wyenot.com/news/2006-03-22-2.htm

Valentine, G. and McKendrick, J. 1997. "Children's outdoor play: Exploring parental concerns about children's safety and the changing nature of childhood." *Geoforum*. V28(2):219-235

Yeung, J., Wearing, S. and Hills, A. 2005. "Child transport practices and perceived barriers in active commuting to school." *Transportation Research Part A*. v42(2008):895-900

Young Transnet. Available at: http://www.youngtransnet.org.uk/

Ziviani, J., Scott, J. and Wadley, D. 2004. "Walking to school: Incidental physical activity in the daily occupations of Australian children." *Occupational Therapy International*. V11(1):1-11

Appendix A:

Ethics Approval

Appendix B:

In-depth Interview Information

Interview Respondent List

Susan Hoadley

Marilyn Thompson

Garry Leeds

PROJECT INFORMATION STATEMENT

THE UNIVERSITY OF
NEW SOUTH WALES

Date: 13 June 2008
Project Title: Nothing but child's play

Approval No.: 85039

FACULTY OF THE
BUILT ENVIRONMENT

Participant selection and purpose of study
You are invited to participate in a study of children's sense of place and childhood experiences of play and movement throughout the public realm. You were selected as a possible participant in this study because of your own childhood experiences and the experiences of your own children.

Description of study
If you decide to participate, we will discuss your own childhood experiences of playing in outdoor settings and your level of independence of play range and mobility throughout your local neighbourhoods. We will also discuss the experiences your children have today in natural settings to compare these experiences in order to determine whether you believe there has been any difference in the amount of physical activity children gain outside the home. You will be required to participate in an interview that should last for approximately 30 minutes. The interview will be conducted only once, you will not be required for any additional interviews. We cannot and do not guarantee or promise that you will receive any benefits from this study.

Confidentiality and disclosure of information
Any information that is obtained in connection with this study and that can be identified with you will remain confidential and will be disclosed only with your permission, or except as required by law. If you give us your permission, we plan to discuss the results in a written thesis that will be submitted to the University of New South Wales.

Your consent
Your decision whether or not to participate will not prejudice your future relations with The University of New South Wales or other participating organisations. If you decide to participate, you are free to withdraw your consent and to discontinue participation at any time without prejudice by completing the statement below and returning this entire form to

> Jodie Lock
> C/o Susan Thompson
> Faculty of the Built Environment
> Department of Planning
> University of NSW
> Kensington NSW

If you have any questions, please feel free to ask Jodie Lock via email jodie_leeds@hotmail.com. If you have any additional questions later, Mrs Susan Thompson of the Course Authority PLAN4132 at the University of New South Wales will be happy to answer them.

Jodie Lock

REVOCATION OF CONSENT. Project Title: Nothing but child's play

(Please send this entire form to the above address.)
I hereby wish to withdraw my consent to participate in this research project. I understand that such withdrawal will not jeopardise my relationship with The University of New South Wales, other participating organisations or other professionals.

....……....   ………….................………....
        Signature   Please   PRINT   name
                                             Date

1. Where parent(s) and children live/lived

As a child
- Can you tell me where you lived as a child?
- What sort of area was this?
- Can you describe the character of the area (types of houses, low density, the demographic, areas of open space etc)?

Where they live now
- Where do you and your children live now?
- How does this area compare to where you lived as a child? In your opinion is the urban character similar in terms of the demographics, density and form and the areas of open space? Why is it the same/different?

2. Opportunity to play outside or in the public realm

Parent(s) opportunity to play as a child
- When you were a child did you have the opportunity to play outdoors?
- Where did you play mostly (such as in your own backyard, friends or neighbours, parks or open space)?
- Was this play supervised or unsupervised by an adult or older child?

Children's have the opportunity to play
- Do your children have the opportunity to play outdoors where you live now?
- Where do they mostly play?
- Is this play supervised by an adult or older child?

3. Experiences in the public realm/outdoor play

Parent(s) experiences in the public realm/outdoor play
- Do you have any memories of playing outdoors or in the public realm (such as parks, beach, shopping centre etc) as a child?
- Can you tell me about a fond memory?
- When you were a child did you have a favourite play setting?
- What were your favourite play activities?
- How often did you play outdoors?
- For how long did you play out?
- Was this play outdoors or in the public realm supervised by an adult?

