Children's perceptions of their outdoor environment in relation to their physical activity behaviours: exploring differences by urbanicity and area level deprivation

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Abstract

Background – Physical activity (PA) has been shown to have numerous physical (e.g., reduced risk of cardiovascular disease, type-2 diabetes and obesity) and psychological (e.g., improved mental well-being, and reduction in levels of stress and depression) benefits for childhood health. Despite the known benefits, childhood PA levels are low in Scotland, where less than 20% of children achieve the recommended daily guidelines. Evidence suggests that time spent outside is positively associated with achieving higher PA levels. Understanding what might encourage children to spend time outside in their neighbourhood could inform the development of interventions aimed at encouraging children to be more active. Children from different socio-spatial neighbourhoods may perceive and utilise their neighbourhood differently, influencing how they spend their free time. This PhD thesis examines how children from diverse settings perceive their neighbourhood in relation to their outdoor activity behaviours.

Methods – This thesis takes a qualitative, multi-methodological approach, towards understanding 10-11 year old children's perceptions of their environment in relation to their time spent outside through the lens of Gibson's theory of affordances. A pilot study (n=15, 5 boys, 10 girls) was conducted to test the feasibility of the methods. For the main study, the children (n=25, 12 boys, 13 girls) were from different levels of area deprivation and from varying levels of urbanicity. Data collection methods included photo voice, drawings, focus groups or interviews. The participants were asked to document features within their environment (via photographs and drawings) that they felt influenced their time outside. They were then asked to participate in either a focus group or a one-to-one interview. The data collection process took place between May and September 2015.

Findings – Children's perceptions of their neighbourhood environments are complex, and numerous differences were found to be dependent on area of residence. Children from rural areas appeared to be influenced more by physical affordances whereas children living in urban settings were influenced more by social affordances, specifically their friends. Children living in more deprived neighbourhoods spoke of needing more PA opportunities in their neighbourhood compared to children living in more affluent neighbourhoods, suggesting that inequalities may still exist between higher and lower area deprivation. Many of the children considered current play equipment too boring, and lacked challenge or risk. The children desired equipment that better suited their perceived capabilities. This thesis found that children were more likely to spend time outside for psychological reasons, such as relaxation.

Conclusion – Through the use of novel methodology in this subject area, this thesis adds an original contribution to the literature by exploring children's environmental perceptions in relation to PA, and by looking at how setting might influence these perceptions. This thesis found that children perceive their environment differently dependent on the context of their lives, suggesting that initiatives to increase childhood PA could differ depending on residential setting. Additionally, policy may emphasize the psychological benefits to children as opposed to the physical benefits. Highlighting benefits such as relaxation, happiness and excitement may be more conducive to increasing PA among this age group than focusing on benefits such as weight management and cardiovascular health.

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Publications, presentations and prizes related to this thesis

Publications

Hayball, F. & Pawlowski, C. (2016) Should we use participatory approaches with children to better understand their physical activity behaviour? *Under peer review*

Hayball, F., McCrorie, P., Kirk, A., Gibson, A.-M. & Ellaway, A. (2017), Exploring Children's Perceptions of their Local Environment in Relation to Time Spent Outside. Child Soc. doi:10.1111/chso.12217

Hayball, F., Kirk, A., Knowles, A. M., McCrorie, P., & Ellaway, A. (2016) The of role affordances in physical activity behaviour in children from urban and rural settings. *Final preparations*

Presentations

Hayball, F., Kirk, A., Ellaway, A. Space for play? A qualitative study exploring how the physical and social environment influences Scottish children's physical activity and active play behaviour. *Global Summit on the Physical Activity of Children*, May 2014, Toronto, Canada

Hayball, F., Kirk, A., McCrorie, P., Ellaway, A. How the social and physical environment influences children's physical activity levels in Scotland; A qualitative study. *Institute of Health and Wellbeing Student Lead Conference,* June 2014, Glasgow, UK.

Hayball, F., Kirk, A., McCrorie, P., Knowles, A. M., Ellaway, A. Space for play? Exploring young female's perceptions of their environment in relation to physical activity behaviour – a qualitative study. *Journal of Youth Studies conference*, April 2015, Copenhagen, Denmark.

Hayball, F., Kirk, A., McCrorie, P., Knowles, A. M., Ellaway, A. Challenges in designing child-centered mixed-methodology. *Institute of Health and Wellbeing conference*, June 2015, Glasgow UK.

Hayball, F., Kirk, A., McCrorie, P., Knowles, A. M., Ellaway, A. A qualitative study exploring children's perceptions of their social and physical environment in relation to physical activity behaviour. *International Society of Behavioural Nutrition and Physical Activity,* June 2015, Edinburgh, UK.

Prizes related to this thesis

Institute of Health and Wellbeing Conference - Winner of best presentation – 2015

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'You sort of start thinking anything's possible if you've got enough nerve.'

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I am exceptionally lucky to have had this team of people in my life throughout my PhD who have supported me, encouraged me, and inspired me. This thesis is dedicated to all of you.

Author's declaration

I declare that, except where explicit reference is made to the contribution of others, that this dissertation is the result of my own work and has not been submitted for any other degree at the University of Glasgow or any other institution.

Signature

Printed name - Felicity Hayball

'Just keep swimming'

CHAPTER 1: INTRODUCTION

1.1 Context of the research

For many years, research has found that achieving sufficient levels of physical activity (PA) is beneficial to an individual's overall health (Lee et al., 2012). Although there is less literature surrounding the benefits of PA in children compared to adults, the existing literature is strong enough to suggest that PA participation is vital for childhood health (Chief Medical Office, 2011). Children who reach the recommended PA levels are less likely to suffer from acute health problems such as decreased muscular strength and endurance (Gay and Smith, 2010, Strong et al., 2005), low cardiovascular fitness (Dunn et al., 1999), likelihood of being overweight (Ortega et al., 2013), and high levels of adiposity (Strong et al., 2005). Frequent PA has also been shown to help improve psychological well-being as it can reduce stress, anxiety, and depression (Doré et al., 2016). Children who do not reach the recommended PA levels are also more likely to suffer from chronic health problems such as diabetes (Liese et al., 2013), cardiovascular health risks, high blood pressure (Farpour-Lambert et al., 2009), and obesity (McMurray and Ondrak, 2013).

Despite the benefits, childhood PA levels are low across the world's population; in Scotland, less than 20% of children are taking part in sufficient levels of PA (Hallal et al., 2012). Such low levels of PA in children could also result in substantial future health burdens when they reach adulthood (Bélanger et al., 2009).

The literature consistently shows that a child's environment is influential to their health behaviours. Historically, determinants of health behaviours focused on the individual (e.g motivation, self-efficacy), but has, over time, expanded to understand how the environment can influence positive and negative health behaviours in individuals (Sallis et al., 2008). PA behaviours have been shown to be a health behaviour that is influenced by the individual's environment (McCurdy et al., 2010). One of the key environments that has been explored in relation to PA behaviours is the neighbourhood (e.g., Avan and Kirkwood, 2010). Research has also suggested that different residential contexts vary in their supportiveness of PA behaviours; contexts such as urban and rural (Liu et al., 2008, Moore et al., 2010, Moore et al., 2014) and neighbourhoods that experience varying levels of deprivation (Noonan et al., 2016c).

There has been increased attention paid to understanding the determinants of children's PA behaviours. Among others, one of the key determinants is time spent outside; if children spend time outdoors, there is a greater possibility they will be active (Woo et al., 2013). Children living in different types of neighbourhoods will experience different environments when outside; understanding how children from all types of environments perceive and use their neighbourhood may help researchers implement the most suitable interventions, and influence policy in a manner that will mobilise change to increase the likelihood of children spending time outside.

Initiatives aimed at increasing PA in children are now widespread and cover numerous contexts, including children from different environmental contexts (e.g., Matisziw et al., 2016, McCormack and Meendering, 2016, Salmon et al., 2013, Moore et al., 2013). Specific literature exploring how children from different environments perceive their outside environment is lacking and therefore, special attention needs to be placed on this type of evidence.

1.2 Purpose and significance of the research

Physical inactivity in children is a major concern within Scotland and has become a priority for the Scottish Government to address (Currie et al., 2015). The Scottish Government have published multiple strategies for increasing PA levels in children; most of which have the primary purpose of, or at least include sections on, creating an outdoor environment that facilitates and encourages PA behaviour (The Scottish Government, 2011). Most of the research that explores the outdoor environment in relation to PA behaviours employ objective measures and focus on the objective environment (Darbyshire et al., 2005). Quantitative methods predominate, and the PA/environment literature is saturated with research that uses accelerometery (Van Kann et al., 2016), surveys and questionnaires (Carver et al., 2012), Geographic Information Systems (GIS) software, and more recently Global Positioning Systems (GPS) (McCrorie et al., 2014). These methods are valuable, however, they lack an understanding of how an individual perceives their local environment (Darbyshire et al., 2005). Although some studies address perceptions from the parent's point of view (Trigwell et al., 2015); there is a significant gap within the literature addressing children's perceptions of their environment in relation to PA. This has led to children's perceptions being overlooked or missed completely from the research. In order to address the childhood inactivity crisis, a better understanding of children's perceptions is needed. Therefore, an

exploration of children's perceptions of their outdoor environment in relation to their PA behaviour is the overall purpose of this thesis.

1.3 The background to this thesis

My thesis is connected to two national studies; Growing Up in Scotland (GUS) and 'Studying Physical Activity in Children's Environments across Scotland' (SPACES).

Growing up in Scotland (GUS) is a national longitudinal study taking place within Scotland that began in 2005. GUS tracks the lives of different groups of children and their families from the early years, through childhood and beyond (www.growingupinscotland.org.uk). The primary aim of GUS is to provide policy-makers in Scotland with new, up-to-date information about the lives of Scottish children. There are three cohorts, of which I am using a sub-sample of Birth Cohort 1 (BC1), which comprises of children born 2004-2005.

SPACES is a quantitatively focused study within the MRC/CSO Social and Public Health Sciences Unit exploring environmental determinants of PA in children from across Scotland. SPACES have also sampled from the GUS study, using the children from the same cohort (BC1). SPACES implemented GPS and accelerometery to understand PA behaviours in children in their environments. My thesis was intended to complement the SPACES study with qualitative data, helping to identify the 'why' aspect of children's PA behaviours.

1.4 Summary of individual chapters

Chapter 2 follows this introductory chapter by exploring the chosen theoretical frameworks that have grounded my study. The chapter begins with an introduction to the primary theoretical framework: Gibson's theory of affordances, and proceeds to discuss its relevance to this thesis, based on its grounding within the socio ecological framework, and its use of perceptive realities, as opposed to an objective quantification of the environment. The chapter then presents two supporting theoretical frameworks: ecological systems theory and place preference. The former is based within the social environment and the latter relates to the physical environment. The chapter concludes by discussing how the theories were applied to the research.

Chapter 3 presents the relevant literature within the field. The review begins by looking at the importance of childhood PA, noting the physical and psychological benefits. The chapter identifies how PA levels/behaviours of Scottish children compare unfavourably to children from other countries. The chapter then discusses how the social and physical environment can

influence children's PA behaviour. Following this, the importance of the neighbourhood is explored in relation to children's PA behaviours. Specifically how the outdoor environment can have an influence on children's PA behaviours. Outdoor affordances, neighbourhood deprivation, urban and rural residence, and how children perceive their neighbourhood are discussed as they form the foundation of the research aims and questions of my thesis. The chapter ends by identifying the current gaps within the literature and the research aims and questions of this thesis.

Chapter 4 is the justification of the methodological choices I made for this thesis. The first part of the chapter highlights the philosophical standpoint of this thesis beginning with my epistemological stance and how it has influenced the research process. I describe the leading epistemological stances - constructivism and positivism and justify why I worked within the constructivist paradigm. I explain why I took a phenomenological approach to understanding children's experiences of their neighbourhood, and why this was the most appropriate approach for my thesis. The second part of the chapter highlights the importance of incorporating children in the research process and how children's rights have developed over time. The chapter then argues how children, although beginning to be thought of as active agents in research, are still considered subservient within the child/researcher relationship, a situation that can influence the research process. An important part of the chapter is presenting the idea that children see the world differently to adults, which is why it is essential to involve children in research. The chapter then addresses the specific methods used throughout this thesis. Taking into account the gaps in the research and the epistemological stance; a qualitative, multi-methodological approach was chosen for the study employing a mix of visual and verbal data collection methods. Chapter 4 concludes with a discussion of trustworthiness of qualitative data, providing an overview of how this thesis adhered to the 'criteria of trustworthiness'. Each criterion is discussed individually with reference to how my thesis has employed each criterion.

Before the aforementioned methods were employed to answer the research questions it is important to test the feasibility of the methods. Chapter 5 is a detailed discussion of the pilot study that took place before the main study. Chapter 5 begins with an overview of the pilot study research aims (which were different to the aims of the main study), an overview of the participants and the methodological procedure, followed by a discussion of the analysis. Findings were then presented through overall themes. The chapter concludes by presenting

the key learning outcomes of conducting the pilot study, in addition to the modifications that were made for the main study.

Chapter 6 discusses in detail the specifics of the main study. I begin the chapter with a recap of the research aims and questions of this thesis. I then give a detailed account of the sampling framework and recruitment procedure employed. The chapter then provides an overview of the procedure of the methods (i.e., a step by step guide of what the children were asked to do). I conclude the chapter by presenting my analytical procedure for the visual and verbal data.

Chapters 7 and 8 present the findings of the main study. Chapter 7 begins by describing the characteristics of the children who took part in the main study. The chapter then presents the visual data findings using the participant analysis grids. The chapter explores comparisons between children living in urban and rural areas, and levels of high and low deprivation via deductive themes, followed by a presentation of the inductive themes. The chapter concludes with a summary of the visual findings. Chapter 8 is a detailed description of the verbal findings from the main study. The study begins with the comparison of the urban and rural findings. This section explores how children from urban and rural dwellings differ in their perceptions, such as their perceptions of locations, their neighbourhood, and how they experienced their environment in relation to outdoor behaviour. This is followed by comparisons of children living in more deprived versus less deprived areas. Additionally, Chapter 8 explores how the different genders might perceive and use the environment differently. The chapter concludes by presenting the overall findings, regardless of dwelling or level of deprivation, bringing together how all the children experienced their neighbourhood.

Chapter 9 discusses how the findings from this study have answered the original aims and questions of this thesis. I compare and contrast the findings with previous studies and how my thesis contributes to the literature relating to children's neighbourhood perceptions and time spent outside. Practical implications of the research findings are discussed and potential future research directions are presented. The chapter concludes with my personal reflections of the research experience and my final thoughts.

CHAPTER 2: THEORETICAL FRAMEWORK

2.1 Introduction

Although many traditional theses place the literature review prior to the theoretical framework, the concept of affordances is discussed heavily within the literature. Additionally, the theoretical framework has guided the research questions and in turn the literature reviewed. Therefore, Chapter 2 discusses the theories underpinning this thesis, which will be followed by Chapter 3: the literature review.

The predominant theory that underpins my thesis is Gibson's theory of affordances (Gibson, 1977). Two other frameworks helped to ground the research: place preference (Malinowski and Thurber, 1996) and ecological systems theory (Bronfenbrenner, 1979). Being heavily focused on the perceptive environment, Gibson's theory is discussed in depth, followed by an overview of the two supporting theories. The chapter then identifies how these theories have been applied to my thesis.

2.2 Theoretical frameworks within PA research

Before deciding on a theoretical framework for this thesis, a number of theories were explored to ensure the most suitable theory was chosen. Theories such as the theory of planned behaviour (Duncan et al., 2012), Social Cognitive Theory (SCT) (Bandura, 1989), and Self-Determination Theory (SDT) (Ryan and Deci, 2000) were considered. Although valuable in the field of PA research, they did not complement the area of childhood PA that I had chosen to explore. I was specifically focussing on how children perceive their environment, and how these perceptions would influence their PA behaviours. Although these theories (theory of planned behaviour, SCT, and SDT) do take into account the influence of the environment, they lacked a focus of individual environmental perceptions. Moreover, I wanted to explore the social *and* physical environments, looking at how one can influence the other; this was not explicitly present within these theories. Further investigation into childhood perceptions of the environment led me to explore Gibson's theory of affordances. The following section presents why this theory, above others, was chosen to underpin my thesis.

2.3 Primary theoretical framework: Gibson's theory of affordances

My thesis has been developed using the social-ecological framework (Green et al., 1996). Social ecology is based on the notion that social and environmental contexts will influence individual behaviours (Sallis and Owen, 1999). Contained within the social-ecological framework is the premise that determinants of PA behaviour are most likely to be context specific (Dishman and Sallis, 1994).

Gibson's theory of affordances is ecological in nature and places specific importance on the reciprocity (Lombardo, 1987) or duality symmetry (Turvey and Shaw, 1999) of organisms and the environment. These terms refer to the interrelationship between an organism (a human or animal) and their surroundings; which creates an affordance. A notable psychologist in the 20th Century in the field of visual perception, Gibson coined the term 'affordance', defining it as 'neither an objective property nor a subjective property; or it is both if you like [...] An affordance points two ways, to the environment and to the observer' (Gibson, 1977 p.129). Gibson further clarifies that 'an affordance is what the environment offers the animal, what it provides or furnishes, either for good or ill' (Gibson, 1979 p.127). What is significant within the theory is the idea that affordances are both environmental and psychical (i.e., of or relating to the mind). In order for an affordance to exist, the environment must facilitate it, but an observer must also perceive it. As such, affordances are not physical objects within the environment; they exist within the environment, but are dependent on the observer. This thesis focuses on how individuals choose to interact with their environment, but also how the environment can facilitate or deter certain behaviours. Although children may be limited in some ways (i.e., parental restrictions, private land restrictions, time limitations, and travel constraints), it is still important to understand where children go, within these potential limitations.

Gibson's theory of affordances has often been associated with research that explores children and place (Kytta, 2002) and it has been suggested that 'Gibson's theory of affordances offers environmental psychology a method of examining the functional significance of environments for adolescents' (Clark and Uzzell, 2002a p.95). The theory has been built on by Kytta (2002, 2004) who explored children's perceptions and experiences of their outdoor affordances. Defined by Kytta (2004, p.181), the theory of affordances in relation to PA is when, 'the environment has to provide something that the individual can perceive as offering the potential for activity, but the perception emerges only when the different characteristics of the individual, such as his or her physical dimensions and abilities, social needs and personal

intentions, are matched with the environmental features.' As Gibson (1979) stated, 'we must perceive in order to move, but we must also move in order to perceive'(Gibson, 1979 p.14). Thus, an environmental feature will only be effective if the child perceives it as something they can interact with. Without that perception, the feature is, essentially, useless. For instance, policy makers can provide investment for numerous playgrounds, but the child must perceive the playground as something they can use, in order for it to offer a PA opportunity.

Although much of Gibson's theory has been supported (Kytta, 2002), researchers have also noted that some parts remain open for debate (Greeno, 1994). For instance, Gibson reflected that the affordances do not change, regardless of the observers needs, such as mood, age and state of mind (Gibson, 1979, Clark and Uzzell, 2002a). Gibson implies it is up to the observer to perceive the affordance, and that the affordance exists in its own right and is placed within the environment. Both Greeno (1994) and Michaels (2003) argue that this aspect of the theory may be open to criticism. Michaels and Greeno advise that the affordance does not belong to either the environment or the observer; only when both come together does the affordance come into existence. Heft (2003) furthered this argument by providing the following example - if a chair is in a living room, the observer perceives it as something to sit on, but if the same chair is in a museum with a cordon around it, the observer may conclude, given the cultural context surrounding the chair, one should not sit on it. Therefore, it is not the environment alone that has prevented the observer from sitting; the perception of the chair is dependent on the environment, observer, and cultural contexts surrounding the chair. The chair exists whether is it perceived or not; the chair offers the observer the opportunity to sit despite the context of its environment. The chair does not act as an affordance unless the observer perceives the opportunity. A more relevant example could be a child and an outside feature, such as a tree. For instance, if a child is tired, a tree may offer something to lean on, if the child was excitable, the tree might offer something for the child to climb. Although the opportunity is external to the observer, the affordance is the property of the observer and the environment. This thesis will follow the work of Greeno (1994), Michaels (2003) and Heft (2003) by acknowledging that the affordance changes depending on the needs of the observer and the changing environment.

Heft (1997) further advanced Gibson's work by exploring different types of affordances: normative and non-normative affordances, and potential and actualised affordances. Regarding the former, Heft uses the example of a fork: among most members of society, a fork's normative affordance is a tool for eating food; a non-normative affordance of the fork

may be a toddler using it as something to dig with. Regarding the latter, a physical object may offer different affordances to different individuals at different times. Using a book as an example, Heft demonstrated that its potential affordance is varied: it can be used to read, to support an unstable table, or to rest one's head. The book's actualised affordance is down to the needs and intentions of the observer. Only when the observer acts on his or her intentions does the book's affordance become actualised.

The theory of affordances was furthered again by Kytta (2002), who developed potential, perceived, utilised and shaped affordances. A potential affordance is an object that offers an opportunity, whether the observer perceives it or not. A perceived affordance is where the observer acknowledges a specific opportunity but does not act on it. For example, a child may see a swing set and acknowledge that this piece of equipment is for swinging or play in general, however, until the child actively uses the swing, it is only considered a perceived affordance. An actualised affordance is where the observer has perceived and then acted on the opportunity offered by the object. For instance, taking the example of the swing, once the child begins to swing, then the swing set becomes an actualised affordance. A shaped affordance is when the observer modifies their surroundings as to create an opportunity to act on. An example of this may be when a child places rocks or jumpers in a field at each end to create football goals.

In the majority of affordance-related literature, affordances refer to physical objects; as noted by the examples previously provided. Another category of affordances are social affordances which are defined as possibilities for social interaction offered by the environment (Rietveld et al., 2013). Social affordances can lead to two trains of thought: the first being that all objects could be considered social affordances, as it is the social world that teaches organisms how to utilise the environment in the way in which we desire. This is supported by Bandura's Social Learning Theory (Bandura, 1971), which notes that behaviour is learned through observation. The second way of identifying social affordances is how other people, culture, and/or upbringing influence possibilities of action within the environment. It is this notion of social affordances that has been employed for this thesis.

Limited research exists that has investigated social affordances in the context of PA opportunities within the environment. Taking examples from other fields, Fajen, Riley, and Turvey (2008) explored affordances within sport: in a team sport, such as rugby or football, a key part of the game is passing the ball between players on one's team. An individual can only pass the ball if the opposition are not blocking their teammates. Therefore, the

affordance to pass the ball would only exist if a teammate were available - if a defender runs in between the two team players the affordance no longer exists. This is an example of a socially created affordance: the actions of another organism, can either create, or destroy an affordance. For example, in relation to environmental PA, the option to play hide and seek only exists if more than one child is present. Social cohesion, parental strictness, and relationships with peers can also offer us affordances that are not necessarily evident in the physical world. For instance, a child may choose to go to a specific area in their neighbourhood only if they know they are allowed to go there (i.e., places their parents have agreed to let them go on their own), or the neighbourhood streets may only be safe to play on if there are high levels of trust between neighbours. Numerous studies (Heft, 1988, Othman and Said, 2012, Prieske et al., 2015, Clark and Uzzell, 2002a) have explored affordances in relation to the physical environment, yet few have attempted to use affordances to position work within the social environment (Rietveld et al., 2013, Fajen et al., 2008). My thesis explored potential social affordances within a child's environment to help understand how the social world influences children's opportunities for PA outdoors. It also investigated how social affordances differ between children from different socio-economic backgrounds and residential (i.e., urban and rural) contexts.

2.4 Supporting theoretical frameworks

As discussed briefly in the introduction, although this thesis is grounded in Gibson's theory of affordances, other theories have been utilised to help explore the behaviours of children in their outdoor environment in greater depth: place preference and ecological systems theory. Place preference (Malinowski and Thurber, 1996) refers to why children prefer certain locations to others and whether children from different backgrounds and cultures may choose different locations in which to spend their time. Ecological systems theory (Bronfenbrenner, 1979) is a theory placed primarily in the social context and explores how different levels of the social environment can influence a child's development and how this in turn may affect the child's outdoor behaviour. The following sections discuss each theory and how they help to support Gibson's theory of affordances in guiding the research.

2.4.1 Place preference

Research relating to preference of place among children has been evident in the literature for many years (e.g., Balling and Falk, 1982, Bernaldez et al., 1987), with studies suggesting that children have notably different perceptions of the world around them; perceptions that

influence where they choose to visit in their local environment. Hart and Moore (1973) found that when children reach the age of ten and eleven, they begin to view the environment in more abstract ways and begin to gain an understanding of directions (i.e., North and South). If we acknowledge that children's configural knowledge of the environment may alter as they move through childhood, it is reasonable to expect their attitudes towards their environment may also change, influencing their place preferences. If this is the case, then their environment may impact their development, and thus their preference of place.

Korpela (2002) argued that two notions exist relating to place preference and children's development. The first relates to self-identity development and social relationships. The variations of place preferences between children are thought to represent the nature of their social relationships and play choices. These can vary depending on level of local exploration, choice of games with other children, and distance to a central town or facilities. For instance, a child wanting to play football with a group of friends would choose an open space such as a local field or quiet street; alternatively, a child wanting to get away from their parents may choose space further away and opt for secrecy, such as woodland. The second notion is environmental self-regulation, which states that the physical environment can help to regulate one's emotions (Korpela, 1992). Korpela suggested the physical environment 'can become an essential part of the process of regulating the experience of self and emotions' (Korpela, 2002 p.367). It is also thought that the preferred location will differ depending on the emotional needs of the child. For example, a study by Owens (1998) with children aged 14-18 years, found that natural settings were reported as the preferred place to go for feeling better and getting things in perspective.

Alongside mood and social factors, various studies have shown that children prefer different environments depending on their biological age. Hart (1979) found American children aged eight to nine expressed stronger preferences for places that offered social activity, whereas children aged 12 years old showed a slightly stronger preference for locations with specific land use. In a more recent study, Min and Lee (2006) found that children aged 10–12 years old preferred city facilities, sports settings, and private vacant areas. Whereas, children aged 7-9 years preferred playgrounds and green areas.

While literature exists on children's preferred spaces, and the influences of mood and age, there is limited research on how socioeconomic and environmental backgrounds can affect a child's preference of place. In a review of studies, Aziz and Said (2012) noted that children from more deprived neighbourhoods were more likely to play closer to home and were often

active in space belonging to peers or relatives (Veitch et al., 2008). In the past, this has been thought to be due to fewer play resources available within a close proximity (Valentine and McKendrck, 1997). Veitch and colleagues (2008) also found that children from more affluent neighbourhoods were more likely to be active in parks, playgrounds, streets and sports centres further away from their homes. Although this gives an idea of where children are objectively visiting, it does not give information as to whether children are spending time here because they *choose* to, or because they do not have anywhere else to go. To get a clearer understanding of this, research is needed into how children from different residential contexts perceive their environment. While it seems generally accepted that children differ in their environmental likes and dislikes, how and why they are different is less clear. This was a key aim of my thesis, and is discussed in more depth in Chapter 3.

2.4.2 Ecological systems theory

A potential weakness of place preference is that it focuses primarily on the objective physical environment, and how social interactions influence choice of physical location. Bronfenbrenner's (1979) ecological systems theory notes that multiple social environments can influence behaviour and is a way of explaining the layers of the social environment that affect human development from childhood to adulthood. Bronfenbrenner explored four levels of environmental influences: a microsystem, a mesosystem, an exosystem, and a macrosystem (see Figure 2-1).
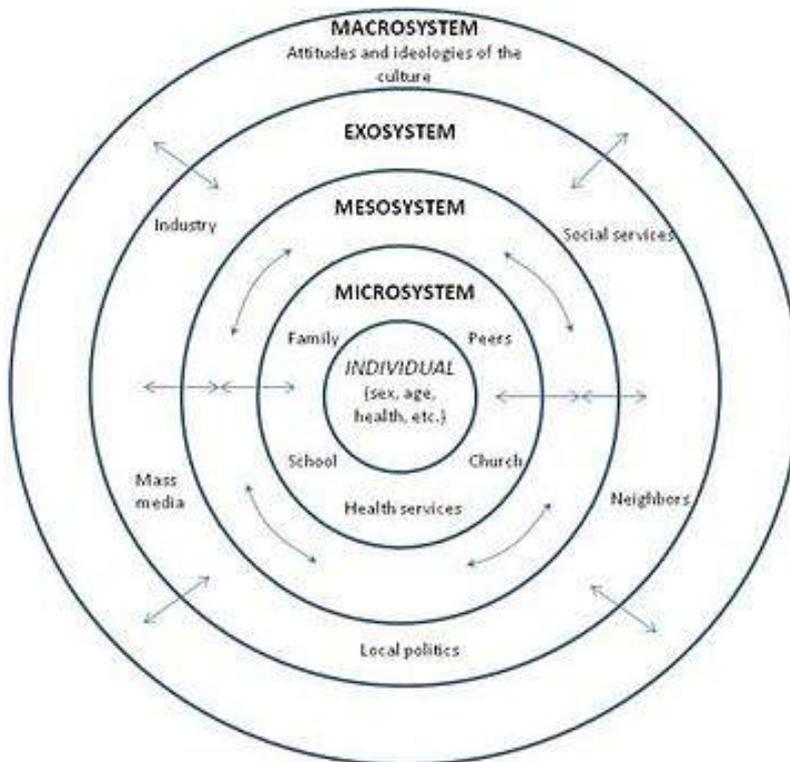
Figure 2-1 Ecological systems theory (Bronfenbrenner, 1979).

The microsystem is the setting that is most direct to our lives: friends, family, teachers, neighbours and other people we have direct contact with, are included in our microsystem. The microsystem is pertinent to my thesis as social interactions may affect a child's independent mobility (conversations with the parents); which locations the child visits (conversations with friends); and their experience of their neighbourhood (interactions with neighbours). The mesosystem is the relationship between two or more microsystems in our lives. For example, a child may kick a ball into a neighbour's garden, angering the neighbours, and resulting in the parents instructing the child not to play football outside. From this example we can see how the child's interaction with the neighbours has caused an interaction with the parents. The exosystem is a setting where there is a connection between a context where the child does not have an active role and a context where a child is an active participant. An example of this is if a crime occurs in the child's neighbourhood, this may affect the parents' perception of safety, and in turn, may influence the child's independent mobility in their outdoor local environment. The macrosystem relates to the culture of the individual, such as the socioeconomic level of their family or neighbourhood, their possible ethnic culture, or the environment in which they are living (urban versus rural). This theory provides a strong grounding for the social environmental aspects of this thesis, and how social environments can interlink. Yet there is a lack of information regarding the physical

environment, and how the social environment could be integrated into the physical environment (a primary concept of Gibson's theory of affordances). Employing ecological systems theory alongside the theory of affordances might help to provide an understanding of how the social environment creates or alters a child's perceptions of affordances. A good example of this would be how the macrosystem, which in this case would be the area deprivation and urbanicity of the neighbourhood, influences how children perceive the neighbourhood affordances such as green space and play areas and how they then in turn utilise these spaces.

2.5 Application of theories

This chapter has demonstrated that all three theories seek to identify how the environment plays a role in a child's development. The following sections more directly illustrate how I applied each theory to my thesis.

2.5.1 Application of place preference

Place preference was employed as a theoretical approach as it guides the researcher in understanding how the characteristics of the children may influence where they prefer to visit in the environment which may offer policy makers evidence to gain a better understanding of what is needed to encourage children to choose certain locations. Research carried out by Malinowski and Thurber (1996) acknowledged that factors such as prior level of exposure, rural versus urban upbringing, parental restriction, and peer preferences were significant in regards to preferring one environment over another. This helped in directing this thesis to not only understand the types of environment children prefer, but question whether it is the affordances available that result in this preference, and if so, what are the specific affordances that attract children from varying cultures or backgrounds.

2.5.2 Application of ecological systems theory

Ecological systems theory explores the different social environments that an individual interacts with, analysing the person and the influences of the various environmental systems he/she encounters. Implementing ecological systems theory helped to understand how the children's interactions with multiple social environments can impact their PA behaviour. For instance, if the child perceives the neighbourhood to have a high crime rate, it may affect to what extent the child willingly goes outside without their parent or carer. This may also interact with preference of place, as the child may avoid specific locations in their

neighbourhood because he/she associates the space with crime, thereby influencing the child's choice of preferred place. Furthermore, my thesis goes on to explore how social interactions can influence actualised affordances: whether an affordance becomes actualised based on a communication between friends or parents, or based on neighbourhood characteristics such as social cohesion for instance.

2.5.3 Application of Gibson's theory of affordances

The environment has multiple purposes: the intentions of use can vary between individual. For instance, a local government authority employs a planner to design a park for leisure purposes with features such as benches, PA equipment, a play area, and/or concrete paths. These features offer different affordances to each individual. An adult may perceive different opportunities compared to young people. Similarly, adolescents may perceive objects differently to smaller children. Moreover, each individual child may perceive alternative affordances depending on their upbringing, mood, or even time of day. Employing the theoretical framework of affordances allows the exploration of what attracts individuals to different locations, and how they use and experience these locations. For my thesis, I applied the theory in relation to how affordances influence children's time spent outside. Specifically, how children utilise affordances differently. Using the perceived environment as opposed to the objective environment provided a unique view of the environment from the child's perspective. Additionally, I investigated the notion of social affordances to understand how social constructs could influence a child's outdoor behaviour. Although, social affordances have been discussed within the literature (e.g., Rietveld et al., 2013), and the social environment has been explored (e.g., Smith et al., 2015) limited research that has examined social affordances in relation to childhood PA behaviours.

2.6 Gibson's theory of affordances vs. ecological systems theory

The theoretical approach frequently used for studies relating to PA in the environment is Bronfenbrenner's ecological systems theory (King et al., 2002). However, I chose to use Gibson's theory of affordances as the primary theoretical approach. Although Bronfenbrenner and Gibson both use the ecological model as a core principle, there is a distinct difference between the two theoretical frameworks: the Gibsonian viewpoint centres on perception. Gibson discusses perception as an intrinsic psychological process that takes place between the perceiver and what is being perceived (Tudge et al., 1997). The key concept within Bronfenbrenner's theory is that of proximal process. The individual endures 'progressively

more complex reciprocal interaction between an active, evolving bio-psychological organism and the persons, objects, and symbols in its immediate environment' (Bronfenbrenner & Ceci, 1994 p. 572). Both theories feature reciprocity; however, the level of analysis differs. The two theories differ in terms of the level of description between the individual and the environment. Tudge et al. (1997) suggested that a simple disparity between the two could be the environment the theory associates itself with. Bronfenbrenner focuses on the influence of the social environment; Gibson does not differentiate between the social and physical environment, suggesting that as they are strongly related, it is difficult to distinguish between them. How we perceive the physical environment is largely dependent on activities that take place in the social world - making it difficult, in Gibson's line of thought, to separate the two.

2.7 Summary of chapter

Of the existing research on PA in the environment, few have acknowledged their theoretical foundation. Implementing Gibson's theory of affordances encourages exploration of potential influences on children's PA behaviour in terms of location and opportunity; as well as gaining an understanding of how affordances can change depending on the circumstances surrounding the individual, and how affordances offered may influence preference of place. Ecological systems theory helps to add a strong social environmental element to the theoretical grounding of this thesis. Although social affordances have been acknowledged within some literature (Fajen et al., 2008, Rietveld et al., 2013), they are underdeveloped compared to ecological systems theory. Previous research has gained an understanding of location influences (Korpela, 1992), although the use of Gibson's theory may help to further understanding of how affordances can affect children's PA behaviour through a position that not only acknowledges, but endorses individual realities. Applying these theories to the research provided this thesis with a strong foundation and helped to ground the literature and research aims.

CHAPTER 3: LITERATURE REVIEW

3.1 Introduction

In this chapter I review the relevant literature on children's PA and its environmental determinants. The review comprises three main components; (i) the first section highlights the important physical and psychological benefits children might accrue when they achieve sufficient PA levels; (ii) the second section explores levels of PA amongst children across the world and outlines how Scottish children's PA levels compare to other countries who submitted report cards; (iii) the third section of the review focuses on the environmental determinants of PA. In particular, I explore the outdoor space and the available affordances and how residential contexts, including neighbourhood deprivation and degree of urbanicity, can influence PA behaviour in children. The chapter provides a clear rationale of why I chose to focus on children's perceptions of the outdoor environment as a key influence on their PA behaviour. Throughout the chapter I identify gaps in the existing literature and explain how I address these through the formulation of my specific research questions. In doing so, I show how my thesis contributes to the existing literature. To identify relevant literature, computer searches using Pubmed, Psychinfo, and Google Scholar were conducted in the English-language literature to identify published studies and reports examining relationships between the physical environment and children and adolescents' PA. Studies were included in the review if they: (1) were exploring PA in the environment (2) exploring types of PA in the environment, such as play and active travel (3) papers that had had a child-based sample were given preference, adult-sample papers were only included if a child sample was not available (4) contained a sample that had no medical conditions stated in the paper; (5) could be accessed in full; and (6) were published in English. I did not limit my sample based on quality criteria such as sample size or research method. Search terms are listed in Appendix A and included words relating to children's PA and play behaviour in the outdoor environment. The bibliographies of the identified studies were also reviewed for additional references. A table on the search strategy is included in Appendix A and a table of key papers is included in Appendix B.

3.2 What is PA?

Before addressing the association of PA to health, it is important to define what is meant by PA. In discussing PA, terms such as exercise, physical fitness and sport are often used

interchangeably. PA is defined as any bodily movement produced by skeletal muscle that results in energy expenditure (Caspersen et al., 1985), and therefore, encompasses activities such as play, exercise, active transport, sport, and physical education (Caspersen et al., 1985). For children, this could be play, walking with friends, walking or cycling to school and/or the shops, and talking part in recreational activities such as football, and games such as hide and seek. Research suggests that children are most likely to achieve the recommended daily guidelines of PA in short, sporadic bouts of moderate activity (Rowlands and Eston, 2007) the majority of which are 10 seconds or less (Baquet et al., 2007) primarily achieved through spontaneous play and time spent outside (Cleland et al., 2008, Payne et al., 2013).

In order to help assist parents and children, there are recommended daily guidelines that children should aim to achieve. International and national public health guidelines have been published with an aim of informing the public of what constitutes a sufficient amount of PA (e.g., World Health Organisation (WHO), Centres for Disease Control (CDC, USA), Chief Medical Officer (CMO, UK)). UK guidelines suggest that young people should be participating in an hour of at least moderate PA every day and undertake strength exercises at least three times a week (Chief Medical Office, 2011).

3.2.1 Health benefits of children participating in PA

3.2.2 Physical health

Physical health benefits among children reported in the literature include: improved bone density; blood lipid and lipoprotein profiles; glucose metabolism; reduced adiposity and blood pressure (Sothern et al., 1999, Strong et al., 2005) and lower levels of body fat mass in later life (Janz et al., 2009). PA also plays an important role in the prevention and treatment of obesity in children (Hills et al., 2007) which has strong links to numerous health conditions such as type 2 diabetes, liver disease and is a risk factor for cardiovascular disease (CVD), asthma, sleep apnoea and impaired mobility (Lobstein et al., 2004).

There has been a substantial amount of research that suggests the more active an individual is as a child, the more active they will be as an adult (Telford et al., 2013). As noted by Halfon et al. (2012) many adult diseases, such as dyslipidaemia, hypertension, cardiovascular disease, obesity, and type 2 diabetes have their origins in childhood, 'which are largely a function of the nutrition, PA, and habits of developing children' (p. 59). It is therefore, crucial that we conduct research to better understand how we can encourage children to be active (Telama, 2009).

3.2.3 Psychological health

Existing studies have suggested that children and adolescents who participate in PA show less depressive symptoms and greater wellbeing than those who are not active (Brown et al., 2013, Ra and Gang, 2016). Self-esteem has also been found to improve with regular PA (Liu et al., 2015). Another psychological outcome of PA may be enhanced cognitive functioning, for example, Davis et al. (2007) and Fedewa and Ahn (2011) found that PA, in particular aerobic exercise, is associated with improved cognitive function in children. Although some studies have found positive associations between PA and academic achievement, the findings are inconsistent and more research surrounding PA and cognitive function is needed (Donnelly et al., 2016).

The psychological health effects of PA may be influenced by the setting in which it takes place. For example, PA within a nature-centred environment may be more beneficial. Spending time in and around nature has been identified as having positive effects on mental health (Hiscock and Mitchell, 2011). Additionally, it has been shown to be a motivator to take part in PA (Schaefer et al., 2014). A systematic review of studies showed that, compared with exercising indoors, exercising in natural environments was related to feelings of revitalisation, positive engagement and increased levels of energy (Thompson Coon et al., 2011). The comparison also showed reductions in feelings of tension, confusion, anger, and depression between the two differing contexts. Participants in many of the studies also declared a greater intent to repeat the activity in the future. Therefore, it is possible that PA that takes place outside may be better for a child's psychological health.

Although the physical and psychological health benefits are not directly measured in my thesis, it is important to highlight how important childhood PA is, and reinforce the need to understand the environmental factors that influence childhood PA behaviours.

3.3 PA levels among Scottish children

Despite a number of known health benefits, levels of PA in children have been declining across the world over recent decades (Currie et al., 2002, Knuth and Hallal, 2009). Globally, as little as one in four 11 year olds are achieving the suggested guidelines of PA (Inchley et al., 2014). To illustrate why research investigating the determinants of childhood PA should take place in Scotland, I give a brief overview of how Scotland compares to countries around the world.

PA data has been reported for a number of countries in the form of a report card (Hallal et al., 2012). Canada, Scotland, and the United States of America are all examples of countries who have presented national level data in this format. The layout follows a school report card design, with different subjects, and percentage based grades. A section of the card reports on 'overall PA', where each country is graded based on the percentage of children and youth who meet the PA guidelines (specific to each country). In the 2013 report card, out of the countries that took part in the report card, Scotland came last in overall PA levels, and was the only country to receive the lowest grade (an F). The subsequent report card published in 2016 showed that Scotland, again, received the lowest grade for overall PA levels (Active Healthy Kids Scotland, 2016, Tremblay and others, 2016) suggesting that the levels of PA in Scottish children have not significantly improved within the last three years. These grades highlight the importance of conducting research that explores the determinants of childhood PA: to inform the development of policies and initiatives aimed at increasing levels of PA in Scottish children.

3.4 Determinants of PA behaviour in children

Data from the Scottish report card shows that less than 20% of Scottish children are achieving the recommended daily guidelines of PA (Currie et al., 2015). This low percentage suggests that current governmental strategies might not be succeeding. In order to improve levels of PA it is important to understand what influences PA behaviours. The ecological framework is frequently employed in an effort to understand the influence of environmental factors on PA behaviour (Sallis et al., 2008). The following section will expand on the ecological model and present the specific aspects to be employed within this thesis.

3.4.1 Ecological models of health behaviours

The ecological model posits that there are factors at multiple levels that influence PA, such as the interrelationships between individuals and the social, physical and policy environment (Kirby, 2013). Research into ecological theories demonstrates the interactive relationship between the environment and individuals, as well as highlighting the need for the environment to be explored at numerous levels of influence.

The ecological model consists of multiple levels in order to explore behaviour, such as, intrapersonal (biological, psychological), interpersonal (social, cultural), organisational, community, physical environmental, and policy (Sallis et al., 2008). Many studies use the ecological model as a framework to design interventions and understand behaviours

(Cochrane and Davey, 2008, Mehtälä et al., 2014); organisations have also used an ecological framework to guide public health at a national and international level (e.g., Healthy People 2010 (U.S. Department of Health and Human Services, 2000); Institute of Medicine (IOM) (Institute of Medicine, 2001); and childhood obesity prevention: health in the balance (Koplan et al., 2005). For the purposes of active living and PA, Sallis et al. (2006) created the ecological model shown in Figure 3-1. The model is a synthesis of findings from the fields of health, behavioural science, transportation and city planning, policy studies and economics, and leisure sciences.

Policy Environment

Behavior Settings: Access and Characteristics

Behavior: Active Living Domains

Perceived Environment

Health care policies/ incentives

Zoning codes

Development regulations

Transport investments and regulations

Public recreation investments

Park policies

Neighborhood
• Ped/bike facilities
• Aesthetics
• Traffic safety

Active Recreation

Safety

Attractiveness

Comfort

Intrapersonal

Demographics
Biological
Psychological
Family Situation

Recreation Environment
Home PA equipment
Parks, trails, programs
Private rec. facilities
Community orgs.
Sports-amateur, pro
Sedentary options

Perceived crime

Household Activities

Modeling, social support, partners for social activities

Home Environment
PA equipment
Gardens
Stairs
Electronic entertainment
Labor-saving devices

Health care policies
Zoning codes
Home prices
Housing-jobs balance

Health care: counseling, info
Mass media-news, ads
Sports
Informal discussions

Social climate, safety, crime, clubs, teams, programs, norms, culture, social capital

Media regulations
Health sector policies
Business practices

Advocacy by individuals and organizations

Information Environment

Social Cultural Environment

Figure 3-1 Ecological Model of Four Domains of Active Living (Sallis et al., 2006).

For the purpose of my thesis, I primarily explored the perceived environment, active living domains, and behaviour settings. Given the lack of research into children's perceptions of their local environment and how they may influence their PA behaviours, my thesis focused on these settings of the model; not only to fill a gap in the literature, but also to inform public policy that aims to create an environment that can benefit children's PA behaviour. I now discuss the existing literature on social and physical environmental determinants of children's PA behaviour.

3.5 Environmental determinants of PA

Associations between the environment and health behaviours have been acknowledged for many years (Bandura, 1986, McLeroy et al., 1988). Günindi (2012) reported that the environment includes all elements, physical, chemical and biological, that assist creatures to live. Our knowledge and attitude of our environment begins to develop and shape around pre-school age (Basile, 2000). Therefore, by the age of 10 years, our attitude and thoughts surrounding our local environment may be firmly established. Research that explores the relationship between children and their environment tends to focus on the local neighbourhood. Neighbourhoods have been characterised as either more 'obesogenic' (Swinburn et al., 1999) (obesity promoting) or more 'salutogenic' (health promoting) environments (e.g., Frohlich and Potvin, 1999, Townshend and Lake, 2009). The physical environment (e.g., street configuration, housing density, distance to schools), and social environment (e.g., community, peers, social support networks) can encourage or impede healthy behaviour. When examining which particular aspects of the environment can influence PA, studies have identified features of the environment that may impact PA behaviour (Macintyre et al., 2002, Macintyre et al., 1993). For example, physical characteristics such as walkability and availability of facilities (e.g., sports facilities, leisure centres, and parks) may either hinder or encourage PA. Similarly, aspects of the social environment such as perceptions of crime rates, and socio-cultural characteristics, such as cultural and social norms for PA, can also impact how PA behaviour is influenced (e.g., Addy et al., 2004).

The following sections explore in more detail the physical and social environments and their relationship with PA behaviours.

3.5.1 The physical environment and PA

Physical environments can both encourage and discourage PA. The physical environment may actively encourage PA by providing places that are accessible, convenient, safe and appealing to carry out PA (King et al., 1995, Sallis and Owen, 1996). For example, a high level of connectivity (i.e., directness or connectedness of travel in a neighbourhood with multiple pedestrian access points) may encourage higher levels of walking and bicycling (Saelens et al., 2003). Conversely, environments with inadequate lighting, limited recreational facilities, and limited pedestrian access can hinder PA in children (Nelson and Woods, 2009, Frank et al., 2012). Although these studies provide valuable information, they focused on the objective environment. My thesis explored the characteristics of the built environment based on individual's perceptions (Hoehner et al., 2005). Perceptions are an important element to my research as they provide a subjective view of phenomena. Studies have found that both objective built environment characteristics, and perceived built environment characteristics are related to PA behaviour (Troped et al., 2011). For example, even though a child's neighbourhood may have good walkability (a tangible quantifiable outcome – objectively measured), subjective measures, such as knowledge of the child's perceptions of the same neighbourhood, can influence whether they believe their neighbourhood is safe for example, and whether they perceive this belief to influence their walkability in their neighbourhood and therefore, their PA behaviour. The literature on perceptions are discussed in more detail later in the chapter, where I highlight existing gaps within the study of environmental perceptions and demonstrate how the theoretical framework I have employed is associated with the literature.

3.5.2 The social environment and PA

Although researchers have begun to acknowledge the importance of the social environment, the built environment is often considered more influential to PA (Hume et al., 2009). Li et al. (2005) suggested that insight into one's social environment is vital as the majority of our activities take place within the boundaries of our families, communities, and neighbourhoods. McNeill et al. (2006) elaborated on this by noting that in order to produce behaviour change in individuals, features such as social norms in the local community, Relatedly, a study by Homel and Burns (1987), which

explored children's likes and dislikes of their environment, found an association between low risk areas and the presence of 'kind people' in the community,

One of the key constraints within the social environment are the restrictions placed on children by adults. For example, research has found parental concerns for their child's wellbeing (e.g., 'stranger-danger', traffic safety) to be a contributing factor to lower childhood PA (Carver et al., 2008, Mitchell et al., 2007). It has been suggested that parents and adult gatekeepers (such as teachers) are limiting children's independent play more than ever before, which is having a negative effect on children's PA behaviour (Tremblay et al., 2015). A Scottish Household Survey (SHS) (Scottish Government, 2014) report found that most parents/carers would feel comfortable with children being aged around 9 or 10 years old to play without supervision. However, this was only in certain environments, such as playgrounds. A 2009 report on Girl-guiding entitled '*Redefining Risk: Girls shout out!*' noted that adults can often exaggerate media coverage and create an environment of worry and misinformation. Although this report was directed at young girls, who have been found to have less independent mobility than boys (Johansson et al., 2010), boys also now experience more limited freedom in comparison to previous generations (Bhosale et al., 2015). This has led to fewer outdoor PA opportunities for young children, as their independent mobility is restricted. Due to the control being placed on children's opportunities to be outdoors, research has also suggested that the time spent on indoor activities has increased (e.g., watching TV, computer use) potentially resulting in an overall reduction in active mobility (Biddle et al., 2009).

Understanding the social determinants of health behaviours may be more complex and time consuming than solely investigating the physical environment, but it is important in helping to produce PA behaviour change (Smedley, 2000).

3.6 The neighbourhood effect on PA

As discussed earlier on, the neighbourhood is considered an influential environment to a child's PA behaviours. Studies have investigated how a child's neighbourhood may influence their health behaviours (Sellstrom and Bremberg, 2006). There is a significant body of work dedicated to understanding the 'neighbourhood effect'; whether differences in health are due to differences in residential context rather than individual characteristics such as social class, income, gender, age and ethnicity

(Flowerdew et al., 2008). There are different contextual factors that could render a neighbourhood a 'good' or 'bad' place to live in. For example, the natural environment (e.g., hilly areas versus flat landscapes, availability of green space, air quality); availability of health care; access to a range of health promoting facilities, and population composition may all contribute to the health effects of a neighbourhood.

Within PA research, the majority of studies looking at neighbourhood influences have focused on physical neighbourhood boundaries and how the space within these boundaries is influential on a child's health (e.g.,Waygood and Susilo, 2015, Noonan et al., 2016c, Rezasoltani et al., 2015). The boundaries used within PA research are usually pre-determined, such as postal boundaries, administrative boundaries, and geographical boundaries (Flowerdew et al., 2008). Although predefined definitions can have a sense of homogeneity, and therefore, may support replicability, they lack an individualised understanding of how people interpret and define their neighbourhood (Perchoux et al., 2013). Studies have started to use more individualised subjective methods to understand neighbourhoods boundaries, for example, cognitive mapping with children is becoming a popular (Veitch et al., 2008). However, there is still a dearth of PA research that looks to understand *how* children define a neighbourhood *without* focusing on boundaries. Understanding what the term 'neighbourhood' means to children is important for future PA strategies and policies. A study by Milton and colleagues (2015) found that older people are more likely to define the term 'neighbourhood' as a social construct, as opposed to using physical boundaries. For instance, the success of PA neighbourhood strategies might depend on whether the participants consider a neighbourhood to be a physical or social concept. Moreover, there is potential for key elements of children's behaviour to be missed if only physical definitions are represented (Jones et al., 2009b). Therefore, to gain more information on how best to define a neighbourhood, it is important to begin to investigate the meanings children ascribe to the term 'neighbourhood' (i.e., is it based on physical or social boundaries). My thesis aimed to shed light on how children perceive and define the term neighbourhood in order to inform the development policies and study-based interventions aimed at improving neighbourhood PA behaviours among children.

3.7 Perceptive versus objective research

As noted earlier in this chapter, and discussed in Chapter 2, perceptions of the environment are heavily intertwined with the theory of affordances and are a key concept of this thesis. Gibson noted that perception is an intrinsic psychological process that takes place between the perceiver and what is being perceived (Tudge et al., 1997). Individual characteristics, socio-ecological factors, and environmental contexts can all influence how someone perceives their environment, how they choose to explore it, and how they utilise it. Despite this, research that explores childhood PA is primarily focused on the objective environment, which fails to acknowledge that there are disparities between what is there, and what is perceived. Nasar (2015) refutes disparities existing, arguing that 'perceptions are not just in the eye of the beholder, but rather are linked to characteristics of the environment' (p.2). However, researchers such as Comstock et al. (2016), oppose Nasar's position on perception. Comstock and colleagues found that despite the rural environment in their study lacking objective environmental support for PA (such as, public recreational facilities and PA equipment), the participants in the study perceived that the environment did support PA. These results demonstrate that when assessing environmental supportiveness of PA, perceptions should be taken into consideration as they differ from objective assessments. Moreover, when literature focuses on just the objective environment, there may be an assumption that the environmental affordances are actualised because it is objectively there. For example, when studies look at the relationship between available facilities and PA levels, there is an assumption that the two are associated. Focusing on the perceived environment may suggest which affordances are actualised, which are just perceived and which are not perceived at all.

Through the use of perceptive methods, individuals also have the ability to choose which specific aspects of the physical environment to focus on. Sharkey (2006) referred to this as 'selected' environments. For example, if a child primarily spends time in a (perceived) safe place within their neighbourhood it may lead to a more positive assessment of their overall location, regardless of the actual crime rate. It is also possible that individuals living close to one another may have varied experiences of their environment not because one is wrong; rather because of important variations in selected activity spaces (i.e., reasons for spaces being chosen for activity vary by

individual). Therefore, it is important to acknowledge the findings in relation to the individual and not generalise across a community. For instance, there should be careful interpretation when noting how a child's perception of neighbourhood safety might be compared to objective crime statistics or another child's perception of safety in the same neighbourhood.

3.7.1 Why use children's perceptions?

Many of the studies exploring children's PA behaviours have often employed parental perceptions rather than the child's (Veitch et al., 2006, Trigwell et al., 2015, Teedon et al., 2014). In some cases, acknowledging the parent's views can be helpful and can provide insight into children's PA behaviours. This is predominantly the case when the aim of the study is to understand parental concerns, as these can influence children's independent mobility in their environment (Woldeamanuel, 2016, Little and Sweller, 2015, Rader et al., 2015). Parents, however, should not be the predominant source of their child's PA behaviours. Research has found that parents do not know if their child achieves the recommended guidelines of PA (Noonan et al., 2016a) and that parents often overestimate their child's PA levels (Thorn et al., 2013). These studies suggest that, when it comes to children's PA behaviours, parents may not be the most valuable source to gain reliable information. Parents may also not 'see' things in the environment in the way a child would, as Aitken and Wingate (1993) noted 'children see things in these environments that we have forgotten how to look for, let alone understand' (p.65).

My thesis explores *children's perceptions* of their neighbourhood in relation to PA. To use parent's perceptions in this case would be flawed, it is best, and most reliable, to go direct to the source. There are examples where researchers do not feel confident in the child's competencies to understand the research topic. For example, Teedon et al. (2014), chose to use parental views in their study in the belief that children would struggle to comprehend the relationship between the environment and health. In this instance, I would contest Teedon and colleague's use of parents and their rationale for doing so. Numerous studies have provided strong evidence to suggest that children are capable of understanding PA related research when methods that compliment a child's competencies are employed (Alexander et al., 2014, Pearce et al., 2009, Noonan et al., 2016b, Ross and Francis, 2016). The importance of children participating in research and how best to go about using methods that complement children's competencies, is discussed in more detail in Chapter 4.

3.8 PA in outdoor spaces

'Children are disappearing from the outdoors at a rate that would make the top of any conservationist's list of endangered species if they were any other member of the animal kingdom' (Gill, 2005). As Gill illustrates, there have been numerous discussions on a new type of childhood where children are spending less time outside than ever before (Fjortoft, 2001, Karsten, 2005). Street play is a cultural phenomenon (Ward, 1978), yet seeing children playing in the streets is a disappearing sight (D'Haese et al, 2015). Contact with nature is also decreasing, Kahn and Kellert (2002) noted that as time passes, generations of children might have progressively lower expectations of their amount of contact with nature in their day-to-day lives. For the purpose of my thesis, the concept of 'outdoors' includes public outside space, where children can engage in PA opportunities (either formal or non-formal) in either man-made environments (urban green space, urban parks, streets, pavements) or natural environments (woodland, fields, streams).

As discussed at the beginning of this chapter, PA has numerous health benefits and studies have found a strong association between children spending time outdoors and its positive impact on physical and mental health (McCurdy et al., 2010). Evidence suggests that outdoor activity can have a positive impact on physical health factors such as: improving asthma (Lovasi et al., 2008), myopia (Sherwin et al., 2012), and obesity prevention (Cleland et al., 2008). Studies have also found PA undertaken outdoors results in greater overall mental well-being (Hiscock and Mitchell, 2011), including reduced stress and anxiety (Corraliza et al., 2012). It has also been found that positive effects in cognitive functioning (Wells, 2000) and behavioural development (Amoly et al., 2014) can accrue from time spent in green space. Studies have also suggested that time spent outside is associated with increased PA levels among children (Woo et al., 2013, Stone and Faulkner, 2014, McCurdy et al., 2010). For example, Schaefer et al. (2014) carried out a cross sectional study with 11-14 year old Canadian children, with self-reported time spent outdoors (split into three categories: none, some, and all/most of the time) combined with accelerometery. The results found that among the 306 participants, those who reported spending 'most/all of their after school time outdoors' (n=120) took part in more moderate to vigorous PA (MVPA), had higher CV fitness, and spent less time partaking in sedentary activities. Furthermore, the children who reported spending the most time outside,

were three times more likely to reach the recommended levels of daily PA, when compared with youth who reported spending no time outdoors (n=52).

Although these studies agree that spending time outside can positively influence children's PA levels, they do not address *why* this is the case and what it is about the outdoors that encourages children to be active. My thesis aims to create a deeper understanding of how children perceive their environment to understand why children are often more active outside, thereby adding to the current literature surrounding children's PA levels outdoors.

3.8.1 Outdoor affordances

As discussed in Chapter 2, children's preferred place can change depending on their emotions and mood (Korpela et al., 2002). Emotion and mood may also influence which environmental affordances the child will seek out. In his original discussion of affordances, Gibson (1977) stated that the unique aspect of affordances is that they only exist if needed by the observer. For example, if a child wants to play hide and seek, they might perceive trees and bushes as an appropriate affordance. However, should the child want to play tag, the affordance of a wide-open space may be more desirable.

There is limited research exploring children's preferences in relation to the potential benefits afforded by the local environment. Moreover, literature investigating how children might utilise the available affordances seems scarce. Heft (1988) published one of the first papers to examine affordances in relation to children's outdoor PA and produced 'an affordance taxonomy' (Table 3-1).

Table 3-1 Taxonomy of environmental affordances (Heft, 1988).

Environmental quality	Affordance
Flat, relatively smooth surfaces	Cycling, running, sports and games
Relatively smooth slopes	Rolling down on wheels
Graspable detached objects	Throwing, digging, building, playing with animals
Attached objects	Jumping over, jumping up to and down from, balancing along
Non-rigid attached objects	Swinging and hanging, climbing up
Climbable features	Climbing, looking out from
Shelter	Hiding, being in secret places, quiet and solitude
Mouldable material	Building, shaping
Water	Swimming, fishing, general water play

This taxonomy was completed through observational methods and was considered more psychologically meaningful than any previous classifications of environmental features. In doing so, Heft provided the literature with a starting point for children's outdoor affordances. Although the taxonomy was a good foundation, it could be argued that Heft does not appear to acknowledge the individuality of affordances and instead generalised how children perceive and utilise the environment. Furthermore, Heft's work does not offer any comparisons or understanding of children from differing residential settings (e.g., those living in urban vs rural areas, or those in more deprived vs. affluent areas). This thesis explores the physical affordances and the sociality of affordances in greater depth, to understand and compare how children from diverse backgrounds (e.g., high deprivation, rural dwelling) perceive and utilise their environment.

In addition to the physical affordances set out by Heft (1988), Kytta (2002) furthered Heft's work by acknowledging an affordance of 'sociality' among the outdoor environment; a space that affords the opportunity for social play such as role playing, games such as Tag[1] and hide and seek, and general spending time with friends. A critique of Kytta's work is the potential for it to be confused with social affordances.

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[1] Tag or tig, is a playground game that involves one or more players chasing other players in an attempt to 'tag' or touch them with their hands.

Kytta asserts that taking part in a social activity, results in a sociality of the affordance. I would suggest that this might not be the case. Social affordances are not physical objects such as trees and bushes. My perspective follows that of Rietveld and colleagues (2013), who refer to a social affordance as the possibility for a social interaction offered by the environment (e.g., someone reaching their hand out affords a handshake). A physical affordance is the relationship between what the physical environment offers and what the observer needs or wants. Associating sociality among physical affordances might potentially blur the lines between what is a physical affordance and what is a social affordance. Kytta asserts that social play (e.g., tag) somehow changes the context of a physical affordance. However, the physical features needed for social play is rooted in the needs of the individual; the sociality of the context is irrelevant. It is my opinion that Kttya may not have furthered the social affordances work by Heft, but rather acknowledged that physical affordances can complement social activities.

In the same year as Kytta (2002), work by Clark and Uzzell (2002b) explored the influence of age and gender on the perceptions of neighbourhood/environmental affordances. Measured via questionnaire, the study asked the participants to quantify how many places there were in the environment for each affordance, and rate how often they used that environment for that affordance (1 = hardly ever, 2 = sometimes, 3 = often). The affordances explored were primarily social affordances, such as, 'be in an area that belongs to teenagers', 'be alone', and 'being with close friends'. The premise for this study is similar to that of my thesis in terms of understanding how affordances can influence place preference. However, Clark and Uzzell quantified the results so that the children's perceptions were reduced to numbers. In doing so, they limited the understanding of the phenomena, making it difficult to comprehend why children chose to use those particular locations. For example, knowledge that a town was considered to be the preferred location for being with friends does not provide an understanding of what specific affordances that the town provides, and why these affordances related to spending time with friends.

Storli and Hagen (2010) employed photography alongside observation and quantitative methods to explore children's active outdoor play in traditional playgrounds and natural environments to understand how each environment influenced children's PA. The children in this study were 3-5 years old, and therefore,

the findings are not directly relevant to my study, yet the methods provide a useful insight into how photography can be used in affordance related research. A weakness of Storli and Hagen's work was the absence of any information regarding the children's perceptions, or child led photography (photographs were taken by the researchers and not the children). With this data missing, the authors were unable to investigate whether the children's perceptions influenced activity level, highlighting why it is so important to involve children in the data collection process.

Where Storli and Hagen placed greater emphasis on the quantitative component of their work, Prieske et al. (2015) qualitatively examined whether children from the Netherlands were attracted to affordances that offered a greater challenge to the child. Thirty children (7-10 years old) were asked to play freely in a play space that consisted of blocks of various heights and distances from each other. Prieske and colleagues hypothesised that the children would opt for the more challenging blocks to play on. The findings from the study suggested that children did not opt for the more challenging routes, but rather opted for variation, while staying within their perceived capabilities. Prieske and others concluded that when 'designing playgrounds we need to create variation. By doing so we would take into account the differences in action capabilities among children and also follow theories about how these capabilities can improve' (p.110). As I explain in the following section, this is a good example of whether adults are best placed to choose the affordances that children will play with. The study also highlights how important child participation is when studying and understanding how children use and experience their environment.

In a similar study with children aged 4-5 years, Sandseter (2009a) explored the potential affordances in two different types of playground – a 'traditional' playground, and a more natural 'wild' playground. The findings suggested that both playgrounds offered risky affordances and children sought risk-driven play, actualising more dangerous affordances. Interestingly, and possibly in line with Prieske and colleagues, the children did not perceive to have played near dangerous features. Suggesting that the high level of risk is only perceived by the adults, and children are not aware of the risk present (Sandseter, 2009a). One of the weaknesses of many of these studies has been their use of 'staged' environments, in which the children may not naturally spend their time. My study allowed children to go about

the normal lives, and document the affordances within the environment that they choose to use on a day-to-day basis.

3.8.2 Adult designed play areas

Many adults are keen to increase levels of outdoor play in children. However, adults often build play structures that lack imagination, adventure and an element of risk (Johnson, 2004). As Nicolson (1971) notes, adult designed play spaces are often 'clean, static and impossible to play around with' (P.6). Research has also found that adult-designed play areas lack nature and imagination, despite findings often showing that children enjoy natural spaces and that certain natural features can increase their physical and creative play (White, 2004). Frost (2006) found that natural features were absent from the majority of playgrounds in the US, yet, when speaking to children about their play spaces, Groves and McNish (2008) found that grass, trees, and leaves, featured heavily in the children's conversations. In support of the children's preferences, studies have found that the presence of natural features in play areas have a positive influence on children's PA levels and motor development. For example, Fjortoft (2001) described how a group of children playing in a natural space 'became strikingly better at mastering a rugged ground and unstructured landscape' (p.115). Elsley (2004) found that children aged between 10–14 years preferred wilder areas such as wooded areas and ruins compared to manicured play areas. This resulted in the suggestion of children playing in 'wilder' spaces with less structural design. It is even argued that children could play a bigger role in designing play spaces so that an environment would be created that truly fits their needs (e.g., Rasmussen, 2004, Burke, 2005). For example, Woolley (2007) explored the meaning behind children's choice of locations and found that children use a multitude of spaces for being with friends; the children's preferred spaces were not necessarily designated play spaces, which begs the question of how beneficial adult designed play spaces can be. For example, if the primary reason for children going outside is to spend time with their friends, there needs to be a greater understanding of which locations and features enable social play. Additionally, it would be valuable to understand whether there is a link between playing with friends and preferring natural spaces.

Although there is evidence to suggest that children prefer more natural, wilder spaces, there is still limited research on why these spaces appeal to children and whether vary by environmental context. Understanding why may help to ensure that playgrounds are built for children's requirements rather than adult's perceptions of what children require. In order to understand these preferences, it is important to engage with children on their perceptions of the outside environment along with a deeper exploration of the meanings children place on particular environments and their unique affordances.

The current section has outlined in detail how and why this thesis focused on the subjective environment through perceptions and affordances. The following sections narrow the focus of this thesis further, by exploring the current perceptions and affordances literature with regard to the two main comparative components within this body of work: experiences of deprivation and urbanicity/rurality of dwelling.

3.9 Neighbourhood deprivation

In the previous section I discussed how this thesis explores perceptions and affordances within a child's outdoor neighbourhood. In order to narrow the focus of this thesis further I chose to include comparative research questions that investigate if perceptions and affordances might differ between children from different types of neighbourhoods/environments, more specifically, urbanicity of dwelling and area deprivation. I now discuss area deprivation and its relation to PA; this is followed by a discussion on urbanicity and PA.

As noted within the ecological systems theory, there are many characteristics that can influence PA behaviours. One influencing factor is deprivation. 'Deprivation may be defined as a state of observable and demonstrable disadvantage relative to the local community or the wider society or nation to which an individual, family or group belongs' (Townsend, 1987 p125). Deprivation can be measured at the individual level (such as socioeconomic status, social class, occupation and income) and at an area level (i.e., defining specific geographical units within which people reside as more or less deprived - often based on a weighted approach that combines multiple socioeconomic indicators of deprivation).

Individual measures of deprivation can present challenges for PA research. For example, an individual's social class and the area deprivation in which they live vary

greatly and is not necessarily dependant on one another. Social class is often reflected in economic differences, status and power (Van Doesum et al., 2017) and can be measured via objective (e.g., income and education) and subjective (e.g., perceived relative class rank) assessments of class (Kraus and Stephens, 2012). Area deprivation has no subjectivity, making it a more reliable measure when making comparisons and helps to simplify sampling. Area deprivation is also used for informing policies by local governments. The purpose of this thesis, and PA research, is to present findings that might help to influence local government and implement initiatives relating to childhood PA. Therefore, it was more practical to use area deprivation versus any individual measures, such as social class.

3.9.1 Neighbourhood deprivation and PA

Sufficient evidence exists to suggest that where you live, in terms of area deprivation, is associated with PA behaviour in adults (Sundquist et al., 1999, Van Lenthe and MacKenbach, 2002). Characteristics such as access to green space, perceptions of safety, and availability of equipment and facilities have been shown to vary between areas differing in measured deprivation (Crawford et al., 2008). Deprivation can also have an impact on how people perceive their environment. Jones et al. (2009a) found that although geographically close to green space, adults living in areas of high deprivation reported as having poor or difficult access to green space. This finding is in line with Macintyre et al. (2008b) who suggested that symbolic proximity may be more important than actual or potential proximity; if they perceive a specific park to be unsuitable for their needs, it may not be within their perceptual field. Unfortunately, the authors did not investigate the specific reasons why the participants did not perceive the park as somewhere close by and other explanations may exist in addition to those presented. For example, the quickest route may involve walking through a known crime area, a busy road, have limited pedestrian crossings, or insufficient walking surfaces; therefore, although the distance is short, the route is not considered accessible by the residents. This assumption was clarified by a qualitative study conducted by Eyre et al. (2014) who explored parental perceptions of environmental determinants of children's PA within a low SES environment. Although there were parks within a ten-minute walk, a non-supportive physical and social environment influenced the ability to visit these locations due to safety concerns. It is important to note that the study used parental perceptions and did not

employ children within the study; therefore, the specific reason why the children chose not to visit the parks is not clear. Although it does suggest that availability may not necessarily affect behaviour, which might help to understand why locations are not used, despite a close proximity.

As highlighted above, there is limited research which explores the relationships between neighbourhood environments and PA behaviours in children (Noonan et al., 2016c). More research into children's PA behaviours and their neighbourhood environment could help to improve childhood PA promotion strategies. Noonan and colleagues (2016c) carried out a study to explore how area deprivation might influence PA behaviour in children and found conflicting results. The children from higher deprivation areas had higher waist circumference and overweight prevalence rates. However, the children also reported greater independent mobility despite parents reporting less favourable walking environments. The authors contended that the overweight prevalence and waist circumference could be due to other factors such as dietary intake, rather than insufficient PA. The study also found results suggesting that the aesthetics of a neighbourhood did not influence self-reported PA in children, and that although the children from high deprivation areas had greater independent mobility, their parents had more safety concerns than parents who lived in more affluent areas.

Past research has found that the context of safety concerns from parents can vary depending on level of deprivation (Rawlins et al., 2013). A study by McAdam (2010) found that there were more parental based barriers to using playgrounds for children who lived in areas of greater deprivation compared to less deprived areas. McAdam noted that parents did not allow their children to play in spaces where there were fears of strangers, abduction, broken glass, needles, and teenagers; concerns that may not be evident from parents living in more affluent neighbourhoods. However, studies that use parental proxy with an aim to understand child PA, fail to access the individual that matters – the child. In my opinion, this is a critical issue that lies absent in the literature. Furthermore, there is a general shortage of research comparing perceptions between areas of deprivation.

3.10   Urban and rural comparisons

As with much of the literature in the field of PA research, the majority of studies that investigate PA in urban and rural settings use quantitative measures to examine relationships. The current quantitatively based literature has only been able to tell us differences exist, and that these differences are not always consistent. Studies that have explored PA levels of children have found rural children to be more active (Liu et al., 2008), less active (Moore et al., 2013), urban children are more active (Moore et al., 2013) or no difference between the two areas (Prentice-Dunn and Prentice-Dunn, 2011, Joens-Matre et al., 2008).

For example, Johnson and colleagues (2010), used pedometers to compare step counts in children (aged 10-11 years) and found that children from suburban and rural areas accumulated significantly more steps per day than children living in more urban areas, although there was no understanding as to why this was the case. Moore and colleagues (2013), collected accelerometer data and found that young people living in urban areas had higher mean levels of MVPA compared to rural youth (19.2 min/day vs. 15.9 min/day). These studies employed different types of PA information; yet neither gives an explanation as to why the children from different settings accrued more or less PA.

Report-based methods have also been employed to understand PA differences, although the findings have been contradictory. For instance, Liu and colleagues (2012) and Davis and colleagues (2011) both used self and parent report methods. Liu and colleagues found no differences between urban and rural children's PA behaviour. Conversely, Davis and colleagues found that rural children were more active. Both studies used language such as the 'number of times per week the child played or exercised enough to make him/her sweat and breathe hard'. Children can have questionable recall abilities (Sallis and Saelens, 2000), and parents will not know what children are doing when at school/with friends, calling into question how accurate these findings are. As discussed with the quantitatively based studies, this type of study also fails to provide any understanding of why there may be differences between the children's PA behaviours.

Veitch and colleagues (2013) explored park differences in urban and rural settings to understand how the neighbourhood might influence PA behaviours in children. They

found that while rural parks were more pleasing to the eye, urban parks may help to facilitate play. The urban parks had better access, lighting/safety, and more diverse play equipment, more play equipment for older children, and were more likely to have paths suitable for walking and cycling. Unfortunately, due to the survey style methodology, the study did not evaluate which parks were more frequented by adults/children, and the perceived preferences of children. Furthermore, there is no guarantee that if the urban playground equipment was placed in a rural playground it would be played with by the rural children. Therefore, although the study gave a basis for understanding and comparing the features of urban and rural parks, the authors did not gain an understanding of how those features influenced who visited them and why. Without this information it is difficult to know which park children prefer, and which features may encourage PA behaviours.

There is a dearth of research that helps to understand how children in urban and rural environments perceive and utilise their neighbourhoods. The quantitative and self-report methods have led to confusing and contradictory data. A more qualitative affordance-based approach may help to understand why children in different settings achieve varying levels of PA. Additionally, very few studies exploring how children from urban and rural environments might perceive their environments differently have taken place in Scotland. Studies have taken place in Australia (Veitch et al., 2013), America and Canada (Carson et al., 2011, McCormack and Meendering, 2016), Cyprus (Loucaides et al., 2004), Brazil (Andrade Neto et al., 2014), Mexico (Peña Reyes et al., 2003) and England (Jones et al., 2009b). My thesis contributes to the literature by adding a qualitative comparison between children from urban and rural areas living in Scotland.

3.11 Summary of the chapter

This chapter was structured in three parts; firstly my aim was to provide an understanding and rationale of carrying out research within the field of childhood PA. I outlined the health benefits that PA offers, both psychological and physical, and highlighted the high levels of inactivity of children in Scotland. The second part of the literature review was to provide the context of PA behaviours. In line with my theoretical framework, I took an ecological approach to PA, with the notion that the environment is influential to individuals' PA behaviour. Much of the literature surrounding PA in children has chosen to either focus on the physical or the social

environment; I chose to incorporate both into this thesis as they often influence one another. The third and final component of the literature review was to highlight how this thesis contributes to the literature. Much of the current research within PA behaviour among children has chosen to employ objective data collection methods, such as accelerometers (e.g., Oreskovic et al., 2012) and methods to examine the location of PA such as GPS (Demant Klinker et al., 2015, Coombes et al., 2013), and proximity to green space and PA facilities (La Rosa, 2014). While these methods offer valuable information on where children are most physically active, they do not provide information on *why* children use or do not use PA facilities which may be nearby (MacKenzie et al., 2015). There is a lack of understanding of how each individual may perceive and utilise an environment or an affordance in a unique way. Although some literature has explored children's environmental perceptions in relation to PA (Pearce et al., 2009), a gap exists within the field where there is little research among children living in more affluent or poorer neighbourhoods or those living in the inner city or more rural locations. Therefore, the overall aim of my thesis was to explore how children's perceptions of their neighbourhood may influence their time spent outside, and therefore, potentially affect their PA behaviour, with a focus on comparisons between areas of varying deprivation and urban and rural dwelling.

3.12   Aims and research questions

3.12.1 The aims of this thesis

The global aim of this thesis was to achieve a greater understanding of how children perceive and experience their neighbourhood in terms of their decision to actively and voluntarily spend time outside within their local environment. This global aim was refined to explore how affordances within children's environment may encourage or discourage their time outside, and investigate any variations between high/low levels of deprivation and urban/rural dwellings.

3.12.2 Research questions

1. How might physical affordances influence children's place preference, and how might they influence meaning behind choice of location? Do children from different levels of area deprivation and degree of urbanicity use and experience places differently?

The main aim here was to look at how children utilise affordances within the environment and how these affordances influence place preference. I also aimed to understand how children associate meaning to locations because of the available affordances and how this might differ by their residential context.

2. Are children influenced by social affordances within their environment when spending time outside? If so, how might social affordances differ between are deprivation and urbanicity levels?

This question specifically investigated whether the social environment influences place preference, and whether this was also dependent on socio-demographics and environmental context of the neighbourhood.

3. How do children define and describe a neighbourhood? Does this vary between degree of area deprivation and urbanicity?

This question investigated the children's understanding of what they considered to be a neighbourhood (i.e., whether children consider neighbourhood boundaries to be physical or social features).

4. How would children alter their neighbourhood to encourage more time spent outside? Does this vary between levels of area deprivation and urbanicity?

The fourth question was designed to understand how children would modify their own neighbourhood in order to make it more appealing to spend time outside and whether this depended on neighbourhoods and environmental context (i.e., area level deprivation and urbanicity).

CHAPTER 4: PARTICIPATORY METHODS WITH CHILDREN

'A person's a person, no matter how small!'
Dr. Seuss
(1954/2004 p. 108)

4.1 Introduction

The purpose of Chapter 4 is to discuss and justify why I have chosen to use child-centred participatory methods.

I have chosen to place the sections on the procedure of the methodology within the pilot study (Chapter 5) and the main study (Chapter 6) as the two studies comprised different sampling techniques, different participants, slightly altered methods, and the analysis was developed over the course of the pilot, which informed changes I then made to the main study.

The first part of this chapter addresses my philosophical standpoint as a researcher. It is important to establish my epistemological beliefs, in addition to the paradigm this thesis is placed in. I outline my position regarding the philosophical assumptions of this thesis, and briefly discuss why this thesis is based within the qualitative paradigm. I then go on to demonstrate why I chose a phenomenological approach for the study. The chapter then addresses the viewpoint in which I explore the research questions – through the eyes of the children. This section gives an overview of children in research, and how children have developed as research participants to become active agents in the research process. The chapter proceeds to look at power issues that can emerge from having child participants and adult researchers, and the importance of consent. The chapter then explores the notion of seeing the world through the eyes of children; specifically, how children construct meaning and how important context is when choosing methods to ensure that they are appropriate to the participant age group. I then discuss the participatory methods that have been employed in this thesis, and justify why I chose to use these methods. The chapter concludes with an explanation of how trustworthiness and quality in the data analysis was ensured throughout this thesis.

4.2 Philosophical assumptions

When commencing a research project, it is important to understand, at a personal level, the epistemological positioning of the study. The term epistemology refers to the theory of knowledge, and attempts to answer questions surrounding what we know, and how we know what we know (Coyle, 2007). Our epistemological positioning dictates which paradigm we choose to work within (Gringeri et al., 2013). The most common paradigms are positivism/post-positivism, and constructivism (also referred to as interpretivism) (Bryman, 1984). The positivistic approach is based on the rationalistic, empiricist philosophy that there is a single reality that can be objectively measured (O'Leary, 2004). Positivism was the principal paradigm in science during the twentieth century. Although in the second half of the century, positivism began to be criticised resulting in post-positivism emerging; post-positivism accepts that context is needed to understand data (O'Leary, 2004). Both paradigms employ quantitative methods as they are concerned with facts as opposed to phenomena (Guba and Lincoln, 1994). In opposition to these paradigms is constructivism, which is based on the belief that each individual constructs his/her own reality and each individual seeks to make sense of the world as they see and experience it. The constructivist approach employs qualitative methods as they are better placed to uncover phenomena and generate a deeper understanding of how each individual interprets the world (Lincoln and Guba, 1985).

The overall aim of my thesis is to bring to light children's individual perceptions and experiences of their neighbourhood in relation to PA behaviour. Therefore, my epistemological beliefs are more aligned with the constructivist paradigm. In order to understand how children perceive and experience their world, I believe it is important to gain insight into how each child perceives and interprets their own world. I do not believe that children all experience the same world or reality. Therefore, my thesis follows a constructivist approach, and adopts qualitative methods.

4.2.1 A phenomenological approach

For my thesis, I have chosen to take a phenomenological approach. Phenomenology is a method of inquiry in philosophy, developed primarily by Edmund Husserl during the 20th century (Flood, 2010). Phenomenology is the study of consciousness as experienced from the first person point of view. In a literal sense, it is the study of

'phenomena': how things appear to us, or how things appear in our experience, or how we experience things. It is the critical reflection of a conscious experience that looks to understand the essential features of that experience (Jopling, 1996). Research exploring children's worlds has regularly employed a phenomenological approach (Woodfall and Zezulkova, 2016, Briod, 1989). The justification is that many child-centred studies aim to understand the experience of childhood (Briod, 1989). The task of a phenomenologist is to identify those existential 'essences' of the child's experiences. Phenomenology was selected due to my desire to extract the essence of how the children experience their neighbourhood in relation to PA behaviour.

4.3 Children in research

4.3.1 Overview of children taking part in research

Children have participated in research for a number of years, although historically, children have mainly been perceived as passive 'objects' that are to be researched *on* rather than researched *with* (e.g., Bowlby, 1947, Newman and Newman, 1975). Children's cognitive competencies were thought to be incapable of comprehending the purpose or significance of research studies. For this reason, research has often found ways to circumvent children, either by going directly to adult figures such as parents, guardians, and teachers, or by placing adult interpretations on the data (Hood et al., 1996, Valentine, 1999). It has been suggested that researchers often avoid research with children as they are not seen as fully developed; they are not yet an 'actualised' being (Balen et al., 2006). Verhellen (1997) notes that within the developmental paradigm of child psychology, children are 'projects' in the making; children are 'human becomings' as opposed to 'human beings'(Qvortrup et al., 1994). Such approaches do not allow for researchers to see children's own perspectives on their everyday lives and experiences. In more recent years, children have found a voice in research and have begun to be seen as equals to their adult counterparts.

4.3.1.1 Origins of children in research

Jean Piaget was a pioneering clinical psychologist who focused on child development. The 1930's were a time when children were thought to be less competent thinkers than adults; however, Piaget suggested that children simply think in different ways. Piaget respected children and their ways of thinking; he listened to what children had

to say and did not consider their explanations inferior and noted that researchers should let the child lead;

> *It is of paramount importance [...] to play your part in a simple spirit and to let the child feel a certain superiority at the game [...] In this way the child is put at ease, and the information he gives as to how he plays is all the more conclusive.*

<div align="right">(Piaget, 1932 p.24-25)</div>

In the latter part of his career, Piaget adjusted his attention from measuring children's competence to understanding how a child's mental processes may cause them to make, in adult's eyes, mistakes in psychological tests. He was one of the first researchers to acknowledge that children should be treated with respect as an equal member of society.

Between the 1930s and the 1990s social scientists developed new ways of working with children, repositioning children's voices at the centre of the research process (Barker and Weller, 2003). Until this point, adults had often spoken for children. When children's voices began to be respected, researchers started to understand that children's perspectives do differ, and are more realistic than what adults think about children's lives (Balen et al., 2006). In my opinion, children deserve the right to express themselves and offer their views on matters that not only affect their day-to-day lives, but on matters that directly influence their health and wellbeing. Although the following quote is under a patient-practitioner context, the applicability of children being allowed to partake in matters that affect them, transfers to the research context:

> *As soon as they are able to communicate and participate in the decisions that affect them, children should be encouraged to express their views, ask questions and discuss their health worries. . . . Health professionals should act as patient advocates and ensure the participation of children and young people in all aspects of decision-making. This should be seen as the norm. If children are excluded from decision-making, there must be justification for that stance.*

<div align="right">(British Medical Association, 2001)</div>

4.3.2 The development of children's rights

Under the United Nations Convention on the Rights of the Child (UNCRC), (United Nations, 1989) article 13 states; 'The child shall have the right to freedom of expression; this right shall include freedom to seek, receive and impart information

and ideas of all kinds, regardless of frontiers, either orally, in writing or in print, in the form of art, or through any other media of the child's choice' (United Nations, 1989). Governments around the world promised children that they would be respected and given the same rights as adults. Article 13 was created so that all children, regardless of their background, would have civil, political, economic, social, and cultural rights. The article by the UN was one of the first to openly acknowledge that children should be given a voice. The following section explores how children are now frequently considered 'active agents' in the research process.

4.3.3 Children as active agents

Traditional sociological thinking of childhood has viewed children as passive beings. Oakley (1994, p.25) expresses this by saying that 'the idea that children can constitute meaningful research data conflicts with adultist views of children as less than competent to make sense of the adult world'. Recently, this mind-set has changed and children have started to be thought of as 'social agents', signifying that children are actors whose interactions make 'a difference to a relationship or decision, to the workings of a set of social assumptions or constraints'(Mayall, 2002, p.21). The belief that children are passive rather than active is being challenged more frequently within the new paradigm of childhood sociology (James and Prout, 1990). One factor that has increased prominence of children's agency in research is the recent growth of accessible media production. Mason and Hood (2011) noted that in postmodern society, children have been able to assert their agency in knowledge production by their ability to express themselves through social media. The internet and social media has enabled children as young as 8 years old to gain a wider audience when expressing their views and opinions (Livingstone and Brake, 2009; Mason and Hood, 2011). As Livingstone and Brake acknowledge, access to online platforms is encouraging children from various backgrounds and as young as 8 years old to 'express themselves and share experiences' (p.77). Although not all children may have a social media account, the existence of social media has meant children are becoming more accustomed to having their voices heard. This has influenced research, where children are now more frequently being thought of as participants able to speak for themselves, while giving reliable and valuable information about the situation in question (Balen et al., 2006).

4.3.4 Power issues between child participants and researchers

Traditionally, childhood studies recruited adult gatekeepers, such as parents and teachers, to be participants in studies relating to children's experiences. This unwittingly (although some may argue it was in fact intentional) gave adults the power regarding what should be discussed in relation to child health. In recent years, studies (e.g., Jongeneel et al., 2015) have shifted the power to the children, acknowledging they are better placed to discuss childhood experiences. This trend highlights that researchers are beginning to appreciate that adult gatekeepers are not able to accurately portray a child's views and experiences, despite how well intentioned or informed they may be (Mahon et al., 1996, Miller, 2000). Although there is acknowledgment that children are better placed than adults to discuss child-related experiences, a power imbalance still exists between the adult researcher and the child participant. For instance, Esterberg (2002, p.48-49) commented that:

> ...researchers need to address the power relationships that are embedded in research. Researchers...often tend to be of a higher social class than the research participants...determine how the research is conducted...set the agenda and determine what is important...[while] Research participants...do not typically have the power to determine, ultimately, how the data are used. Social scientists thus must be vigilant lest their research reflect more about themselves and the establishment than it does represent authentically those whom they study.

This is compounded, or intensified, when the participant is a child. If the participants are children, the power imbalance is likely to be magnified due to the already existing power imbalance of children and adults. Adults are considered of greater status than children due to their social standing, physical presence, and institutional positioning (Morrow and Richards, 1996, Valentine, 1999). Gaining insight into children's worlds requires a reduction in the asymmetry between adults and children. Researchers in the early 1990's began to discuss the power relation between child participants and researchers, and began suggesting ways to combat this power struggle in pursuit of more child centred research (Hart, 1992).

The development of child-centred methods, based on forms of communication children are most accustomed with, are a key way of addressing the power imbalances with child participants. These methods do not assume that age is synonymous with ability, but rather use the methods to help build a rapport, trust, and confidence with the researchers (Barker and Weller, 2003). Children often choose to communicate in

various ways, such as speaking, drawings, and acting, with perceived ability, enjoyment, and mood often contributory factors that influence how they converse. For this reason, the majority of studies that seek to employ a child-centred approach use mixed methods, utilising methods such as song, photography, drawing, and stories to encourage children to take part in an attempt to elicit the most valuable data. The use of a multi-methodological approach is discussed further on in this chapter.

4.3.4.1 Consent of the child

Choosing appropriate methods can help to minimise the power imbalance between children and adult researchers. Despite attempts to equalise power discrepancies between children and adults in research, it is still common practice for researchers to seek the guardian's consent before the child can legally take part in a study. The rules surrounding parental consent are vague. For example, The Medical Research Council states that 'research with children must normally only be carried out with the consent of the parent/guardian and/or child depending on the competence of the child' (Medical Research Council (MRC), 2004). In Scotland, young people under the age of 16 can also give legally binding consent to medical procedures or treatment as long as they are believed by the medical practitioner to be competent (Medical Research Council (MRC), 2004). Understandably, it is difficult to assess the competence of the child, as it is usually a very subjective topic.

It is not entirely clear whether the Scottish statute covers consent to participate in research. In the absence of law dealing specifically with research, the principles of Scottish law relating to consent to procedures and treatment might reasonably be applied. While there is no law on young people under the age of 16 years participating in research studies, there is inconsistency, uncertainty, and unawareness of whether children under 16 years can take part in research without the consent of their parent/guardian. The result being that the majority of researchers would seek the parent/guardian's consent, in order to prevent potential repercussions.

A key problem with seeking parental consent is that if the adult signs the consent, the child may not want to take part but feels obligated. Conversely, the child may want to take part but has not been given consent by their parent/carer. In order to circumvent issues regarding the children's rights, consent from the children, in addition to the parents is considered the solution and is frequently sought within research. In my opinion, it is essential to gain the child's consent, even with the parent's consent. It

shows to the child that their rights are being taken seriously and they are being actively involved in the decision making process (Taylor 1998).

It is still considered best practise that should the parent/carer choose not to sign the consent form, the child would not participate in the study. For my thesis, while the parents had to sign the consent form, should the child not sign the consent form for my study, regardless of the parent's decision, the child was not required to take part.

4.4 Seeing the world through the eyes of children

As mentioned earlier in this chapter, Piaget was commended for recognising that children should be treated as equals in research. However, some researchers have criticised Piaget's methods, claiming them to be adult-centred and complex (Atkinson et al., 1996, Bryant, 1974). These criticisms led Piaget's original experiments to be retested, replacing or removing the adult complexities. The new versions followed the same process, but provided a context that the children might better relate. A good example of this was when McGarrigle and Donaldson (1974) repeated one of Piaget's experiments. Piaget's original task involved placing two parallel and numerically identical rows of counters in front of the child, and an adult would then push one row of counters more closely together so that one row was shorter than the other. In the McGarrigle and Donaldson study, the respected adult was replaced with a 'naughty' teddy bear but still arranged them in the same way the adult did. With the adult changing the counters, only 13% of the children answered correctly. In the updated version with the teddy bear, 50% of the children gave the correct answer (McGarrigle and Donaldson, 1974). By adopting a context that related more to the child's world, the children appeared to better understand the situation and, as a result, the proportion of correct answers increased. The findings from McGarrigle and Donaldson's study are particularly pertinent to my thesis as their methodology reflects a similar philosophy: considerable effort was made to make the methods suitable to children's competencies.

4.4.1 Co-construction of meaning

Children's words are often analysed and understood to suit an adult's agenda or research aim (Lundy et al., 2011). Researchers discussing interpretations of the data with the participants can circumvent this. For instance, children's drawings can often be unclear to adult researchers, which can lead to adult's placing their own meaning

onto what the child has drawn. Discussions with the child can help avoid this, and help to make sure the analysis reflects what the child intended to be drawn. A good example of this was illustrated by Punch (2002) who noted that when asking children to draw, it was often difficult to distinguish between a cow and a horse, a sheep and a dog and a home or a school. When it came to analysis, Punch noted that it was difficult to work out the details of the images. Punch suggests that if she were to repeat the technique she would 'ask all the children in an open way to explain what their drawing meant to them and why they decided to draw those images' (p.332). These were two questions I made sure to include in the focus groups and interviews.