Children's experiences in the public realm/outdoor play
- What about your children, where do they like to play mostly?
- What sort of activities do they like to do?
- How often do your children play outdoors?
- For how long did you play out?
- Is your child's play outdoors or in the public realm supervised by an adult?

Comparison between parent(s) and children
- Do you think that you played outdoors more as a child than your children do now?
- Do you think you had more independent/unsupervised play than your children do now? Why?

Parents Playmates
- When you were a child who did you play with mostly?
- Did you play with siblings, friends from school or friends from your local neighbourhood?
- Who did you most often play with?

Children's Playmates
- How about your children?
- Who do they mostly play with?
- Would they be more likely to play with siblings, invite friends from school around or do they play with other children in the street/area?
- Who do they most often play with?

Comparison
- Do you think that as a child you would be more likely to play with other children from your own street than your children are? Why do you think this is so?

Parent(s) Play Range
- My next question is about the range play you had as a child. When you were a child what was your play range?
- Did you play mostly on your property, in neighbours or friends properties or did you go to a local park or area of open space?
- If/when you went exploring the neighbourhood was it with an adult or supervised in anyway?
- When you went to local parks or areas of open space was there supervision or did you go on your own/with other children? How did you get to these places (walk, bicycle, get driven by an adult?

Children's Play Range
- What is this like for you own children?
- What is their play range?
- Do they travel far to play?
- How do they get to these places?
- Is this usually supervised by an adult?

Comparison
- Do you think you had more freedom of play range than your own children? Why do you think this is?

4. Travel to school

Parent(s) travel to school
- How far away from your school did you live?
- How did you travel to and from school?
- Did you travel on your own/with siblings/friend or an adult?
- If you wanted to walk to school would your parents let you?

Children's travel to school
- How far away from your children's school do you live?
- How do they get to school?
- Do they travel with siblings/friends or with an adult?
- Would you let them walk or catch public transport if they wanted to? Supervised or unsupervised?

5. Lifestyle changes

- Do you think lifestyle changes in the community have contributed to the way children play now compared with how you may have as a child (such as more mothers working, increasing affluence changing the types of activities)?

- Do you think that changes in urban development have contributed to the way children play now (such as urban consolidation, smaller housing lots, the impact of the car on society)?

- Do you think the increase in technology has impacted children's play? Do your own children rather entertainment than physical play?

6. Parent(s) impression of the importance of play

- Do you think it is important for children to play outdoors? Why?
- In outdoor areas outside your own property, do you think it is important for play spaces such as parks, playgrounds to be interesting for children? Why?

- Do you think that parks, playgrounds etc that children's needs for play are currently being met?

- Is less free space an issue than it was when you were a child?

7. Parent(s) impression of the importance of independent travel to school and mobility within the community

- Do you think it is important for children to be able to walk to school? What benefits do they gain from walking to school?

- Do you think it is important that children are able to walk to school independently? Why? Do you think there are some benefits children gain through independent mobility?

- Do you think it is important to allow children independent mobility to various locations in their neighbourhood such as the local park, friends house? What benefits do you see they gain?

8. **Types of play spaces.**

- Is the type of play space an issue for children?
- When you were a child did you rather play in structured playground or did you rather play in a natural area that was unstructured that required you to use your imagination?
- Which do you think your children rather? Or should they be able to have both?

9. **Consultation with children**

- When children's play areas are designed do you think that adults tend to think on behalf of children in terms of what they actually want? Do you think it would be beneficial for Council's, planners and designers to consult with children on the types of play spaces that they want?
- Do you think that there are any benefits of including children in the decision making process about their environments? What are some of these benefits?

Closing
So overall, how do you rate your experiences as a child through experiences in outdoor settings and the public realm to your children's?

Appendix: C

Survey Information

PROJECT INFORMATION STATEMENT

Date: 13 June 2008
Project Title: Nothing but child's play

Approval No.: 85039

THE UNIVERSITY OF
NEW SOUTH WALES

FACULTY OF THE
BUILT ENVIRONMENT

Participant selection and purpose of study
You are invited to participate in a study of children's sense of place and childhood experiences of play and movement throughout the public realm. You were selected as a possible participant in this study because of your own childhood experiences and the experiences of your own children.