Additionally, in order to avoid research bias I decided for the visual data to design a method of analysis that was carried out by the children. For the verbal data, I made sure to continually check I understood what the child was meaning and clarify what the child was telling me to ensure there was no misinterpretation. Verbal data are less likely to suffer from such difficulties as the researchers can check during the discussion that they understand what the participant is meaning or the point they are making.

4.4.2 Importance of context

When qualitatively investigating specific populations it is important to acknowledge the results within the context they are founded. Of context, Graue and Walsh (1998) state that 'if stepping into the same river twice is not possible, neither is doing the same research twice' (p.17). Dockett and Perry (2005) demonstrated the importance of context through the opposing findings of their study. A group of children, from different schools, were asked to photograph aspects of their school they felt new students should know about. Children from a catholic school chose to take pictures of a church, while children from a rural school chose to take pictures of their bus area. The results of each group are reflective of the context in which they were taken. It is important to acknowledge that any qualitative findings do not reflect the views of all children or even that the same children have an identical view at all times. In my research I understand and promote the notion that children will not have 'one truth'; children have multiple perspectives that can change depending on time, context and mood.

4.5 A multi-methodological approach

As with the work of McGarrigle and Donaldson (1974), I felt it was important that the methods chosen were closely related to a child's world. The overall research aim of this thesis was to investigate the influence of the outdoor environment on children's PA behaviour. Therefore, it was important to *see* the environment the way the child would. In order to see the world through the eyes of a child I decided to use two types of visual data: photo elicitation and drawings. I also wanted to gain an understanding of children's experiences and allow their voices to be heard, which motivated me to also include verbal data collection methods. Therefore, I decided a multi-methodological approach, photo elicitation and drawings, would give a child's eye view of environmental features and places in their environment. Verbal data was also needed to allow for a deeper understanding of any photos and drawings provided by the children.

4.5.1 Visual data

4.5.1.1 Photo elicitation

In order to answer the research questions set out in Chapter 3, it was important to see the environment through the eyes of the child. Although verbal data offers some insight into the child's environment, photographs allow a deeper understanding of the world the child lives in (Aitken & Wingate, 1993). Photo elicitation (also referred to as photo voice within the literature) uses photography to empower participants to help reveal features of daily life that may otherwise go unknown by the researcher (Pearce et al., 2009). Photo elicitation (i) enables people (including children) to take photographs and describe their content to policymakers giving residents power in influential aspects of their environment (ii) promotes critical dialogue and knowledge about what people believe are important issues (iii) and is commonly utilised alongside interviews and focus groups, extracting important views and experiences from participants (Hurworth, 2003).

It was also important to ensure the children were given power over what was important to them to talk about. Photography is often about power: it is about who is taking the pictures and who is in the picture (Strack et al., 2004). Photo elicitation confronts a fundamental problem in many research studies: what researchers think is important may overlook what the participants themselves perceive as important

(Wang and Burris, 1997). For my research I felt it was important that the children shared the power with the researcher, which is one of the reasons photo elicitation was chosen as a method.

Photo elicitation has often been used for exploring children's health (Hume et al., 2005) and has recently been used for studies investigating children's PA behaviours (Ross and Francis, 2016). Ross and Francis acknowledge that while rarely used in PA research, photo elicitation methods 'provide a deeper understanding of children's perceptions of and context for physical activity' (p.42). Pearce et al. (2009) also employed photo voice (alongside cognitive mapping and focus groups) to explore environmental influences on PA. Pearce and colleagues perceived the method to work well in the context of PA, while also finding that a multiple method approach was more inclusive for the children, compared to using just verbal and/or written communication methods, due to the potential wide-ranging verbal and written perceived competencies.

4.5.1.2 Drawings

As proposed by Pearce and colleagues in the previous section, implementing a multi-methodological approach can have a positive influence on the study. Darbyshire (2005) came to a similar conclusion; more than one method can increase children's engagement and interest in the study. It also signified to the children that the authors recognised them as 'active agents in the creation of their worlds' (p.424). For this reason I decided to utilise another visual data collection method. Although there are numerous possibilities, I selected drawing as my second visual data method. Drawings are frequently used in studies with children, particularly in studies relating to health: for example drawings have been used to understand children's perceptions of neighbourhood violence (Usta and Farver, 2005), HIV and AIDS (Mutonyi and Kendrick, 2011), and how rural children perceive their life (De Lange et al., 2012).

There is a common perception that drawings are the appropriate method to use when studying a population who are not able to articulate their experiences using spoken or written methods, such as is the case for children (Nomakhwezi Mayaba and Wood, 2015). However, this was not the main motivation for using drawings in my thesis; I selected drawing as it allowed the children to illustrate what they perceived rather than what is objectively present. Zweifel and Van Wezemael (2012) suggested that the drawings could allow perceptions to become visible and allow the researchers

(and sometimes the individual themselves) an in-depth view of the participant's perceptive insights of the phenomena. Additionally, I selected drawing as a secondary visual data method as I realised it would be unethical to ask children to take photographs of locations they felt were unsafe or were not allowed to visit. Drawing offered a safe, but equally informative alternative that still enabled me to investigate the perceived 'negative' aspects of the children's environments. This was important because otherwise the results may have been biased with only a 'positive' view of the children's environments.

There are disadvantages to using drawings in research with children, notably, difficulty in interpreting the drawings, placing subjective views onto the pictures (Guillemin 2004), children copying other children's drawings, children not liking drawings, and/or children not feeling they are able to draw (Einarsdóttir 2007). I have aimed to provide solutions to these disadvantages by ensuring the children interpret the drawings via the analysis, and not analysing them myself; the children drawing before the focus groups, and by providing photography as an alternative method.

4.5.1.3 Participant analysis for the visual data

The visual data (photographs and drawings) were both analysed by the participant, following the same procedure. As discussed throughout this chapter, the involvement of children in the research process is integral to understanding phenomena from the children's perspectives (Bradbury-Jones and Taylor, 2015). Participatory research encourages children to be involved in as much of the research process as possible (Fleming, 2012). This does not always extend to the analysis of the data despite researchers acknowledging that involving children in the analysis can improve the research process (Coad and Evans, 2008). Participant analysis can help to address power imbalances and create a deeper knowledge about the group in question (Clark et al., 2001, Doucet and Mauthner, 2002). Researchers have also noted that key issues and findings would not have been uncovered without the involvement of the young people in the analysis process (West, 1995). Examples of participant's analysis have included comments on the research process, coding, categorising and interpreting the data, selecting quotations and verifying adult researchers' analysis (Kirby, 1999). Photo elicitation and drawings are relatively novel methodologies in PA research and participant analysis methods for visual data are in its early stages. One of the most common criticisms of visual data is the difficulty in analysing or interpreting it

(Jorgenson and Sullivan, 2009). An innovative feature of my thesis was the inclusion of visual data participant analysis. Similar ideas have been employed in previous research. For example, Nomakhwezi Mayaba and Wood (2015) asked children to create collages from pictures in magazines. Nomakhwezi and colleagues asked the children why they had chosen certain pictures, and what these pictures represented to them. Although similar, my method of participant analysis involved data that the children themselves had created. For my thesis, the participant analysis task was a six box grid (see Figure 4-1) that enabled the participants to place their visual data (photographs and drawings) into boxes, thereby allowing me to identify a truer meaning of the data (Bradbury-Jones and Taylor, 2015).

Things I like seeing	Places I like going	*[Children's own label]*
Things I don't like seeing	Places I don't like going	*[Children's own label]*

Figure 4-1 Participant analysis grid.

As seen in Figure 4-1, four of the boxes were labelled and two were left empty. The four boxes that were labelled acted as deductive themes. These deductive themes emerged from the formative stages of the pilot study. When analysing the pilot visual data, I noticed many of the children had written a descriptive sentence underneath their drawings. Many of these sentences were based around enjoying/disliking seeing features and places the children did and did not like going. I decided to use these sentences for the deductive themes for the grid. I did not want to limit the children's representations of their photos and drawings; therefore, I left two boxes blank. These blank boxes were considered inductive themes as they emerged from the children's data. The grid also acted as a participant familiarisation tool for the focus groups, and as a discussion prompt in both the focus groups and the interviews.

4.5.2 Verbal data

4.5.2.1 Focus groups

Social scientists have used focus groups for decades in order to understand and explore people's attitudes and beliefs (Hill et al., 1996). Focus groups can vary in participant number, length of time, and demographic of participant. They are usually made up of a group of people whose opinions are sought regarding a specific subject. The aims of focus groups are the elicitation of perceptions, attitudes, and ideas through the facilitation of group discussion and interaction. It is the interaction and discussion between the participants that is thought to make focus groups unique.

A disadvantage of using focus groups with children is that children can often stray off topic. By its very definition, a focus group must have a focal point of discussion. For my thesis, I used the visual data and the participant analysis grid to help focus the discussion. Darbyshire et al. (2005) noted that this could also help to create an informal environment and encourage animated, interactive discussion. Additionally, incorporating activities into the focus group can provide variety and interest for the children.

The focus groups were designed to remain small, ensuring each child's voice was heard. Some authors have claimed that a focus group is defined by the number of people in the discussion, such as a group of six-ten people (MacIntosh, 1993). I would suggest that the key component of a focus group is the discussion between the participants. Other studies using children have kept the size of the focus group small. For example Morgan et al. (2002) conducted focus groups of four children aged 7-10 years, while Hoppe et al. (1995) had focus groups ranging between three-to-eight children who were aged 8-12 years. Therefore, for my study, I aimed to have a minimum of three participants to constitute a focus group, as this would facilitate better discussion.

4.5.2.2 Interviews

Interviews were conducted in the main study as well as focus groups as a way to extract greater insight into the phenomena; the reasoning for this is explained in more detail in Chapter 5.

There are three types of interview: structured, semi-structured, and unstructured. A semi-structured focus was used for the main study. Although (most) interviews

involve some level of pre-planned questions or subject areas, semi-structured interviews are far more conversational and open-ended than the more structured formats of questionnaires and surveys. It is important that the researcher impose as little as possible regarding their prior knowledge or opinion of the subject field. Barbour and Featherstone (2000 p.78) noted that 'research encounters involve a departure from the model of researcher as expert', meaning that researchers should not consider themselves an expert in the phenomena they are investigating. Mauthner (1997) suggested that researchers should give children the freedom to set their own agenda. I demonstrated this by designing each interview guide based on each child's visual data, allowing the children to guide the interview. The interview was guided by the photos and drawings each child provided, thereby making each guide unique to that child. Moreover, children were asked open-ended questions about the visual data without picking out specific features within the drawings/photos, or even asking about every picture. Shucksmith and Hendry (1998) advocated that research with children requires the researcher to acknowledge them as experts of their world and involve them as an active participant in the research.

Although it was important to understand the collective thoughts of children, it was also important to gain a deep understanding on an individual level. My aim in the interviews was to explore the unique experiences and perceptions of children regarding their environment. The focus groups provided an element of comparison between each child. The interviews focused on the unique relationship between that child and their environment. Initially I refrained from using interviews, as it is uncommon for a child to be one-to-one with an adult, being asked questions, where the adult is not the parent or the teacher. Additionally, when a child is answering questions, there is often a correct and incorrect answer. This can make an interview for a child an unnatural and tense situation. However, the pilot study process allowed me to meet with the children twice before the interview was conducted, thereby creating a sense of familiarity between the child and myself. As this proved useful in ensuring that the children would be familiar with me, I used this technique in the main study, which encouraged me to employ interviews as well as focus groups in the main study.

4.5.2.3 Analytical Framework for verbal data

The interview and focus group data were analysed following the same analytic procedure. As discussed earlier in this chapter, my thesis took a phenomenological qualitative approach, with the aim to understand experiences of children within their neighbourhood in relation to PA behaviour. Often in phenomenological studies, the chosen analytical framework is thematic analysis, which involves identifying themes that emerge from the data that are important to the phenomena being explored (Daly et al., 1997). Conducting thematic analysis involves 'careful reading and re-reading of the data' (Rice and Ezzy, 1999, p.258) in order to establish patterns within the data. Some qualitative researchers advise that the researcher themselves should transcribe the recordings as it familiarises the researcher with data (Liamputtong, 2013). Due to time constraints I used a university approved transcription service. In order to ensure I was able to suitably familiarise myself with the data, I read each transcript alongside the recording to check for accuracy and to acquaint myself with the data.

The theoretical foundations of this study were integral in guiding the analysis, as were the specific research questions discussed at the beginning of this chapter. Both the theoretical grounding and the research questions guided the deductive analysis. I did not want to prevent findings emerging from the data itself; therefore, the best approach was to use a hybrid of inductive (Boyatzis, 1998) and deductive (Crabtree and Miller, 1999) analysis. Consequently, my analytical framework was concurrent inductive and deductive thematic analysis (Fereday and Muir-Cochrane, 2006). The procedure for the analysis is discussed in Chapters 5 and 6.

4.5.3 Value of using a multi-method approach

These methods were used in combination to add depth and understanding by exploring the same subject from multiple viewpoints. As noted by Lambert and Loiselle (2008) using both interview and focus groups can add value to research as it allows different types of data to emerge. In this study, the interviews would offer unique and individual perspectives of the child's own neighbourhood, being one-to-one with the child would allow for a deeper exploration of that child's experiences. In slight contrast, the focus groups would elicit more comparison-based data, where children could compare and discuss their neighbourhoods. The children who took part in the focus groups also lived near one another, so the discussion would potentially

also give an insight into how children from similar environmental contexts perceive and experience their surroundings. A similar line of thought was proposed with the visual data in terms of different types of data; implementing photo-voice offered a 'real-life' view of the child's neighbourhood, in contrast the drawings would allow access to whatever the children imagined was in the neighbourhood, rather than what was objectively there.

Using all methods in combination would allow greater insight into a child's world as it gives the research numerous points of perspective. It also can strengthen findings if similar findings occur across more than one methodology. If slightly diverse findings occur, it can create an inquiry into why this might be the case.

Using these methods in combination would also aid in helping to overcome researcher bias. Triangulation is an approach frequently referred to when ensuring quality of qualitative data. Importantly, the data from the different methods would potentially complement each other, rather than contradict one another, giving the findings added depth. Using both the visual data and verbal would also help to avoid creating an adult interpretation of the neighbourhood. The sole inclusion of either might lead to 'filling the gaps' by the researcher, having data that was both verbalized and illustrated by the children meant that I would not need to 'fill-in' any missing information, thereby reducing potential bias.

4.6 Trustworthiness of qualitative research

Qualitative researchers often believe that because the nature and purpose of qualitative research is in such contrast to quantitative research, it is unsuitable to judge qualitative studies with the same criteria (Krefting, 1990). This led to Guba (1981) developing four aspects of trustworthiness to help ensure the quality of the analysis of qualitative data: credibility, confirmability, transferability, and dependability.

4.6.1 Credibility

Credibility refers to the extent to which the findings are believable, and reflect the focus of the inquiry (Lincoln and Guba, 1985). All qualitative studies accept a level of subjectivity, in the sense that researchers reflect on their own experiences when collecting and interpreting the data. Consciously acknowledging how the researcher as an individual might influence the study is referred to as reflexivity. Reflexivity

ensures the researcher has assessed how the influence of their own background, perceptions, subject interests and thoughts may influence the qualitative research processes (Berger, 2015). A common way of ensuring reflexivity is writing a personal research diary (Bradbury-Jones, 2007); an approach that is incorporated into the development of this thesis. I decided to use the pilot study as an opportunity to write a diary to document how the study was progressing from a personal and a methodological point of view. This diary helped to guide the main study and was also useful when noticing how my emotions may have influenced parts of the study. Reflexivity can also be achieved by acknowledging personal attributes and experiences that might influence the study. For example, I am a female, 26 years old, I have prior experience working with children and I have undertaken formal training in qualitative methods and working creatively with children. These factors may have influenced how the children responded to me, and how I interacted with the children and acknowledging them helped to present a level of transparency in the findings. It is also important that the researcher is not only aware of researcher/participant power imbalance, but that this imbalance is magnified when it is between an adult and child (Hart, 1992). These issues will be discussed and reflected upon in my concluding chapter to reflect on how these attributes may have influenced the data collection and analysis.

Further to reflexivity, member checking is also a widely cited method used to increase credibility. Member checking consists of continuously checking with the participants that the data, analytic categories, interpretations, and conclusions are clear, and avoids the researcher misunderstanding or misinterpreting the data given via the participants (Krefting, 1990). As a member checking process, for the visual data I used participant analysis: a concept designed to help avoid misrepresentation of the data. The participant analysis involved asking the children to place visual data they had collected into grids they felt represented their data, which helped to reduce placing researcher bias onto the visual data. The grid method also led the interviews and focus groups in a direction that was controlled by the participants that further acted as a member checking process. For the verbal data, member checking was achieved by checking with the children that I was understanding what they were saying, this was achieved by repeating certain statements and asking them to clarify any point where there was ambiguity. All procedural aspects of the methods are discussed in more

detail in Chapter 5.

Credibility can also suffer if the research participants respond with what they consider to be a socially appropriate response, rather than a personal experience (Kirk and Miller, 1986). In my thesis I aimed to avoid this by asking the children to take pictures before the focus groups took place, therefore, their photos and drawings would prompt the discussion, rather than what other members of the focus group had said or what the children thought I wanted to hear.

Krefting (1990) also suggests that credibility can be improved when there is consistency within the data collection methods. This was achieved in my study by following procedure whereby each participant was asked similar questions about their visual data. I prepared interview and focus groups guides (appendices B and C) that allowed freedom for the conversation to be guided by the participant, but also ensured similar questions were asked in each discussion. Consistency was also achieved through following a similar procedure with each participant. I met with both the participant and the parent initially to discuss the study and request consent/assent, and give the child the field equipment. I went back to the participant's house a week later to collect the equipment. I then met the child again for the interview or focus group. Therefore, I met each child at least once before the interview/focus group – creating a level of familiarity.

Another approach to ensuring credibility in qualitative research is the use of triangulation; triangulation is achieved by carrying out more than one data collection method in order to view the research problem from more than one 'view' (Krefting, 1990). As discussed previously, I implemented a range of methodologies in order to explore how children use and experience their environment in relation to PA behavior.

4.6.2 Confirmability

As previously mentioned, two key qualities of working within the constructivist paradigm are the presence of subjectivity within the research and the view that the researcher will bring a unique perspective to the topic in question. Confirmability is to what degree the findings can be established or agreed upon by others (Rolfe, 2006). To achieve confirmability within the study, one supervisor coded one transcript separately, we then met to discuss the transcript and to ensure our coding was similar.

Another supervisor read all the transcripts. Furthermore, I have presented coding tables in the appendices (appendices E and F) to show how the raw codes, first and second order themes, and sub themes have been grouped to create the global themes.

4.6.3 Transferability

While it is likely that the data from a qualitative study is not reproducible, it is not impossible to apply a qualitative study in a different setting (Shenton, 2004). Shenton noted that application of a qualitative study is possible by providing sufficient information about the researcher, the research context, and the researcher-participant relationship. Providing the researcher has addressed all aforementioned aspects of the study, transferability is argued to be the responsibility of the person wanting to transfer the findings to another situation or population than that of the researcher of the original study (Lincoln & Guba, 1985). To this end, in Chapters 6 and 7, I have outlined the participant information and the procedure to provide the as much information possible to ensure the study could be replicated in the future.

4.6.4 Dependability

Dependability refers to 'the stability of findings over time' (Bitsch, 2005 p.86). It is the idea that if the work was to be replicated, with the same participants, similar results would be obtained (Shenton, 2004). This is a difficult concept to uphold given the changing nature of the phenomena (Fidel, 1993, Marshall and Rossman, 1999). Florio-Ruane (1991) suggested it is difficult as the original researchers observations are intertwined to the situation of the study. Florio-Ruane noted that the 'published descriptions are static and frozen in the 'ethnographic present'' (p.235) Lincoln and Guba (1985) suggest that the criterion's credibility and dependability are closely related and a demonstration of the former can help to ensure the later.

4.7 Summary of chapter

The first part of this chapter highlighted the importance of identifying the epistemological stance of the research, as it is often influential to the choice of methodology. My thesis is placed within the constructivist paradigm and took a qualitative methodological approach to elicit a deeper understanding of children's experiences. I have decided that a phenomenological approach is most suited to

understand how children experience their environment, and how their perceptions might differ dependent on the residential context in which they live.

The second part of the chapter emphasised that children should be an active agent in the research process. I discussed the varying ways in which to approach a study in a participatory manner. I noted the importance of power issues, consent/assent, and the independence of children. The chapter then explored the specific methods used within this thesis and why they were chosen. The chapter concluded with how to ensure trustworthiness in qualitative data collection, discussing the four main criteria. Each criterion is discussed individually with reference to how my thesis has addressed it.

CHAPTER 5: STUDY ONE – THE PILOT STUDY

5.1 Introduction

Chapter 5 explores whether the methods chosen for my thesis would answer the research questions presented in Chapter 3. It is common procedure to conduct a pilot study (Leon et al., 2011), and is often employed to assess the feasibility of methods, the sample, the recruitment process, and evaluate whether the selected methods produce findings related to the research area. Therefore, prior to conducting the main study, a pilot study was carried out.

For my thesis, the primary purpose of the pilot study was to review the novel methodology. Photo-elicitation and drawings are yet to be considered 'traditional methods' and therefore, limited research exists on implementing them within the field of PA. Focus groups with young children can be difficult to navigate and the questions need to be age-appropriate. Additionally, the participant analysis task was an innovative task created to help reduce researcher bias and it is important that it was tested through the pilot study to ensure its viability and to work through any potential challenges.

5.2 Research aims

The aims of the pilot study were: (i) to test the feasibility and applicability of the chosen methods to extract sufficiently rich and detailed information regarding children's experiences of their local environment in relation to their PA behaviours; (ii) to investigate meanings behind why children chose or avoided specific places in their environment; (iii) to explore how the outdoor, public environment is a facilitator or barrier of children's enthusiasm to be outside.

5.3 Participants

The only inclusion criteria were that the children had to be between the ages of 10 and 11 years old to mirror the intended age of the main study participants. The participants were 15 children (5 boys and 10 girls,) from Glasgow and surrounding rural areas, who all lived in areas of low deprivation and a mixture of urban, suburban and accessible rural settings. Using an opportunistic sample, the participants were recruited from children of colleagues and from a local Girl Guides (GG) group

(www.girlguiding.org.uk). I liaised with the chair of the GG in Glasgow who granted access to the children. Study information documents along with consent forms (for the parents to sign) and assent forms (for the child to sign) were distributed to the children. Three focus groups were conducted, an all-female, and all-male, and a mixed gender focus group.

Data collection took place between October 2014 and December 2014. Ethical approval was granted from the College of Social Sciences at the University of Glasgow. The participants were given pseudonyms for the study to ensure anonymity.

5.3.1 Procedure

The pilot study implemented a participatory multi-methodological approach (O'Regan, 2016) comprising photo elicitation, drawings, and focus groups to collect children's thoughts and experiences of their environment. These methods were further complemented by participant analysis. The methods used have been justified and described in detail in the previous chapter. The following sections outline the procedural aspects of each of the methods.

5.3.1.1 Visual data collection

The visual data collection was a combination of photo elicitation and drawings. The first phase comprised a short introductory meeting with the children to discuss the study requirements. I gave each child a disposable camera and sketchbook and asked them to spend the following seven days taking photographs and/or drawing pictures of locations and environmental features that they perceived to influence their time outside. Children were informed that the study was primarily interested in the public outdoor environment. For clarification, the children were asked to document public environments that were accessible to anyone, for example, the park, streets, and communal gardens.

For the drawings, the children were given their own sketchbook. Inside the sketchbooks were example sentences such as, 'this is my favourite place to go'; 'I do not like seeing this in the environment'. These sentences were used as a guide similar to a guide employed in an interview or focus group, and helped the children recall the purpose of the study. The pages in the sketchbook were blank to avoid the children associating it with a schoolbook and to try and prevent too much writing. The children

were told that the sketchbooks belonged to them and they could decorate it and keep it after the study.

The cameras and sketchbooks were collected one week after they were handed out. The photographs were developed and copies were made of both the sketchbook entries and the photographs. The copies of the children's data were stored in a secure location in line with the MRC/CSO SPHSU data protection guidelines. The children were encouraged to keep the original raw data as it belonged to them. The majority of the children chose to keep their data, if the children chose not to take their photographs and drawings home, they were kept alongside the copies of the data.

5.3.1.2 Participant analysis and focus group

The focus group discussion took place while the children were placing their photos and drawings. The format of the focus group was a discussion regarding the pictures the children had placed in each box, the subject matter of the picture, what the picture represented, why it had been placed in that specific box, and comparisons between the children's choices and settings. Three focus groups were conducted with duration of 45 minutes (all-boy focus group), 1 hour and 30 minutes (all-girl focus group) and 2 hours (mixed-gender focus group).

5.4 Analysis

The analytic framework for the pilot study verbal data was thematic analysis, which involves carefully reading the transcripts multiple times and identifying patterns within the data. The patterns are then labelled as themes. The analysis was primarily inductive - this study had less specific aims than the main study as it was primarily employed to test procedural and methodological feasibility. Therefore, analysis was mainly data-driven, although there was an element of deductive analysis due to the research aims of the pilot study, (i.e., identifying meaning behind why children spent time in certain locations).

I read the transcripts of the focus groups and then sorted the verbal data into raw codes. Once every transcript had been coded, these raw codes were identified for patterns; raw codes that followed similar patterns were placed together and arranged into second order themes. The same process then took place with the second order themes to place them into first order themes, which were then grouped together a final time to result in five global themes. In order to ensure trustworthiness, one supervisor

went through the coding process independently and confirmed my interpretation of the coding.

5.4.1 Visual data analysis

The visual data were first analysed by the researcher, who gave each picture a code relating to the locations (i.e., park, loch, street) or the subject matter (i.e., swings, tree, and cat). The pictures were then grouped together to create themes such as, sports facilities or peers; these sub themes were grouped together a final time to create global themes, such as, play areas, aesthetics, natural spaces. The visual data was then analysed by the children during the focus groups (see 5.3.1.2).

At this point it is important to note that I do not present my analysis of the pilot study visual data. The main aim of the pilot was to test the feasibility of the visual data and the visual data analysis and it became apparent during the participant analysis that I was misinterpreting the children's data. I realised that my interpretations were not in line with the interpretations of the children often misrepresenting the subject matter and/or the location of the pictures. Therefore, the findings of my analysis are not presented; instead, the visual data is presented alongside the verbal data to support the verbal themes and to coincide with how the participants interpreted their own visual data.

5.5 Findings

5.5.1 Physical affordances

The children in my study spoke frequently about the lack of outdoor settings they felt they could go to; specifically places that contained perceived appropriate equipment for play. This was a recurrent issue within all three focus groups, and evident in both the visual and the verbal data. The data also suggested that children perceived that the play equipment in most places was designed for younger children and 'not meant for them'. For example, Emily spoke of not liking the park because it was not exciting to her:

> No, some parks are not very nice, but…
>
> *FH: Why aren't they very nice?*
>
> Well they're not very exciting. They don't have much in them and my friends don't like going there so I'm not like accompanied by anyone. So I don't enjoy it as much.

> *FH: So when you say there's not much there, what is there?*

> Well, not much there in terms of the stuff I like, really. There's like smaller, sort of smaller children's park. It's like, got like baby swings, and like a mini climbing frame thing. But I prefer to like just play football or something.

This issue was also emphasised by Robin who took a picture (Figure 5-1) of a local playground that was perceived as 'too young' for her to play on:

Figure 5-1 Robin's photograph showing equipment perceived as 'too young'.

The girls in particular, spoke frequently, not only about the perceived lack of age appropriate equipment, but also about the lack of equipment in general. The girls spoke of a desire for more equipment that they could use to play on. For example, Elsa drew a few pictures illustrating the need for more parks and more park equipment (Figure 5-2), while Jessica spoke of wanting bigger and more appropriate equipment:

> *FH: Can you think of any equipment that you would want to play on, or that kids your age would like to play on?*

> Well like climbing frame, like bigger, big climbing frames, monkey bars, appropriate swings, that kinda thing.

Figure 5-2 Elsa's drawing illustrating the need for more parks and equipment variety.

With regards to the aesthetic environment, many of the children depicted graffiti in a negative way, and wanted it to be removed (Figure 5-3). Although some of the children did suggest that their environment would be improved with the addition of colourful walls (Figure 5-4 & Figure 5-5).
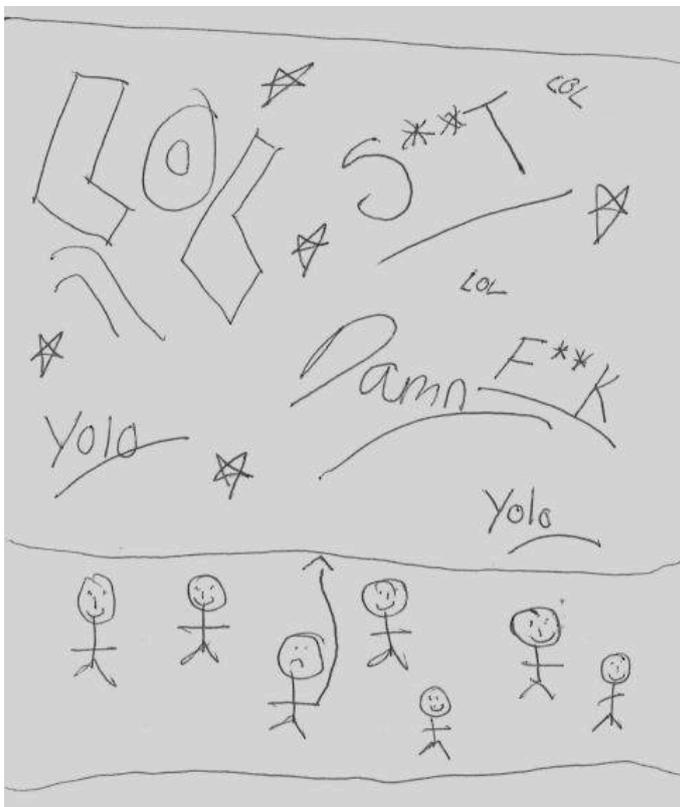
Figure 5-3 Paul's drawing illustrating illegal graffiti.
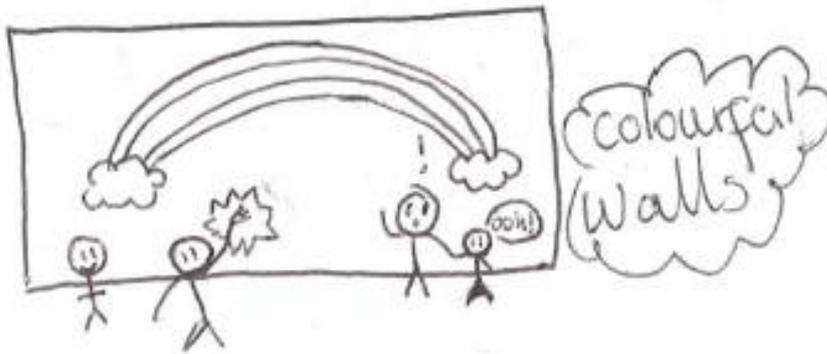
Figure 5-4 Ashley's drawing illustrating desire for a colourful environment.

Figure 5-5 Rose's photograph illustrating colourful walls.

In the all-boy focus group, the children discussed football as an activity they enjoyed while they were outdoors. The children discussed numerous places where they played football, and the most important environmental characteristic to the boys was that the location offered football related affordances, as mentioned by Ben:

> We normally walk to basically there's, well there's a few parks near us but we normally just stick, go to ****.
>
> *FH: Is that…? Why is that the one you go to the most?*
>
> Because that's the one with the best football pitch

Feeling safe was also a key factor when children talked about the places where they spent their time and why they did so. Rachel spoke about a 'turning circle' (a private space for cars to park or turn outside houses) outside her home that she liked to play in because she felt safe, as she knew everybody in the surrounding area:

One of the places that I really like going is actually quite near my house. I have a huge turning circle – it's not supposed to be a turning circle, it's actually quite annoying people using it as a turning circle, cos we have to get out of the way and move all our stuff – but we really, me and my neighbours really enjoy playing there, and we normally use our bikes and scooters and we use our imagination and pretend games, and it's basically been something I've grown up with, so I know these people really well, and I know that nobody comes up here that scares me, because if they do then they're either in a car or they're just, they're just postmen or people giving out leaflets [...] I feel safe there.

5.5.2 Social affordances

During the focus groups, it appeared that friends were a key influence, in terms of which location the children would visit. For instance, if the child was with friends, they would require a different type of environment as the children sought alternative affordances depending on whether they were alone or with friends. Izzy discussed that she would visit a woodland area when she was with her friends because they could play hide'n'seek, but she would not go there by herself:

> *FH: So, let's talk about this one, "Places I like going".*
>
> Well this is a park, it's like a park but then it has like a really like good size wood next to it and I like to go there and play with my friends because it's fun and sometimes you don't know where you're going, which I also think is really fun. And you sort of just have to work your way around it like a maze, it's really fun to play with, with your friends, and I enjoy going there.
>
> *FH: Ok, so if it was just a big open field, would we like it as much?*
>
> No, 'cause it has like loads of trees and places that you can hide in and stuff [...] I wouldn't go there by myself 'cause it's quite scary by yourself.
>
> *FH: Ok.*
>
> But I enjoy going there with my friends.

The children also spoke about and visually documented places where they were not allowed to go. These locations were frequently isolated paths or paths near dangerous locations, such as the following illustration (Figure 5-6) by Hector showing a location near a river:
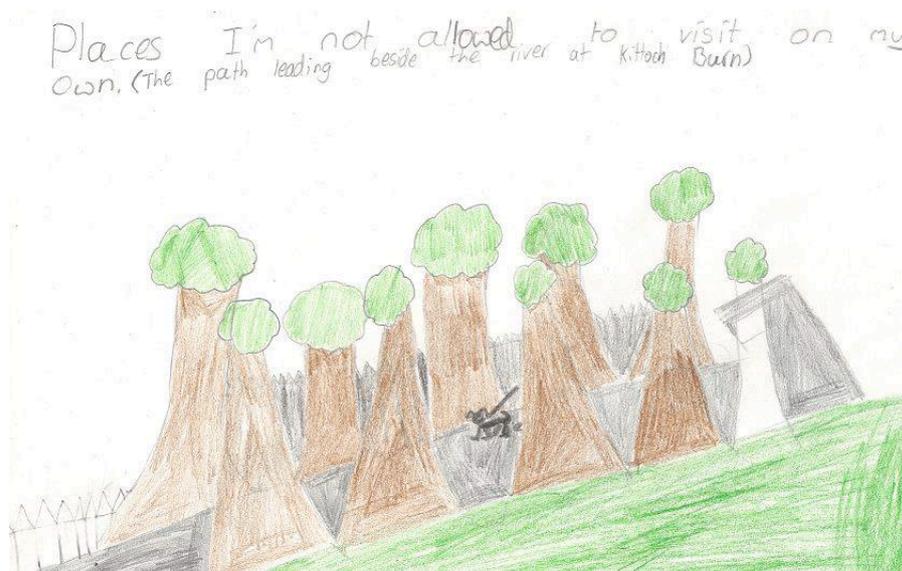
Figure 5-6 Drawing by Hector of a restricted location due to parental influences

The children also spoke of intimidating social environments that they avoided. 'Hoodies' were labelled as a type of teenager the children would purposefully avoid when deciding where to go in their environment. The following quote is from Luke, Sarah and Emily who talk about how they define what a 'hoodie' is:

> *FH: So hoodies are mentioned quite a lot (yeah) what about hoodies do you find intimidating?*
>
> Luke: When they have their hood up.
>
> *FH: So when you can't see their face?*
>
> Luke: Yeah.
>
> Emily: Yeah.
>
> Sarah: Well, I can usually see their face it's just they walk about with like hoodies and trackies and like sort of junkies or something.
>
> Luke: Jakeys just like, look like they're gonna like come after you like to give them stuff. So some of them are quite intimidating.
>
> *FH: So if you were know that they were gonna be in a certain park or in a certain place would you purposely avoid that place?*
>
> Luke: Yes.

Ben and Luke also referred to teenagers 'hanging out' and considered this to be more intimidating than teenagers who were participating in a recognised activity such as football:

> Ben: You get the ones at the Peel who are in, colourful like football strips and they're just running around happy

Luke: And you get the ones like what I was talking about at the parks, just in grey hoodies, and you can't see their face and then they've got jogging bottoms on and you just, it's like they just don't want you to see that they're hanging around there, but they kind of do because they want people to see that they're cool.

5.6 Discussion of findings

Although numerous studies have been conducted to understand children's objective PA levels in their environment, there is limited research exploring children's perceptions of their environmental affordances. Learning more about how children perceive their environment will help adults understand how best to encourage children to spend more time outside. More time spent outside could potentially increase children's PA levels. Using a multi-methodological approach, the pilot study contributes to the literature by giving a deeper understanding of the way children perceive and utilise their environment and guided my methods for the main study.

Other qualitative studies have found similar results to the present study: determinants such as parental restriction (Eyre et al., 2014), safety (Loureiro et al., 2010), and social intimidation (Veitch et al., 2007, Brockman et al., 2011) were all found to influence children's perceived barriers to spending time outside. As with the current study, Veitch et al. (2007) found that younger children are aware of 'stranger danger' and this is a perceived barrier to spending time outside. A novel finding within the current study is that strangers (specifically teenagers) were perceived as less intimidating if they were taking part in a 'recognised' activity such as football. Teenagers who were perceived as just 'hanging out' were considered to be more intimidating and therefore, more of a barrier to the children using the space. Although perceived social intimidation as a barrier has been found frequently in research (Veitch et al., 2007, Brockman et al., 2011), the understanding that children are affected by whether the stranger in question is participating in a 'known activity' is particularly novel and highlights the importance of context when discussing social intimidation.

Affordances that offered play opportunities appeared to be a key influence of where children spent their time in their environment. However, many of the children spoke of their local playgrounds having unsuitable equipment, which they perceived to be for much younger children. They often spoke about how they had nowhere to go - playgrounds were perceived as 'too young' for them, which resulted in the children

feeling the equipment was 'not very exciting'. An outcome of this was the children choosing to play in unexpected areas such as a turning circle for cars. This finding was echoed by parents in a study by Veitch et al. (2006), one parent noted that 'we want to go to parks that are interesting. The closest park, we can walk to, but it does not interest my kids. It is a big park but the play equipment is too small and it only caters for younger children, 7–8 year olds are not challenged there' (p. 389). The problem of 'boring' playground equipment is one that has been around for many years. In 1999, Cunningham and Jones asked 26 children aged 10-13 years old to write short essays on the importance of play. The children did not mention (or rarely mentioned) playground equipment, when questioned, the children responded 'they did indeed appreciate good equipment but a lot of it was boring' (Cunningham and Jones, 1999 p.13). Nearly 20 years later, children are reporting very similar findings, suggesting little has been done to rectify this problem.

One study has taken this line of inquiry further, to establish whether children purposefully design more risky, less standardised play areas. Jongeneel et al. (2015) conducted a study that explored whether children, when creating their own playground, opted for a less uniform set up. In Jongeneel's study, the results showed that children elected for playground features that were not uniform. Furthermore, the children chose to create a playground that matched their perceived capabilities. In the current study children felt the available playgrounds were too easy, and would prefer more 'suitable' equipment for their age, echoing the findings of Jongeneel and colleagues. The children in this study discussed using a turning circle for cars as an area for play by using their 'imagination'. It could be interpreted that by doing this, the children were designing their own playground, and thus creating opportunities that matched their (perceived) capabilities.

The research presented in this section strongly suggests that children desire less safe, more risky playground equipment. Although studies have shown similar findings spanning over 20 years, it would appear little has been done to design playgrounds that challenge children in a way they would consider appropriate. A possible outcome would be that local councils could reassess the design of playgrounds to try and accommodate the different capabilities of all age groups.

Past studies have acknowledged the relationship between friends and PA behaviours (Edwards et al., 2015, Macdonald-Wallis et al., 2012), which is also echoed in the

findings of this study. The children spoke of spending more time outside if they were with their friends, and that if they could not find their friends, or their friends were busy, they would not go outside. The majority of my findings relating to friendship and PA were not necessarily novel. However, in relation to affordances, the findings did suggest that children required different types of play affordances dependent on whether they were with their friends or by themselves. When designing interventions to increase outdoor play, policy makers might think to provide different areas that cater to children who are with friends, and children who are by themselves.

One of the interesting findings emerging from this pilot was the children's views of graffiti. As with previous literature, the children noted that they avoided locations they perceived to be unclean, such as places with litter, dog foul, and graffiti. There have been studies to suggest there is a negative association between children's environmental safety perceptions and incivilities (Rossen et al., 2011) as well as PA levels and neighbourhood incivilities (Ding et al., 2011). The pilot study found evidence to suggest graffiti may not always be considered negative. There appeared to be perceptive discrepancies between negative graffiti (commonly consisting of slang and swear words) and neighbourhood enhancing graffiti that was 'colourful'. In the literature, graffiti is often related to the broken window theory; where there is graffiti there is crime and violence (Wilson and Kelling, 1982). However, graffiti comes in many forms: 'street art' in often used to replace the term graffiti, when the work is perceived to be artistic and aesthetically appealing (Hughes, 2009). There are now numerous projects where graffiti is being used to help at-risk youth and to improve community appearances. For instance, within The Graffiti Transformation Project in America, the youths are taught how to paint murals and change graffiti into works of art[2]. There is also the Graffiti Arts Project in America, where a police department has partnered with a local arts organisation[3]. The aim of the intervention is to give youths an opportunity to express themselves through legal graffiti in an effort to reduce graffiti-related crimes in the city, and to provide at-risk youth positive alternatives to gangs and illegal activities.

Data from this pilot study suggested children would enjoy spending time in a 'colourful' environment, with the visual data showing colourful wall art. Moreover,

[2] www.stchrishouse.org/children-youth
[3] http://www.muralmusicarts.org/programs/graffiti_arts_program

the participants discussed how they found teenagers to be intimidating when they 'hung around'. As youth are often considered responsible for most graffiti (Ten Eyck, 2016), there could be a case for allowing teenagers to artistically express themselves through legal wall graffiti that was socially acceptable in designated areas. This could effectively 'kill two birds with one stone'; potentially lessening the number of teenagers 'hanging around', and create a colourful environment for the children.

5.7 Modifications made during the pilot study

The primary purpose of this pilot study was to test the feasibility of the employed methods, whilst identifying any potential modifications.

<u>Focus group demographics</u>

The pilot study consisted of three focus groups: the all-female group, the all-male group, and the mixed gender group with an aim to understand whether children were happier/more comfortable in a single sex environment. Observation of the behaviour of the children suggested there was no clear difference between the groups. Therefore, for the main study, the children were not specifically placed into either a single sex or mixed sex focus group. Each group acted as a separate pilot and modifications were made between each group. As is the case with early feasibility work, the initial study acted as foundation from which to build and strengthen, therefore, there were small alterations made between each phase of the pilot.

<u>Familiarity</u>

An early problem that arose with the first focus group (all-female group) was familiarity. As part of the agreement to work with the guides, I offered to volunteer prior to data collection. Therefore, when it came to conducting the focus group, I had met with these girls six times, for roughly one hour. Although this meant I had built a strong rapport with the girls, it also meant there was a high level of familiarity between us, which would not be present in the following two focus groups. This may have introduced some bias with how the girls interacted with me compared to the other pilot focus group participants. The main learning point I took with me onto the next two focus groups was to ensure that I met the children the same number of times as I expected to meet the children in the main study.

Participatory task

After the first focus group I decided that the participatory task would need to take place before the discussion. The girls in the first focus group carried out the task during the focus group discussion, which led to a 'one-to-one' interaction between each child and I. For the next two focus groups the children were asked to spend fifteen minutes on the participatory task before the discussion commenced. In the two focus groups that followed there was greater interaction between the participants; therefore, this structure was taken forward to the main study.

Self-reflection

I was given the opportunity for self-reflection during a focus group training course that was scheduled the day after my first focus group. The course helped me to clarify what had gone well the day before and identified aspects that could have been improved. Positives included the participants completing the task at the same time, which meant the children were less self-conscious of being watched by other members of the group. Identified improvements included the need to probe more when the children spoke. During the remaining two focus groups I was more aware of this and my probing did improve as I began to realise at what points I should explore what the children were saying.

Comfort of the participants

A further improvement made was as a result of me recognising that some of the children, during the first two focus groups, appeared visually nervous (hands shaking, quietening of the voice) when being recorded. For purposes of the third focus group, I encouraged the children to practise with the recorder and allowed the children to record each other briefly. This meant the children were more familiar with the concept of being recorded before the discussion.

5.8 Development for the main study

Addition of interviews

Once the pilot study was complete; I reflected and identified what could be developed. The first of these developments was the decision to implement interviews as well as focus groups. Although the focus groups provided discussion among the participants, which encouraged comparisons between neighbourhoods, or likes and

dislikes, it was difficult to discuss individual experiences. The interviews were introduced to look at individual experiences of the environment and personal preferences.

Grid discussion adjustments

In the first focus group, the grid activity took place during the group discussion; the children talked about the photos and why they were placing them into a specific box while they were actively doing so. I later reconsidered this format as it created too much noise, which resulted in an unclear recording. For the main study I asked the children to spend 10-15 minutes placing their pictures into the grid. During this time I did not speak to the children, and suggested they needed to decide for themselves where the pictures would be most suitable. Occasionally a child asked for my help labelling an inductive theme, in this instance the child and I would discuss suitable words, where I provided more help with extended vocabulary rather than name the theme for them.

Familiarising the children with the methodology

The third focus group was the only group where I was unable to speak to the participants before the focus group discussion: I had to give the equipment to the parents, who then posted or returned the equipment themselves. When analysing the sketchbooks, three out of the four participants had misinterpreted what was required, and written diaries of their daily locations and PA behaviours. I had hoped to avoid written dairies by ensuring the sketchbooks had no writing lines inside (i.e., blank pages). For the main study I made two changes; I made it clearer that the sketchbooks were for drawing; I also ensured I could talk to the children before they commenced data collection.

Visual data analysis – withdrawing researcher analysis

For the pilot study, both the children and I analysed the visual data. I analysed the data using subject matter and location before the focus groups took place. However, once the children had discussed their photos and drawings with me, it became apparent that I had placed my own interpretations on the illustrations by saying what the subject matter and location was. The children's interpretation of his or her own data was often very different to what I had assumed and therefore, resulted in misinterpretations being placed on the data. Additionally, one of the reasons for the

children to analyse their own data was to give the children more control. I realised that by analysing the data myself, I was potentially undermining the children's analysis. It could be argued that by both the child and I analysing the visual data, I would be able to explore the different ways researcher/adult and child/participant interpret photos. However, I was not looking to interpret the photos in the same way the children were (e.g., somewhere the child liked to play); I was only looking at location and subject matter (e.g., green space and playground) which did not help to answer any of the research questions. For these reasons, it was decided that I would not analyse the visual data.

<u>Visual data analysis – data in its own right</u>

A key reflection from the pilot study was the requirement to utilise the wealth of visual data as a deeply rich dataset in itself. Therefore, the participant led visual data is presented in its own individual chapter for the main study. This is to ensure that the visual data are data in its own right, not just used to support the verbal data. This was not possible for the pilot study, as I did not take a record of the participant's grids; an issue that was rectified for the main study data collection by taking pictures during the process. This also helped to ensure the children's data were not misinterpreted.

<u>Deprivation analysis</u>

Developments in the pilot study resulted in the decision to take photographs of the children's grids in the main study. The decision to take pictures of the main study grids not only allowed me to use the visual data in its own right, but also allowed me to analyse deprivation within the main study focus groups. As I did not have ethical approval for videoing the focus groups, I did not think it would be possible to differentiate the children (thereby establishing who was saying what) and be able to analyse area deprivation within focus groups. However, I realised in the pilot study that because the children primarily spoke about their pictures and grids, I would be able to distinguish which child was speaking and therefore, identify whether they were from a higher or lower area of deprivation.

5.9 Summary of Chapter

The main purpose of this chapter was to describe how I tested the methods and procedure of the study through a set of three focus groups. The study was also used to ensure that the chosen methods would extract findings relating to the overarching

thesis research questions. The participant analysis procedure was a novel development of this study, and was deemed to be very successful across a number of areas: integration of the participants into the collection and analysis phase, reduction in researcher bias, and better answering of the research questions. The participant analysis also provided a more genuine representation of the visual data.

The key findings of the pilot study were that the children associated strangers as intimidating if they (the strangers) were not taking part in a formal activity. The children perceived dirty or unclean places as unsafe, and avoided them. The children also felt there was a lack of age appropriate equipment in their playgrounds. The pilot study also resulted in key changes for the main study, such as the introduction of interviews, participant analysis task carried out before the discussion, and emphasising that the sketchbooks were for drawings and not diaries.

CHAPTER 6: STUDY TWO – THE MAIN STUDY

6.1 Introduction

The previous chapter presented and discussed the feasibility of the methods and procedure whilst also producing an early insight into potentially novel findings. The main study of this thesis explores children's perceptions of their environment in more detail. Furthermore, the main study focuses on the comparative aims of this thesis, using the developed methodology to investigate the differences and similarities between those children living in more deprived or affluent neighbourhoods and dwelling in urban and rural areas.

This chapter commences with a recap of the aims and research questions of this thesis and provide details of the background and context in which the study took place. I describe how I sampled and recruited the participants and then give a step-by-step account of my analytical framework. The findings are presented in the succeeding chapters (Chapters 7 and 8).

6.2 Recap of research aims and questions

6.2.1 The aims of this thesis

The overarching aim of this thesis was to explore how children aged 10-11 years perceive their neighbourhood and how their perceptions influence their time spent outside and PA behaviours. This aim was refined to explore how affordances within children's environment may encourage or discourage their time outside, and investigate any variations between high/low levels of deprivation and urban/rural dwellings.

6.2.2 Research questions

1. How might physical affordances influence children's place preference, and how might they influence meaning behind choice of location? Do children from different levels of area deprivation and degree of urbanicity use and experience places differently?

2. Are children influenced by social affordances within their environment when spending time outside? If so, how might social affordances differ between are deprivation and urbanicity levels?

3. How do children define and describe a neighbourhood? Does this vary between degree of area deprivation and urbanicity?

4. How would children alter their neighbourhood to encourage more time spent outside? Does this vary between levels of area deprivation and urbanicity?

6.3 Methods

6.3.1 Sampling

As mentioned briefly in Chapter 1, the main study was sampled from a cohort of children from the Growing Up in Scotland study (GUS). GUS is a nationally representative longitudinal study that tracks the lives of children and their families across Scotland, starting in the very early years, with funding to continue through childhood and adolescence. There are three cohorts as part of GUS: child cohort, birth cohort 1, and birth cohort 2. My study sampled from the birth cohort 1 (BC1), a group of children born between June 2004 and May 2005. For BC1, data were collected annually from families when the children were aged between 10 months and just less than 6 years, then periodically until the children were in Primary 6. During the latest sweep (January 2015), an information letter about the SPACES study (in which my research is embedded) was given to the children and parents that asked if they would be happy for their contact information to be passed on to the MRC/CSO SPHSU (see Appendix F). Address details of those willing to be contacted were recorded by a SPACES administrator within a computer database system and included, amongst other details, a unique participant ID. In order to recruit the participants, I was given an interactive map that contained the participant's residential context (urban/rural and area deprivation classification) and their ID. The details were confidential with only the administrator having access. When I required participant information, I had to request access to the details of the participants I was looking to contact.

When using the map to choose which families would be contacted about my study, I used a purposive sampling technique of which there were multiple components (see Figure 6-1). For logistical reasons, the participants had to live in either the West or East of Scotland within the central belt. I then needed to recruit participants from both urban and accessible rural areas (see figure 6.1) to try to capture the accounts of children living in a variety of residential contexts. A similar process was conducted for area deprivation. Lastly, logistics were important as during the pilot study, it

became apparent that in order to conduct focus groups successfully the participants might need to live in similar geographical areas. This was particularly important for participants that were more rural as they were considerably more spread out geographically. Therefore, when sampling for the accessible rural group, I ensured I sampled participants that lived in spatially proximal clusters.
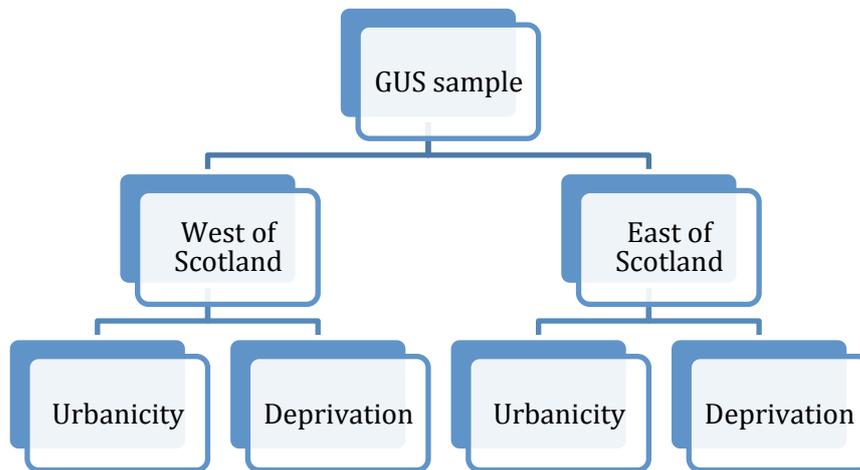
Figure 6-1 Purposive sampling components.

6.3.1.1 Urban/Rural classification

To ensure the study had a mix of urban and rural participants, I used the Scottish Government 6 fold Urban Rural Classification index (www.gov.scot) (Table 6-1). The participants I selected lived in either category 1 and 2, or 4 and 5. I grouped levels 1-2 as urban and 4-5 as rural. Children from level 6 were not recruited due to a limited number of children from this type of settlement available within the East and West of Scotland, in addition to the geographical spread and distance of this group, and the time and resources required to access them.

Table 6-1 Scottish Government 6 fold Urban Rural Classification (www.gov.scot/).

Scottish Government 6 fold Urban Rural Classification		
1	Large Urban Areas	Settlements of 125,000 or more people.
2	Other Urban Areas	Settlements of 10,000 to 124,999 people.
3	Accessible Small Towns	Settlements of 3,000 to 9,999 people and within 30 minutes' drive of a settlement of 10,000 or more.
4	Remote Small Towns	Settlements of 3,000 to 9,999 people and with a drive time of over 30 minutes to a settlement of 10,000 or more.
5	Accessible Rural	Areas with a population of less than 3,000 people, and within a 30 minute drive time of a settlement of 10,000 or more.
6	Remote Rural	Areas with a population of less than 3,000 people, and with a drive time of over 30 minutes to a settlement of 10,000 or more.

6.3.1.2 Measure of deprivation

As discussed in Chapter 3 (section 3.9), there are numerous ways of measuring and understanding deprivation. For this study I used an area based relative measure - the Scottish Index of Multiple Deprivation (SIMD) - which operationalises deprivation as a multi-dimensional construct. SIMD assumes that not only is deprivation multidimensional (it attempts to capture some of the dimensions through its seven domains), it is also relative, i.e., it produces ranks that indicate an area to be more or less deprived relative to another (The Scottish Government, 2012). There are a number of options available on how to use it most effectively. The options available to me were to use the overall rank and subsequent categorisation into quintiles (e.g., 1-5, most to least deprived); or to use the individual outcomes of the seven individual domains that make up the SIMD (income, employment, health, education, housing, access, and crime). For my thesis, deprivation was measured using the overall SIMD score and rank. The rationalisation was dictated by the aim of my thesis and how I recruited the participants. As discussed earlier, one aspect of my thesis was to understand how children perceive, explore, and experience their local environment dependent on area deprivation. I used the overall rank as it provided a greater understanding of how the area experiences multiple deprivation by taking into consideration a number of different domains. I also chose to separate the deprivation by quintile, as opposed to deciles (i.e., a participant's location was either quintile 1st, 2nd, 3rd, 4th, or 5th). Splitting the deprivation levels into deciles may have resulted in only one or two children being at each level.

Each quintile was represented in my sample. 1st and 2nd quintiles represent areas of greater deprivation and 4th and 5th quintiles represent areas of lower deprivation. This led to a consideration regarding the classification of participants in the 3rd quintile, i.e., should they be considered a middling category or should they be placed in the high or lower categories. As only three participants were attributed to the 3rd quintile, it was decided that an independent category would contain too few children. The SIMD is a relative measure of deprivation - as opposed to an absolute measure (i.e., someone living in quintile one is not twice as deprived as those living quintile two) and there were fewer participants in the 1st and 2nd quintiles (most deprived) compared to 4th and 5th quintiles (least deprived). Therefore, I chose to place those participants in the 3rd quintile into the 'higher deprivation' group.

6.3.2 Recruitment

Following the pilot study, the original estimate of sample size was based on the requirement to conduct 10 interviews and four focus groups – having a mix of children from both high and lower area of deprivation: split into West of Scotland urban; West of Scotland rural; East of Scotland urban; and East of Scotland rural. With three to five children per focus group, it was estimated that 26-30 participants would be required. To maximise the success of recruitment, I recruited three times this number and in total, 90 10-11 year old children were sent information packs and consent forms, from which, 30 were returned. From the 30 returned consent forms, five children changed their mind, leaving 25 children willing to take part. I, together with my supervisors' advice, decided that I would conduct the 10 interviews and four focus groups and then establish whether the data had reached saturation. If it did, we would end data collection; if saturation had not been reached, I would recruit more children to take part. Once data collection and analysis of the data was complete, it was decided that the data had reached saturation. This left a final sample size of 25 participants.

6.3.3 Participants

All 25 participants were aged 10-11 years of age. Of the 25 participants; there were 13 girls and 12 boys; 15 urban children and 10 children from semi-rural (remote towns and accessible rural); 13 children from lower deprivation areas and 12 children from higher deprivation areas; 14 children from Glasgow and surrounding semi- rural areas, and 11 from Edinburgh and surrounding rural areas. The multi-dimensional profiles are shown in table 6-2. The sample included four children from secondary school, and the remainder from primary schools.

Table 6-2 Multi-dimensional profile of participants

Demographic	Boys	Girls
Urban area of higher deprivation	3	4
Urban area of lower deprivation	3	5
Rural area of higher deprivation	3	2
Rural area of lower deprivation	3	2

After the visual data collection was completed, which resulted in 646 visual images being collected, three children chose not to take part in the remaining stage of the study (interviews and focus groups), leaving 22 children. However, two participants who were meant to participate in the same focus group cancelled at short notice and chose not to reschedule. It was decided to turn this focus group into an interview. In total, 20 children took part in the verbal data collection. These children took part in one of three focus groups or one of the eleven interviews.

Each child received a 'SPACES goody bag' for taking part. The children were not told of these in advance of agreeing to the study and therefore, did not act as an incentive. I gave out the goody bag, which included health related objects such as a pedometer and a reflective cycle badge, when the children received their cameras and sketchbooks. The bag was valued at under £10 each.

6.3.3.1 The children

In order to give each child an identity within the research and to ensure they are being presented as an active participant in the research process, I now give a brief description of each child in relation to their residential contexts. Each child has been given a pseudonym.

- Rob lived in a city centre flat in the West of Scotland within an area of higher deprivation. Rob played with his friends in the flat block private car park. Rob only participated in the visual data collection.

- Jenny also lived in a city centre flat in the West of Scotland within an area of higher deprivation. Although Jenny did not have a garden, she lived close to a park. Jenny took part in the visual data and one of the focus groups.

- Penny lived in a more affluent environment within the inner city and lived in a flat in the West of Scotland. Penny took part in same focus group as Jenny. This focus group took place in the MRC/CSO SPHSU unit.

- Anna lived within the city centre in the West of Scotland and lived in a townhouse in an affluent area next to a large open park. Anna was in the same focus group as Jenny and Penny.

- Kim was from a more deprived area within the city in the East of Scotland. Kim lived in a flat near to a busy road with little green space. Kim chose not to take part in the verbal data collection.

- Nicky, Craig and Tiffany all participated in the second focus group. All three children lived in the East of Scotland and lived in an urban environment. Craig and Tiffany both lived in more affluent areas, while Nicky lived in an area of higher deprivation. This focus group took place in Edinburgh within a university lecture room.

- Julie participated in an interview at her home. Julie lived in an urban part of the West of Scotland in a detached house with a spacious garden. Although Julie's home was within an area of high deprivation it was on the very edge, bordering a much more affluent zone.

- Taylor took part in an interview and lived in an urban area of higher deprivation in the East of Scotland. Taylor lived in a cul-de-sac where he cycled around; he lived opposite a large open green space.

- Becca only took part in the visual data and also lived in an urban area of higher deprivation in the West of Scotland. Becca lived by a busy road but had access to a garden.

- Owen and Belle both lived in more affluent environments in urban parts of the West of Scotland. Owen and Belle took part in one-to-one interviews. Belle lived in a flat with accessible private green space behind a complex of flats adjacent to car parks. I did not visit Owen in his home as his interview was conducted at the Social and Public Health Sciences Unit.

- Tom and Tillie both took part in interviews at their own homes and both lived in urban neighbourhoods of lower deprivation in the West of Scotland. Tillie's lived in a house with access to a private garden, and Tom lived in semi-detached house with a garden.

- Dylan, Lucy and Evie, all took part in the third focus group. All three lived in the same suburb in a rural environment of higher deprivation in the East of Scotland. The suburb was quiet; each house had a private garden and was located near farmland. The focus group took place in Lucy's home.

- Noah took part in an interview and lived in a rural village of higher deprivation in the West of Scotland. Noah's house was bordering a more affluent area. His house was detached with a private garden. Harvey lived very near to Noah, with a detached house and a private garden, although Harvey chose not to take part in the verbal data collection.

- Mollie took part in an interview in her home. Mollie lived in a rural area of low deprivation in the East of Scotland. Her home was a working farm, located around 5 miles away from the nearest town. Mollie lived within acres of farmland; her house was situated close to a road with a 60mph speed limit.

- Charlie and Freddie took part in interviews. Both lived in quiet, rural, more affluent suburbs. Charlie lived in the West of Scotland, and Freddie lived in the East of Scotland. Their houses were located in small villages near lots of green space and rural fields. Both boys had a private garden attached to their house.

- April also lived in a quiet, rural area of low deprivation. April lived on a dead end road near farmland, April did live opposite green space, but there was a 'no ball games' sign up. April chose not to take part in the verbal data.

- Henry participated in an interview. Henry lived in an affluent area within the West of Scotland. His home was a detached house with a private garden; he lived at the end of a road where there was no through traffic. Henry's house bordered natural, 'wild' green space.

6.3.4 Procedure

The procedure for the main study was similar to that of the pilot study. Having signed a consent form, the children were each given a disposable camera and a sketchbook, in most cases by myself; however, a small number of participants received their equipment from a fieldworker. The children were asked to go about their day-to-day routines and document, via the camera or sketchbook, locations and/or features in their neighbourhood that they felt influenced their time outside. The equipment was collected one week later and copies were made of both the photographs and the drawings. I then arranged to meet the children for either an interview or as part of a focus group. For this, I asked each child whether they had a preference to take part in a one-to-one interview with myself or as part of a focus group with two or three other children and myself. Some of the children specifically wanted to take part in one and not the other (this happened for both interviews and focus groups); each child's choice was respected. If the children did not have a preference, the decision was based on their availability and whether they lived near other children (and whether they were willing to drive to another location for a focus group).

The interviews and focus groups were conducted in a similar format. For both, the children were asked to spend 10 minutes at the beginning of the discussion to sort their pictures into the grids provided (Figure 4-1), placing their pictures into whichever grid they felt represented their pictures. Should any or all of the pictures not fit into the labelled boxes there were two non-labelled boxes that they were asked to label. Once this had been completed the discussion began. The discussion in both interviews and focus groups was prompted by the grids in that the children were asked to talk about the pictures they had placed in each box, what each picture represented (or if there were time constraints, the picture they most wanted to discuss), and to talk about why they had chosen to place the picture in that box. In the focus groups, there was also an element of children comparing what pictures they had placed in specific boxes. Each discussion started with the 'places I like to go' and either the conversation led to another box, or I would end the conversation about one box and ask specifically about the next one. The interviews lasted from 22 minutes to 53 minutes; while the focus groups lasted from 57 minutes to 1-hour 38 minutes and all were recorded via a Dictaphone.

Once the discussion ended I took pictures of each participant's grid, and allowed the children to take home drawings or photographs if they wished. I sent away each recording to be transcribed by a professional transcription service. When the transcript was returned, I read each transcription while listening to the recording to ensure accuracy.

6.4 Process of analysis

6.4.1 Analysis of visual data

Co-production and participatory research is becoming popular within the literature, particularly research with children (Siry et al., 2016). Studies have acknowledged the importance of bringing children into the planning element of research and working with the children to produce the data. There is, however, a remarkable lack of studies that involve children in the analysis of *their* data. In my study, I asked the children to analyse the visual data that they had produced. As discussed in the previous chapter, one of the key developments from the pilot study was that I made the decision not to analyse the visual data myself due to bias and misinterpretation. The procedure for visual analysis was discussed on page 56 and therefore will not be repeated here.

6.4.2 Analysis of verbal data

As discussed in Chapter 4, the analytical framework for the study was concurrent inductive and deductive thematic analysis. For the deductive part of the analysis, I used a coding table (Fereday and Muir-Cochrane, 2006) which consisted of two overall themes based on the theoretical framework and the research questions: 'Affordances', and 'Perceptions of the Neighbourhood'. For the theoretical framework I aimed to explore the concept of affordances and developed three broad sub-themes for the coding table: 'actualised affordances', 'potential affordances' and 'social affordances. 'Actualised affordances' were defined in the coding table as any code relating to children talking of utilising affordances (either an environmental feature or a location). It also included influential features of the environment that enabled them to be utilised. 'Potential affordances' related to any code where the child spoke as to why they perceived the affordance but either chose to not, or could not, actualise the feature or location. 'Social affordances' were defined as any affordance within the social environment or any code that discussed how the social environment enabled the child to actualise a physical affordance. Although there are more types of affordances, (e.g., shaped and normative) these were not employed for the coding table. With regards to the research questions, the study was specifically looking at physical and social affordances. For the physical affordances, I chose to focus on actualised and potential affordances as these affordances are easily defined and therefore, easily coded. Many of the other types of affordances, such as shaped affordances, can also be categorised as actualised affordances. Bringing in too many types of affordances could make the coding process indistinct and difficult to rationalise.

For the second deductive global theme, Perceptions of the Neighbourhood, I developed two broad sub-themes: 'Changes to the Neighbourhood', and 'Definition of the Term Neighbourhood'; these were in line with two of the research questions of this thesis. 'Changes to the Neighbourhood' was defined as any code that related to what the child would change in their neighbourhood resulting in them wanting to spend more time outside. 'Definition of the term Neighbourhood' was any description of the word 'neighbourhood'.

These overall themes and sub-themes were established in advance of reading the transcripts. Once the coding table had been completed, I began to analyse the verbal data.

I began by reading the transcripts and any quote that was relevant to the phenomena being explored (children's perceptions of their environment relating to spending time outside), was given a code. All codes were descriptive in nature, providing me with a synopsis of the quote. The codes were then placed into either a deductive overall theme/sub-theme or into a separate unlabelled column. The codes were often moved two or three times until each code had been placed in the most suitable category. For example, social and actualised affordances often interlinked and it was only after two or three moves that it was decided which category was most appropriate.

The codes placed into the sub-themes were grouped together if possible, to create first order themes, and then if any patterns emerged from the first order themes, these were grouped together to create second order themes. It became apparent that some codes could be placed into the deductive global themes, but not into the more narrow sub-themes. These specific codes were read through to identify any patterns; these patterns created first and second order themes, which were then grouped together to create new sub-themes within the deductive themes.

The remaining codes were placed in the unlabelled column, creating the third global theme; 'Perceived Benefits of Being Outside'. The benefits were either physical or psychological, therefore, two subthemes emerged: 'Physical Benefits' and 'Psychological Benefits'.

6.5 Summary of chapter

This chapter introduced the main study of my thesis and reiterated the research questions and aims of the study. I discussed the sampling strategy for the study, including the incorporation of varying levels of area deprivation and degree of urban or rural dwellings into the sample. The chapter then described the recruitment of the participants, including contact, and over-recruitment, followed by an overview of who took part in the study, in particular, how many children were from higher and lower areas of deprivation and urban and rural areas. The chapter concluded with a detailed discussion of how the findings were analysed. The following chapter (Chapter 7) presents the visual data findings by presenting the photographs of the children's grids and supporting quotes about their pictures.

CHAPTER 7 –VISUAL FINDINGS

'Grown-ups never understand anything by themselves, and it is tiresome for children to be always and forever explaining things to them'

In: The Little Prince

P. 4-5

Antoine de Saint-Exupéry

7.1 Introduction

This chapter reflects the first element of the study – the collection and analysis of the visual data. I present the four deductive themes (i.e., the themes that were labelled prior to collecting the data) followed by the inductive themes (the boxes that were labelled by the participants). The data in this chapter is primarily visual, although quotes are used alongside the visual data to ensure a deeper understanding. In each theme I present a sample of urban and rural grids as well as grids from both higher and lower areas of deprivation to draw comparisons. I conclude the chapter with the inductive themes. Each child had the choice of labelling an inductive theme; this was dependent on whether they felt they had pictures that were not represented by the deductive themes. I do not make comparisons between the subgroups and their inductive themes as almost all of the inductive themes were individual to each child, making it problematic to draw out any differences between the groups. The chapter closes with a summary of the findings.

7.2 Deductive themes

The deductive themes were in place before the participant analysis commenced. These themes emerged inductively from the pilot study. The children in the pilot study labelled many of their drawings as places they liked to go/not go and features that they enjoyed seeing/not seeing. These sentences were then used for the deductive themes for the main study. The deductive themes were; places I like to go, places I don't like to go, things I like to see, and things I don't like to see.

7.2.1 Places I like to go

Overall, the children primarily placed photographs or drawings of places that allowed them to be active or play games with friends, although the physical locations varied from streets and pavements, to fields and skate parks.

7.2.1.1 Rural and urban comparisons

Children that lived in rural areas often took pictures of green areas and chose to place them in this theme (Figure 7-1); many of the children (from both rural and urban areas) included photographs or drawings of 'activity' spaces such as skate parks and parks (Figure 7-2); children from urban areas were more likely to take pictures of parks and streets that they spoke of playing in (

Figure 7-3).
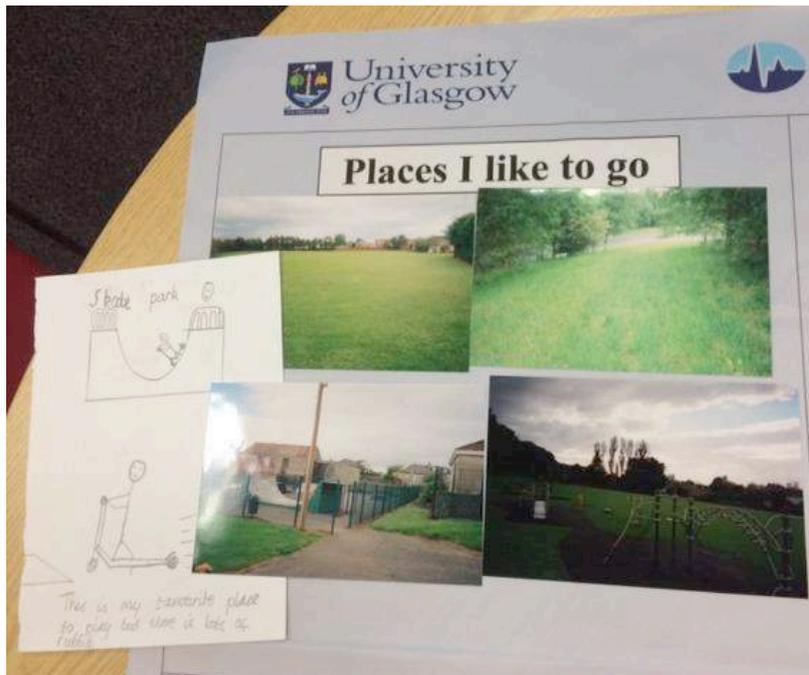
Figure 7-1 Visual data: Noah

Below is a quote from Noah, who lived in a rural environment; he chose to place in this theme, primarily areas that supported PA behaviours:

> *That one's like Skate Park. It's just like I'd be there possibly most days. Practically all the time when I'm outside playing.*
> *So that is taken down at my granddad's house. Like over his fence and there's this big park and normally against the fence I was taking that picture I think is there's like we play football there and like they set up just goal nets against the fence and then just kick the 'goal' into the fence.*
> *I think that wasFredd on the way to school like the path and the road goes round that way and at one point there was actually a path like head down the hill there. And yeah, we sometimes like ride our mountain bikes like down that path 'cause like at the bottom you like, you have to break quite suddenly and then just like go round the corner. So it's quite fun*

Figure 7-2 Visual data: Charlie

Charlie, who lived in a rural environment, chose to take/place his photographs in this theme showing a specific area at his school where he was allowed to play outside school hours as highlighted below:

> *Well, in these pictures here I am in XXX which is my school, I like to go there to play on the activity trail, as you can see. It's a nice place 'cause I have lots of friends there, everyone's nice…Sometimes I take my sister, my dad takes me and my sister over there to play on the activity trail…Yeah, it's fun. More adventurous.*

Figure 7-3 Visual data: Jenny[4]

Jenny, who lived in an urban area, discussed two parks that she enjoyed visiting, one was near her school (but not part of the school), while the other was slightly further away:

> *I like to go to a park where it's got a farm and it's got like swings and all that. Like to go there. And then a park next to my school with my brother and then another one, and it's a thing where you go down a waterslide. And I went ice skating and a barbecue.*

7.2.1.2 Higher and low deprivation comparisons

There were few differences between children from higher and lower areas of deprivation in relation to places they liked to go. Both groups of children spoke about parks and sports related equipment (Figure 7-4 - Figure 7-7).

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[4] Jenny placed numerous photos in the theme 'Places I like to go', covering the title
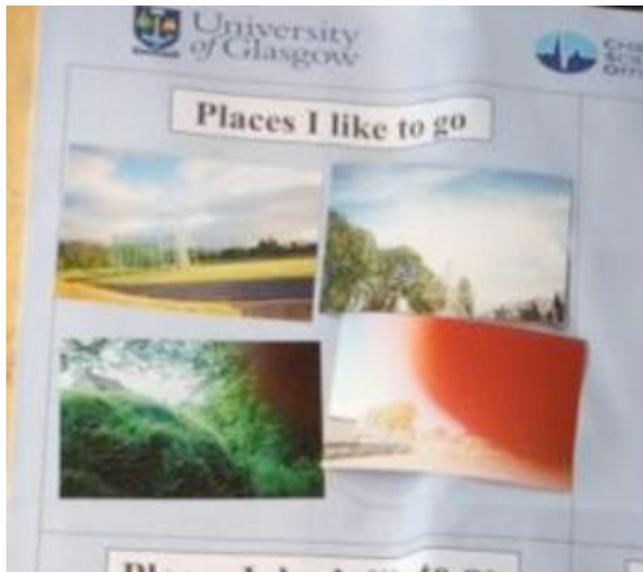
Figure 7-4 Visual data: Dylan

Dylan, who lived in an area of higher deprivation, mainly spoke about locations that were designed for sport, but did also mention an area where he went with his friends:

> *I've got athletics track, a park and the kick pitch and then a den that's like that way behind the houses…Well, the den, like we go to, go with my friends like to mess about. It's fun at athletics and it's fun at the park…It's like there's tons of things to go on or you can play football with stuff at the kick pitch.*

Figure 7-5 Visual data: Evie

Evie, who also lived in an area of higher deprivation, placed photos that were of her park near to her house. She spoke of enjoying the equipment but also the views the park offered:

> *There's specific places in the park that I like. I like going like looking right across from the Flying Fox because, at night, because you always see the sunset going down beneath the trees. I think that's really pretty. And that's just the park, like things about the park that I like, swinging on the tyre swing and things*

Figure 7-6 Visual data: Tiffany

Tiffany, who lived in an area of lower deprivation, also placed photos of her local park, and discussed that she liked to go there because there was climbing equipment:

> *Well these two are of my local park and I like to go there because it's really, it has a big field so you can play ball games and things. But also it has a climbing stuff, that you can climb on and you, sorta the play park bit of it, and I really enjoy going there*

Figure 7-7 Visual data: Belle

Belle, who lived in a more affluent area, placed photos of her local park and tennis courts where she played with her dad, and she said she enjoyed the obstacle course that was nearby:

> Belle: It's of the tennis courts…I just play it with my dad really. This is of the park that we go to usually. It's just, like, it's just a park we hang out.
> FH: Who hangs out there?
> Belle: My friends, my next door neighbours, sort of, my friends…we just talk really. That's just places I like to go 'cause, like, it's XXXX…I like the obstacle course. That's fun.

7.2.2 Places I don't like to go

The children chose few drawings or photos to place into this theme. There were some differences between children from urban and rural areas; for children from higher and lower areas of deprivation the main comparison was that only one child from a less deprived area placed a photo within this theme, compared with many children from more deprived areas.

7.2.2.1 Rural and urban comparisons

Rural children were more likely to place a photograph or drawing in this theme; many of the illustrations featured undesirable playgrounds (Figure 7-8; Figure 7-9). Only one child from an urban setting placed a picture inside this theme; a picture of a farm animal (Figure 7-10).

Figure 7-8 Visual data: Noah

Noah (rural environment) spoke about a nearby park where he lived that he did not enjoy visiting. Noah described the park as having traffic problems and concerns over smashed glass:

> *It's not the closest park but it's closer than the skate park, it is, it's just beside where my best, where my friend, best friend Connor lives. So yeah, it's like kind of, it's like, it's got a lot of cars like 'cause there's, that's the back of a restaurant there. A lotta cars come and in there when it's, they're technically not really meant to 'cause that's just a path to get outta the park. So like you could just be like playing on the swings or something like a van comes in and just like stops there. And they have loadsa like things into restaurant so... and there's also quite a lotta glass in that park just lying about. Mainly over this side, in this corner here. I would generally only go in there I would say if I'm waiting for Connor or something like that.*
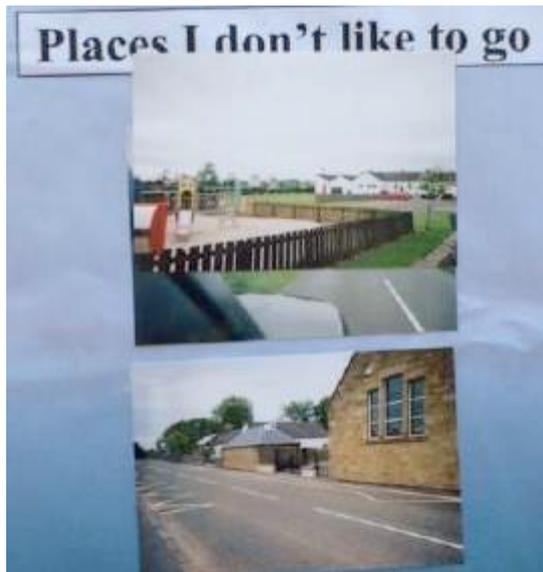
Figure 7-9 Visual data: Mollie

Mollie, who lived in a rural environment, placed two photographs within this theme. The top picture resents a playground she does not like, below Mollie speaks about the school being promised new equipment which has yet to be delivered:

> *That's the slide and that's, like, the best part of the whole – it's not very good…it's literally got, like, a baby climbing frame. They took everything away and they promised all the school and all that that – like the school raised money – they promised all the school they would get all the new things and then didn't really bother.*

Mollie also placed a photograph of the space outside of her school where she has concerns over her safety when coming off the bus:

> *And that's another picture there… That park, the school's here, across that road – that's the school…So, and the bus, there's nowhere for the bus to park, so it has to park on the yellow zigzag lines and, when we're getting out, it's at the wrong way, so we need to get out onto the road.*
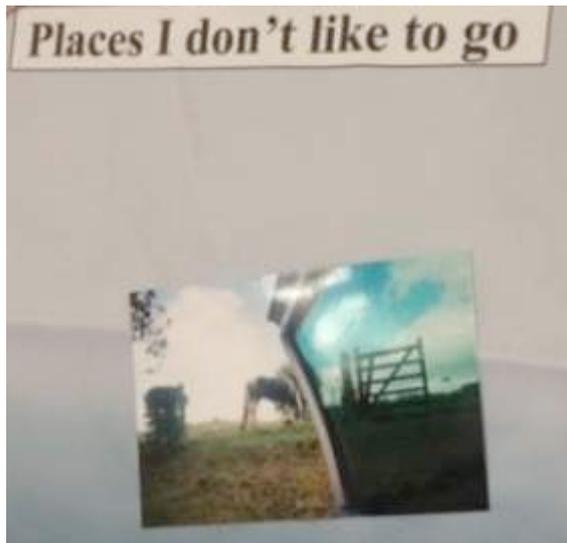
Figure 7-10 Visual data: Jenny

Jenny, who lived in an urban area, was one of the few to place a picture within the theme 'places I don't like to go'. She spoke of not enjoying places with farm animals because of the smell:

> *I don't like going places with lots and lots and lots of farm animals because sometimes they stink a lot.*

7.2.2.2 Higher and low deprivation comparisons

Only one child (Mollie) from one of the lower deprivation areas placed photographs within this theme – the two pictures represented a playground Mollie considered unsuitable and a road outside the school where it was dangerous to cross (Figure 7-9 and Figure 7-11). Children living in higher deprivation areas were more likely to place their photographs and drawings within this theme. Many of the photos represented busy roads and parked cars (Figure 7-12).
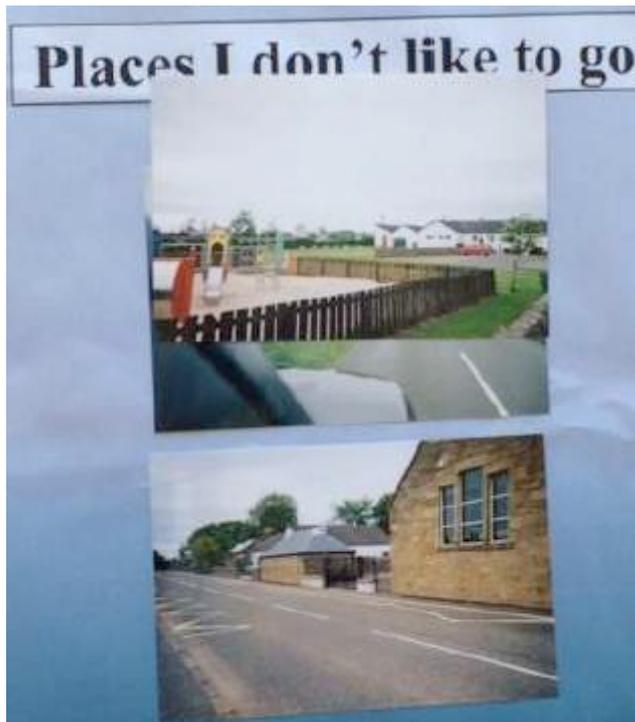
Figure 7-11 Visual data: Mollie
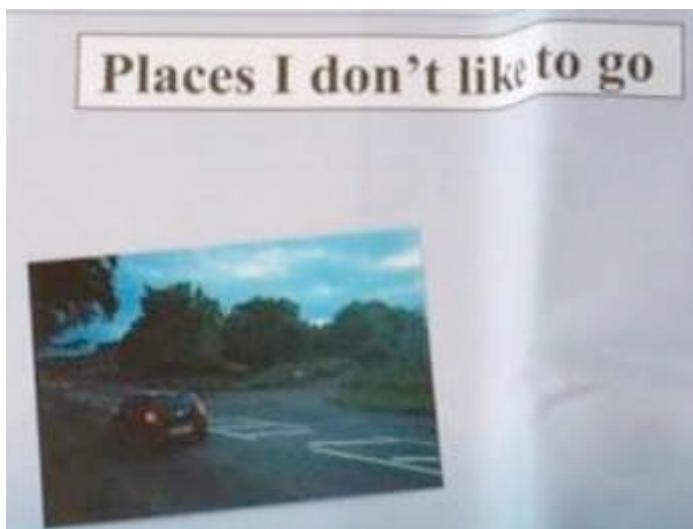
Figure 7-12 Visual data: Dylan

Dylan, who lived in an area of higher deprivation, spoke of how he disliked the main road near to where he lived, as he had to cross it to get to the park:

> *The main road…So it's like when I go to, try and go to the bike path I have to go across main road but the traffic lights are like away up at the park so you either have to go all the way up there and cro-, or go to the traffic lights where you have to wait until like traffic's clear.*
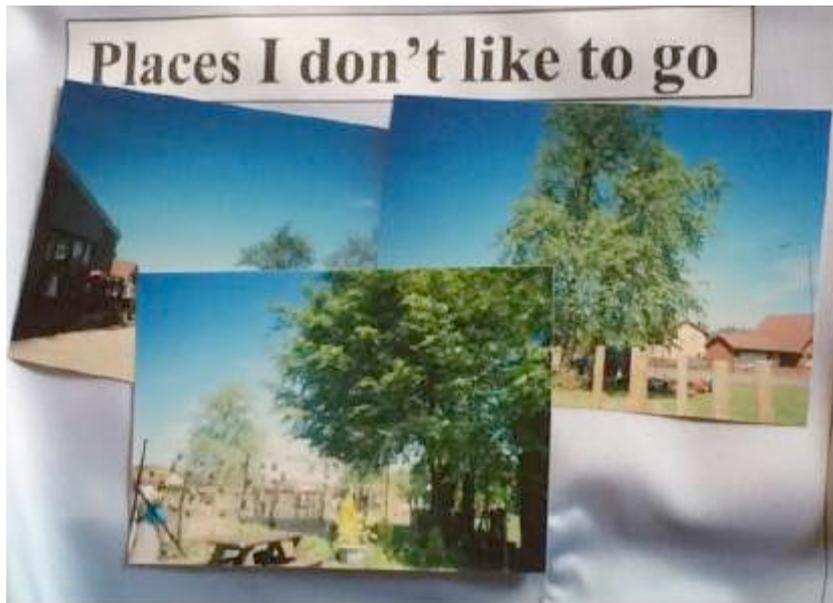
Figure 7-13 Visual data: Evie

Below is a quote from Evie, who lived in an environment of high deprivation, noted that children were not allowed in certain areas of the school in order to preserve nature (flowers):

> *I don't like school but it's like certain parts of it, like all the, like there's a lotta trees at one side of the corner and it is like blocked off, it's like weird, we have our little bee thing and when like the ball maybe goes over there, someone has to go in and get it. So I sometimes go over in there but there's so many midges and things and I hate it. It's just annoying for them to all to be like at you. You're not allowed… like you're allowed to go there. Like, to get a ball but I don't think you're like actually it's not, it's not like one of the places where we're actually properly allowed because there's like flowers and stuff there.*

7.2.3 Things I like to see

For this theme, all the children placed photographs/drawings that represented nature/greenery regardless of the subgroup they were in.

7.2.3.1 Rural and urban comparisons

As mentioned above, all the children, regardless of whether they lived in an urban or rural dwelling, placed pictures of greenery and/or nature within this theme (Figure 7-14 - Figure 7-17).
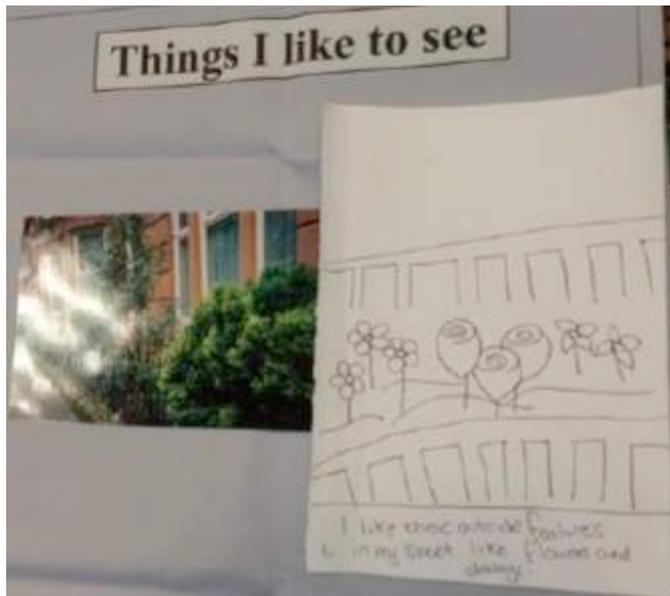
Figure 7-14 Visual data: Penny

These pictures are from outside Penny's house. Penny lived in an urban area; quote shows why Penny appreciated seeing flowers and shrubbery:

> *This is outside features like the flowers and things which have a really nice view and you can see different flowers and they can give you just nice, like nice look…Yeah, because if you have like a place where it's all mucky and all that then you wouldn't really like it.*

Figure 7-15 Visual data: Jenny

Jenny, who also lived in an urban environment, mainly placed pictures of the school playground and her garden. Below she discusses the positive reasons behind these locations, such as they're cool, pretty or made from a natural source:

> *I like to see like the castle that's in our playground in the school 'cause it's really cool. And then the garden 'cause it's really like pretty and all that. And then there's a maze that we have in our school and I want to see that 'cause it's made out of tree bark.*

Figure 7-16 Visual data: Charlie

Charlie, who lived in a rural area, and similar to the other children, noted the importance of nature:

> *Well, I like cycling down this path because it's – it's downhill so you don't need to do as much…It's also really nice because it's just, you get the wind in your face which I think's really nice, I love that feeling. It's a nice path, there's lots of grass, green, lots of thistles there and I like nature a lot so that's really nice for me personally.*

Figure 7-17 Visual data: Mollie

Mollie, who lived in a rural environment on a farm, placed pictures of mostly farmland, including farm animals:

> *There's a picture of the cows and the calves…And I like the flowers.*

7.2.3.2 Higher and low deprivation comparisons

Similar to rural and urban, there were no differences between the pictures the children placed within this theme, regardless of whether they lived in more or less deprived areas, as they all depicted nature, and/or greenery (Figure 7-18; Figure 7-19). However, one child, Anna, did place drawings of a local fountain and statue (Figure 7-20).

Figure 7-18 Visual data: Julie

Julie, who lived in a higher area of deprivation, placed pictures of grass within this theme, and in the quotes below, it is clear to see why seeing grass was so important to her:

> *Julie:Well, I think the grassy areas as well. Like there's lots of grass everywhere, so I like to see like all of it growing and everything.*
> *FH: Why is that important to you?*
> *Julie:Well, I just like it and it looks nice and if like... I'd rather it be grass than concrete all of it...We have this outdoor classroom at the school and it's like you can sit and then you can like go outdoors almost and learn, which is good 'cause if it's a nice day then you can do like your maths outside or something, which is, yeah, good 'cause you're getting out and getting fresh air.*
> *It's like, well, we play lots of games down there, so like camouflage and things, so you can like hide in between them which is good 'cause like if it was all cut then you wouldn't be able to do anything.*

Figure 7-19 Visual data: Henry

Similar to Julie, Henry, who lived in an area of lower deprivation, placed pictures of nature and greenery and spoke of wildlife:

> *Lots of trees around and not just, like, lots of houses, just a lot of wildlife as well.*
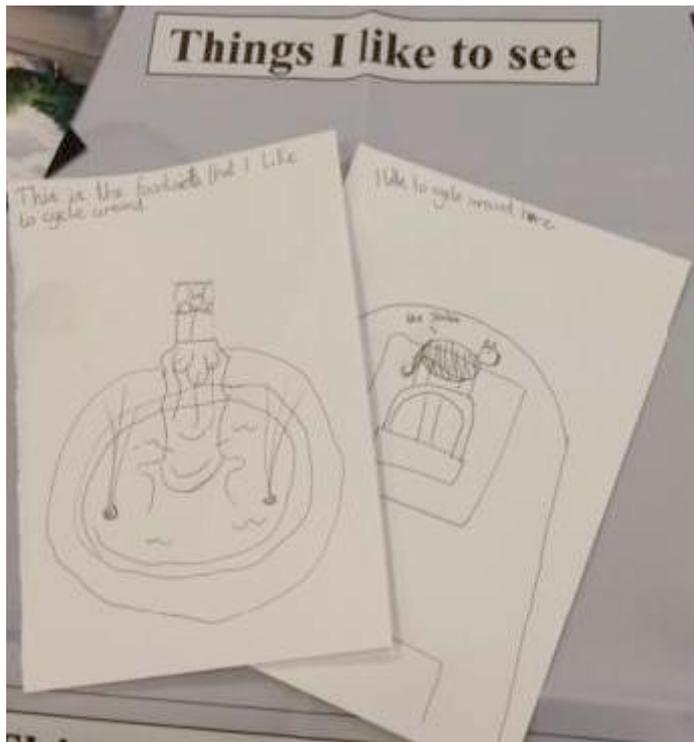
Figure 7-20 Visual data: Anna

Slightly different to the other children, Anna, who stayed in a more affluent area, placed two drawings representing man-made features within this theme and no illustrations of nature or greenery:

> *Well I was drawing the fountain and the statue which are in the park, because well I like to see the fountain 'cause it's really pretty and it's got lots of like, it's got lots of like levels and it's got different things on it and stuff. And then I also like the statue just because it's on the very top hill of the park so it's got a really nice view from it and it's quite cool statue as well.*

7.2.4 Things I don't like to see

This theme did not give clear comparisons between the urban and rural children, as the pictures and drawings all varied greatly. The children from areas of lower deprivation were more likely to place data in this box.