Description of study
If you decide to participate, you will be required to answer some questions regarding your childhood experiences of outdoor play and independent mobility throughout the neighbourhood and also compare this to that of your children today. This is to determine whether there are any differences experienced between two generations of children. In addition, you will be required to answer some questions about your local area and some general health related questions. The questionnaire will require you to tick a box or place a number in a column that you agree with most and will take approximately 5 minutes to complete. You will not be required to participate in any further questionnaires after this. We cannot and do not guarantee or promise that you will receive any benefits from this study.

Confidentiality and disclosure of information
This survey is anonymous and therefore, no information you provide can be connected to you. If you give us your permission, we plan to discuss the results in a written thesis that will be submitted to the University of New South Wales.

Your consent
Your decision whether or not to participate will not prejudice your future relations with The University of New South Wales or other participating organisations. If you have any questions regarding the study you can contact Prof. Susan Thompson of the Course Authority PLAN 4132 at the University of NSW or contact Jodie Lock at:

      Jodie Lock
      C/o Susan Thompson
      Faculty of the Built Environment
      Department of Planning
      University of NSW
      Kensington NSW

Alternatively if you have any questions, please feel free to ask Jodie Lock via email
jodie_leeds@hotmail.com and we will be happy to answer them.

Yours sincerely,

Jodie Lock

Health and obesity Questionnaire

Date:
Project Title: Anything but child's play

THE UNIVERSITY OF
NEW SOUTH WALES

FACULTY OF THE
BUILT ENVIRONMENT

1. How old is your child?

Under 5	
5-9	
10-14	
15-18	

2. Would you say your child is

Underweight	An ideal weight	Overweight	Obese	Don't know

3. During an average day, how much time does your child spend watching television, using a computer or playing electronic games?

Watching television

30 minutes or less	
30 but less than 60	
60 but less than 90	
90 but less than 120	
120 minutes or more	
Don't know	

4. How often does your child get at least 30 minutes of physical activity

5-7 times a week	
2-4 times a week	
Once a week	
Less than once a month	
Never	
Don't know	

5. In the past year has your child been involved with organised sport or activities such as swimming, dance or football?

Yes	No	Don't know

6. On an average day how does your child travel to school?

Walk	
Cycle	

Public transport	
Private vehicle	

7. How many days a week does your child walk or ride a bike to school?

None	One day	Two days	Three days	Four days	Five days	Don't know

8. Would you let your child walk or ride a bike to school if they wanted to?

Yes	No	Don't know

9. When you think about letting your child walk or ride their bike to school, which concerns you most?

Its too far	Traffic danger	The weather	Fear of crime	Not concerned	Don't know

10. When **you** were a child how much time did you spend watching television, using a computer or playing electronic games

30 minutes or less	
30 but less than 60	
60 but less than 90	
90 but less than 120	
120 minutes or more	
Don't know	
Did not have a television	

11. How often did you get at least 30 minutes of physical activity

5-7 times a week	
2-4 times a week	
Once a week	
Less than once a month	
Never	
Don't know	

12. Did you regularly participate in organised sport?

Yes	No	Don't know

13. How did you get to school?

Walk	Bicycle	Private car	Public transport	Other

14. How safe do think your neighbourhood was when you were a child?

Very	Somewhat	Not very	Not at all	Don't know

15. Were you allowed to play outside on the street without an adult present when you were a child?

Very	Somewhat	Not very	Not at all	Don't know

16. How safe do you think your neighbourhood is?

Very	Somewhat	Not very	Not at all	Don't know

17. How comfortable would you be letting your child play outside or on the street without an adult present?

Very	Somewhat	Not very	Not at all	Don't know

18. How walkable do you think your neighbourhood is?

Very	Somewhat	Not very	Not at all	Don't know

19. Do you think that children are at a greater risk of being abducted by strangers today than when you were a child?

Yes	No	About the same	Don't know

20. Which suburb to you live in? ....