7.2.4.1 Rural and urban comparisons

The pictures within this theme varied among all of the children, with very little to compare. Many of the children from urban areas placed pictures of traffic and pavements and areas that contained graffiti (Figure 7-22) within this theme. Rural children placed pictures of playgrounds that were unsuitable (Figure 7-21), as well as

litter, weeds, and logging. However, it was difficult to distinguish differences between how the children living in urban and children living in rural areas as all the children placed very diverse illustrations within the theme.

Figure 7-21 Visual data: Evie

Evie, who lived in a rural setting, placed a photograph representing a playground that she perceived to be unsuitable for her to use:

> *I don't mind seeing it but it's quite annoying considering that it's not for us.*
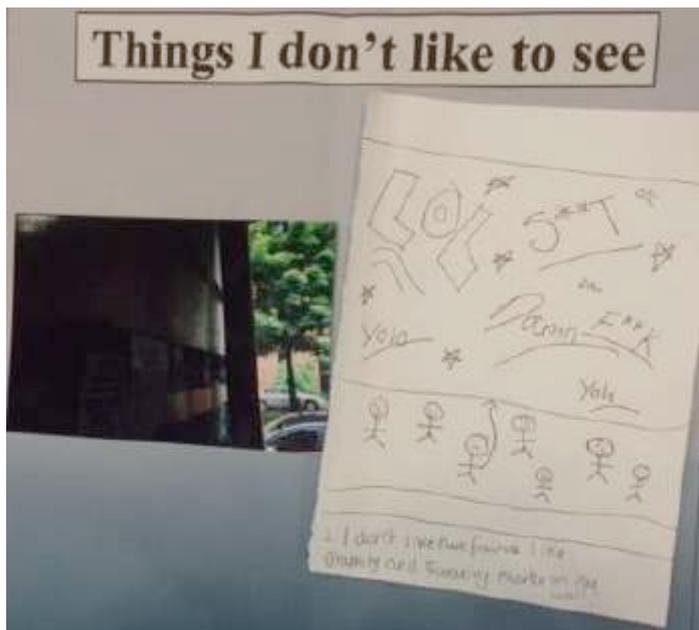
Figure 7-22 Visual data: Penny

Penny, living in an urban environment, placed two pictures, one drawing and one photograph, within this theme. Below Penny talks about not liking graffiti as it may give older people the wrong impression of young people:

> *I don't like it when you go onto, like you're going to someone's house and then on the walls there's swearing words and there's graffiti, and it just sets a bad example for, it just sets, it just gives you, it's just really not nice like if the old people, if just younger people come then they see this it might give them like wrong ideas. So I don't like seeing that.*

7.2.4.2 Higher and low deprivation comparisons

Only a few children from areas of higher deprivation placed their pictures within this theme. The children that did place their photo/drawings within this theme were of areas of green space that had 'no ball games' signs (Figure 7-23). Another picture that was placed within this theme by a child living in a higher deprivation area was in relation to traffic (Figure 7-24). The children from low deprivation areas placed pictures representing litter, traffic, potholes or uneven pavements, and graffiti (Figure 7-25; Figure 7-26).

Figure 7-23 Visual data: Noah

A photograph from Noah (rural) showing a large area of green space that he felt would be ideal for playing football, however, there was a no ball games sign preventing it:

> *This is the park just like across from the park round the corner from where I stay and it's like, it's quite, it's just like where we just, we sometimes would go but not very often. So there's like a wee gr-, the big grassy area just across from that and we can't really do anything in it because they put up this sign saying 'no ball games'.*

Figure 7-24 Visual data: Julie

Julie, living in a more deprived setting, placed very different photographs within the theme. Julie lived by a dangerous junction and her photographs centred on road safety and traffic:

> *Well, like I don't like when the roads are really busy 'cause then it's hard almost when you're walking to school, like when there's no lollipop man.*

Figure 7-25 Visual data: Tiffany

Tiffany, who lived in a less deprived area, highlighted the poor quality pavements in her neighbourhood that made cycling difficult:

> *So on my street there's quite a few bits, like pavements like this, and I usually like to go on my scooter outside as well or my bike, and if I'm ever, ever on the pavement, then it annoys me because then I have to stop, get off and then carry on. And some… 'cause it just kinda makes it awkward for me. And I have quite a, I counted them once and my street's sorta circle and it's, so I counted round and think there's around eleven of these in the street. So it just kinda makes life awkward so I took a photo of it.*
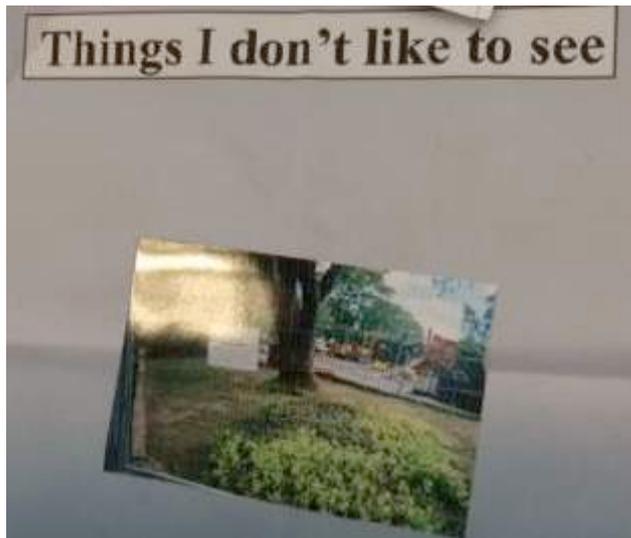
Figure 7-26 Visual data: Anna

Anna, who stayed in a more affluent setting, placed one photograph within this theme, which showed a public park that appeared to be closed. Anna noted that this caused issues when meeting her friends:

> *Well I don't like when like the parks are closed because like you might have arranged to see your friend, to meet there and then like it's closed and then like you can't find them and then you don't know if like where they are or anything. Because they could have went to a different entrance of it and then gone home or something.*

7.3 Inductive themes

The inductive themes were themes that emerged from the participants in relation to their unique data (drawings and photographs). As discussed in the introduction of this chapter, I do not describe any comparisons between urban and rural settings and areas of mixed deprivation.

7.3.1 Things I like to do

The most common inductive theme among the children was 'things I like to do'. This theme emerged from the visual data collected by children from different types of neighbourhood. The theme revolved around both formal activities such as football and cycling, as well as less formal activities such as tree climbing.

Figure 7-27 Visual data: Noah

Noah, living in a rural, and more deprived setting, chose to take photographs of the area he played team football. Noah did take other pictures of football, but these photographs represented the area where he specifically trained as part of a team:

> *So there was a big, that's like one of the goal nets up there and sometimes we play on the pitches over here. And that's like on a Monday night from I think it's from seven 'til half eight or something…So that's, well we were there and we just do like training and then like, well we do the warm up then we do like drills and things and then we do the actual matches. Then sometimes at the end we do penalty shootout. So that's like, this was after football training, those pictures, and like I think that was when I was waiting for my dad to come and collect me.*

Figure 7-28 Visual data: Henry

Henry, staying in a rural, more affluent setting, placed photographs of areas he liked to cycle and felt these were related to things he liked to do:

> *This is at the bottom of our street and it's when it was a sunny day so I was gonna go out on my bike, so, it would be a nice day to do that. That would be the kind of day I would go on my road bike or my mountain bike and you – I kind of go along, like, halfway on Moor Road then come back and try and get, like, as fast I can.*

Figure 7-29 Visual data: Lucy

Lucy, who lived in a rural area of higher deprivation, spoke of various activities that she did in her spare time and placed pictures of her doing these activities within things I like to do. Lucy primarily spoke of cycling and archery (something she does with a friend):

> *Yeah, so... well, that's… they're basically kind o' like the same thing but I've just got different pictures. So I like cycling on my bike. I was cycling to school that day and I like... yeah, I like cycling on my bike cause it's eco-friendly and it's fun but it can also be quite tiring 'cause I've got a big hill to go up on my bike…'Cause like… it's quite tiring actually so… I don't mind it sometimes but if like my legs are tired then I don't like doing it….And… I like doing archery. This is my friend…yeah, I like doing archery because it's fun but you also can't like be messing about, you have to concentrate.*

Figure 7-30 Visual data: Anna

Similarly to the other children in this theme, Anna, staying in a urban area of more affluence, placed photographs and drawings of her or her friends doing activities. For example Anna speaks about climbing trees, but also about cycling and dog walking:

> *Well I like climbing trees and there's this tree in the park which has like a long branch coming out so I like to jump on it and sit on it and swing from it and stuff. And I like to cycle with two of my friends and I like walking and I also like, well I like walking my dog as well.*

7.3.2 Individual inductive themes

The remaining inductive themes were individual to each child; therefore, no further comparisons are made.

7.3.3 Places I used to go

Figure 7-31 Visual data: Noah

The theme 'Places I used to go' emerged from Noah's data. Noah, who lives in a rural, more deprived area, took a photograph of a place he went when he was younger. He noted that he no longer went to this place due to it being overgrown rather than he had 'outgrown it':

> *That was for like ages, like we used to play there all the time. That's in my grandad's garden, it's a tree you climbed 'cause it was quite easy. It almost had like footholds just like there just so you could go up it. And like so you, and you could like climb right to the top and just like sit there for ages and just like… things. But you can't do that now 'cause it's a bit overgrown with net-, with brambles, so… you go up there and you come back down, you've got all these wee thorns sticking in your arms*

7.3.4 Way to school
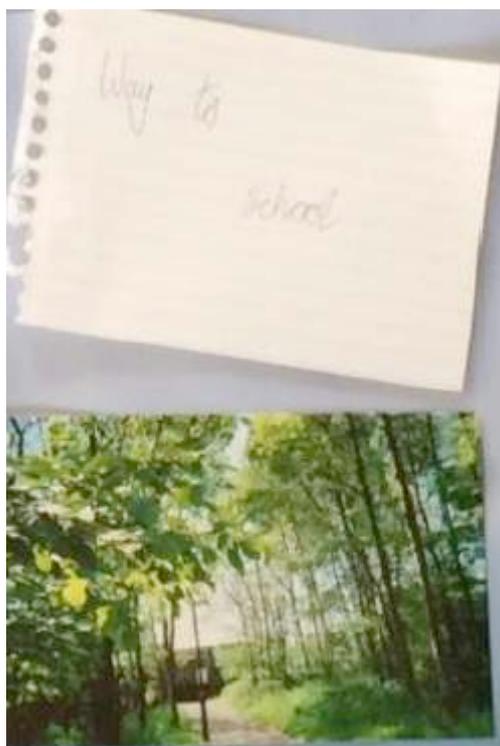
Figure 7-32 Visual data: Dylan

Dylan, who lives in a rural area of higher deprivation, choose to place a photograph of his way to school in a theme labelled 'way to school':

That's pictures of the way to school

7.3.5 Places I like playing in

Figure 7-33 Visual data: Penny

Penny, who lived in a more affluent urban area, felt that some of her data was not represented in the deductive themes: from her data emerged the theme 'places I like playing in'. Penny noted that the places she enjoyed playing in were green space, but also the street outside her house:

> *It's basically around my neighbourhood, and it's in, there's a bit in my street where there's a big open green place and you can just play in it all you like. So basically sometimes my friends come in my street and they basically play here. Or it's beside like stairs or something or jumping or something like that. And the rest of the pictures are it's my neighbourhood. We like going around and that's pretty close to the park as well.*

7.3.6 Places I don't like playing in
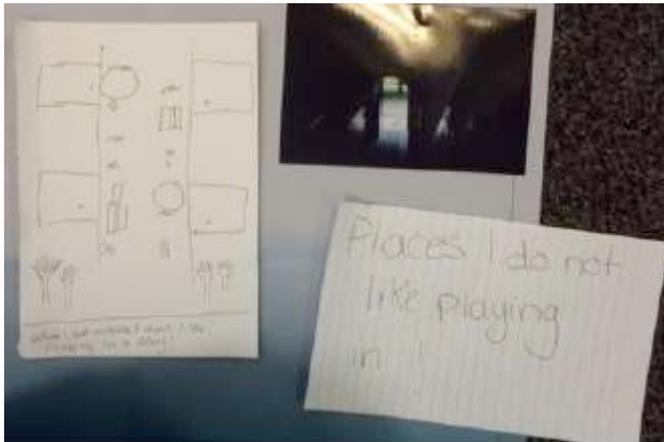
Figure 7-34 Visual data: Penny

Penny (urban and less deprived) also labelled one of the themes 'places I don't like playing in'. The theme emerged from data that illustrated places with litter and dark places:

> *Don't like to go into like lanes, like little side lanes or I don't like to go to like places with bins like all the rubbish and stuff.*
> *FH: Why don't you like to go places with lanes or along the lanes?*
> *Because like they're usually quite long or they're quite thin, it's all dark and then they might have like strange people and it also might have like, well maybe have, like it might have like bins lying out and stuff.*

7.3.7 Places I feel comfortable

Figure 7-35 Visual data: Belle

From Belle's data, the theme 'Places I feel comfortable in' emerged. Belle, who lives in an urban area of less deprivation, placed two photographs of a green area behind her flat that she referred to as her garden. Below, Belle does not directly mention it is somewhere she is comfortable, only that she plays there and that there is a lot of space:

> Belle: Well, that's probably the main place that we play because my friends are just across there and it's their garden as well so we just play badminton, people from, like, other places, they come and play stuff as well, so.
> FH: Okay. So, there's not much equipment in this bit. (Mmhm) Does that matter?
> Belle: No, 'cause there's still quite a lot of space

7.4 Summary of chapter

A common criticisms of visual data collection is that photographs taken by participants are hard to analyse, as without participant explanations, it is difficult to interpret what the photographs and drawings are showing (Croghan et al., 2008). This chapter highlights a way in which visual data can be analysed by the participants.

Overall, there was more visual data representing positive images of the children's environment, and less data representing their negative perceptions of the environment.

From the analysis of the photographs that the children chose to take, it appears that children from rural areas are more likely to go to places that have greenery, possibly due to having greater access to green spaces or are more likely to want to take photos or drawings of these environments. Children from urban areas were more likely to visit locations with playgrounds. Conversely, children from rural areas were more likely to avoid playgrounds. Children from urban areas were less likely to place pictures in the theme labelled 'places I don't like to go' compared to children from rural areas.

There was little difference between the locations children from higher and lower areas of deprivation choose to visit; children from both areas favoured parks, playgrounds and space with greenery. The main difference between children from more deprived neighbourhoods and those from more affluent neighbourhoods was where they choose *not* to go. The children who lived in areas of higher deprivation were more likely to place pictures of busy roads, traffic and parked cars in 'places I don't like to go'.

There were no comparisons for the two additional deductive themes; 'things I like to see' and 'things I don't like to see'. However, this was for two different reasons. For the theme 'things I like to see', all of the children placed pictures relating to nature and/or greenery, with one placing a picture of a nearby fountain and statue. For the theme 'things I don't like to see', it was difficult to draw comparisons as the children mostly placed very different pictures inside this theme suggesting a high level of individuality in what children do not like to see in their environment. Some of the pictures included incivilities such as graffiti and litter. However, pictures also included inappropriate playground equipment, a busy junction and a closed off park.

For the inductive themes, there was only one theme that emerged from children from all different types of environments - 'things I like to do'. Although the photographs and drawings in this theme varied between each child, it does highlight that children associate the outdoor environment with participating in PA.

CHAPTER 8 – VERBAL FINDINGS

'Pretty much all the honest truth telling there is in the world is done by children.'
Oliver Wendell Holmes

8.1 Introduction to chapter

The previous chapter presented the findings from the visual data, analysed by the children. This chapter discusses the findings from the verbal data from the interviews and focus groups analysed by myself. Two of the key aims were to understand comparisons of area deprivation (higher and lower) and urban and rural areas. Therefore, this chapter is been split into three sections: the first section presents comparisons between the children living in urban and rural dwellings. The second section compares the findings between the children living in areas of higher and lower deprivation. The third section presents the findings from all the children as a whole data set.

8.2 Introduction to section: comparisons of urban and rural settings

In this section, the findings from the urban and rural comparisons are explored (the coding table is presented in Appendix G). I discuss each global theme and subtheme and the notable findings in each. Not all themes are presented as after the first stage of analysis it was decided they were not integral to the research questions. The global themes are: 'Affordances', 'Perceived Benefits of Being Outside', and 'Perceptions of the Neighbourhood'. As discussed in Chapter 4, the analytical framework was concurrent inductive and deductive thematic analysis. Each global theme was either based on the theoretical framework (Affordances); the research questions (Perceptions of the Neighbourhood) or emerged from the data (Perceived Benefits of Being Outside).

8.3 Affordances

The subthemes that were part of the deductive coding table under Affordances were; 'Actualised affordances', 'Potential affordances', 'Social affordances', and 'Variety of affordances'.

8.3.1 Actualised affordances

'Actualised affordances' were defined as characteristics of the environment, which were utilised by the child. The themes based on the verbal data from children living in both the urban and rural areas were *Activities, Equipment, Non-Normative, Play, Preference of surface, Purpose of location,* and *Sports facilities/sports.*

Activities

The children from rural areas discussed more activities such as, cycling, playing in dens, football, walking, jogging, fox finding, golf, scooting, skateboarding, and sledging. Henry, a rural child, spoke of enjoying going walking and jogging in the fields by his house:

> *Yeah, I go down to lots of different fields quite a lot. Like, my grandma and grandad live, like, in – near to fields, so, like, kind of, playing around doing stuff there.*
> *FH: What kind of things do you play there?*
> *Cycling and sometimes I go for jogs and then sometimes walk*

The children living in urban settings discussed few activities (cycling, football, golf, skateboarding and sledging). The rural children discussed more types of activities. Both rural and urban children spoke of cycling and football and these were the most frequently discussed activities. Below are quotes from Belle and Mollie who were from urban and rural areas respectively and both girls spoke about cycling as their favourite activity:

> **(Urban)**
> *FH: Okay, so, can you tell me about what your favourite activity is to do outside?*
> *Belle: Cycling. Cycling, definite. If there was, like, anything – there's, like, there's not exactly any, like, it would be scootering but I don't have a scooter anymore, so. But, so, yeah, cycling is probably.*
> **(Rural)**
> *FH: What else do you like to do outside?*
> *Mollie: Like, I like riding my bike outside. It's my favourite thing to do.*

Equipment

Equipment was considered an actualised affordance if the child perceived the equipment in a normative manner, and then actualised the affordance. The children from rural dwellings spoke of swings, a roundabout, a climbing wall, flying fox, trampolines, and monkey bars. Charlie, who lived in a rural environment, discussed with me the equipment he enjoyed playing on in his local park:

> *Charlie: Yeah, we go on the swings. That's them we usually use and you can't really see but there's a monkey bars leading across to a bigger platform, so, yeah, we also use that as well.*

Children spoke positively about playgrounds if the equipment was perceived as age-appropriate. For example, Belle (urban) was asked why one park's equipment was better than another parks, Belle replied because 'we can use it'.

Non-normative

Non-normative was defined as features of the environment or locations the children actualised in a non-normative manner. For the children in rural areas, non-normative affordances involved visiting the park, but to climb the trees rather than play on any of the equipment. Henry (rural) spoke to me about visiting a park, but what he enjoyed about the park was that there were trees to climb:

> *Henry: So, the park's, kind of, got a stream at the end of it and there's lots of trees to climb over there and it's quite tall trees so I like climbing up to the top and finding new ways to go up the tree.*

Children also used the equipment in a non-normative way because it was more fun. Mollie (rural) for example, pointed out that the equipment was not fun if it was used properly:

> *FH: So in the parks, are there things that, enough things for children your age?*
> *Mollie: Not really, 'cause there's only like a flying fox and things. It's not fun if you use it properly, like.*
> *FH: Ok, talk to me about using it properly.*
> *Mollie: Well, like, this climbing frame, we just jump off the top and don't actually slide down the slide. [...] It's more fun jumping off the top instead of sliding down.*

The children from urban areas also spoke of using locations and equipment in a non-normative manner. For instance, Owen (urban) noted that he preferred one park over the other as it was quieter and allowed him to use the equipment the way he wanted to:

> *Well, I prefer that park to the other one.*
> *FH: Why's that?*
> *There's less little kids there and we're more able to use the stuff how we want to, like we can climb on it and hang off it and no one can tell us off. I like going to both parks though, just depends what me and my friends want to do.*

Play

Play was defined as affordances the children actualised specifically for play (I.e.,the word play had to be mentioned in the data). For children living in urban areas, the size

of the location was considered important. Tiffany, who stayed in an urban area, discussed with me that she visited a local park because it was big field:

> *Well, these two are of my local park and I like to go there because it's really, it has a big field so you can play ball games and things.*

The amount of room the space provided also came up when talking about their local park. Julie (urban) appreciated how the park was designed:

> *Julie: Like I like the way it's [the park] laid out and I like how like 'cause at the start apparently it was just a big like patch of mud and then they made it into that, so it's good how they made it into that so we've got something to do. [...] Well, there's like bridges and there's like bits that you can like go through, so it's quite fun and there's... like you can play tig and there's more room almost.*

Preference of surface

Preference of surface was defined as surfaces that either created or changed affordances for the children. For the children in rural settings, surface for cycling was frequently mentioned. Surfaces included concrete for speed, flat surfaces for speed, grass for safety, enjoying cycling on bumpy surfaces, and cycling fast through the stream. For example, Henry (rural) spoke about enjoying different surfaces providing cycling affordances:

> *Yeah, I like the bumps 'cause you can sometimes do jumps down the hill and then-*
> *FH: So, you don't mind that it's not all manicured and…?*
> *Yeah. I like bumps more than just flat but flat's good for speed, like, on my road bike but bumps are good for having a go at your jumps and it's sore on your hands and your arms.*

These children also mentioned different surfaces for football, playing and scooting. Charlie (rural) specifically spoke about the surface he would look for to play on:

> *FH: So, when you think of being outside and playing, what kind of surface, what kind of environment are you in?*
> *Well, yeah, I wouldn't be on concrete. I would definitely be on either astroturf or grass. Something soft, something like, not as hard, something where you can muck around or, like, jump around.*

However, children placed within urban environments spoke more about surfaces compared to the rural children. They spoke about surfaces in relation to relaxing, scooting, skateboarding, football and playing. Surface for play was mentioned most frequently, and grass was considered the best surface for most play activities. Tiffany (urban) enjoyed playing on grass more as she considered it to be safer:

> *Tiffany: I actually have more grass than concrete*
> *FH: And do you (Yeah) prefer that?*
> *Tiffany: Yeah, 'cause most o' the time I'm really on the grass and it's a wee bit safer, 'cause if you fall it won't really hurt you as bad as it would on concrete.*

Purpose of location

Purpose of location emerged from discussions as to why children chose specific locations in relation to the affordances they offered. Children from rural environments discussed visiting fields, hills, places of nature, and places with views. Children from urban settings however, spoke about why they visited pavements, and school grounds; they also noted that lack of traffic, lack of people, and size of the space was important when visiting locations. For example, when Craig, who stayed in an urban area, was asked what he looked for he discussed the size of the space:

> *I like to look for a big space where I can do lots because there is a lot of places that has loads of like benches and stuff that you, that gets in your way and I also look for a place where there's not many people so you can sort of have more space and be free a bit more.*

Although the desire to have multiple affordances in one location was apparent with children living in both environments, it was more evident for the children living in a rural setting. The quote below from Charlie (rural) highlighted his desire to be able to visit somewhere that would offer numerous affordances:

> *Charlie: I always like to go to XXXX in the summer because you can go and play football with your friends at the football park and there's a nature trail round the back where you can go for a walk if you want. As well as that it's a nice place to hang out and just have fun, relax. There's a running track as well, so, I can go there 'cause I like running.*

Space was also important for both groups of children. Below are quotes from Mollie (who lived in a rural environment) and Tom (an urban setting) discussing why outdoor space is desirable. Mollie felt that if she had lived in a town, she may have had less space to run about, and Tom emphasised that space was the most important thing for him when he is outside:

> **(Rural)**
> *FH: So do you think, if you'd grown up in the town, you still would have been just as active?*
> *Mollie: Maybe there'd be more like active clubs that you could go to – but I don't think there would be more, like, space around would have been smaller. Like, I've got all that right around the house and the fields and all that to run about in.*
> *FH: So is the space quite important to you?*
> *Mollie: Yeah.*

FH: Tell me about why.
Mollie: Because there's plenty of space to do biking and, like, my dad made swings out a' wood and there's just lots of space.
(Urban)
FH: What is that the main thing for you, when you're outside?
Tom: Mm hmm, space.
FH: Why is that?
Tom: So I can run about. […] Yes. More space to run about.

The importance of proximity was an influential feature discussed more by children living in an urban environment. For example Nicky (urban) spoke of going somewhere to play football because it was close to his house:

 [Looking at a photograph] Oh yeah, I remember that bit, I like that bit. That's where me and my dad play football.
FH: So why do you choose to play there as opposed to anywhere else?
It's like really near my house.

Jenny (urban) also spoke about choosing to visit a park close to her because she was more likely to run into her friends:

Basically always the park where we always meet up 'cause you're always near to it. And we always… even if you're not even there to meet your friends, sometimes you just appear to see them. So yeah, definitely the park that's near to us.

Sports facilities/sports

Sports facilities/sports varied slightly between rural and urban children. For the rural group, Noah (rural) spoke about having access to a formal sports track where he could run and play:

Sometimes we go in there just to play football if the gate's closed in the other park 'cause that gate's always open. But, yeah, we have running races in this which is fun. So, we do 400m and 100m, also do relays.

8.3.2 Potential affordances

'Potential affordances' are defined as barriers that resulted in the child not actualising the affordance. The themes that emerged from both groups were *Adult restrictions, Other children, Unsuitable equipment, Weather* and *Traffic*. The themes that emerged from discussions with the urban children were; *Lack of affordances, Social intimidation, Time of day,* and. The themes important to the rural children were *Fear, and Mood.*

Adult restrictions

For the children in urban dwellings, there were teachers' restrictions of the areas the children could play in, such as 'no ball games' signs, and closing the school sports facilities out of school hours. For the rural children, the only restriction was a 'no ball games' sign:

> *FH: So what about 'things I don't like to see'?*
> *Noah (rural): Well I've seen like, me and when one of my friends from school, James, he lived just round the corner from me, and when we were there we used to play... this is the park just like across from the park round the corner from where I stay and it's like, we sometimes would go there but not very often. So, the big grassy area just across from that and we can't really do anything in it because they put up this sign saying 'no ball games'.*

Other children

Both groups spoke of other children putting them off playing on the playground equipment. The children from urban places spoke of wanting to avoid teenagers, equipment being too crowded, and other children using the equipment for sitting and talking. The rural children felt teenagers did drugs in the woods so avoided going there.

Traffic

Safety on roads was a barrier that prevented actualising the roads and paths for activities such as cycling, and was an issue that arose in conversations with children from both environments. The following discussion was from a focus group with children living in an urban setting; however, very similar discussions were present with children from rural areas:

> *FH: So how do you feel about cycling on the road?*
> *Anna: Nah, 'cause like it's very like dangerous.*
> *Penny: It's dangerous.*
> *Jenny: If I had to I would probably be fine with it but usually if I, when I have a choice, I always cycle on the pavement just 'cause it's less dangerous.*

Unsuitable equipment

Both groups of children referred to the playground equipment being unsuitable, and the majority of children felt the equipment was aimed at much younger children:

> *Charlie (rural): That's the park beside them. [...] Sometimes if we're just cycling on our bikes with my friends we'll cycle round there and back up.*
> *FH: Will you play on this stuff?*
> Charlie: No, not really. That's, like, more for little – younger kids.

Moreover, Noah, who lived in a rural environment, chose not to use the equipment in his nearest park because it was too dangerous to play on:

> *The swings are okay but that's needing painting and it's also like because it's like, the slides are, the thing's metal and the floor it's metal as well, so it's got like not a lot of grip on it, so sometimes it's slippy and you really have to be cautious of like you might slip and like hit your head off it or something like that. So, yeah, and there's like a wee kind of, it's kind of like chains there, it's like a chain thing to climb up but it's like really loose and once Connor's wee brother he was climbing down it and I think, well I think it was his wee brother anyway but his foot slipped and he landed in between the chains, he did, and he was stuck there for a while, so… and I don't really go up those chains anymore.*

Weather

Both groups of children felt that the weather influenced their behaviour outside, with little variation between the two groups. Children from both groups discussed the affordances changing if it snowed or rained. For example, Charlie spoke of playing a game specifically when it rained:

> *Charlie (rural): Yeah, but if it's raining there's a shelter at XXXX where we can, we go under and just play wall-y. Which is basically with a football where you kick it off the wall, one after the other and if the person misses a shot they're out.*

Some children felt they would go out if the weather was better:

> Taylor (urban): I just like tae be ootside really. Unless it's raining

However, there were children who did not think that the rain made too much difference to their time outside providing they were wearing the right clothing:

> *Jenny (urban): I'm mostly used to the rain.*
> *Anna (urban): Yeah. I don't really mind it as long as like I get like a jacket or like something.*

Lack of affordances, *Time of day* and *Social intimidation* were themes relating just to children living in urban environments. *Lack of affordances* referred to Nicky discussing that there was nothing exciting in his local environment and that trees should be planted to create more opportunities to play:

> *Nicky (urban): Since we're talking about nature, as you said, I've got a back green bit and it's like just plain and there's nothing too exciting. So I was, I would like if it was a lot o' trees planted there, it was like a forest with bushes, and you could have a good game of hide and seek there and it would be much better 'cause if it was a rainy day all the trees would cover it all up anyway so*

> *you could still play when it was on a dark day, so you don't have to sit around playing on your phone and your laptops, Xboxes, stuff like that.*

Time of day/light referred to Anna (urban) spoke of avoiding going places at night because there would be different people:

> *Basically at the night, yeah. I avoid going at night 'cause I don't like it like when there's maybe people out there and stuff like that. Mostly people, different people come in in the night and they do stuff like… just different things.*

Social intimidation related to when the children spoke of avoiding places with graffiti:

> FH: *Why does it make you feel unsafe?*
> Penny (urban): *Because like you know that somebody wrote that then you're pretty much crazy or something like that.*

The themes relating just to children from rural areas were *Fear* and *Mood*. *Fear* was relevant to Evie who spoke about avoiding cycle paths as they were quiet and scary:

> *Evie (rural): There's not a lot of... there's not a lot of people walking normally. Like, it's only dog walkers and cyclists, and then you don't very often see people or anything if you're by yourself and there's not someone older than you or your mum or your dad something could happen because, well unless you scream really, really, really, really loud [...] then no-one's probably gonna hear you if something bad happens to you. Like you fall over or worse.*

Mood influenced the children's choice of location. Charlie (rural) spoke about going to different places depending on if he wanted to relax, or felt jumpy:

> *So, if we're feeling, like, jumpy and excited we could go to XXXX but if we're feeling, like, a bit tired and we wanted to relax we'd go to XXXX. But if we wanted to do something other than activities, we would, yeah, we would go to the woods.*

8.3.3 Social affordances

'Social affordances' were defined as affordances perceived by the children that existed in the social environment. The themes that emerged from discussions with both groups were *Friends, Family, Mobile phones* and *Community*.

Friends

For the children from urban environments, friends influenced them being outside, the location they visited, provided company, influenced activity levels and created affordances. The children from rural areas appeared to be less influenced by their friends; they spoke of friends providing encouragement to go outside, for company, and influencing locations visited. The main comparisons were that children from

urban environments spoke of friends creating affordances, such as not being able to play certain games without friends, or not being able to much anything without your friends:

> FH: So when we go outside how important are our friends?
> Nicky (urban): Very important to me 'cause if I didn't have any friends then what's the point of me actually having life, 'cause I wouldn't actually be able to do anything really 'cause my mum and dad are usually busy.

They also felt that their activity levels were increased when they were with their friends:

> FH: How does being with friends affect how active you are?
> Owen (urban): I'm definitely way more active with my friends. Like, I wouldn't really go outside without them. They encourage me to go skating, or to the park, I think most of the places that I'm running around are places I go with friends. If I like, if, well say I dinnae have friends, I think I'd not go ootside, I'd just play video games.

Family

Both groups of children discussed how their families influenced their PA behaviour outside. Boundaries were important to both groups of children, and the children spoke of places they were not allowed to go or limitations on how far they could go:

> (Urban)
> Taylor: They don't let me go further than Ice- like Morrison's and I'm not allowed to go further tha-, I'm not allowed to go further,
> (Rural)
> Charlie: I wouldn't go past certain boundaries like down past the, just before the golf club or my friend's house, I wouldn't go past there 'cause that's out of a place where I'm, like, I don't know as well.

Both groups of children spoke about how their parents being active positively influenced them, or that they do activities with their parents:

> (Urban)
> So, what do you guys, what's, talk to me about a family weekend.
> Julie: Well, usually when I'm training on a Friday night or a Tuesday my mum and dad will go out for a run, and then on the Saturday if it's nice weather me and dad will probably, me and my dad'll probably play some football or something.
> (Rural)
> Do you think you're more active because you have quite active parents?
> Henry: Yeah, 'cause, like, they don't just go out to the pub every night and drink and smoke and stuff. They like, they go out and do stuff with us and they're good parents.

Mobile phones

Although both groups discussed the theme of Mobile Phones, it was in a very different context. Evie (rural) was the only child from the rural group who spoke of having a mobile phone and discussed that it was helpful for keeping time:

> *I take my phone and watch so I would know when to come home.*

However, the children who were living within an urban environment did speak of having mobile phones in relation to having more confidence, being able to contact their parents to stay out later, and having more independent mobility. For example, Tiffany, who lived in an urban setting, associated having a mobile phone with being able to go more places on her own:

> *I can go there any time I want 'cause I've got my own phone now so I can just take that with me, go to XXXX, say "I'm going to climb."*

Community

Community emerged from the discussions, with both groups of children discussing how the social aspects of their neighbourhood encouraged PA behaviour. Children in the rural group discussed feeling safe, having people their age to play with, and attending a local club. For example, when asked if moving to a new location would influence outdoor time, Charlie (rural) said:

> *Well, at the beginning, yes, it would influence but if I got to know friends like I did in this neighbourhood then, no, it wouldn't influence me going outside.*

The urban children echoed similar feelings:

> *FH: If you moved to a new place would you go outside as much?*
> *Owen (urban): Maybe not until I met the people.*

Both groups of children also spoke about the importance of their lollipop man/woman:

> (Urban)
> *Julie: Well, like I don't like when the roads are really busy 'cause then it's hard almost when you're walking to school, like when there's no lollipop man.*
> (Rural)
> *Noah: No, for the main road there is a crossing patrol that I go across most of the time.*
> *Is that like a lollipop person?*
> Yeah.
> *Okay. Is that quite handy for you?*
> Yeah. Especially when I've got my sister with me.

8.3.4 Variety of affordances

'Variety of affordances' was defined as children discussing their desire or the preference of multiple affordances in either one location or within their neighbourhood. Within both groups, *Variety of activities* emerged. However, the rural group also discussed *Variety of equipment*. Two children living in an urban area spoke of preferring a park over other locations because there was more to do. For example, Belle (urban) spoke of feeling more active in a specific park because there was more to do:

> *FH: Where would you say you're most active?*
> *I would probably say XXXX Park.*
> *FH: And why is that?*
> *Well, there's more stuff to do there. There's another park there, there's a big area to play, be free, be wild.*

Children discussed that they would prefer more equipment in the park and that it is more fun at the park because of the number of opportunities:

> *FH: Why's it fun at the park?*
> *Noah (rural): It's like there's tons of things to go on or you can play football with stuff at the kick pitch.*

Children within the rural group also spoke of variety when asked about what it meant to be outside:

> *FH: what does outside mean to you?*
> *Henry (rural): It kinda means play and stuff. Sometimes if you're out for, like, really long it can get quite boring 'cause you're like – you've done the thing for ages and, like, but if there's lots of different things to do then it's fun.*

8.4 Perceived benefits of being outside

The subthemes that emerged from the analysis of the transcripts were 'Perceived physical benefits' and 'Perceived psychological benefits'.

8.4.1 Perceived physical benefits

'Perceived physical benefits' were defined as those that might accrue from being outside. Although physical benefits were discussed in both groups, this emerged to a greater extent within the urban group. The themes within both groups were *Being active,* and *Physical fitness.* The urban group also comprised *Exercise, Obesity* and *Release of energy* and the rural group of *Health.*

Being active

Being active emerged from discussions with the children talking about either being outside to be active or acknowledging that being outside allowed them to be active, as mentioned by Tom (urban):

> *FH: give me a description for why you like going outside.*
> *Tom: Playing wi' friends, getting active, being out in the fresh air.*

Nicky (urban) also referred to how being outside caused him to be active without consciously thinking about being active:

> *Like, you don't know, you just go outside, and then eventually you're just like, 'You know what, I'm just gonna go in for my friends and play,' and then you're just being active and you're just doing it without really knowing what you're doing.*

Physical Fitness

Physical Fitness emerged from discussions with both groups of children, although it was much more predominant among the children living in urban areas. For instance, Julie (urban) spoke of using the wall at school to keep fit:

> *This is the trim trail, so like you go round that way and then you can use that. So, it's basically, it's fun 'cause you get to like go around and it's keeping you fit as well 'cause you're like running round.*

The themes that emerged solely from the urban group were *Obesity,* and *Exercise.* *Obesity* emerged when the children were asked how important it is to be outside, one child responded with:

> *Tiffany (urban): [...] well, quite a few more people would be obese in my opinion because if you don't go outside you probably won't do much exercise. 'Cause I find my exercise is usually the trampoline and so without, like, going outside… and I do, like, I play hockey outside as well, so I do… also sports, I don't like playing in school sports inside, I just don't find it has the same effect as if it's outside.*

Exercise emerged when Penny (urban) discussed choosing to cycle (as opposed to walk) because she felt it was more physical:

> *Because if you're cycling you're like your legs are getting, like you're exercising on it. So you, well you can get places like quite, much faster and also I just kind of prefer cycling because it's more exercise and, yeah.*

The only theme that emerged solely from the rural group was *Health*. Henry (rural) spoke about why he felt it was important to be outside:

> *'Cause it's, like, good for your health and stuff, so, it makes a difference and it makes you fit.*

8.4.2 Perceived psychological benefits

'Perceived psychological benefits' were defined as how the children perceived the outdoor environment to influence their mental or emotional state. Both groups spoke much more of the psychological benefits of being outside compared to the physical benefits.

The themes that appeared in both groups were *Companionship, Enclosed, Fun, Physical and Mental stimulation, Fresh air, and Relaxation.* The rural group comprised *Happiness* and *Belonging/identity.*

Companionship

Companionship emerged from the data when the children spoke about the importance of spending time with their friends. For example, Charlie (rural) spoke about enjoying going outside to the local football pitch to make new friends:

> *FH: where's your favourite place to play?*
>
> *The XXXX football pitch.*
>
> *FH: Okay. And tell me about why that's your favourite place.*
>
> *'Cause I like football and no matter what, even if your friends aren't there, there's always someone else to play with even if you don't know them 'cause you will always make friends there.*

Henry (rural) also spoke of feeling happy when he was with people:

> *FH: How important is it to you when you're outside to be with friends or be with people?*
>
> *It's quite important 'cause I don't like being on my own. I, kinda, like being with people and it makes me feel happy when I'm with people, 'cause it's just like you get to talk to people a lot and communicate with them and make new friends,*

Nicky (urban) also spoke of how he would feel if he had no friends, and that this would result in him sitting about all day:

> *And if I had no friends then I'd be lonely and I wouldn't know what to do and I'd just sit about all day and then I'd be glum*

Fun

Both groups discussed the importance of having fun when outside, Tiffany (urban) encapsulated this by speaking about how she decided whether she should go outside:

> *I don't really think about going outside for, to be active, I usually, I think when I think, 'Should I go outside?' I think yeah, I should because it'd be fun*

Physical and mental stimulation

This theme reflects the children discussing how being outside resulted in different types of stimulation from being outside. The rural children spoke of accomplishment, feeling adventurous, challenges, exploration, freedom, and gaining confidence. For example, Freddy (rural) spoke of enjoying the freedom he gets from being outside:

> *FH: So what is it about being outside that you enjoy?*
> *It's pretty much the freedom.*

While Henry (rural) spoke about enjoying the open spaces, and not feeling enclosed:

> *'Cause it's, kind of, an open space. I like quite open spaces, I don't like –*
> *enclosed I don't really like,*

Henry also spoke about enjoying climbing trees even though it could be challenging:

> *FH: Why do you like climbing trees?*
> *It's just a fun thing to do 'cause you learn from what you climb and then you*
> *can climb it again and you know what to do next time and it gives you a good*
> *view sometimes and it's challenging sometimes*

The children within the urban group also spoke about adventure, excitement, experience, and freedom. Whereas the conversation with the children from rural settings centred on being away from their parents and adult supervision:

> *FH: Can you tell me kind of in a few words what is it about being outside that*
> *you like?*
> *Taylor (urban): Being away from mum and dad.*

Fresh air

Although not a direct psychological benefit, the children spoke of fresh air in a way that I interpreted it to be a perceived benefit of being outside that was more a mental than physical state. For example, Charlie (rural) spoke of enjoying walking and cycling to school because of the fresh air:

> *FH: Why do you like walking to school?*
> *Same as I like cycling, it's just fresh air is nice. I just - wouldn't – I'd rather*
> *walk than be stuck in a hot car.*

Relaxation

Relaxation was a theme that emerged from discussions just with the rural children. The children spoke about going to places to hang out and relax and how the

countryside made them feel relaxed. For example, Henry (rural) was asked why he enjoyed the countryside and he replied:

> *The fact that you've got open space and you're, you're like, it feels just quite good that you're not with lots of cars and the noise is just, like, the wind flowing by and nice and sun sometimes. [...] Yeah, I like the quiet. So, yeah, and it makes me feel relaxed again.*

Views

Although not a psychological benefit, many of the rural children spoke about enjoying views, although did not identify a specific feeling. For example, Lucy (rural) spoke of visiting her park for the view:

> *There's specific places in the park that I like. I like going like looking right across from the Flying Fox because, at night, because you always see the sunset going down beneath the trees. I think that's really pretty.*

Happiness

Happiness emerged from discussions with children within the rural group. Henry (rural) spoke about how being surrounded by nature on a recent residential which had made him feel happy:

> *This is at XXXX residential and this is just one of my – out of my bedroom – and it's just a nice picture 'cause you've got the different trees and stuff and different leaves, so, yeah, it kind of makes you feel happy and there's not a lot of electronic devices so you're not – you're outside a lot of the time and it's good for you and, so, places I like to go.*

Belonging/identity,

The theme *Belonging/identity* emerged from an interview with Henry, who lived in a rural environment and who identified strongly with being a 'countryside boy':

> *It means like tractors and stuff, like, you hear a lot of tractors quite a lot and you don't – you, kind of, get used to the animals and you become more and more confident just to go past them and you're more adventurous, you get quite adventurous and it makes you feel nice.*

8.5 Perceptions of the neighbourhood

The subthemes that emerged from discussions with both groups were 'Changes to the neighbourhood', 'Children's voices', and 'Perceived definition'. The subthemes that emerged from discussions with the urban group were 'Aesthetics', 'Neighbourhood boundaries', and 'Perceptions of safety'; and from the rural group were 'Comparisons of rural and urban living' and 'Media influence'.

8.5.1 Changes to the neighbourhood

Discussions surrounding the changes the children would make to their neighbourhood, either physical or social, that could increase time spent outdoors resulted in the sub theme 'changes to the neighbourhood'; a subtheme which emerged from speaking to the children in both groups. The themes for both groups included *Adding more equipment, Anti-social behaviour,* and *Changes relating to traffic.*

Adding more equipment

Many of the children frequently discussed the need for additional equipment and more age appropriate equipment, as shown through conversations with both Penny and Evie, who were asked what they would want to be changed in their neighbourhood:

> *(Urban)*
> *Penny: I think there should be more things to play with, instead of just two things and nothing else.*
> *FH: Okay. Can you talk to me about some of the things you would have as well there?*
> *Penny: A roundabout, more swings because people aren't just like, are waiting there for like ages to go on the swing and some people don't even get off.*
> (Rural)
> *FH: If you could ask the council to do one thing for your environment what would you ask them?*
> *Evie: For the environment? Add more stuff to the park.*

Anti-social behaviour

Another feature in the environment that the children wanted to change was the presence of anti-social behaviour. Both groups discussed disliking behaviours such as smoking, littering, and leaving dog foul on the street as highlighted in my discussion with one of the focus groups (urban):

> *Jenny: Like smoking 'cause…*
> *Penny: Smoking, yeah.*
> *Jenny: 'Cause sometimes like little children can breathe it in and then their lungs get all ruined.*
> *Anna: I would say no smoking*

When asked how they would go about implementing change, the same girls felt signs drawn by children may have more influence than generic 'no smoking' signs:

> *Jenny: Like have signs saying 'Do not put your cigarettes on the floor' and like on top of a cigarette bin so like they can see where to put their cigarettes.*

Anna: But sometimes people don't even listen to the signs, they just ignore adult signs.
Jenny: Maybe they could put up signs by kids
Anna: Yeah, they would be more effective.
Penny: Yeah, like if, like 'cause it's children they would think like since like 'cause little kids and stuff they would think more to put it in the bin for little kids than adults.

Changes relating to traffic

For the urban group, the majority the discussion related to traffic or road related changes that would help the children cycle. For instance, Julie and Noah spoke of how it would be easier to cycle if there were lanes available just for cyclists:

(Urban)
FH: Do you cycle much?
Julie: Not that much, I think I'm starting to do more, but when you are it's difficult 'cause you get lots of people cycling home from school sometimes and you get lots of cyclists cycling along, and I think it almost would be better if we got like a cycle path or something like that because it's really busy and the cars drive quite fast down the road and 'cause it's a busy junction it's quite hard for the cars and the bikes.
(Rural)
Noah: well, you're not supposed to cycle on the pavements but then 'cause you're not, 'cause you're supposed to cycle on the road, then the roads can be really busy. And especially when there's like cars and it's quite hard to go around them and I once, I was cycling up to school and I was on the wrong side of the road.

8.5.2 Children's voices

'Children's voices' was a subtheme that appeared in both groups, with two themes; *Knowledge hierarchy* and *Feeling heard*. Children's Voices was defined as discussion surrounding whether children felt their voices (opinions/feelings) were listened to by adults and authoritative figures. The children in the urban group spoke much more of feeling unheard with regards to the adults listening to children's opinions. For example, the children felt adults '*don't think that children can be as responsible as they are*' (Tiffany, urban), or that '*the government think adults are so much more smarter than kids*' (Anna, urban). Only Noah from the rural group spoke about the council not listening to children in the same way they listen to adults:

FH: So do you think council listen to what children want in their neighbourhood?
A bit I'd say. […] Not maybe as much as they listen to adults but…
FH: Why do you think that?

> *I don't know, maybe 'cause they think adults talk a wee bit more sense sometimes*

There were children (living in both urban and rural environments) who felt their voices were heard (*Feeling heard*). An interesting perspective came from Tiffany who felt that her local council would listen to the majority; regardless of whether that was adults or children. In another example, Belle (urban) felt that the council did listen to children, and when asked why she felt that way she responded:

> *Well, I just – because first of all there's the park round here and the tennis court […] so, I think they just do good stuff.*

Charlie, who stayed in a rural area, felt that children had a voice; this was based on councillors coming to his school and asking children for their ideas:

> *FH: Do you think the council listen to what children want in their neighbourhoods?*
> *Well, yes, because lots of councillors come out to our schools and, yeah, they do take all the ideas in. Yeah, I think they do listen.*

8.5.3 Perceived definition of the term neighbourhood

This subtheme was driven by one of the research questions of this thesis. The children were all asked how they would define the term neighbourhood. The subtheme comprised three themes in both the urban and rural groups; *Community*, *People*, and *Possession*, and one theme in the urban group, *Neighbourhood boundaries*.

Community

Community emerged when children considered the definition of the term neighbourhood to be related to the concept of a 'community'. For example, Tiffany (urban) felt that for her, the term neighbourhood meant a community:

> *In most occasions, it probably means community for me.*

Anna (rural) also defined the term neighbourhood in relation to a community and nice neighbours:

> *Well, it's like a place where there's lots of different... there's houses and there's lots of people and it's a community and most people are very nice neighbours.*

People

People were a key feature of children's perceived definition of a neighbourhood. For instance, Freddy (rural) defined the word neighbourhood as:

> *Like, pretty much, like, your neighbours an', like, where you live an', like, round the place where you live.*

For the urban group, *People* appeared to be more central to their perception of a neighbourhood than the rural group. For instance, Nicky (urban) felt that the term neighbourhood was '*more about knowing the people who live around you.*' Tom (urban) suggested that:

> Normally, in neighbourhoods, you're all friends and there might be loads o' children to play with, if they're, like, younger.

Neighbourhood boundaries

Neighbourhood boundaries were perceived as an important aspect of a neighbourhood for one urban child. Belle (urban) did not give a definition of the term neighbourhood, but instead discussed what she considered to be her neighbourhood:

> *Right, so, I would say from my house all the way around to, say, my friend's house, tennis, and my other friend's house. So, I would say that's around my neighbourhood.*

8.5.4 Aesthetics (urban subtheme)

The themes within 'aesthetics' were *Neighbourhood features* and *Neighbourhood upkeep.* Both themes emerged from the children discussing what they enjoyed seeing in their neighbourhood, with regards to upkeep or existing structures. For example, Tillie (urban) spoke about enjoying seeing flowers in her neighbourhood:

> *I like seeing, like, flowers and stuff around the neighbourhood.*
> *FH: Is that for any particular reason?*
> *I think it just makes, like, the place look nicer really.*

8.5.5 Perception of safety (urban subtheme)

'Perception of safety' was defined as any discussion relating to feelings of safety (or lack of safety) within the child's neighbourhood. The subtheme comprised three themes; *High perceptions of safety, Traffic related safety,* and *Feeling unsafe.*

High perceptions of safety

High perceptions of safety emerged from data that related to feelings of neighbourhood safety. Tiffany (urban) spoke of not judging people, and how this had made her feel safer:

When I go out I see a few people that I don't think look good but you should never judge a book by its cover so I try and feel, I feel safe because I try and persuade myself to think that everybody looks fine.

Traffic related safety

Traffic related safety emerged from discussions with the children about associating safety with a lack of traffic, for example, when Belle was asked what the most important aspect of being outside was, she replied:

Belle: It probably wouldn't be being safe because our street there's, like, one car every ten minutes or something so that isn't really busy, our street, so, that's not a big problem.

Feeling unsafe

Feeling unsafe emerged from the data when the children spoke about features of their neighbourhood that made them feel unsafe. These related to social aspects of their environment, including bullies, graffiti, people who smoke and drink, and going out after dark. For example, I asked Tiffany what made her feel unsafe in her environment, and she responded:

Tiffany: Unsafe is when I'm like by myself and nobody comes out and there's a lot o' bad people.

8.5.6 Comparisons of rural and urban living (rural subtheme)

The subtheme of 'comparisons of rural and urban living' is defined as any discussion relating to perceptions of urban living in comparison with their rural setting and comprises of two themes; *Playing in the city* and *Fresh air and noise pollution.*

Playing in the city emerged from a discussion with Charlie (rural) as to whether living in the middle of the city would influence his outdoor play:

FH: If you lived in the middle of a city and you didn't have, like, the views and the nature – would you still enjoy playing outside as much?
Not as much, but, yeah, I would still definitely enjoy it. I love going outside no matter what.

Fresh air and noise pollution emerged in a discussion with Henry (rural), who spoke about his perceptions of living in the city:

FH: Do you think you would go outside as much if you lived in a big city?
Well, I don't know, it would depend on the air and stuff and if the place is, like, there's nice people then, yeah, I would go out but if there's – I don't really like stuff where it's all in, like, lots of fumes from cars.
FH: What do you like about feeling like you're in the countryside?

The fact that you've got open space and you're, you're like, it feels just quite good that you're not with lots of cars and the noise is just, like, the wind flowing by and nice and sun sometimes.

8.5.7 Media influence (rural subtheme)

'Media influence' is defined as how the children perceived media to influence their time spent outside. The subtheme emerged from my discussions with the rural children, and comprised two themes; *Negative influence of the media* and *Lack of media influence.*

Negative influence of the media

The children spoke of how they felt the media negatively influenced their outdoor behaviour. Lucy and Evie (rural) both described how they felt affected when negative events were broadcast over the media:

> *Lucy: It was all over the newspapers and everything. So like I get scared to go up there myself just in case like there's someone up there*

Lack of media influence

Contrary to Lucy and Evie, Dylan (rural) spoke of how he did not feel influenced by the media as the chances of something happening to him were small and therefore, his outside PA behaviours were not affected:

> *It's like the odds are low of them, like it's like even if they're near you it's like the odds of you being the one, I don't really get put off by that.*

8.6 Introduction to section: comparisons of area deprivation

This section discusses the findings that emerged from analysing the two deprivation-related subgroups (the coding table is presented in Appendix H). The global themes and subthemes are the same, as those in the first section of the chapter; however, to prevent repetition, the definitions of the themes are not given again. Should any themes appear that have not been previously been discussed, definitions are provided. I discuss each global theme and subtheme and the notable findings in each. Not all smaller themes are discussed as they after the first stage of analysis it was decided they were not integral to the research questions.

8.7 Affordances

The subthemes that emerged from the initial analysis of the combined data set were 'Actualised affordances', 'Potential affordances', 'Social affordances', and 'Variety of affordances'.

8.7.1 Actualised affordances

The themes that emerged from discussions with children living in both higher and lower areas of deprivation were *Activities, Equipment, Non-normative affordances, Play, Preference of surface, Purpose of locations*, and *Sports/Sports facilities*. The group of children living in areas of higher deprivation had two further themes: *Lack of affordances* and *School grounds.*

Activities

The children living in more affluent areas spoke of more activities compared to the children living in more deprived areas. The children who stayed in less affluent areas spoke of den building, football and cycling. The children staying in more affluent settings spoke of cycling, football, fox finding, golfing, and hill climbing. Both groups spoke of cycling and football, with two of the children in the lower deprivation group noting that cycling was their favourite activity:

> *Mollie (lower deprivation): I like riding my bike outside. It's my favourite thing to do.*

Equipment

Both groups of children talked about specific pieces of equipment they played on; swings and monkey bars emerged in discussions within both groups, while the flying

fox emerged from discussions with the children who lived in more affluent areas, and trampolines emerged from discussions with children who stayed in the more deprived areas.

Aside from specific pieces of equipment, the children also discussed their perceptions of their neighbourhood equipment. The children who lived in the more affluent settings spoke about feeling happy with the amount of equipment available:

> FH: do you wish there was any more equipment?
> Tillie (lower deprivation): No, I don't think so.

The children staying in poorer areas preferred locations that offered more choice of equipment. For example, Julie, who lived in a more deprived area, discussed preferring the park, as there was more to do:

> Julie: Well, there's more things at the park. Like [the urban jungle] that's good, but there's not that many different things to do, almost, like you can play tig and everything, but there's not equipment to use and things, whereas the park, there's like swings and everything.

Non-normative

Both groups discussed using locations or objects in a non-normative manner. Nicky (higher deprivation) spoke of using objects such as benches and trees to create football space:

> I play in this little section here, from where the bench is kind o'? And this section here where the two trees are as well. And then I put a jumper there or two footballs or cones on each side and we play a game of football 'cause, you know, I play an awfy lot with my friends.

Tom (lower deprivation) noted that the swings in his playground were for younger children, so he actualised the affordance in a way that made it fun for him:

> Like the big swings, like, the ones that's not got any side, they've got, like, the square around them so, like, babies can fit in them – so I normally just stand up in them and swing.

Play

Both groups spoke of the importance of play, however, it was more prevalent in the discussions with the children living in the more deprived areas. These children were more likely to talk about where they went to play, and how the environment helped them to play. For instance, Julie (higher deprivation) spoke about an overgrown area of her school playground that allowed her to play specific games:

> *Well, it does get cut but like it's meant to be like that. So, it's like, well, we play lots of games down there, so like camouflage and things, so you can like hide in between them which is good 'cause like if it was all cut then you wouldn't be able to do anything*

Preference of surface

Children in the higher deprivation group discussed using the surface for play, lying down, skateboarding and how the surface changed affordances for activities, with grass being the predominant surface of choice. For example, Julie (higher deprivation) spoke of enjoying 'seeing' grass because she'd rather be on grass than concrete:

> *Yeah. Well, I think the grassy areas as well. Like there's lots of grass everywhere, so I like to see like all of it growing and everything*
> *FH: Why is that important to you?*
> *Well, I just like it and it looks nice and if like... I'd rather it be grass than concrete. […] Yeah, 'cause it's hard if you were to play on concrete because then if you were like to fall it would be much sorer than on grass.*

Nicky (higher deprivation) spoke of how the surface changed football affordances:

> *I like both grass and concrete because when you're playing football, concrete makes it bouncier. But I like to play in goals so then you can dive, instead of when you're not on concrete. When you're on concrete you just have to like stick your foot out so it's harder to save it.*

The only time concrete was preferred was for biking and skateboarding:

> *FH: And what about on the concrete, is that good for any type of play that you do?*
> Taylor (higher deprivation): I like to play on my bike. It's also good for like skateboarding

For the children in the lower deprivation group, grass was also the preferred surface for relaxing, lying down, playing and cycling. Henry, who lived in an affluent suburb, also spoke of numerous other affordances for cycling, such as concrete for speed, bumpy surfaces, and water:

> *FH: Why do you like the stream?*
> *It's just, like, you can go through it quite fast and then you brake as hard as you can to not hit the fence 'cause it's locked all the time. And you get wet and, like, I like getting wet and muddy so it's, 'cause it's kind of, like, a lot of fun, like, you can, you get muddy and then when you get back into your house you get a nice shower or something and get cleaned up*

Purpose of locations

Both groups of children spoke of visiting places because of their space, proximity to central locations and the views. There were differences between the two groups where children living in more affluent environments spoke more about proximity, for

example Belle visited a location less because it was further away. Views were also noted as a reason behind visiting locations, and there were little differences between the two groups. Space was discussed more frequently from children living in more affluent areas who discussed needing space to play games or 'running about', such as Tom:

> *FH: What is that the main thing for you, when you're outside?*
> *Tom: Mm hmm, space.*
> *FH: Why is that?*
> *Tom: So I can run about.*

Children from more deprived environments did speak of space, but more in relation to be outside as there was limited space indoors:

> *FH: How would you describe to [other children] the feeling of being outside?*
> *Noah (higher deprivation): I don't know what I'd describe to them. I would probably say you were missing a lot but yeah, I'd say it's really good to be outside 'cause there's more space than inside and you can do, necessarily you can probably do more things outside.*

The lower deprivation group also spoke of visiting locations because of their intrinsic associations with a place, locations that offered multiple affordances, the presence of nature, the lack of people, the size of the locations and the location's affordances for games. Fields were discussed as places to go and play, roads and pavements were also mentioned as a place for scooting and cycling; the park was spoken about multiple times by different children as somewhere they went as it had lots play opportunities, and more equipment to play on/with, and was a good place to go with friends. For example, intrinsic associations of place were spoken of by Charlie (lower deprivation) who noted that he went to places for 'an adventure' or because it was a 'secretive' place:

> *That's a place for adventure, like, the woods are really big so it's nice to just walk around and me and my friend from the estate made a treehouse there which was really good fun.*

Sports facilities/Sports

Children in the higher deprivation group spoke of sports, in relation to it being their favourite activity outside, whereas the lower deprivation group just spoke of accessing sports facilities:

> *Charlie (lower deprivation): Well, this here is a running track, I'm not sure if we covered that. That's a hockey pitch in there as well. Sometimes we go in there just to play football if the gate's closed in the other park 'cause that gate's always open.*

School grounds

Julie spoke of actualising play equipment within school grounds in relation to the school making affordances more exciting or creating affordances for play:

> *Julie (higher deprivation): This is also a bit of the school, it's like the climbing wall that we have, which is good because like it makes the wall a bit like cooler almost 'cause it used to just be a plain wall but then they added these so it's fun.[...] This is one of the things that are on this and it's like a big... like we got the willow from... we got willow and then like the person that did it made it into like arches so you can run through it and everything.*

8.7.2 Potential affordances

The themes for children in both groups were; *Unsuitable equipment*, *Busy roads*, and *Weather*. The higher deprivation group had five further themes; *Hierarchy of locations*, *Fear*, *Change to the affordance*, *Adult restrictions* and *Light*. The lower deprivation group had three further themes; *Mood,* and *Other children*.

Unsuitable equipment

Unsuitable equipment emerged in the discussions with both groups, and related to children perceiving the equipment as too small or for children younger than themselves. Noah who lived in more deprived environment spoke about the lack of usable swings:

> *I don't like the swings because like it's a baby swing, like a car seat, like, and the car seat, like you can't even swing on it. It's like you can go like this on it but you can't actually swing.*

Tiffany, who lived in a more affluent setting, also felt that the equipment in her neighbourhood was unsuitable when compared to her friend's parks:

> *Well, where I live, no, not really because it may look big but this stuff is actually quite small. But I have gone to friends' areas where they do have parks and places that they have quite tall things. Also I went to XXXXXX and they have a lot of the same equipment as some of my friends' parks do, that are actually suitable for our age but there's quite a few, like, baby swings and baby slides.*

Busy roads

Busy roads related to both groups of children suggesting that traffic or issues with their roads prevented them from activities such as cycling. Although this theme emerged in the discussions with both groups, it was more predominant amongst the lower deprivation group. For both groups of children, the primary activity that was

prevented due to busy roads was cycling. For example, Henry felt cycling at rush hour was difficult, while Tillie believed parked cars prevented her from playing on pavements:

> *Tillie (lower deprivation): That's of cars parked in the street going up, but they're annoying because it's just, I mean, you've less space to do stuff. So if you're, like, I don't know – playing on the pavement outside your house and, like, it means you have less space and stuff.*

Weather

Weather emerged from how weather was believed to influence perceived affordances. When the children discussed the weather, they spoke about how different weather could create opportunities/change how they played in their environment. For example Charlie talked about playing a different football-related game when it rained called 'wall-y' which was played in a local shelter; hills being used for sledging and using trees for shelter from the rain.

The following themes relate to the higher deprivation groups only.

Hierarchy of locations emerged from discussion with Noah; he did not choose to actualise a locational affordance because there were other places he preferred. *Fear* emerged from discussions with Lucy who chose not to use the nearest cycle path because she felt scared, as it was isolated:

> *Lucy (higher deprivation): there's not a lot of people walking normally. Like, it's only dog walkers and cyclists, and then you don't very often see people or anything if you're by yourself and there's not someone older than you or your mum or your dad something could happen because, well unless you scream really, really, really, really loud… then no-one's probably gonna hear you if something bad happens to you. Like you fall over or worse.*

Change to the affordance emerged from children suggesting that would use a piece of equipment or visit a location if minor changes were made. For example, one focus group discussion spoke of altering the surface so they could visit the playground more when it was wet:

> *Lucy (higher deprivation): Possibly have actual like playgrounds that we can go on most of the time so when the field's wet, like actually we could have something there.*
> *Evie: Yeah, there's like, there's only something in the field, there's nothing anywhere else*

Adult restrictions was a theme that related to children being prevented from actualising an affordance due to restrictions put in place by adults such as teachers restricting locations:

> *Julie (higher deprivation): Well, sometimes it's the weather again because if it's too rainy then we're not meant to go on 'cause you could slip up on it and fall 'cause it's really rainy and everything. [...] I think it's just in case anyone gets hurt but I'm not sure, yeah. I would like it if you could get on all weathers that would be better.*

Or council officials placing signs such as 'no ball games':

> *Noah (high deprivation): the big grassy area just across from that and we can't really do anything in it because they put up this sign saying 'no ball games'.*

Mood influenced some children's choice of locations. For example, Charlie only actualised a location if he was tired, and would actualise another location if he were 'jumpy and excited'. *Other children* influenced children's decision to actualise playground equipment. Belle suggested that when the park was 'really, really crowded you can hardly get on anything', while another child felt that the park was visited by younger children who she did not want to spend time with and therefore, chose not to visit the park.

8.7.3 Social affordances

The themes for both higher and lower deprivation groups were *Friends, Family, Community, Social intimidation,* and *Mobile phones*. Two further themes emerged from discussions with children living in more deprived environments; *Age of the children,* and *Peer acceptance*.

Friends

Friends emerged from discussions with all the children, particularly that friends provided company, created affordances, influenced location and encouraged the children to spend time outside. The idea of company was more predominant with children that lived in more deprived neighbourhoods, with children noting they would be lonely or bored outside without friends. Friends creating affordances emerged from discussions with both groups of children who spoke about friends allowing them to do more activities outside. For example, Nicky (higher deprivation) felt that, *'if you don't have friends then you can't do anything, like stay out or play'*. The children discussed how their friends influenced where they went. For instance in both groups' children

noted that they would only go to the park if they were with their friends. Discussions with the children from the lower deprivation group suggested that their friends had a positive influence on their PA behaviour, which was not apparent in the higher deprivation group.

Family

Family emerged from discussions with both groups, although the children from more deprived areas discussed the influence of family less than the children living in affluent areas. Children from more affluent neighbourhoods discussed company, grandparents' location, and siblings. Furthermore, activities with the family were much discussed more by children in the lower deprivation who talked about going cycling, playing football, outdoor photography, playing tennis, and going for walks. For example, Belle (lower deprivation) spoke of playing Tennis with her dad:

> *Yeah. I just play it with my dad really.*
> *FH: How long have you been doing that?*
> *Well, we used to go after school, [...]*
> *FH: And why tennis?*
> *'Cause it's fun and my uncle got me this tennis racket and tennis balls for Christmas, so, yeah.*

Community

Community emerged from the discussions with both groups, although the children living in more affluent environments did speak more about the importance of a feeling of community. For these children, there was a lot of discussion relating to feeling safe due to 'nice people' and the importance of neighbours:

> *Henry (lower deprivation): Most people we know and they are, they're nice people.*
> *FH: Does that make you feel safer, that you know them?*
> *Yeah. It can, because it means that when they pass by I can just talk to them.*

Social intimidation

Many of the children discussed how they felt intimidated, specifically by teenagers, and how this influenced their time outside. For both groups this related to teenagers either doing drugs, or taking up equipment and the children not feeling confident enough to ask to use the equipment:

> *Noah (higher deprivation): Well, I go round the street a lot on my bike but I don't go close to the park because I've had a problem where like some of the older like teenagers or something, like they'll pick up your bike and start*

riding round the park on it if you leave it unattended for even just a minute to go on a climbing frame or something.

Mobile phones

Both groups of children acknowledged how important they perceived mobile phones to be with regards to their independent mobility and where they could visit locations either later, 'Well, I liked it 'cause I could contact my mum and dad so I could stay out', or visit locations that were further away:

> *Nicky (higher deprivation): I've got my own phone now so I can just take that with me, go to Arthur's Seat, say "I'm going to climb."*

Children that lived in areas of higher deprivation discussed the following themes.

Other children emerged from discussions with children talking about how they perceived different locations to attract different types of children. For example, Noah, who lived in a more deprived environment, felt that the play park was mainly for younger children:

> *FH: what kinda kids do usually go to the play park?*
> *They're usually younger.*
> *FH: Okay, so it's a different type of kid?*
> *Yeah, well sometimes over in the swings over here there's older people but mostly they're in the skate park.*

Peer acceptance emerged from children not wanting to be seen with their parents by other children of a similar age, as it was considered either embarrassing or would influence whether the child was considered 'a loner'. This influenced where the child would go outside and whether they drove or walked to a location:

> *FH: So do you go anywhere with your parents?*
> *Lucy (higher deprivation): Places you have to go in the car.*

8.7.4 Variety of affordances

'Varity of affordances' emerged from discussions with both groups of children. Both groups noted how important it was that there was 'lots to do', and 'more to do'. For example, Charlie (lower deprivation) chose to go to the big park because there was more to do:

> *FH: which do you go to the most?*
> *The big park.*
> *FH: Okay. What is it about what's there that draws you there most?*
> *Just more things to do there because there's swings, there's monkey bars, there's platforms*

8.8 Perceived benefits of being outside

The subthemes that emerged from the analysis of the transcripts were 'Perceived psychological benefits' and 'Perceived physical benefits'.

8.8.1   Perceived physical benefits

The themes within both groups were *Being active*. The children from higher deprivation also discussed *Physical fitness*, whilst the children from the lower deprivation group discussed *Health*.

As with the urban and rural comparisons, the children perceived time outside to be more related to psychological benefits than physical benefits. The children living in more deprived areas spoke more of the physical benefits compared to the children from more affluent neighbourhoods. For example, Julie, who lived in a more deprived area, talked about how the playground was good for keeping fit:

> *This is the trim trail, so like you go round that way and then you can use that. So, it's basically, it's fun 'cause you get to like go around and it's keeping you fit as well 'cause you're like running round*

8.8.2   Perceived psychological benefits

Companionship

Companionship emerged from the discussions in both groups, although was more predominant within the low deprivation group. There were slight differences between the two groups, for example, the higher deprivation group were more likely to discuss meeting new people as a positive outcome of being outside:

> *FH: Okay. And tell me about why that's your favourite place.*
> *Charlie (higher deprivation): 'Cause I like football and no matter what, even if your friends aren't there, there's always someone else to play with even if you don't know them 'cause you will always make friends there.*

Freedom

Freedom emerged from the discussions with both groups. However, children who lived in poorer areas spoke about it more frequently. When I asked what Freddie enjoyed the most about being outside, he responded 'It's pretty much the freedom.'

Belle, who lived in a more affluent environment than Freddie, also mentioned freedom:

> *FH: Where would you say you're most active?*

> *Belle: I would probably say XXXX Park.*
> *FH: And why is that?*
> *Belle: Well, there's more stuff to do there. There's another park there, there's a big area to play, be free, be wild.*

Fun

Fun related to children discussing fun as the outcome of spending time outside, either taking part in activities, spending time with friends or as definition for what being outside means to the children. The children from areas of higher deprivation mentioned fun more frequently and for them, the outcome fun related to activities, walking to school, playing on equipment or just being outside. For example, Noah spoke of how playing football outside is fun. Nicky also noted that he goes outside to 'look for fun'.

Children from areas of less deprivation felt fun was often the main reason they went outside and was thought of as a motivator to spend time outdoors. For instance, Tiffany (lower deprivation) spoke of how fun influenced her decision to go and spend time outside:

> *I don't really think about going outside for, to be active, I usually, I think when I think, 'Should I go outside?' I think yeah, I should because it'd be fun, I would be active and I just love being outside.*

Mental and physically stimulating

Mentally and physically stimulating emerged primarily within the lower deprivation group and included discussions around accomplishment, adventure, life skills, and competition. For example, Henry spoke of feeling accomplished when he had cycled up uphill. The experience of being outside emerged from discussions with children living in higher deprivation areas, with regards to spending time outside, learning new skills, and wasting a soul. For instance, when Nicky (higher deprivation) was asked how important he felt it was to be outside, he replied:

> *Very important, 'cause if you weren't outside you wouldn't be able to understand the outdoor world – you'd just be looking at it from windows, wouldn't be actually be able to go experience what it's like. And if you didn't have, like, outdoors you wouldn't go see like swans, capture eels and put them in ponds, see replicas of whale bones, you know, you wouldn't get to see the national flower of Scotland.*

Nicky also felt that being active outside was integral to living, when asked what life would be like without activity or outside he responded it would be 'a waste of a soul'.

Other themes that emerged from the discussions with children who lived in more affluent areas were *Belonging, Fresh air, Happiness, Independence, Purpose, Relaxation, and Space. Fresh air* emerged when children talked directly about fresh air being the reason why they went outside. *Happiness* was also a mentioned as an outcome of spending time outside. One child mentioned going out on his own which was coded as *Independence. Relaxation* emerged either through going outside to relax or aspects of being outside, such as the countryside and nice views, being perceived as relaxing. *Space* was discussed in terms of the children not liking feeling 'enclosed' inside, and space offered them the chance to escape this.

8.9 Perceptions of their neighbourhood

For the majority, the subthemes relating to their perceptions of the neighbourhood were the same for both groups of children; 'Changes in the neighbourhood', 'Children's voices', 'Perceived definition of the term neighbourhood', and 'Perceived safety'. Only children living in areas of higher deprivation discussed 'Media influence'.

8.9.1 Changes in the neighbourhood

The themes for both low and higher deprivation groups were *Adding in equipment, Anti-social behaviour, More opportunities for children*, and *Traffic related changes. Appearance of the neighbourhood* emerged from conversations with children living in areas of lower deprivation, while *Safety related changes* emerged from discussions with children who lived in areas of higher deprivation.

Adding in equipment

For the children living in more affluent environments, key concepts that were discussed were; adding more playground equipment, a fence to separate age groups within play parks, adding in a sports pitch to play sports on, and more equipment that is age appropriate. For example, Tiffany (lower deprivation) was asked what she would add to her park and she replied:

> *I like taller things because we're quite tall so then if you go on the mini slides you're about the same size as it and for me, equipment for our age is equipment our size. And some people think that people our age are grown out it and that's why they do smaller equipment for smaller people but we still, I still like going out and actually playing on the equipment, 'cause sometimes if you haven't got a ball or anything there's not much to do. And so the*

> *equipment's there to sort of have fun with and so it would be nice to get some, like, things fit to us.*

The children from more deprived neighbourhoods also discussed adding equipment to the park and the skate park, and adding age appropriate equipment. For example, Freddy was discussing how he would change the park, and when I asked him what made his friend's park better than his, Freddy responded:

> *Well, our one's good but they have, like, more stuff and they've got, like, a flying fox which I really like and, like, pretty much a climby frame type things, like the one which you can go straight up tae the top. Yeah, and like... that's it. Well, and a slide 'cause it's got, like, our one doesn't even have a slide.*

Anti-social behaviour

Although anti-social behaviour emerged from the discussions within both groups, it was more evident from discussions with the children who stayed in less deprived areas. These children discussed picking up dog foul, picking up litter and rubbish and banning smoking in outside places. When Henry (lower deprivation) was asked what he would change if he was in the council, he replied:

> *Cause it's, kind of, really popular but getting less as it goes along 'cause people know that it can kill you, smoking can kill you. [...] Yeah, I would definitely change it. Just say, get a stop to it, 'cause it's just killing people and children and if their dad smoked the children breathe it in, and it's not good for the children. And sometimes if people if – you might throw a cigarette just onto the ground and it could start a fire 'cause there might have been, like, an oil leak.*

For the children who were from the areas of greater deprivation, the only reference to changing anti-social behaviour was picking up dog foul.

More opportunities for children

The children all felt that within their respective neighbourhoods, there should be more opportunities for children, in terms of play and also sports. For instance, Tillie (lower deprivation group) talked about wanting more places to play:

> *FH: What would make you think 'Oh that would encourage me to be outside a bit more'?*
> Well, not really. I mean, I guess if there were more places like that you could go, like, more like parks and stuff round about or more that sort of like public areas that are like made for like playing and stuff.

Nicky (higher deprivation) also discussed the need for more places to play on during the winter:

> *It's like the parks are mainly on the grass, like one, the park just round the corner you're not allowed in it the whole winter because it's just always wet, it is. And it's like a swamp, the park so you can't really go into it.*

Traffic related changes

For both groups, although discussed slightly more frequently by the children living in more deprived areas, emerged the theme *Traffic related changes*. Children from both areas spoke of making changes that would make them feel safer with regards to busy roads. In the higher deprivation group, Julie spoke of making pavements wider 'cause then you can like walk with your friends'. Freddie also spoke of putting in a path to make walking to school safer, and Evie spoke of putting in place more traffic calming measures. In the lower deprivation group, the majority of references were made to changes such as putting in traffic lights; 'I think if there were traffic lights here it would make it easier'.

Appearance of the neighbourhood

Appearance of the neighbourhood only emerged from discussions with children who lived in areas of greater affluence and referred to changes the children would make regarding the appearance of their neighbourhood. For example, when Mollie (lower deprivation) was asked what the council could change, her response was predominantly related to appearance:

> *Maybe pick up litter. They cut all the grass at the side of the road but they never pick up the litter or anything.*

8.9.2 Children's voices

The subtheme, 'children's voices' emerged from conversations with the children when they were discussing their beliefs of whether adults in authoritative positions, such as the council and government, listen to their ideas to improve the neighbourhood. Within this subtheme, one theme emerged from both groups was *Knowledge hierarchy*. In the lower deprivation group, a further theme emerged; *Feeling heard*.

Knowledge hierarchy

Knowledge hierarchy emerged from the discussions within both groups and primarily referred to children feeling adults did not want to hear what they had to say. For

example, Tiffany (lower deprivation) discussed that adults should listen to children as sometimes children are just as responsible as adults:

> I do think children count. 'Cause also some people don't get to vote and things because they don't think they're old enough and responsible. But some adults I think don't think that children can be as responsible as they are, because children can make good decisions.

Taylor (higher deprivation) also felt that adults would not listen to what children had to say:

> *'Cause we're so young, like they do-, they wouldn't listen to us I think, like if we wanted something to change, I don't think they'd listen to us. Because like we're young and they'd just think we were talking a load of rubbish probably.*

Feeling heard

Feeling heard emerged from the discussions within the lower deprivation group that discussed children feeling the council did listen to what they had to say. For instance Charlie (lower deprivation) felt that because councillors came to his school, it showed they listened:

> *Well, yes, because lots of councillors come out to our schools and, yeah, they do take all the ideas in. Yeah, I think they do listen.*

8.9.3 Perceived definition of the term neighbourhood

For both groups, the concept of 'neighbourhood' was perceived to be a social construct. For the lower deprivation group, the themes were *Community, People,* and *Proximity*. For the higher deprivation group, the themes were *Community, People,* and *Possession.* There was a small difference between the two groups, with children in the higher deprivation group using words 'neighbours' and 'your neighbourhood' more than children in the low deprivation group, who were more likely to use words relating to proximity, such as 'people who live near you', and 'people that live around you'.

Some of the children did mentioned the term 'place' when asked to define the term neighbourhood. For instance, Tillie, who lived in a more affluent area, defined a neighbourhood as:

> *I'd say it's, like, a place near where you live. Like, the people that you know*

Although some children mentioned the term place, it was always followed by a social construct and the children did not give any more detail when it came to where they

meant when they referred to a 'place'.

8.9.4 Perceived safety

The subtheme *Perceived safety* emerged from discussions with the children when they mentioned their perceptions of safety in their neighbourhood. In both groups the theme *perceived safety* related to the children speaking of feeling safe in their environment. There were little differences between the two groups. One noticeable difference was that the children from less deprived areas referred to people when discussing safety, whereas children from more deprived environments discussed more physical aspects such as, locations and traffic crossings.

8.9.5 Media influence

Media influence emerged from discussions with the children who lived in environments of higher deprivation discussing how the media influenced their time outside. For example Lucy (higher deprivation) noted that the papers had reported a dog-napper and it had put her off going to certain locations:

> *On the news or something is it like something about dog-nappers and like someone, they were disabled, they were in like their wheelchair and they were walking their dog and someone tried to cut the lead. It was all over the newspapers and everything. So like I get scared to go up there myself just in case like there's someone up there.*

8.10   Introduction to section: comparisons of gender

The research aims of this thesis were set out to explore comparisons between environmental contexts in which the children lived. However, much of the literature within PA research considers gender to be integral, and too important not to discuss. Therefore, in accordance with much of the PA literature, I will now present an analysis of gender, and how the boys and girls of this study perceived their environment. Only the Global and Sub-themes will be discussed.

8.11   Affordances

8.11.1 Actualised affordances

The children of this study actualised equipment in very similar ways, regardless of gender. Both genders spoke of using the equipment in a non-normative way due to it not being age appropriate. For example, Owen noted that he preferred one park to the other as it was quieter and allowed him to use the equipment the way he wanted to:

> *Owen: Well, I prefer that park to the other one.*
>
> *FH: Why's that?*
>
> *There's less little kids there and we're more able to use the stuff how we want to, like we can climb on it and hang off it and no one can tell us off. I like going to both parks though, just depends what me and my friends want to do.*

Mollie also discussed using park equipment in an 'improper' way:

> *FH: So in the parks, are there things that, enough things for children your age?*
>
> *Mollie: Not really, 'cause there's only like a flying fox and things. It's not fun if you use it properly, like.*
>
> *FH: Ok, talk to me about using it properly.*
>
> *Mollie: Well, like, this climbing frame, we just jump off the top and don't actually slide down the slide. […] It's more fun jumping off the top instead of sliding down.*

Girls spoke more about needing more room and enjoying open spaces. For example, Tiffany discussed with me that she visited a local park because it was big field:

> *Well, these two are of my local park and I like to go there because it's really, it has a big field so you can play ball games and things.*

The amount of room the space provided also came up with girls when talking about park space. An example of this is how Julie appreciated the way park was designed:

> *Julie: Like I like the way it's [the park] laid out and I like how like 'cause at the start apparently it was just a big like patch of mud and then they made it*

> *into that, so it's good how they made it into that so we've got something to do. [...] Well, there's like bridges and there's like bits that you can like go through, so it's quite fun and there's... like you can play tig and there's more room almost.*

Although not as frequently discussed, some of the boys did mention the need for space when outdoors.

> *FH: What is that the main thing for you, when you're outside?*
> *Tom: Mm hmm, space.*
> *FH: Why is that?*
> *Tom: So I can run about. [...] Yes. More space to run about.*

Boys were more likely to discuss the need for variety in surfaces in order to take part in activities such as cycling. For example, Henry spoke about enjoying different surfaces providing cycling affordances:

> *Yeah, I like the bumps 'cause you can sometimes do jumps down the hill and then-*
> *FH: So, you don't mind that it's not all manicured and...?*
> *Yeah. I like bumps more than just flat but flat's good for speed, like, on my road bike but bumps are good for having a go at your jumps and it's sore on your hands and your arms.*

The boys also mentioned different surfaces for football, playing and scooting. Charlie specifically spoke about the surface he would look for to play on:

> *FH: So, when you think of being outside and playing, what kind of surface, what kind of environment are you in?*
> *Well, yeah, I wouldn't be on concrete. I would definitely be on either astroturf or grass. Something soft, something like, not as hard, something where you can muck around or, like, jump around.*

Boys and girls both considered proximity important to their time outside, particularly in relation to being able to spend time with their friends. For example, Jenny spoke about choosing to visit a park close to her because she was more likely to run into her friends:

> *Basically always the park where we always meet up 'cause you're always near to it. And we always… even if you're not even there to meet your friends, sometimes you just appear to see them. So yeah, definitely the park that's near to us.*

Nicky spoke of proximity in terms of playing football with his dad:
> *Nicky: [Looking at a photograph] Oh yeah, I remember that bit, I like that bit. That's where me and my dad play football.*
> *FH: So why do you choose to play there as opposed to anywhere else?*
> *It's like really near my house.*

Children discussed that they would prefer more equipment in the park and that it is more fun at the park because of the number of opportunities:

> *FH: Why's it fun at the park?*
>
> *Noah: It's like there's tons of things to go on or you can play football with stuff at the kick pitch.*

The boys and girls spoke frequently about all the different affordances that they would incorporate into their play outside. A quote from Nicky emphasises that having lots of trees and bushes helped them play different games, but also play in bad weather:

> *Nicky: Since we're talking about nature, as you said, I've got a back green bit and it's like just plain and there's nothing too exciting. So I was, I would like if it was a lot o' trees planted there, it was like a forest with bushes, and you could have a good game of hide and seek there and it would be much better 'cause if it was a rainy day all the trees would cover it all up anyway so you could still play when it was on a dark day, so you don't have to sit around playing on your phone and your laptops, Xboxes, stuff like that.*

Belle also spoke about visiting locations because there was more to do, and why she felt she was more active in her local park compared to other places:

> *FH: Where would you say you're most active?*
>
> *I would probably say XXXX Park.*
>
> *FH: And why is that?*
>
> *Well, there's more stuff to do there. There's another park there, there's a big area to play, be free, be wild.*

8.11.2 Potential Affordances

Both genders spoke of older children intimidating them from playing, or spending time in certain areas. Many of the children discussed how they felt intimidated, specifically by teenagers, and how this influenced their time outside. For both groups this related to teenagers either doing drugs, or taking up equipment and the children not feeling confident enough to ask to use the equipment:

> *Noah: Well, I go round the street a lot on my bike but I don't go close to the park because I've had a problem where like some of the older like teenagers or something, like they'll pick up your bike and start riding round the park on it if you leave it unattended for even just a minute to go on a climbing frame or something.*

The boys also were more likely to note that playground equipment was not safe, and gave it as a reason to go to another play area:

Noah: The swings are okay but that's needing painting and it's also like because it's like, the slides are, the thing's metal and the floor it's metal as well, so it's got like not a lot of grip on it, so sometimes it's slippy and you really have to be cautious of like you might slip and like hit your head off it or something like that. So, yeah, and there's like a wee kind of, it's kind of like chains there, it's like a chain thing to climb up but it's like really loose and once Connor's wee brother he was climbing down it and I think, well I think it was his wee brother anyway but his foot slipped and he landed in between the chains, he did, and he was stuck there for a while, so… and I don't really go up those chains anymore.

The girls were more likely to discuss choosing not to visit a location if it got dark outside as they felt 'different people' would be out after dark, which discouraged them from playing outside:

Anna: I avoid going at night 'cause I don't like it like when there's maybe people out there and stuff like that. Mostly people, different people come in in the night and they do stuff like… just different things.

In fact, throughout the discussion with the girls, they were more likely to not visit places because they felt intimidated. This was not necessarily down to seeing intimidating people, but rather it was an isolated location. For example, Evie did not go down a specific path because she felt it was too secluded.

Evie: There's not a lot of... there's not a lot of people walking normally. Like, it's only dog walkers and cyclists, and then you don't very often see people or anything if you're by yourself and there's not someone older than you or your mum or your dad something could happen because, well unless you scream really, really, really, really loud [...] then no-one's probably gonna hear you if something bad happens to you. Like you fall over or worse.

8.11.3 Social Affordances

As with the previous too analyses, social affordances influence the children time outside, regardless of gender. Similarly, friends were considered to be very influential to time outside, although in slightly different ways dependent on gender. In terms of what they did outside, boys did seem to be more influenced in the type of activity they participated in, as the boys often spoke of PA that would need more than one person, such as football, or visiting locations such as skate parks, where it was a social activity as much as an active one.

Charlie: I always like to go to XXXX in the summer because you can go and play football with your friends at the football park

FH: How does being with friends affect how active you are?

> *Owen: I'm definitely way more active with my friends. Like, I wouldn't really go outside without them. They encourage me to go skating, or to the park, I think most of the places that I'm running around are places I go with friends. If I like, if, well say I dinnae have friends, I think I'd not go ootside, I'd just play video games.*

Girls were influenced by friends, but more in relation to that they enjoyed spending time together, rather than it directly influenced the games they played or locations they visited. For example, Lucy noted that she enjoyed going outside just because *'It's fun cause your friends are there'*.

Family was also important to both genders, in terms of encouragement and joining in PA with them. There were no differences in relation to how family influenced their time outside or the PA outside. Both girls and boys spoke of being motivated by their parents, parents being positive role models and participating in sport and PA outside with their parents as illustrated by the quotes below from discussions with Julie and Henry:

> *FH: So, what do you guys, what's, talk to me about a family weekend.*
>
> *Julie: Well, usually when I'm training on a Friday night or a Tuesday my mum and dad will go out for a run, and then on the Saturday if it's nice weather me and dad will probably, me and my dad'll probably play some football or something.*

> *FH: Do you think you're more active because you have quite active parents?*
>
> *Henry: Yeah, 'cause, like, they don't just go out to the pub every night and drink and smoke and stuff. They like, they go out and do stuff with us and they're good parents.*

Community also appeared equally important to both genders, the boys and girls spoke about how having a friendly community around them helped them feel safe and encouraged them to spend time outside. For example, when asked if moving to a new location would influence outdoor time, Charlie said:

> *Well, at the beginning, yes, it would influence but if I got to know friends like I did in this neighbourhood then, no, it wouldn't influence me going outside.*

A social influence that was discussed frequently, and by both genders, was the influence lollipop persons had on their route to school, noting how much easier it made walking and cycling to and from school:

> *Julie: Well, like I don't like when the roads are really busy 'cause then it's hard almost when you're walking to school, like when there's no lollipop man.*

Noah: No, for the main road there is a crossing patrol that I go across most of the time.

Is that like a lollipop person?

Yeah.

Okay. Is that quite handy for you?

Yeah. Especially when I've got my sister with me.

8.12 Perceived benefits of being outside

'Perceived physical benefits' were defined as those that might accrue from being outside. There were very few differences, with both the girls and boys spoke of spending time outside helping you to achieve physiological and psychological benefits.

8.12.1 Physiological benefits

The boys spoke slightly more about the potential physiological benefits than the girls, speaking more about 'being active': as mentioned by Tom:

FH: give me a description for why you like going outside.

Tom: Playing wi' friends, getting active, being out in the fresh air.

Nicky also referred to how being outside caused him to be active without consciously thinking about being active:

Like, you don't know, you just go outside, and then eventually you're just like, 'You know what, I'm just gonna go in for my friends and play,' and then you're just being active and you're just doing it without really knowing what you're doing.

The girls however, spoke more about exercise and keeping fit. For instance, Julie spoke of using the wall at school to keep fit:

This is the trim trail, so like you go round that way and then you can use that. So, it's basically, it's fun 'cause you get to like go around and it's keeping you fit as well 'cause you're like running round.

Penny spoke about enjoying cycling to school because it helped her exercise and get places faster:

Because if you're cycling you're like your legs are getting, like you're exercising on it. So you, well you can get places like quite, much faster and also I just kind of prefer cycling because it's more exercise and, yeah.

8.12.2 Perceived psychological benefits

'Perceived psychological benefits' were defined as how the children perceived the outdoor environment to influence their mental or emotional state. Both groups spoke much more of the psychological benefits of being outside compared to the physical benefits. There were few differences between genders, though there were slight differences in the terms they used, or the emotions they related to feeling when outside. For example, Belle spoke about being free when she was outside, whereas a couple of the boys spoke of having independence.

Fun was spoken about by both girls and boys, and was frequently discussed as being the main reason why the children spent time outside:

> *Tiffany: I don't really think about going outside for, to be active, I usually, I think when I think, 'Should I go outside?' I think yeah, I should because it'd be fun, I would be active and I just love being outside.*

The boys were more likely to speak about adventure when spending time outside. A quote from Nicky illustrates how important he felt it was to spend time outside in order to 'experience what it's like':

> *Nicky: Very important, 'cause if you weren't outside you wouldn't be able to understand the outdoor world – you'd just be looking at it from windows, wouldn't be actually be able to go experience what it's like. And if you didn't have, like, outdoors you wouldn't go see like swans, capture eels and put them in ponds, see replicas of whale bones, you know, you wouldn't get to see the national flower of Scotland.*

Henry also spoke about how spending time outside made him feel connected to his identity as a country boy, the theme of identity did not emerge from discussions with the girls:

> *Henry: It means like tractors and stuff, like, you hear a lot of tractors quite a lot and you don't – you, kind of, get used to the animals and you become more and more confident just to go past them and you're more adventurous, you get quite adventurous and it makes you feel nice.*

8.13 Perceptions of the neighbourhood

8.13.1 Changes in the neighbourhood

When asked what they would change in their neighbourhood, both genders spoke about adding additional equipment, however, it was slightly more prevalent with the girls, as shown through conversations with both Penny and Evie, who were asked what they would want to be changed in their neighbourhood:

Penny: I think there should be more things to play with, instead of just two things and nothing else.

FH: Okay. Can you talk to me about some of the things you would have as well there?

Penny: A roundabout, more swings because people aren't just like, are waiting there for like ages to go on the swing and some people don't even get off.

FH: If you could ask the council to do one thing for your environment what would you ask them?

Evie: For the environment? Add more stuff to the park.

The girls were also more likely to speak about removing anti-social behaviour from the neighbourhoods. Both groups discussed disliking behaviours such as smoking, littering, and leaving dog foul on the street, but it was more frequent with the discussions with the girls.

Jenny: Like smoking 'cause…

Penny: Smoking, yeah.

Jenny: 'Cause sometimes like little children can breathe it in and then their lungs get all ruined.

Anna: I would say no smoking

When asked how they would go about implementing change, the girls felt signs drawn by children may have more influence than generic 'no smoking' signs:

Jenny: Like have signs saying 'Do not put your cigarettes on the floor' and like on top of a cigarette bin so like they can see where to put their cigarettes.

Anna: But sometimes people don't even listen to the signs, they just ignore adult signs.

Jenny: Maybe they could put up signs by kids

Anna: Yeah, they would be more effective.

Penny: Yeah, like if, like 'cause it's children they would think like since like 'cause little kids and stuff they would think more to put it in the bin for little kids than adults.

Both genders felt that changes should be made to traffic to increase safety in the environment. For instance, Julie and Noah spoke of how it would be easier to cycle if there were lanes available just for cyclists:

FH: Do you cycle much?

Julie: Not that much, I think I'm starting to do more, but when you are it's difficult 'cause you get lots of people cycling home from school sometimes and you get lots of cyclists cycling along, and I think it almost would be better if we got like a cycle path or something like that because it's really busy and the

cars drive quite fast down the road and 'cause it's a busy junction it's quite hard for the cars and the bikes.

Noah: well, you're not supposed to cycle on the pavements but then 'cause you're not, 'cause you're supposed to cycle on the road, then the roads can be really busy. And especially when there's like cars and it's quite hard to go around them and I once, I was cycling up to school and I was on the wrong side of the road.

8.13.2 Children's voices

As discussed in the previous two analyses, many of the children often felt adults did not listen to what they had to say in relation to their local environment. There was no difference between genders, with both the boys and girls feeling like they should be asked their opinions more often.

FH: So do you think council listen to what children want in their neighbourhood?

Noah: A bit I'd say. [...] Not maybe as much as they listen to adults but...

FH: Why do you think that?

Noah: I don't know, maybe 'cause they think adults talk a wee bit more sense sometimes

Tiffany: I don't think that children can be as responsible as they are

Anna: the government think adults are so much more smarter than kids'

As mentioned previously, the children who did feel as though their voices were heard, included both genders, and revolved around council members coming into schools and asking the children for their opinions.

8.13.3 Perceived definition of the term neighbourhood

This subtheme was driven by one the research questions of this thesis. For both groups, the concept of 'neighbourhood' was perceived to be a social construct. Elements of community, people, and social constructed boundaries were present in the conversations with both genders.

For instance, Freddy defined the word neighbourhood as:

Like, pretty much, like, your neighbours an', like, where you live an', like, round the place where you live.

Tiffany felt that for her, the term neighbourhood meant a community:

In most occasions, it probably means community for me.

Anna defined the term neighbourhood in relation to a community and people:

> *Well, it's like a place where there's lots of different... there's houses and there's lots of people and it's a community and most people are very nice neighbours.*

As previously discussed, some children mentioned the term place, it was always followed by a social construct and the children did not give any more detail when it came to where they meant when they referred to a 'place'.

8.13.4 Perceived safety

Safety in the environment emerged primarily from the discussions with the girls. They spoke about traffic related safety, and being surrounded by 'bad people'.

I asked Tiffany what made her feel unsafe in her environment, and she responded:

> *Tiffany: Unsafe is when I'm like by myself and nobody comes out and there's a lot o' bad people.*

When Belle was asked what the most important aspect of being outside was, she replied:

> *Belle: It probably wouldn't be being safe because our street there's, like, one car every ten minutes or something so that isn't really busy, our street, so, that's not a big problem.*

8.13.5 Media influence

Media influence emerged only from discussions with two girls who discussed how the media influenced their time outside. For example Lucy noted that the papers had reported a dog-napper and it had put her off going to certain locations:

> *Lucy: On the news or something is it like something about dog-nappers and like someone, they were disabled, they were in like their wheelchair and they were walking their dog and someone tried to cut the lead. It was all over the newspapers and everything. So like I get scared to go up there myself just in case like there's someone up there.*

8.14   Overall findings

To conclude the chapter I present an overview of each global theme from the combined data set on how all the children who took part in this study experienced their environment.

8.14.1 Affordances

All of the children spoke about how important playground equipment was to their time outside. Many of the children referred to using objects in the environment in a manner that would not be considered normative, and appeared to do this for the purposes of fun or for a challenge. Play was spoken about by children frequently, and was often considered the main reason for going outside. Affordances also influenced why children visited locations. For example, the size and openness of the space was considered important by many of the children, with most children choosing to visit locations that presented an open space for playing games with their friends.

In many cases, there were affordances that children perceived but did not actualise. Mood often influenced affordances; children would choose a location based on what their needs were for their mood, for example whether they were tired, excited, or needed to relax. Traffic was also perceived to be a barrier to play and activity. For instance, the children spoke about not being able to play on pavements due to parked cars, not being able to skate home due to busy traffic, and being confident enough to cycle on roads because there was too much traffic. Children were largely influenced by social affordances; friends were the most influential social affordance, whilst the influence of family was largely dependent on residential context. Variety of affordances emerged from discussion with the children about the need or desire for locations to offer multiple affordances in terms of equipment and activities. Many of the children spoke about having more fun, or would be more likely to choose a location based on whether there was more than one affordance.

8.14.2 Perceived benefits of being outside

The children discussed the perceived benefits of being outside as a key reason why they chose to spend time outside. Although many children mentioned physical health related reasons, the children spoke more about psychological benefits of spending time outside. These included; companionship, belonging, enclosed, freedom, fresh air,

fun, happiness, mentally or physical stimulation, a sense of purpose, relaxation, and the experience. Companionship was one of the more frequently benefits referring to meeting new people, talking to people, playing with their friends, and that they would be lonely and bored inside. Freedom was also important with many of the children, referring to both the feeling of freedom with regards to space, as well as the increase of independent mobility and lack of parental supervision. Fun was also a benefit of spending time outside, and they purposefully took part or sought out activities that would result in fun.

8.14.3 Perceptions of the neighbourhood

For the majority of children, the definitions of a neighbourhood centred on social concepts; community, people, and neighbours for example. Physical constructs were seldom mentioned, and when discussed were often alongside a social construct.

Changes to the neighbourhood were based on children discussing potential changes they would make to the neighbourhood if they were given the opportunity. The most frequently discussed change was adding more play equipment to the neighbourhood. Many of the children felt there was a need for more swings, and climbing frames, and adding in more age appropriate equipment, as much of the existing equipment was designed for younger children.

The children also discussed anti-social behaviour. The children suggested strategies to stop adults smoking in public; child-designed signs placed where adults smoke. The children felt adults may ignore signs from other adults, but may pay more attention to signs drawn by children. Changes related to traffic was also frequently discussed by the children, most often referring to needing to put in place more safety measures for cyclists. Children discussed the need for separate cycle lanes, so that they could cycle to more places, including school. The children also discussed wider pavements and more traffic calming measures.

The children also discussed their views of adults listening to children's opinions and needs. When the children did speak of feeling heard, it was often in relation to the council coming into their school regularly. However, the children were aware of a knowledge hierarchy, perceiving adults feeling superior to children. Many of the children felt that adults do not respect children's opinions because they are not seen as intellectually equal and adults know about 'more important stuff' than the children,

and that that because they are children, adults think they are 'talking a load of rubbish'.

8.15   Summary of chapter

This chapter has presented a detailed overview of the verbal findings from my study. I have given a descriptive dialogue of the data that emerged through both types of data collection methods. I have first discussed the comparisons between urban and rural, and then the comparisons between different levels of area deprivation. I have then gone on to give a brief analysis of gender, noting that there were few differences in how the boys and girls in this study influenced and experienced their environment. The following chapter goes on to discuss the findings in relation to theory and past literature, highlighting how my findings have furthered our knowledge of childhood outdoor PA behaviours, and provided an original contribution to the literature.

CHAPTER 9: DISCUSSION AND CONCLUSION

'That's the real problem with the world; too many people grow up. They forget what it is like to be 12. They treat children as inferiors. I won't do that.'

Walt Disney

9.1   Introduction

The overall aim of this thesis was to explore children's perceptions of their environment to understand what factors might influence their time outside, and, in turn, their likelihood of being physically active. In this final chapter I present the findings to each research question and discuss how my findings contribute to existing theory, literature, policy, and practise.

9.2   Research Question 1: How might physical affordances influence children's place preference, and how might they influence meaning behind choice of location? Do children from different levels of area deprivation and degree of urbanicity use and experience places differently?

I found that physical affordances play an integral role in influencing where children spend their time. The importance of affordances changed depending on where children lived (area deprivation, degree of urbanicity), which in turn influenced the child's preferred place as well as impacting how they perceived and used their local environment. Preferred physical affordances were also dependent on the child's emotional state. Some children designated locations with an emotional outcome (i.e., specific green spaces were for relaxing). These emotional outcomes were often tied in with the affordances that location offered.

9.2.1 Risky behaviour

Risky play is defined as 'thrilling and exciting play that can include the possibility of physical injury. The desire for risky play opportunities is a finding that has repeatedly surfaced throughout the literature regarding children's play behaviours (Green, 1997, Wyver et al, 2010, Sandseter & Kennair, 2011). Types of risky play include play 'at

height, speed, near dangerous elements (e.g., water, fire), with dangerous tools, rough and tumble play (e.g., play fighting), and where there is the potential for disappearing or getting lost' (Brussoni et al., 2015 p.6425). Risk is perceived by many as having negative connotations (Tulloch and Lupton, 2003), and is something that should be avoided. Yet the discussions with all children from my study, regardless of their residential context, suggested they *did* want a higher element of risk in their play. Even without using the term, it became apparent that they felt their current opportunities were devoid of any challenge, were too safe, and offered no opportunity to test their abilities or encounter difficulties. The children appeared to equate safe with boring, and they related fun to a sense of adventure and challenge, and thus what might be viewed as risk. It has been argued that a focus on safety with regard to children's play may be hindering children's development and health (Wyver et al., 2010). Different explanations exist to explain why children participate in risky play behaviour. Some have noted that other children are a key influencing factor to children acting in risky ways (Morrongiello et al., 2013); while others have noted that risky play is simply normal behaviour in children (Brussoni et al., 2012). Jambor (1995), offering an alternative explanation, suggested that when children are not sufficiently challenged it can lead to boredom that can result in 'inappropriate equipment use' – which could be interpreted as the emergence of risk. My findings suggest the latter two reasons, as the children never spoke of taking part in challenging activities to appease their peer groups. The children did however, speak of playing with equipment in a unique way and seeking out suitable play spaces. This latter explanation is supported by previous research which has shown that if no appealing play opportunities exist in a play space, children will actively seek out alternate options to experience a more fulfilling play experience (Brussoni et al., 2012).

In relation to creating unique play experiences, the children in my study utilised existing play equipment, but in a non-conventional manner. Previous research suggests that when given the opportunity, children will create challenging play areas that match their capabilities. For example, Jongeneel et al. (2015) found that children, when designing their own playground, opted for a less uniform set up, and chose to create a playground that matched their perceived capabilities. Findings from my study suggest that children were, in effect, designing their own playground, and thus

creating opportunities that matched their perceived capabilities. From a theoretical perspective, Gibson's affordances may offer further insights into the conceptualisation and mitigation of risk by referencing perceived capabilities. Affordance theory suggests that affordances only exist if perceived by the observer, i.e., the child can only interact with an affordance once they have perceived it as such. Hirose and Nishio (2001) supported the notion that the perception of affordances might be based on the observer's body (and its capabilities). The child would only perceive an affordance if their body and their perceived capabilities allow it. This would then help to explain the work by Jongeneel and colleagues' in that the children only created a playground that matched *their* perceived capabilities, therefore ensuring the availability of risk but to a degree that was managed.

A clear division exists between what children want and subsequent provision. Many local governments are modifying environments to reduce all possibility of injury (Brussoni et al., 2012) while interventions have instilled fear into children in a bid to reduce risky behaviour (Morrongiello and Matheis, 2007). Little and Eager (2010) suggest that equipment being provided to children reflects the safety priorities of the local government as opposed to the more risky-preferences of the children. This is also echoed in the paper by Wyver and colleagues (2010) who noted that, whilst increasing safety in playgrounds may have a small impact on improving injury rates, this would be at the expense of providing children with activities that are developmentally appropriate, challenging and enjoyable. The findings of these previous papers, and those of my study help to shed light on the difference between unsafe play and play that incorporates risk. While measures should be taken to protect children from unsafe play, the element of risk should not be removed from all aspects of play.

9.2.2 Multiple affordances

To encourage children to spend time outdoors, the findings of this thesis suggests that our physical environment would benefit from the construction of multiple affordances. Identified in photos, drawings and through focus groups and interviews, an environment that affords movable equipment, play areas focused on nature, and overall variety is one that will impact the children's time spent outdoors.

This is a finding that is repeated throughout the child PA literature. Recent work from Prieske et al. (2015) found that children selected a playground that offered more variation. Similarly, Kaczynski et al. (2008) found that parks with more features were more likely used for PA behaviours than parks with fewer features. Another study found that MVPA was higher in parks that compromised of more facilities such as courts, playgrounds, sports fields, and paths (Shores and West, 2008). However, the children in my study did not just suggest variation in equipment and facilities, but also suggested the need for different surfaces in order to facilitate different types of play. This is supported by previous literature: for example, Willenberg and colleagues (2010) noted that an overarching sentiment from the children in their study was the need for surfaces such as grass *and* concrete in order to play different types of games. Wyver and colleagues (2010) reflected that a 'uniform surfacing of playgrounds can only be seen as a limitation to learning' (p.265), and my study's findings would support such a statement.

Willenberg and colleagues (2010) also found the children raised concerns over the provision of fixed equipment only as it hindered their play experience. The children in my study did not speak directly about equipment being fixed or movable, but both raised similar concerns over stilted play due to old-fashioned and one dimensional structures. Although Willenberg and colleagues study was an exploration of school playgrounds, the findings strike a similar resemblance to that of my study, and therefore suggest transference from what children want in school playgrounds to what they need in community playgrounds. Sancar and Severcan (2010) also reflect this concept of diversity in play spaces while studying place preferences in children aged 9-11 years. The authors note that static structures can become boring after a period of time, as the ways to interact with the structures are limited. However, freely movable play structures, including features of the natural environment, have more opportunities associated with them.

Although there were few differences by area deprivation in perceived play opportunities, children from the rural areas were vocal about requiring multiple play opportunities in one space, such as climbing trees, playing on equipment, cycling downhill and playing in streams. A discussion point that was not evident among the more urban-based children. An interpretation of this finding is that the rural-based children – by the very nature of being exposed to variety in rural parts of the country

– identified affordances that they had experienced, and enjoyed, before, whereas those in urban areas were unable to do so because their local environments have never afforded those opportunities (e.g., hills, streams, and trees to climb). Alternatively, because rural children in this study were often reliant upon parents to take them places in the car, they could not travel to other locations as easily as urban-based children, and therefore identified the need for more opportunities within closer proximity. Previous literature has stressed the importance of variety within playgrounds (Prieske, et al, 2015; Kaczynski et al, 2008; Willenberg et al, 2010; Sancar and Severcan 2010). However, my findings provide preliminary evidence that advances our knowledge by identifying the need for greater variation in affordances, particularly for children in rural settings.

9.2.3 Proximity

The sections thus far have been framed within Gibson's physical affordance framework, highlighting the importance of the physical environment and its ability to afford opportunities for children to spend time outside. An additional issue that was equally important for the participants was the acknowledgement of proximity. The children in this study acknowledged that they would primarily visit parks, playgrounds and greenspace that were close to their home. This is supported by previous work. For instance, Lavin Fueyo and colleagues (2016) reported that greater distance to parks is associated with reduced use by children. Grow and colleagues (2008) also reported that proximity to large parks and public spaces was positively associated with frequent use by children.

An interesting finding of my study was that many of the children - when identifying somewhere in close proximity to their homes they could go to be active in addition to somewhere their parents allowed them to visit - mentioned their own school grounds. A number of studies have highlighted the importance of the school environment as a setting for PA behaviours: Klinker et al. (2014) for instance identified that children spend a considerable amount of time in MVPA on school property; Oreskovic and colleagues (2012), using GPS and activity monitors, found that children aged 11-12 years obtained 8.4% of their MVPA at school (only 2.4% less than in parks and playgrounds); Rainham et al. (2012) found that children aged 12-16 years obtained around 20% of their total MVPA at school; this was similar to a study by Kneeshaw-

Price and colleagues (2013) which found that children recorded 26.8% of their total MVPA at schools (compared to only 4.9% at parks).

My findings suggest that some (although not all) of the children chose to go back to the school environment in order to play with friends and family outside of school hours. The importance of the school grounds is understandable given that for many children aged 10-11 year, schools are close by, somewhere they feel safe and familiar, and a space where they can easily meet their friends. McKendrick (2005) has noted that school grounds are a unique setting that can help to encourage PA behaviours. McKendrick also noted that while school grounds were a good resource for play opportunities, the ways in which they are used could be developed and improved. Some of the children in my study, for example, noted that they could not visit their school grounds outside of school times because the gates were closed and locked. It is possible that some children are less active during this time because they do not have places to visit that would encourage PA behaviour – including those that are open and spacious, which afford multiple options to the user. With school grounds being identified as important locations for activity, leaving school play areas open outside of school hours may help to increase PA levels. Policy should still be developed to encourage the continual growth and development of open, spacious school grounds that affords multiple options for users. This is touched on in the section relating to implications on policy (section 9.9).

With regards to proximity and the environmental subgroups, differences did emerge between the children. The concept of 'proximity' appeared to be less established for the children living in rural settings. Previous work, although limited, has suggested that children living in rural settings have access to fewer PA promoting facilities than urban children (Comstock et al., 2016), and this may play a role in the perceptions of rural children. It is unclear whether staying in more remote areas alters the perceptions of proximity or there is an inherent acceptance that opportunities that provide affordances are further away. Future studies however, should explore this further.

In contrast many of the urban-based children in my study spoke of proximity in relation to visiting friends and going to a nearby park to meet friends – something that was absent in the narrative of rural children. This is a novel finding and identifies a social component to the understanding of proximity – specifically in urban children.

As such, it merits further investigation within future studies. There are studies that have found children from small urban cities to be more active than their rural counterparts (e.g., Joens-Matre et al, 2008) and this could be explained through a possible association between PA and proximity of friend's houses. Moreover, previous work by Macdonald-Wallis and colleagues (2011) has shown that urban children report being friends with people who have similar PA profiles, highlighting the importance for social networks and PA levels. However, given the inconsistencies relating to urban and rural PA in children, and the lack of objective measures in the current study, this interpretation should be viewed with caution, and would require further research to understand in more depth. Additionally, there are several limitations associated with urban/rural PA studies, which make interpretation difficult; as noted in the narrative review of the topic by McCormack and Meendering (2016) many studies define rurality differently, do not use objective measures for assessing PA levels, and recommendations of PA vary among different countries.

In addition to degree of urbanicity, proximity seems to be relevant to those living in deprived and more affluent areas. As noted in Chapter 3, a review by Aziz and Said (2012) found that children from more deprived neighborhoods were more likely to play closer to home. Additionally, Veitch and colleagues (2008) found that children from more affluent neighbourhoods were more likely to be active in parks, playgrounds and streets further from their own homes. Humbert et al. (2006) also found that children from schools in more deprived neighbourhoods were more likely to be influenced by proximity than the children from schools in more affluent neighbourhoods. The findings from my study challenge these previous studies, as the children living in more affluent neighbourhoods mentioned proximity more often than children from more deprived areas. However, the difference in age and context may explain the disparity between the findings as the participants involved in the study by Humbert and colleagues were Canadian, and between 12 and 18 years old. An alternative explanation may counter previous notions of proximity as solely a matter of accessibility (Veitch, Aziz & Said); where instead, the desire to form or maintain social networks may advance our understanding in this area. Combined together, this is a key example of how the physical and social environment can interlink to influence place preference, a key component of Gibson's theory.

Although many children in my study chose locations that were close by, and this is often cited as a common reason for visiting a particular park (Cohen et al 2006; Cohen et al 2007), my findings also existed that contrasted with that narrative, making it an important discrepancy to discuss; some children did not go to the closest park because there was nothing for them to play with. What could be described as symbolic proximity, if an area is not suitable to an individual's needs, the area will not be within their perceptual field (Macintyre et al., 2008b). Grow and colleagues (2008) support these findings; in a study exploring two sources of PA for youth - active transport and recreational areas such as playgrounds - the authors noted that close proximity to a recreation site did not always equate to use, and identified that a lack of desirable features is a common barrier. Proximity seems to be important for children of this age, but perhaps not at the expense of matching children's needs.

9.2.1 How does emotion influence choice of physical affordances and place preference?

A novel finding of this thesis was that emotional state may pre-determine location choice. Feeling happy, excited, or relaxed influenced where the children would go within their neighbourhood. In Chapter 2, place preference was discussed and two concepts of place preference were noted, including the concept of 'environmental self-regulation'. Environmental self-regulation suggests that the physical environment can help to regulate one's emotions, and a preferred location will change depending on the child's emotional needs. My findings suggest that not only does the preferred location change, but that children are aware of this regulating feature of the environment, and choose locations depending on which emotion they wish to pursue. Moreover, relating back to affordances, the location was linked to an emotional state because of what the location offered in terms of affordances. This particular finding only emerged from discussions with a small number of children from rural and more affluent areas. Nevertheless, it suggests that children may be more consciously aware of the connection between place and emotion than we may have previously thought.

Previous research has shown that children create strong emotional links with specific locations; however, much of this literature focuses on childhood memories, rather than present day information (Morgan, 2010, Sebba, 1991, Sobel, 1990). There has also been research regarding children's favourite places and how emotions can

contribute to a location being perceived as a favourite place (Korpela et al., 2002) and that children develop strong emotional bonds with particular locations over a duration of time (Hay, 1998). There is a dearth of literature that has shown children reflect on their emotional state, or what emotional state they would like to achieve, and then choose a location because it provides an affordance that compliments that emotion. Figure 9-1 illustrates how my research has potentially advanced our knowledge regarding how children go about selecting their environments.
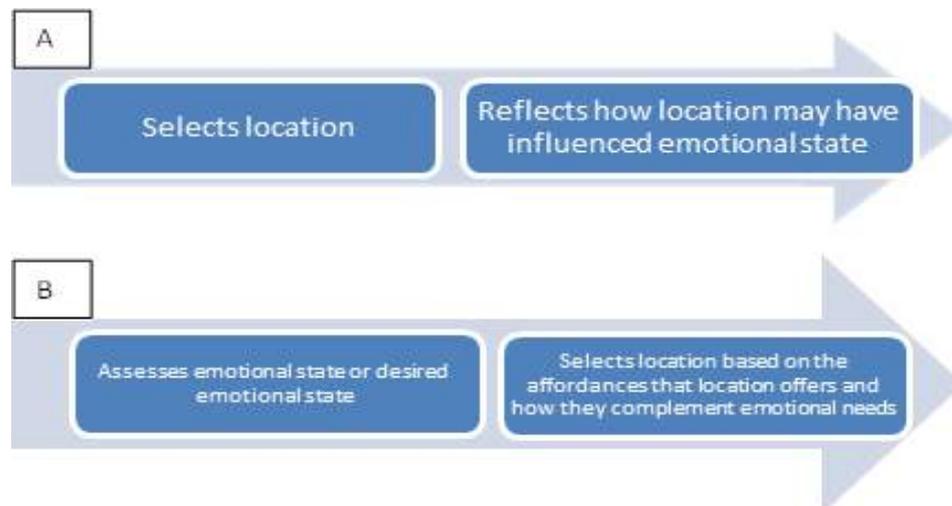
Figure 9-1 Comparison of (A) previous research and (B) the findings of my study.

Past research has suggested that children and young people may have favourite places that help to regulate their emotions; Korpela (1992) suggested that 17-18 years olds can use favourite places to help them regulate their emotions during times of great sadness or happiness. Thurber and Malinowski (1999) found that boys chose favourite places based on solitary qualities. However, both studies focused on the concept of favourite places, which fails to understand how children use their environment in a more day-to-day approach. Asking children purely about their favourite places limits our understanding of how children perceive their environment. A child may need to go somewhere to achieve a specific emotion or because the location furnishes that specific emotion, such as sadness or stress; this does not mean the child regards this place as a favourite location.

My findings also suggest that it is the affordances, rather than the environment as a whole, that helps to regulate the child's emotions - consistent with an aspect of place attachment theory (Morgan, 2010). The theory suggests that children value a place

based on what the physical environment can do for them (Hay, 1998), compared to adults who value a place more due to its social meanings (Massey, 1994). My findings concur with Hay's: children choose a location based on the physical affordances it offers. It also provides an understanding of how the theory of affordances and the theory of place preference can influence one another.

Thus far in the discussion, I have portrayed how the findings from this thesis answer my first research question, exploring how physical affordances can influence children's time spent whilst outdoors. The following section discusses how my second research question was answered, namely how social affordances can influence children's time outside, and how these affordances could help to increase childhood PA.

9.3 Research question 2: Are children influenced by social affordances within their environment when spending time outside? If so, how might social affordances differ between are deprivation and urbanicity levels?

Social affordances play a significant role in influencing children's time outside. Overall the most significant social affordance appeared to be friends, in terms of outside activities and general willingness to spend time outside. This was evident for all of the children, regardless of residential context. A key difference was that children from more urban areas felt that friends provided them with more opportunities when outside, suggesting that urban children are more reliant on social affordances, which may be a result of a lack of close-by friends in rural neighbourhoods. Other influential factors were parents, social intimidation, and social networks with the neighbourhood.

9.3.1 Friends

Out of the different social features in their environment, friends appeared to be the most prominent feature that influenced outdoor time. Discussions with children suggested that that more time was spent outdoors if their friends were available; if they could not find their friends, or their friends were busy, they would not go outside. This supports previous research that has found strong associations between friends and PA behaviours (Edwards et al., 2015, Jago et al., 2009, Macdonald-Wallis

et al., 2012). Past research has found that friends can influence the PA levels through various processes, including encouragement, modelling through their own behavior, and participating in PA with friends (Fitzgerald, Fitzgerald, Aherne, 2012; Maturo & Cunningham, 2013). These past studies reflect findings in my study, with the children discussing how their friends provided encouragement, and acted as a social affordance that enabled them to play more types of activities.

The children in this study also spoke of spending more time with friends in areas that were not specific play spaces. This is in line with findings by Woolley (2007) who reported housing estates as popular play spaces because they were areas where friends could meet up spontaneously. This element of spontaneity is perhaps a key reason why friends were so influential to the urban-based children in the current study.

While the association between friends and PA levels in children is well established in the literature, there is a significant gap in the research exploring whether children from different environments place similar importance on friends. This study found few differences between children from varying levels of deprivation, yet found clear comparisons between urban and rural children. The urban-based children appeared to rely on the presence of friends more so than their rural counterparts. The children living in urban areas spoke of their friends creating affordances that encouraged PA. As previously discussed, urban-based children lived in close proximity to their friends and many of their photographs included scenes with their friends. In discussions, it felt as though urban-based children were rarely outside without their friends, therefore it is plausible that many of their games and activities were group-based. Referring back to the findings by Woolley (2007), it could be argued that urban-based children are aware that if they go outside spontaneously, they are more likely to be able to enjoy the presence of their friends. Another possible explanation that has already been discussed in this chapter is proximity and access; the urban children spoke of living close to their friends and finding it easy to meet up with them after school and on weekends. The rural-based children however, spoke more of physical rather than social affordances. Although they spoke of friends providing encouragement to go outside, for company, and influencing locations visited, the rural-based children did not speak of activity levels increasing or friends creating PA affordances. There is limited research that qualitatively explores differences between urban and rural children's perceptions of the PA environment. Moore and colleagues (2010)

investigated barriers and facilitators of PA in rural and urban adolescents (mean age was 12 years). Although their aim was to understand comparisons between the groups, the study discusses very few differences between urban and rural-based youths. In terms of friends, the study simply states that all participants felt they were influential in their PA. The lack of consistency between my findings and Moore's could reflect discrepancies in culture as Moore and colleague's study took place in North America, variability in methods due to the inclusion of parents in their data collection, or the difference in participant ages.

Children from all areas acknowledged that friends were influential to place preference in that certain locations were associated with time spent with friends. Furthermore, when talking with the children, it became apparent that there were certain places that they would only visit with friends, due to fear of being there alone, or that activities were limited when friends were not present. This was a finding recurrent within the pilot study, where the children required different types of play affordances dependent on whether they were with their friends or by themselves. This supports the theory of affordances, in that affordances can alter dependent on the social circumstances/needs of the situation. A study by Korpela (1992) found that activities and friends were the most likely reasons for visiting a favourite place. There is a considerable gap in the recent literature qualitatively discussing the reasons why children visit particular locations in their environment. In a quantitative study with children aged 5-8 years old, Corder et al (2011) found that there was a positive relationship between a greater variety of locations and participating in more vigorous PA, and that common locations of PA were playgrounds/parks, school grounds (after hours) and friends' homes. My study supports the theory that friends are influential in the place preference of children's PA but more research needs to be conducted to understand how type of PA can change depending on the social environment.

My study adds to the current literature by suggesting that place preference is similar regardless of area demographic. Although the specific location may vary between area of residence, there is a common consensus that if a child perceives a location as somewhere they can spend time with their friends, they are more likely to visit that setting. Although the reasons and contexts varied, overall, friends were extremely influential to the children spending time outside, regardless of where they lived.

9.3.2 Parental influence

9.3.2.1 Safety concerns

Many studies have found that parental safety concerns, such as stranger danger and traffic, is associated with the amount of time children spend outside (Sallis et al., 2000). The children in this study did not feel that their parents' concerns influenced their time outside or caused the children to have concerns about their safety. The only exception to this was the children's ability to walk to school and this will be discussed later. The children did speak of avoiding specific locations during certain times of the day, although this appeared to be as result of their own concerns regarding social intimidation rather than a consequence of their parent's reservations. This suggests the children not only were given autonomy in where they went, but they then demonstrated a level of awareness and maturity by choosing not to go to locations that they perceived as unsafe. What stood out among the children in this study, was not only the independence they were given by their parents, but their consciousness of their own safety and decision making skills when deciding where to spend their time. This also links back to encouraging children to participate in risky play, which can also encourage children to be more independent and learn how to navigate the world with more confidence.

The most frequently mentioned perceived parental concern was in relation to traffic, particularly among children living in more rural and more deprived areas. Although children in more deprived areas spoke of their parent's traffic concerns they did not relate it back to influencing their autonomy in their environment. Rural children did perceive this to influence their mobility. This finding was interesting given that urban children tend to live in areas of higher traffic density (Mayer, 1999). One explanation could be their parent's awareness and concerns of many high-speed roads in close proximity to their homes, and very few pedestrian safety features, such as zebra crossings and pavements in more rural areas. Some of the children enjoyed walking or cycling to school but their parents did not allow it. A recent study found that half of cyclist fatalities take place on rural roads and 43% of pedestrian casualties on 60 mph roads (which are likely to be in more rural locations) are killed or seriously injured - this compares to 25% for 30 mph roads, which are more common in urban areas (Rehfisch, 2014). The children who lived in accessible rural areas did feel concerned about traffic and wanted more to be done to increase safety. Rural children were keen

to walk or cycle to school yet were unable to, due to their parents not allowing this behaviour; however the children also gave the impression that they did not mind this restriction as they agreed it would not be safe. Research has suggested that active travel can contribute up to 30% of a child's daily PA levels (Van Sluijs et al., 2009; Voss et al., 2015). Therefore, rural-based children are missing out on a key source of PA. Much of the evidence in the field suggests that rural-based children are less likely to actively commute to school (Dalton et al, 2011; Johansson, Laflamme, and Hasselberg, 2012). Davison, Werder and Lawson (2008) suggested, similar to this study, that common barriers for rural-based children are the lack of infrastructure around walking and cycling. This study found similar barriers, but also acknowledged that parents have concerns over safety because of the inadequate infrastructure, and that children were restricted because of parental concerns. There has been a great deal of research acknowledging that parents govern their children's mode of transport to school (Carver et al., 2013; Pont et al., 2011; Hume et al., 2009; Panter et al., 2008). However, in my study, while the direct restriction was a result of parental restriction, this was largely influenced by the lack of supportive environment. This has been reflected in studies across the globe, including Salmon and colleagues (2007) in Australia, who found that over 60% of parents in their study reported environmental barriers to their child actively commuting to school.

9.3.2.2 Parental boundaries and adult restrictions

Previous studies have asserted that children today have less independent mobility than previous generations (Kyttä et al., 2015) with parental concerns having a negative effect on children's independent mobility (Foster et al., 2014), particularly children living in urban, and areas of high deprivation (Eyre et al., 2014, Schoeppe et al., 2015, Lopes et al., 2014). However, there is a lack of literature that centres on children's views about the topic (Zubrick et al, 2010). Two exceptions of this have been a study by Carroll and colleagues (2015) and a study by Nansen and colleagues (2014). Both studies implemented methodologies with children to better understand children's view on their mobility and concluded that independence in the environment is something they enjoy and is integral to their time outside. The children in my study echoed similar statements, however the children did not feel as though parents were restricting to their mobility. The children did not discuss many restrictions relating to their time outside, and did not offer any examples of having to be watched, having a

strict curfew or being unable to roam freely. That is not to say that the physical distance that they roam is larger or equal to previous generations; I did not measure the physical distance that the children travelled from home. The children themselves however did not consider themselves limited. In the discussions, the children said that they felt free and adventurous when they were outside, suggesting children may not be restricted as previously thought, or at the very least, children themselves, do not feel restricted and still enjoy a sense of adventure.

My study found evidence to suggest that living in different types of areas may have an effect on how influential parents are in terms of boundaries and independent mobility. Both urban and rural children discussed boundaries in similar ways, suggesting there were little evident differences. This contrasts with previous literature such as the work by MacDougall, Schiller, and Darbyshire (2008) who compared perceived boundaries in rural and urban children in Australia, and found urban children were much more restricted, whereas rural children had very few boundaries. A possible explanation is that the culture of boundaries in rural Australia may be different to the culture in Scotland. Additionally, the level of rurality may be incomparable. The children in MacDougall and colleague's study were from a rural island, suggesting a much higher level of rurality than the current study.

However, differences did exist in children across levels of deprivation. Children from higher deprivation areas did not speak specifically about parental boundaries, while the children living in more affluent areas did discuss the subject. In support of my findings, recent research has suggested that children living in higher areas of deprivation have fewer parental restrictions on their PA in the neighbourhood (Noonan et al., 2016c). Noonan and colleagues found that children living in more deprived areas reported higher levels of independent mobility, despite their parents reporting less favourable environments. One possible explanation is that children from more affluent areas are more likely to have access to a garden, and therefore their parents do not feel higher mobility in their neighbourhood is necessary (Noonan et al, 2016c; Chuang et al, 2013).

With regards to non-parental restrictions, the children did feel restricted by public signs forbidding play. The children would see an area of green space and perceive this space as an affordance for games such as football and rugby, but in most cases would be deterred from actualising the affordance due to 'No Ball Games' signs. Other

studies have reported this too, for example Morrow (2003) found that children felt a strong sense of exclusion due to anti-play signs such as 'No Ball Games' signs. Morrow (2008) further reported that these signs lead to children facing contradictions in that on one hand they are being encouraged to be more physically active, but on the other hand are discouraged from using the spaces around their home to be active. Scotland's Play Strategy has noted that all anti-play signs will be removed across Scotland (The Scottish Government, 2016). This welcome decision was actioned by Aberdeen City Council first. They made it a priority that all ball games signs were to be removed in time for UK National Play Day, August 3rd 2016 (www.aberdeencity.gov.uk). The remainder of Scotland has also decided to remove anti-play signs in a bid to increase outdoor activity.

9.3.2.2.1 Mobile phone access and boundaries

One factor that appeared to influence the children's security and confidence within their neighbourhood was access to a mobile phone. This was particularly relevant for the urban children, regardless of area deprivation. The children appeared to feel more secure and confident with a phone, and this translated to the children staying out later, visiting locations further away from their house, and enabled them to feel and perhaps be more independent (i.e., going outside when they wanted). This is consistent with a study by Brockman et al. (2011), who noted that mobile phones allowed contact with parents, and because of this, the children were allowed greater independent mobility. In a global report on children's independent mobility, owning a mobile phone was positively associated with independent mobility, although this was only the case in some countries (France, South Africa, Ireland and Australia) (Shaw et al., 2015). A recent study on independent mobility found that children used mobile phones as companions in order to increase their independence in the environment, and these were thought of in the same way as going somewhere with friends or relatives (Nensen et al, 2014). Similar to my study, Nensen and colleagues noted that mobile phones provided the children with more security and confidence, whilst alleviating parental fears. Research has also found mobile phones to free children of curfews (Pain et al 2005), a finding echoed by the children in the current study. Pain and colleagues (2005) also noted that children's permitted spatial ranges increase with the presence of a phone Whilst there is no objective data from this study to suggest

children with mobile phones did explore more space with a phone, the children did perceive that they could go further if they had a phone.

As discussed in the previous section, children living in different residential contexts may have different levels of independent mobility. Children living in more affluent areas spoke of having parental boundaries, whereas children in more deprived areas did not. However, regardless of area deprivation, children perceived that mobile phones increased their independent mobility. This suggests that although some parents may have given their children boundaries, there may have been a conscious effort made by the parents to allow the children more mobility in their environment. This is consistent with a study by Naish (2009) who noted that the number of parents who believe it is acceptable for children less than 12 years to own a mobile phone has increased by more than a third in the last few years. In a more recent study, Dinleyici, Carman, Ozturk, and Sahin-Dagli (2016), also found, of 333 parents, nearly a third felt that the optimum age for owning a mobile phone was 12 years, only slightly older than the children in the current study. In my study, all of the children from more deprived areas either owned or had access to a mobile phone. Similarly, in a German study, Thomas, Heinrich, Kuhnlein, and Radon (2010) found that children (aged 8-12) from low SES were more likely to own a mobile phone. My findings suggest that, when implemented as a communication device (compared to an entertainment device), access to a mobile phone could increase independent mobility and potentially overall PA levels.

9.3.3 Social intimidation

9.3.3.1 Intimidation of strangers and antisocial behaviours

Perceived intimidation of strangers (particularly teenagers) prevented the children from visiting locations, including parks, with little difference by urbanicity or area deprivation. In many cases, teenagers were seen as a nuisance, as they dominated the play equipment. When this happened, the children appeared to feel intimidated and were not comfortable asking the teenagers to move. They also spoke of the fear of being bullied by teenagers, and that the teenagers were doing drugs. These findings are echoed by previous studies in the UK (Brockman et al., 2011) and Australia (Veitch et al., 2007). With children aged 10-11 years in Australia, Brockman and colleagues (2011) noted that children were more concerned with the risk posed by

other young people than fears such as stranger danger and traffic. Veitch and colleagues (2007) also reflected that the participants in their study (also aged 11 years) did not visit parks regularly, in order to avoid adolescents and their bullying behaviours. My findings support the suggestion by Brockman and colleagues, who noted that more should be done to build spaces specifically for teenagers, so that they are less likely to spend time around play spaces.

One of the novel findings of my thesis – specifically arising in the pilot study - was how strangers who wear hoodies can intimidate the children only if they were perceived as hanging around. The children in the pilot study perceived teenagers to be more intimidating if they were not taking part in a recognised activity such as football. If the teenager or stranger was taking part in a socially accepted and recognised activity, the children felt less intimidated. This is a novel finding and has not been identified in previous research. Whilst previous qualitative research has acknowledged that teenagers and anti-social behaviours do deter younger children from visiting locations (Harden, Backett-Milburn, Scott, and Jackson, 2000), the association between participation in known activities, such as football, and less perceived intimidation is unclear.

The children identified 'hanging about' as participating in an informal or unrecognised activity that had no specific purpose. The children made no mention to being worried about being physically hurt or verbally abused, just that the presence of people, primarily teenagers and adults (i.e., not other children their own age) was enough to dissuade them from spending time in that location. This supports past research where Percy-Smith and Matthews (2001) pointed out that young people fear being in local areas where teenagers are present. Although this finding contributes to our understanding of what children consider to be threatening, it also contributes to the literature in understanding why children may avoid certain activity spaces such as green space and playgrounds.

This may further explain why some GPS studies have found that children do not visit green space even though it is close to their home (Jones et al., 2009a). It is difficult to propose a solution, as teenagers are not doing anything wrong by 'hanging around'. A suggestion could be for local councils to discuss with children what could be done, or to create spaces specifically for children of this age group. This would be difficult to enforce as public spaces are for everyone, however, providing children of this age

group with areas that contain only equipment that suits their perceived competencies, may result in older teenagers being less attracted to the space. In this case, adolescent's needs would need to be considered to ensure they have somewhere to go. The comprehensive review by Travlou (2003) found similar problems whereby there is spatial conflict with teenagers and other members of the public, including younger children. The report notes that further research needs to be conducted to ensure adolescents have somewhere in the environment that is theirs.

Social intimidation was also discussed in relation to children avoiding places where anti-social behaviour (ASB) was taking place. ASB generally refers to 'a range of undesirable and inappropriate behaviours of varying levels of severity, both criminal and non-criminal' (Bromley and Stacey, 2011 p.650). ASB can refer to anyone, however, children and young people are most often seen as 'potential threats to public safety and social order' (Mason and Prior, 2008 p.280). However, literature on ASB has recognised that children's perspectives are commonly excluded in local authority discussions relating to safety (Haines and Case, 2008). ASB child-centred research can be difficult, as people tend to have different expectations over what 'ASB' is, and is often dependent on where they live (Millie, 2008). This was the case with my study, as the frequency and type of ASB varied depending on the residential subgroup of the child. Children from the low deprivation areas were more likely to discuss wanting to decrease ASB in their neighbourhood compared to children from high deprivation areas. The only ASB discussed by a child from a higher deprivation area was in relation to the presence of dog foul. The children living in more affluent areas spoke of smoking and drinking in public, littering, and offensive graffiti as acts of ASB. Interestingly none of the children discussed ASB in relation to person-directed ASB (e.g., violence, harassment, or mugging).

Although not mentioned during discussions with the children from poorer areas, the absence of such context does suggest that ASB was not a concern for children living in more deprived areas. This is surprising given that more deprived areas are often associated with higher levels of ASB (Neary et al., 2013). One interpretation could be that children from more affluent areas are less exposed to ASB; therefore, they are more attentive of any negative behaviour that takes place. This is in line with past literature, which has supported normalisation to environmental ASB. Bromley and Stacey (2011) found that concerns over environmental ASB (compared to

interpersonal ASB) were higher in the more affluent areas and lower in the deprived areas. Bromley and Stacey noted that this was most likely due to children in more deprived areas having decreased sensitisation to ASB behaviour in their environment, and therefore, did not see it as a concern.

Another way in which children felt restricted by adults was how adults often take part in behaviours that dissuade children from spending time there. Activities such as smoking and drinking on the street were behaviours that children avoided being close to and would often take alternative routes so as not to come across these types of situations. Although research exists that suggests children avoid locations where they feel there is ASB taking place (Eyre et al, 2014), the majority of the literature has focused on stranger danger, and intimidating teenagers. There is a lack of comparable research that has investigated adult's tobacco and alcohol behaviours as a barrier to children's mobility in their local environment. The children in my study made a conscious decision to avoid certain areas, showing a level of autonomy in the environment and an awareness of their own safety and ability to make mature decisions. This is a crucial skill as an adult and having freedom in the environment is enabling children to develop a sense of personal safety early on. The children noted there were signs instructing adults not to drink or smoke in certain areas but also indicated that adults appeared to ignore these. The children's interpretation of this was that adults ignore most signs because other adults designed them but suggest that they might listen to signs that were drawn by children. There is limited research exploring children's perceptions of public health messages. However, there are other qualitative studies that have investigated children's perceptions of their parents' smoking and drinking behaviours, and have found, in line with my study, that many children actively oppose their parents smoking (Rowa-Dewar, Amos, Cunningham-Burley, 2014), and have negative views of their alcohol consumption (Casswell, Brasch, Gilmore, Silva, 1985).

9.3.4 Social networks in the community

My findings suggest that the local community have a substantial influence on how the children interacted with their environment. Importantly, the children, in general, suggested they were more likely to go outside if they had positive thoughts about the local community. This is acknowledged in previous research where studies have noted the correlation between a safe neighbourhood and children's PA levels

(Romero, 2005), although the social environment has received less attention compared to the built or physical environmental influences (Franzini et al, 2009).

Many of the children said that they were less likely to go outside if they moved to a new neighbourhood and did not know anyone. Although this could be viewed as simply a case of familiarity, when talking with the children I felt it was the children being given the opportunity to judge whether they made a connection with the new people, and then could decide whether they could build a social network. A review by McPherson et al. (2013) supports this, noting that children who had access to social support within their local community/neighbourhood were more likely to participate in health promoting behaviours. Strong social networks have been identified to have a positive influence on self-esteem, identity and perceptions of control (Cohen and Syme, 1985). However, the findings from my study related strong social networks to safety and trust; some children spoke of knowing that there were nice people nearby and associated that with the ability to talk to people, and feeling safe in the environment. It felt as if the children considered their neighbours as an extended family; people who would look after them, help them if necessary, and people they could enjoy speaking to when outside. These findings suggest that if children are able to look upon neighbours as a person they can trust, they are much more likely to spend time outside in the local environment. This is echoed in other studies exploring children's outdoor PA levels. For instance, Molnar and colleagues (2004) found that neighbourhoods characterised as unsafe were associated with lower level so PA. Franzini and colleagues (2009) found that a favourable social environment was more strongly associated with PA than the physical environment. It should also be noted that Franzini sampled from an urban-based environment, supporting the findings from my study where urban children showed a stronger affiliation with the social, rather than the physical environment.

The findings for urban and rural children were similar; both spoke of the importance of strong social networks and community. However, there were differences dependent on area deprivation. The children from more affluent areas tended to speak more about community in their neighbourhood compared to the children from poorer neighbourhoods. The children from more affluent areas spoke of choosing locations to spend their time, and feeling safer in certain environments, because there were nice people there. The children living in more deprived areas did not speak of the local

community or the acknowledgement of familiar people as influential to them spending time outside. Interestingly, this finding was associated with the children's definitions of their neighbourhoods. Children living in more deprived areas were less likely to note the importance of social networks in relation to their time outside and were also less likely to define their neighbourhood in relation to the community around them (discussed in more detail in section 9.4.1). Neighbourly interaction has often been associated with subjective wellbeing. For example, Howley et al. (2015) found that those who speak and interact with their neighbours tended to have higher levels of subjective well-being. There has also been evidence to suggest that neighbourhoods of higher deprivation are associated with lower levels of social cohesion and trust (Drukker et al., 2003, Mackenbach et al., 2016). It is unclear whether the children from poorer areas did not consider social networks within the community to impact on their time outside, or whether they did not experience high levels of it in their neighbourhood, as they did not refer to any form of social capital or its effect on their outdoor activities. Although, this does not necessarily mean it is less important to children from more deprived areas. An explanation is that they were not familiar with a sense of community and therefore, did not have the choice of acknowledging whether it is influential.

9.3.4.1 Active travel

Another aspect of neighbourhood community that the children perceived to influence their willingness to walk and cycle to school was the presence of lollipop men/women (school crossing patrol officers). Children from residential contexts spoke of the importance of a local lollipop man/woman and noted that getting to school would be harder if it was not for them. Although the aim of this thesis was not to explore active travel, gaining more knowledge regarding what influences children spending time outside (including their walk/cycle to school) is important to increase PA levels, as active travel has been shown to be a key influencer of childhood PA (Murtagh et al., 2016). Having access to lollipop men/women appeared to be significant to some of children in this study regardless of where they lived. The lollipop man/woman is another example of how the physical and social environments can interlink. The lollipop man/woman (social) impacted the extent to which the traffic (physical) influenced the children's PA behaviour. As discussed in the previous section, social networks and a sense of community has been found to be important to the children in

this study. Many of the children in this study perceived lollipop men/women to be a positive aspect of their community and acknowledged they helped keep them safe. There have been few studies of crossing attendants, however, the positive association between physical environmental aspects such as pedestrian related-improvements (such as more zebra crossings, traffic light crossings, and speed bumps) are highlighted in much of the active travel literature (e.g. Carver, Timperio, Hesketh, & Crawford, 2010; Panter, Jones, & Van Slujis (2008). Furthermore, novel ideas surrounding active travel, such as a walking school bus (Mendoza et al, 2011) are proving to be a successful way to improve children's PA levels.

9.4   Research question 3: How do children define and describe a neighbourhood? Does this vary between degree of area deprivation and urbanicity?

All the children considered the term neighbourhood to be a socially defined construct. Even though some children discussed boundaries in their definition, these boundaries represented social components, rather than physical aspects such as objectively defined distance. For instance, the children would mark boundaries around their friend's houses or up until they no longer recognised locations where their friends lived. Therefore, it may be incorrect to suggest that a neighbourhood is a standardised concept, as each individual will inevitably have unique social networks.

9.4.1 How do children define the term neighbourhood?

Debate exists within the current literature on how best to define and objectively measure a neighbourhood (Jones, van Sluijs, Ness, Haynes, and Riddoch, 2010). Most research uses objective parameters, such as postcode areas and data zones (Weiss Ompad, Galea, and Vlahov, 2007). This creates problems when researchers try to assess how the neighbourhood influences PA. Recent work on the subjectivity around neighbourhood boundaries, such as Coulton, Jennings, and Chan (2012), acknowledged this by exploring maps drawn by adult residents and comparing them to census tracts. The study found that in general, the perceived neighbourhood sizes were much smaller than the objective census tracts. It is acknowledged, however, that this study was conducted with adults and may not represent the views of children.

Weiss and colleagues (2007) also criticised the use of pre-defined boundaries from secondary data sources such as postcode areas because they do not reflect the more subjective concepts of a neighbourhood. Weiss and colleagues used a multi-step process for creating neighbourhood boundaries incorporating reviews of publicly available land-use data and systematic observation with census information. However, Weiss and colleagues (2007) also noted that there is no right way to define a neighbourhood, clarifying this by saying that even among residents, the definitions will vary greatly. The authors go further to suggest that in order to more accurately define a neighbourhood, both subjective and objective processes should be incorporated as opposed to choosing between or the other.

Jones and colleagues (2010) also employed this multistep process by combining three methodologies, mixing objective (Enumeration District (ED) boundaries), and subjective data (subjective communities of similar characteristics). Their study reflected that the neighbourhood is largely an individualised concept, however, the study also noted that the social environment is less important to children, which is not what I found. In my study children defined the term neighbourhood based on the social environment with responses focused on people or community, and somewhere they felt safe rather than a physical geographical area. Some of the children did use the word place, although this was often used alongside the term people. Furthermore, place was used in reference to the location where the child lived, giving the word a social reference (i.e., the neighbourhood was central to the child). One child gave an answer that related to boundaries, using friends' houses as the markers. Therefore, although an adult might perceive this as a physical geography, the child chose to use social markers. If the friend moves, the boundaries of the neighbourhood may also move. Moreover, the children felt their activity spaces were all centred on their home. This contrasts findings by Jones and colleagues (2010) who noted that activity spaces of individuals extend far beyond their local neighbourhood. However, given the discrepancy in methodologies, (my study was purely subjective, opposed to Jones' and colleagues objective data), a direct comparison cannot be drawn. A possible explanation may be down to inconsistencies between children's perceptions of distance, their own understanding of what constitutes activity (i.e., school based vs. leisure time), and objectively how far they travel.

In terms of residential context, I found that children from poorer areas may not have perceived their neighbourhood as a community, but somewhere that was central to where *they* lived. This is particularly interesting as it relates back to the discussion in section 9.3.4, where I discussed that the children from more deprived areas did not appear to acknowledge that community and social networks were significant to time spent outside. Linking these two findings (importance of social networks/community and definition of the neighbourhood) could suggest that children from poorer areas are not reliant on a sense of community, and it does not influence their time outside.

For children living in urban areas, people were important to their definition of a neighbourhood; they noted that knowing the people around them was important and helped them to feel safe. They also gave neighbourhood boundaries in relation to social constructs; they defined boundaries by where a friend lived, or when they stopped recognising people. The ways in which social cohesion can influence levels of PA is a growing area of research, however most studies have involved adults and few have examined the urban/rural dimension. An exception is Beggs, Haines, and Hurlbert (1996) who found that there are significant differences in the social environment between urban and rural settings: primarily that the networks are smaller; are based more around neighbourhood solidarity than friendship; and that there is more homogeneity between individuals (specifically, education level, ethnicity and religion). However their study it was conducted with adults and would now be considered dated (1985). My study suggests that children perceive their neighbourhoods to be socially constructed. The size of the neighbourhood largely depends on the child's social networks and their day-to-day activities. These findings highlight the importance of relating neighbourhood definitions to the individual in future research exploring the relationship between place and health in children.

9.5 Research question 4: How would children alter their neighbourhood to encourage more time spent outside? Does this vary between levels of area deprivation and urbanicity?

Children offered numerous suggestions of ways in which they would change or alter their neighbourhood so that they would be more willing to spend time outside. Children from deprived neighbourhoods, in particular, wanted more opportunities to be active, and more outdoor clubs for children within close proximity. The most

frequently mentioned change across all residential contexts was the improvement of equipment in parks and playgrounds. As noted earlier, many of the children felt that the existing equipment was boring and too safe and that they wanted equipment that was more challenging for their age. Road safety was another issue that many of the children wanted to address, regardless of where they lived, in order to improve their activity in their neighbourhood.

9.5.1 More play equipment

The children, regardless of gender or where they lived, wanted more age appropriate equipment; this finding was also evident in my pilot study. This finding is also reflected in the discussion earlier (section 9.2.1). Previous literature has supported the availability of freely movable equipment and the need for diversity in play environments (Willenberg et al 2010; Sancar and Severcan 2010). It is well established in the literature that children often choose unconventional spaces for play such as streets and pavements (Jones et al, 2009b). However the existing literature does not reflect on whether this is due to inadequate play structures in playgrounds, or whether these spaces would be used regardless of available play facilities. What my study suggests is that regardless of other possible play spaces, improving the playgrounds in children's neighbourhood would be one route of increasing PA. Pearce and Bailey (2011) argue that despite their ubiquity, playgrounds are often overlooked by educational and health researchers, meaning that potential issues with them are not reflected in reports to local authorities. This is a possible explanation as to why many playgrounds do not get modified and children are left with fixed, man-made, unsuitable equipment.

The children offered their own opinions of how play areas could be improved to help encourage more activity, such as adding climbing equipment, more swings, a sports pitch, and more variety in the local skate park. Whilst it may not be feasible to implement changes that suit every child, overall what came from the discussions with the children was the desire for more variety, and for more challenging equipment. This came from all children and suggests that variety and adventure is a basic need for all children, regardless of where they grow up.

9.5.2 Street design and traffic related changes

Cycle lanes and more pedestrian crossings were popular traffic-related changes the children would implement. The children were enthusiastic about-cycling, but they felt discouraged by busy roads and they advocated separate cycle lanes. Many of the rural children I spoke to live near or next to fast and/or busy roads, and had issues with cycling to and from towns and schools. The children also mentioned (as previously discussed) this was a key concern of their parents, and was a primary reason for placing restrictions on the children's active travel.

During the discussions, there were numerous mentions of changes in traffic regulations. Such concerns were far more apparent in children living in urban areas, and in more deprived areas. These children spoke primarily of providing more crossings, more and wider pavements, and traffic calming measures to slow cars down. Suggestions of cycle lanes also emerged from children living in all types of settlements except more affluent areas. Other studies on play/activity spaces have also acknowledged the importance of locations such as pavements and quiet roads that an adult would not necessarily perceive as a play space (Woolley, 2007). Given that some studies (e.g. Quigg et al., 2010) have found that the majority of children's PA does not necessarily take place in those spaces usually associated with PA such as parks, the importance of local everyday locations such as pavements and streets should not be overlooked. Safety concerns in relation to traffic are a common concern of parents (Rothman et al., 2015, Trigwell et al., 2015). Children however, appear less concerned about road safety than their parents (Timperio, Crawford, Telford, and Salmon, 2004), and previous work has suggested that children are also aware of how traffic can influence their mobility outside (Veitch et al, 2007). Yet there are few studies that explore child-centred suggestions for improving these concerns to help develop road safety interventions. The lack of involvement has been noted, for example, Wridt (2010) argued that when designing and planning child-friendly communities, more methodologies should be implemented that engage children in the conversation. Given that streets are a common play space utilised by children (Oreskovic et al., 2012), improving road safety may have a direct influence on children's PA behaviours.

9.5.3 More PA opportunities

As discussed in Chapter 3, Valentine and McKendrick (1997) noted that children from more deprived neighbourhoods frequently have less play resources available within a short distance from their homes. The findings from this thesis replicate those of Valentine and Mckendrick, begging the question if we are any further forward 20 years later. Many of the children from poorer areas (both urban and rural) suggested that additional PA opportunities could be put in place for children within their neighbourhoods. PA opportunities were considered separate from added park equipment. The children proposed opportunities such as larger areas of green space; having surfaces (e.g., AstroTurf) to play on when the ground is wet ensuring the children have more than one activity area nearby; and having play areas that are more challenging to their age group (10-11 years old). Although these suggestions may not all be feasible, it is important when designing play areas, to have input from children of this age group to understand the types of environments that they would play in.

Interestingly, the possibility of more PA neighbourhood opportunities was not discussed among children from more affluent areas, suggesting that children from these environments may have access to a satisfactory amount of PA opportunities or may be able to access facilities further away. This may signify a key inequality between children from low and high areas of deprivation. Despite past literature finding more deprived areas of Scotland have a higher density of public facilities (Lamb et al., 2010), this does not necessarily equate to usage. The current study did not measure the levels of facilities in the areas in question, and therefore is not able to comment on whether the perceived limited PA opportunities was due to a lack of facilities, or a lack of perceived accessibility. However, past studies with adults have found that perceived accessibility, safety, and usage was lower among those who lived in poorer areas (Jones et al. 2009a), suggesting a possible similarity between how children and adults from deprived neighbourhoods perceive local opportunities.

9.6   Gender in the environment

There have been numerous studies suggesting that being a boy or girl has a strong influence on PA levels (Taverno Ross et al, 2012). However, few studies have explored how girls and boys might differ in their perceptions and use of the environment (Bengoechea, Spence, & McGannon, 2005). My findings suggest that

there are some similarities in the ways boys and girls experience their environment, and use affordances in a comparable manner. Both girls and boys enjoyed going to quiet environments in their neighbourhood in order to relax, and both spoke of using play equipment in non-normative ways. There were also girls who enjoyed going outside to play football, and boys who enjoyed going outside to relax and de-stress. There were some slight differences, for example, boys were more likely to use open spaces to play team sports such as football, while girls were more likely to use the open space individually, or to play imaginative games with their friends. There was also a slight difference in relation to how friends influenced their PA behaviour. The boys spoke more of taking part in team activities such as football and basketball. The girls were more likely to spend time with their friends in either individual activities (such as cycling), or in a light PA activity (such as walking). Given that much of the literature surrounding gender and PA suggests that girls are less active than boys, regardless of nationality and ethnicity (Trost et al, 2001; Owen et al, 2009; Klinker et al, 2014; Ishii et al 2015; and Nielsen, Pfister, and Andersen 2011), it is of interest to note that my study found similarities in the way both genders use and experience the environment. Whilst it would require further investigation, a possible explanation is that the girl's perceive the environment the same as boys, but they utilise the environment less. This is reflected in a study by Maihan, Murrie, Gonzalez and Jobe (2006) who found that, when listening to girls (aged 11-15 years) talk about PA social aspects were the key barriers to participation; whereas the boy's felt that they self-motivation was a primary barrier, alongside other boys. Maihan and colleagues also advised that verbal encouragement, support, and active participation from family members could help girls be physically active (as opposed to providing different physical affordances).

9.7 Recommendations for future research

Potentially one of the key contributions to the literature is the furthering of the theory of affordances. The primary affordances discussed in the literature are the physical and social affordances, and how they influence behaviour in the environment. However, the findings of this thesis suggest an additional important component to the theory in relation to PA behaviour: that of emotional affordances. Emotional affordances have been discussed in other fields, such as emotional responses with children and extreme mental trauma (Roe & Aspinall 2011) but not in association

with PA and play. In order to expand our understanding of how children interact with their environment, future research is required to explore the associations children have with their environment in terms of emotional needs.

Throughout the findings of my study, it was shown how adults can limit children's independent mobility, and that children from more deprived areas appear to be restricted by their parents in comparison to their peers living in more affluent settings. However, a limitation to these findings is the lack of objective measurements. More research is needed (such as that being conducted through the SPACES quantitative study using GPS technology combined with accelerometers [McCrorie, Mitchell, & Ellaway, 2017]) on the mobility and activity levels of children from different contexts to understand more about the ways in which they might be restricted. This research should utilise the children's perceptions of their independent mobility, GPS technology, and where applicable to the research questions, parental views.

More research needs to be done to understand how girls use the outdoor environment throughout childhood and adolescence. This could be achieved via a qualitative longitudinal study, allowing researchers to explore how girls use the environment at a young age, and how this may change as they move through adolescence. Understanding the requirements of girls in their environment as they transition from childhood into adolescence may help to keep the positive connotations with outdoor PA outside, and assist with narrowing the gap between male and female PA levels.

During the interviews and focus groups, the children were happy to talk about negative features of their environment. However, there were fewer negative pictures of the children's environment; of the four deductive visual data themes, the ones with negative connotations contained fewer pictures. A brief discussion with some of the children gave the impression they took pride in their neighbourhood and did not want to show 'outsiders' negative aspects of their environment. A suggestion for future studies could be to rephrase one of the main questions to 'what do you think children do not want in neighbourhoods'. This would remove the emphasis off the children's own neighbourhood and would make it more hypothetical.

I chose to take a child-centred approach in my methods, however some researchers avoid this approach, even when the topic directly relates to their health. While exploring perceptions of the impacts the built environment has on young children's

health, Teedon et al. (2014) chose not to engage with children because the 'children might find the connections between environment and health too abstract and thus difficult to deal with' (p.51). Although there may be benefits to selecting parental proxy, there is a great deal of research noting that, if the right methodological approach is chosen, children can understand complex subjects (Noonan et al., 2016b, Pearce et al., 2009, Ross and Francis, 2016). Future research that aims to understand the lives and experiences of children should endeavour to involve children in as much of the research process as is feasibly possible.

9.8   Implications for Policy and Practice

9.8.1 Policy

The current policy climate in Scotland is aligned to the Active Scotland Outcomes Framework[5] and the new 10-year 'Physical Activity Implementation Plan: a More Active Scotland'[6]; Scotland's vision is for more people to enjoy more active and healthier lives. Borrowing from the gold standard advocacy tool, the Toronto Charter - the policy environment in Scotland is well developed with a clear focus until 2024. A number of policy documents have been published by the Scottish Government to improve children's well-being and health; those particularly important to the current study are; Equally Well[7], Good Places Better Health[8], Achieving Our Potential[9], and The Early Years Framework[10].

The findings of my study support Scotland's policy priority on improving school play areas, and opening up school grounds outside of school hours. The Scottish Government are working with local authorities to achieve high quality school grounds that are consistent with the 'Good School Playground Guide'[11], a document produced by Play Scotland. My study suggests that school grounds should be exciting play areas for children in order to help them achieve more PA behaviours. My findings also give support to opening school grounds out of hours, given that many children view this as a prime location, due to proximity, ease of access, proximity to friends, and feelings of safety.

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[5] http://www.gov.scot/About/Performance/scotPerforms/partnerstories/Outcomes-Framework
[6] http://www.gov.scot/Topics/ArtsCultureSport/Sport/MajorEvents/Glasgow-2014/Commonwealth-games/Indicators/PAIP
[7] http://www.gov.scot/Topics/Health/Healthy-Living/Health-Inequalities/Equally-Well
[8] http://www.gov.scot/Topics/Health/Healthy-Living/Good-Places-Better-Health
[9] http://www.gov.scot/Resource/Doc/246055/0069426.pdf
[10] http://www.gov.scot/Resource/Doc/257007/0076309.pdf
[11] https://www.ltl.org.uk/pdf/LTL-Scottish-Good-Playground1386257083.pdf

Within The Early Years Framework, the Scottish Government highlights the benefits of risk, and promotes risk management as opposed to risk aversion. My study supports this message, and contributes by giving further insight into how children perceive risk in play. Discussion could be had to develop these further, particularly in relation to planning policies relating to play park equipment. One of the key findings of this study supports the incorporation of freely movable structures within play parks.

There are a range of policies aimed at ensuring children from more deprived neighbourhoods are given equal PA opportunities and these include Equally Well, Achieving Our Potential, and The Early Years Framework. In my study, the children from more deprived areas did speak of desiring more PA opportunities in their local area, justifying Scotland's initiatives on this topic, but also potentially suggesting more could be done to address inequalities between children living in different areas of deprivation.

The findings of this study reaffirm important initiatives around Scotland, which is the improvement of road safety for children living in all types of environments. Scotland has a range policies aimed at improving road safety for pedestrians including children (e.g., *I, bike* and *bike to school week*). Aside from general road safety improvements, the need for safer cycling opportunities was a highly emphasised point made by the children. Recently, Transport Scotland released a report documenting the Cycling Action Plan for Scotland (CAPS) from 2017-2020[12]. The report emphasises many ways communities and local authorities can promote behaviour change such as the *'Give Everyone Space'* campaign. Looking abroad, Scandinavian countries such as Denmark show increasingly progressive policies that have, for the last few decades, prioritised pedestrians over motorised vehicles. My findings support Scotland's current emphasis on road safety, and potentially justify doing more to echo what has been done in countries such as Denmark.

Finally, I would argue that current policy in Scotland does not explicitly accommodate for the differences in PA opportunities and requirements of children living in urban and rural contexts; findings from this thesis highlight the importance

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[12] http://www.cyclingscotland.org/wp-content/uploads/2013/10/Transport-Scotland-Policy-Cycling-Action-Plan-for-Scotland-January-2017.pdf

of doing so. The urban and rural-based children in this study acknowledged that they placed different importance on social and physical affordances. There is potential justification for this to be reflected in Scottish policy by ensuring that urban and rural environments are provided with the appropriate tools to encourage activity, rather than a 'one size fits all' mentality.

9.8.2 Practice

Despite the range of Scottish Government policies in place, childhood PA levels continue to be lower than desired, suggesting that there may be difficulties in putting these into practice.

This thesis identifies four main suggestions to assist in putting policy into practice, and involves three different groups of people to assist: planners, parents, and schools.

(i)   A key implication of this work is that children perceive many play spaces as inadequate. While there is policy in place reflecting creating suitable playgrounds (Good School Playground Guide), the children still felt they were inadequate; this is possibly due to children largely being absent from discussions about how to enact policies. Planners could address this by creating more play spaces that are developed in discussions with children who are likely to use them. My findings suggest there is clear direction for play spaces; more equipment, varying the available equipment, ensure equipment is age appropriate, offering multiple surfaces for play, ensure safety through a recognised park ranger, and offer other spaces for adolescents to minimise feelings of social intimidation among younger children.

(ii)   There is a need to recognise the variations in how children's play is dependent on their surroundings. While other more nuanced findings were reflected by residential context, the clearest comparison was between the urban and rural-based children and their associations with the physical and social environment. Local authorities and planners should proceed accordingly and design play spaces that cater to the surrounding environment and reflect the needs of that specific community. Additionally, this study reflects children's desire for risky play. Discussed

at policy level[13], the Scottish Government is advocating that risk should now be managed, rather than eliminated. In practice, I found this could be achieved by providing equipment that can be used in multiple ways, depending on the child's capabilities, many of the children acknowledged that natural, free-moving equipment would be more suitable than fixed, metal structures. Parents and teachers should also avoid stopping children partaking in more risk-related play behaviours.

(iii)   A third important implication of my study derives from how parents and teachers might best engage children in more PA to help them achieve the recommended PA guidelines. Parents should, where possible encourage and facilitate active travel to school, participate with their children in PA, limit time inside and promote more independent mobility. A key finding from this study suggests one way of doing this is to provide children with a mobile phone, solely for communication purposes (i.e. it could be an inexpensive phone rather than a Smartphone). Teachers could help to engage children in more PA by ensuring that they are encouraged to spend time outside by implementing activities in break times and before school. A good example of this is the Daily Mile that is now a popular school activity.

(iv)   Schools were also a key location in children's PA, and Scottish policy recognises this, with policies in place to improve playgrounds all over Scotland. However, opening up school grounds out of hours was an important finding from this study and should be implemented across schools in Scotland to help implement higher overall PA levels in children. Some schools have implemented an open-after-hours framework with successful results, however more local authorities should implement this, as a way of helping children achieve more PA outside of school hours.

9.9   Concluding reflections on the research process

9.9.1 Methods

One of the challenges during data collection was that some children did not produce many photographs or drawings, and felt unable to take part in the visual analysis. This

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[13] http://www.gov.scot/Resource/Doc/257007/0076309.pdf

was an issue I noted in my research diary, which helped to reflect on how to handle such an obstacle in the future. I noted that the children felt more comfortable talking about the pictures, rather than placing them straight into a grid. In these interviews there was more recall and reflection involved, In the diary, I note that this could be another way of collecting data, if the child had not felt comfortable with drawings or taking pictures on their own. Although this might have impacted the analysis, it only occurred with two of the children, and was resolved by being flexible with the methodologies, which I felt was an important aspect of carrying out less traditional, participatory methods.

Reflecting on the research diary and transcripts, I also feel I could have had a more structured interview/focus group guide. There were interesting findings that were not developed more in the verbal data possibly due to a lack of exploratory discussion that ventured away from the visual data. Initially, I aimed for the children to lead the conversation, centered on the participant grids. However, upon reflection there were findings that would have been relevant to the aims of the thesis that were not explored due to this interview structure. For example, weather was touched upon by a few of the children, primarily because there were pictures of blue skies or clouds or discussions over where children went during different seasons. However, it was not explored by all the children, or in much depth, potentially because weather may not have been a feature or location. Given that the study took place in Scotland, known for high rainfall and cold temperatures, it may have been beneficial it explore this topic further. Going forward with these methods, it is important to acknowledge that while children should lead discussions, there is benefit to ensuring particular topics are brought up if important or relevant to the study.

Looking back there are skills as a researcher I can improve on. My interview technique is still developing; there were times reading the transcripts where I noticed I could have probed further. A key example of this was research question 3; exploring how children define their neighbourhood. This was a particular subject that, when looking back through the transcripts, there were times when I could have probed more deeply, in order to gain a deeper understanding of the children's perceptions.

9.9.2 Researcher characteristics

As discussed in Chapter 4, reflexivity is an important component to ensuring the

qualitative data. As previously mentioned, I am female, 26 years old with prior experience working with children, and characteristics may have shaped how I engaged with the children during the study. Although my gender, age, and personality may have influenced the openness of the children (Finlay, 2002), in hindsight, the relationship I created with the children, in terms of how I interacted with them as an adult, a researcher, and as an 'outsider', had the most impact. During my time with children, I aimed to lessen the divide between the children and myself through various methods. Many of these were small, and seemingly, inconsequential acts such as sitting on the floor with the children, letting them hold the recording device, introducing myself with just my first name and wearing casual clothing. A slightly more purposeful act was to ask the children to collect the data; thereby ensuring the children felt that they were trusted as experts (Milligan, 2016).

I also acknowledged with the children that I knew nothing about the environments and was there to learn from them. The aim was to be open with the children that I was an outsider, the children were the experts, and I was not to be treated as an authoritative figure. The children appeared to respond well and did speak to me in ways that suggested they thought of me as someone who was not superior to them. In fact, the children appeared to feel superior to myself at times; for example, they tended to speak in slang and enjoyed having to explain to me what certain words meant. While it is difficult to completely remove all bias, I feel the steps I took to try to lessen the researcher/participant, adult/child, insider/outsider, divide did create a more comfortable environment for the children and lessened potential effects these characteristics can have during data collection (Milligan, 2016).

9.10 Strengths and limitations

Throughout this thesis I have followed the belief that children are best placed to know what they would like in their neighbourhoods, and they are more than able to communicate these thoughts. I used a participatory approach, which involved the children in as many aspects of the research process as possible. The chosen methodologies and analytical procedure produced a deeper understanding of children's PA behaviours, and helped to answer the 'why' questions that are often neglected in PA related research. Utilising drawing and photo elicitation within my study was a key strength of this thesis and of the findings, giving children control over what in their neighbourhood, was discussed. If I had just used interviews and

focus groups, the data may not have communicated the information that the children felt was important.

The participant analysis framework was also a key strength to this study. As discussed in Chapter 4, involving children in the analyses can help to address power imbalances and can create a deeper understanding of the data (Clark et al., 2001; Doucet and Mauthner, 2002). Only by asking the children themselves to analyse the data, was I able to understand what the children were trying to show me with their pictures. Additionally, the children often exclaimed how much they enjoyed taking part in the analysis process and having their voices heard.

A potential limitation of the study was the chosen sample of the participants. Due to logistical issues, and time constraints as a lone researcher, I was not able to explore urban and rural comparisons on a more detailed scale (i.e., urban, small town rural, accessible rural and remote rural). Additionally, only children from the Central Belt of Scotland took part in my study. During the early stages of planning, I wanted to recruit children from more distant locations such as Inverness and Dumfries. This would have given me a greater understanding of children's perceptions from all over Scotland (i.e., north and south). Unfortunately, time and logistical constraints did not allow for this.

 The issue of deprivation is one that should be re-evaluated at this point. I used SIMD to measure the deprivation of an area, which, although a valuable resource, presented a few anomalies. When visiting one particular child it was clear that the child did not live in or experience high level of disadvantage, despite their house being within the 2nd quintile of SIMD. A closer look at the map of the data zones showed that they lived on the very edge of a data zone that was considered as 'high deprivation'. At this point it is important to keep in mind that although the individual, house, or family would not necessarily be experiencing high levels of deprivation, I was exploring the child's local environment and as such, the area in which they lived and could potentially experience (which would be considered more deprived).

9.11   Main conclusions

A small percentage of Scottish children participate in the recommended PA guidelines (McCrorie, Mitchell, and Ellaway, 2018). Time outside is associated with more PA in children (Schaefer et al, 2014), and creating a positive outdoor environment is

imperative to increasing childhood PA. Prior to my study, there was a gap in the research exploring how children experience their environment, particularly children from varying residential contexts. This thesis investigated children's perceptions of their environment and identified ways to make neighbourhoods more child-centred and hence potentially more activity promoting.

The children felt positively about their environments, however, they also acknowledged that the environment could undergo improvements to encourage and facilitate more time outside. These discussions highlighted the need for more varied and challenging play spaces, safer roads, and access to school grounds out of hours. The children also reflected how friends were potentially the most important influence to their time outside, echoing previous research and the necessity for play spaces to facilitate group play. A novel finding of this thesis was the relationship children have between the environment and their emotions; and that they would seek out affordances in the environment that would complement their emotional state. This is an important outcome of the study, and helps to advance the theoretical framework of affordances.

While there were many smaller comparisons between the different places children lived, the associations between urban and rural children and the influences of social and physical affordances is perhaps the most novel finding of this study. Importantly, this finding can offer a possible explanation to previous literature that has reported inconsistent findings over the activity levels between urban and rural children. It is also a finding that to be taken forward in practice when looking to increase the PA levels of both groups of children.

The overarching conclusion to this thesis is that the children enjoyed spending time outside, and felt when they were, their activity levels increased, consistent with the objective literature. However, they were also able to offer explanations to the currently low levels of PA among children, and suggest ways in which adults could create more child-centred environments that would positively impact PA in children.

9.12 Personal reflections

Looking back on this thesis, and on the last three years, I have without any doubt grown as a researcher. This PhD has required determination, perseverance and patience, but has been a rewarding and knowledgeable experience. A PhD comes with

many challenges, personal and academic. There are obstacles that face any researcher, although the last three years has shown me that such obstacles can be magnified when working not only with children, but also with their families. However, every time I listened to each child's experiences and ideas I was reminded that children are so often not listened to in research, and the challenges I faced were worth it to ensure that the children were heard. The findings presented in the previous chapters show that children have unique experiences and are knowledgeable about their own worlds and I am grateful that I was in a position to give them a voice. When I first began this thesis I was approaching the subject with a passion for physical activity. Three years on, my passion for physical activity was joined by a passion to ensure that children are given a voice within research. There are now numerous studies where children have made valuable contributions, giving researchers no excuse to treat them passively within research. I am proud of myself for working *with* the children, which may have presented more challenges, but was essential to understand children's perceptions of their own world.

I finish this thesis having grown in confidence - keen to ask questions, but also a much greater trust in my own instincts. Whatever challenge I face next as a researcher, and as an individual, I owe a great deal to this experience and what it has taught me.

Appendices

Appendix A: Search criteria for literature review

Appendix B: Table of key papers for literature review

Appendix C: Interview guide for main study

Appendix D: Focus group guide for main study

Appendix E: Participant information booklet containing consent form

Appendix F: GUS information sheet

Appendix G: Coding table for urban and rural comparison analysis

Appendix H: Coding table for area deprivation comparison

Appendix A: Search criteria for literature review

Search terms	Childhood physical activity Outdoor play Outdoor physical activity Environmental perceptions Rural/urban physical activity Children's physical activity in neighbourhoods Area level deprivation children physical activity Childhood Physical inactivity Defining the neighbourhood Participatory approaches with childhood Affordances / Gibson's theory of Affordances Place preference
Databases searched	PubMed Psychinfo Google scholar
Years of search	Papers published up until 2016 (inclusive)
Language	English
Types of studies included	Qualitative studies Participatory studies Quantitative studies (for specific areas of literature) Studies with children Studies with adults were only used if a child-related study was not found
How quality of paper was assessed	Papers were not excluded based on research method or sample size. The paper was included if it met the inclusion criteria Observation papers, intervention and RCT papers, and review papers were included.
Inclusion criteria	The paper was included in the review if 1. The paper explored PA in the environment 2. Or explored types of PA in the environment, such as play and active travel 3. Papers that had had a child-based sample were given preference, adult-sample papers were only included if a child sample was not available 4. The sample had no medical conditions stated in the paper; 5. Could be accessed in full; 6. Published in English.
Exclusion criteria	Papers were excluded if: 1. They had an adult sample, when a child sample study was available 2. The study was using a different age group (toddlers/teenagers). This was overlooked if a study exploring the same aims with 10-11 years old was not available 3. Only the abstract was accessible 4. A stated medical condition was being reviewed as a primary hypothesis 5. Published in a non-English language

Appendix B: Table of key papers (listed in order of appearance)

Authors	Date	Country	Aim	Methods	Key conclusions
CASPERSEN, C. J., POWELL, K. E. & CHRISTENSON, G. M.	1985	USA	This paper proposes definitions to distinguish the terms "Physical activity," "exercise," and "physical fitness"	Review	Clear definitions for each term are provided. The definitions are offered as an interpretational framework for comparing studies that relate physical activity, exercise, and physical fitness to health.
CLELAND, V., CRAWFORD, D., BAUR, L. A., HUME, C., TIMPERIO, A. & SALMON, J.	2008	Australia	This study aimed to determine whether time spent outdoors was associated with objectively measured physical activity, body mass index (BMI) z-score and overweight in elementary-school aged children, cross-sectionally and prospectively over 3 years.	N=188 (5-6 yr olds) N= 360 (10-12 yr olds) At baseline and follow-up children's moderate and vigorous physical activity (MVPA) was objectively assessed by accelerometry, and BMI z-score and overweight was calculated from measured height and weight.	Encouraging 10-12-year-old children to spend more time outdoors may be an effective strategy for increasing physical activity and preventing increases in overweight and obesity.
PAYNE, S., TOWNSEND, N. & FOSTER, C.	2013	UK	The objective of this study is to identify what *types* of activity contribute most towards overall physical activity in children who achieve the UK physical activity recommendations	Self-reported physical activity was captured through the Health Survey for England 2008, a nationally representative, cross-sectional survey.	Active play was the largest contributor to overall physical activity (boys = 48%, girls = 53%), followed by walking (boys = 17%, girls = 23%).
STRONG, W. B., MALINA, R. M., BLIMKIE, C. J. R.,	2005	USA	To review the effects of physical activity on health	Systematic review	School-age youth should participate daily in 60 minutes or more of

DANIELS, S. R., DISHMAN, R. K., GUTIN, B., HERGENROEDER, A. C., MUST, A., NIXON, P. A., PIVARNIK, J. M., ROWLAND, T., TROST, S. & TRUDEAU, F.			and behavior outcomes and develop evidence-based recommendations for physical activity in youth		moderate to vigorous physical activity that is developmentally appropriate, enjoyable, and involves a variety of activities.
SOTHERN, M. S., LOFTIN, M., SUSKIND, R. M., UDALL, J. N. & BLECKER, U.	1999	USA	Explore the health benefits of physical activity in children and adolescents: implications for chronic disease prevention	Review	Moderate intensity exercise of a non-structured nature seems to facilitate most of the disease prevention goals and health promoting benefits.
HILLS, A. P., KING, N. A. & ARMSTRONG, T. P.	2007	USA	This review assesses the evidence that identifies the important role of physical activity in the growth, development and physical health of young people, owing to its numerous physical and psychological health benefits.	Systematic Review	The evidence is conclusive that physical activity is conducive to a healthy lifestyle and prevention of disease. Habitual physical activity established during the early years may provide the greatest likelihood of impact on mortality and longevity.
TELFORD, R. M., TELFORD, R. D., CUNNINGHAM, R. B., COCHRANE, T., DAVEY, R. & WADDINGTON, G.	2013	Australia	longitudinal monitoring of daily physical activity (PA) patterns in youth over successive years	Pedometers were worn for a 7-day period each year over 5 consecutive years to assess PA volume (steps per day) and accelerometers were worn concurrently in the final 2 years to assess PA volume (accelerometer counts (AC) per day),	A weekly pattern of PA occurred in children as young as age 8 on a day by day basis; these patterns persisting through to age 12.

				moderate and vigorous PA (MVPA), light PA (LPA) and sedentary time (SED).	
TELAMA, R.	2009		The aim of the article was to review studies on the tracking of physical activity in all phases of life from childhood to late adulthood.	Systematic review	Physical activity appears to track reasonably well also in the longer term, for example from adolescence to adulthood. The results of the tracking studies support the idea that the enhancement of physical activity in children and adolescents is of great importance for the promotion of public health.
RA, J. S. & GANG, M.	2016	Korea	This study investigated the relationship between physical activity and health-related quality of life (HRQoL) as moderated by depression in low-income children.	A cross-sectional study with children 10-12 years. Children's physical activity, depression, and hrqol were measured with self-administered questionnaires.	Physical activity was significantly positively correlated with HRQoL while depression was significantly negatively correlated with physical activity and HRQoL. The moderating effect of depression between physical activity and QoL was confirmed in children from low-income families.
LIU, M., WU, L. & MING, Q.	2015	China	To perform a systematic review and meta-analysis for the effects of physical activity intervention on self-esteem and self-concept in children and adolescents,	Systematic review	Intervention of physical activity alone is associated with increased self-concept and self-worth in children and adolescents.
SCHAEFER, L., PLOTNIKOFF, R. C., MAJUMDAR, S. R., MOLLARD, R., WOO, M., SADMAN, R., RINALDI,	2014	Canada	To determine whether time spent outdoors was associated with increased moderate-to-vigorous physical activity (MVPA)	A cross-sectional study of 306 youth aged 13.6 ± 1.4 years. The exposure of interest was self-reported time spent outdoors after	Time spent outdoors is positively associated with MVPA and cardiorespiratory fitness in youth and negatively associated with sedentary behavior.

R. L., BOULÉ, N., TORRANCE, B., BALL, G. D. C., VEUGELERS, P., WOZNY, P., MCCARGAR, L., DOWNS, S., LEWANCZUK, R., GLEDDIE, D. & MCGAVOCK, J.			and related health benefits in youth	school, stratified into three categories: none, some, and most/all of the time. The main outcome of interest was accelerometer-derived MVPA	
THOMPSON COON, J., BODDY, K., STEIN, K., WHEAR, R., BARTON, J. & DEPLEDGE, M. H.	2011	USA	The objective was to compare the effects on mental and physical wellbeing, health related quality of life and long-term adherence to physical activity, of participation in physical activity in natural environments compared with physical activity indoors.	Systematic review	This review has shown some promising effects on self-reported mental wellbeing immediately following exercise in nature which are not seen following the same exercise indoors. However, the interpretation and extrapolation of these findings is hampered by the poor methodological quality of the available evidence and the heterogeneity of outcome measures employed.
KNUTH, A. G. & HALLAL, P. C.	2009	Brazil	The aim of this study was to systematically review articles on temporal trends of PA and fitness, with emphasis on differences between children/ adolescents and adults.	Systematic review	Youth PA seems to be decreasing over time, including a lower level of activity in physical education classes. Therefore, fitness levels are also declining.
HALLAL, P. C., ANDERSEN, L. B., BULL, F. C., GUTHOLD, R., HASKELL, W. &	2012	Global	Explore global PA levels	Review	

EKELUND, U.					
TREMBLEY, M. S., BARNES, J. D., GONZALEZ, S. A., KATZMARZYK, P. T., ONYWERA, V. O, REILLY, J. J & TOMKINSON, G. R.	2016	Global	organise the concurrent preparation of Report Cards on the physical activity of chil- dren and youth in 38 countries from 6 continents	Countries were required to register their interest by the deadline of October 2015 all countries gathered the best and most recent available evidence, or in some cases collected data prospectively, and reported on 9 common indicators	Scotland achieved the lowest grade for PA for the second year running. There is a paradox of higher physical activity and lower sedentary behavior in countries reporting poorer infrastructure, and lower physical activity and higher sedentary behavior in countries reporting better infrastructure
KIRBY, J., LEVIN, K. & INCHLEY, J. J.	2013	Scotland	This study aimed to identify environmental factors that influence physical activity participation among young people in Edinburgh, Scotland.	A multi-methods qualitative study, employing photography, computer blogs, maps and focus group discussions	A variety of facilitators and barriers to participation were also reported. Most notable was the importance of cost and value for money when choosing physical activities. Use of green space for physical activity was reported among pupils from all schools.
TOWNSHEND, T. & LAKE, A. A.	2009	UK	Many papers suggest that contemporary urban environments do not support healthy lifestyle choices and are implicated in the obesity pandemic. This paper reviews the evidence from this field in relation to theory, policy and practice, from three different disciplinary perspectives: urban design, geography and	Systematic review	Tackling obesity requires concerted multi-disciplinary effort to draw together interventions which target individual behaviours within an environmentally supportive context.

			public health nutrition.		
HUME, C., JORNA, M., ARUNDELL, L., SAUNDERS, J., CRAWFORD, D. & SALMON, J.	2009	Australia	This study aimed to examine cross-sectional associations between neighbourhood social environmental factors and physical activity (PA) among Australian primary school children.	Baseline data from a large-scale trial (n-957, 9-12 years) Children self-reported their perceptions of the neighbourhood social environment including social networks and social capital. Children also self-reported their weekly walking frequency and PA.	These findings suggest that children who had positive perceptions of neighbourhood social capital and social networks in the neighbourhood, tended to be more physically active.
TREMBLAY, M. S., GRAY, C., BABCOCK, S., BARNES, J., COSTAS BRADSTREET, C., CARR, D., CHABOT, G., CHOQUETTE, L., CHORNEY, D., COLLYER, C., HERRINGTON, S., JANSON, K., JANSSEN, I., LAROUCHE, R., PICKETT, W., POWER, M., SANDSETER, E. B. H., SIMON, B. & BRUSSONI, M.	2015	Canada	A diverse, cross-sectorial group of partners, stakeholders and researchers, collaborated to develop an evidence-informed Position Statement on active outdoor play for children aged 3-12 years.	The Position Statement development process was informed by two systematic reviews, a critical appraisal of the current literature and existing position statements, engagement of research experts (N=9) and cross-sectorial individuals/organizations (N=17), and an extensive stakeholder consultation process (N=1908).	The final Position Statement on Active Outdoor Play states: "Access to active play in nature and outdoors--with its risks--is essential for healthy child development. We recommend increasing children's opportunities for self-directed play outdoors in all settings--at home, at school, in child care, the community and nature."
MILTON, S., PLIAKAS, T., HAWKESWORTH, S., NANCHAHAL, K., GRUNDY, C., AMUZU, A., CASAS, J.-P. & LOCK, K.	2015	UK	Investigate the impact of the neighbourhood environment on health and behaviour amongst older adults	A qualitative geographical information systems (QGIS) approach was taken to facilitate the understanding of how older people over 70 in 5 UK towns interact with their	The concept of neighbourhood changed seasonally and over the lifecourse, and was associated with social factors such as friends, family, or community activities, rather than places. Spaces stretched further than the local, which is problematic for

					older people who rely on variable public transport provision. QGIS techniques prompted rich discussions on interactions with and the meanings of 'place'
COMSTOCK, C., KATTELMANN, K., ZASTROW, M., MCCORMACK, L., LINDSHIELD, E., LI, Y., MUTURI, N., ADHIKARI, K. & KIDD, T.	2016	USA	Assess environmental support of physical activity (PA) in rural areas and determine whether there is a correlation between the measured environment for PA and participant perceptions of the environment for PA.	The PA environment was assessed using the Active Neighborhood Checklist (ANC) and the Physical Activity Resource Assessment (PARA). Youth behavior and perceptions related to PA and the local environment were assessed using 5 questions from previously validated tools.	Perception of PA in rural communities may not match objective measures.
TEEDON, P., GILLESPIE, M., LINDSAY, K. & BAKER, K.	2014	Scotland	This paper explored with groups of parents of young children their lay perceptions of their local environment with specific reference to its impact upon their children′s health.	Involved a series of 12 workshops in two phases across four Scottish localities. The workshops included a range of activities encouraging both verbal and written inputs.	As knowledgeable key gatekeepers to children′s use of home environments and public spaces, parent′s qualitative lay input is important for the development of children′s effective use of outdoor spaces and the built environment over the long term.
THORN, J. E., DELELLIS, N., CHANDLER, J. P. & BOYD, K.	2013	USA	To determine differences between children and their parents' perceptions regarding dietary behaviors, physical activity (PA), and screen time.	Eighty-eight parent/guardian-child pairs completed a questionnaire that specifically asked parents about their child's health behaviors. A similar version of the survey was	The discrepancies found between parents and their children concerning food choices, juice and soft drinks, screen time, and PA are all troubling, particularly in a community where obesity risk is high.

				also given to their children to answer questions regarding their personal health behaviors.	
PEARCE, A., KIRK, C., CUMMINS, S., COLLINS, M., ELLIMAN, D., CONNOLLY, A. M. & LAW, C.	2009	USA	This pilot study used multiple methods to explore children's perspectives of environmental influences on their eating and physical activity.	Thirty-nine children aged 9-11 years from a North London local authority took photos, drew maps, and attended focus groups.	The results highlighted a number of areas for local policymakers and practitioners to consider when developing work to prevent childhood obesity. We conclude that these methods of gaining children's views should be further developed and tested.
WOO, M., SCHAEFER, L., BALL, G. D. C., MAJUMDAR, S. R., PLOTNIKOFF, R. C., WOZNY, P., MCCARGAR, L., DOWNS, S., LEWANCZUK, R. & MCGAVOCK, J.	2013	Canada	This paper aimed to see if associations would exist between time spent outdoors after school and MVPA in youth.	The primary outcome was accelerometer-derived MVPA The primary exposure was self-reported time spent outdoors after school stratified into three categories: none, some, and most/all of the time.	Time spent outdoors predicts MVPA in youth. Prospective cohort and experimental trials are needed to confirm this observation. "We were never allowed in the house until it was dark" is an adage that can positively impact MVPA.
KORPELA, K., KYTTÄ, M. & HARTIG, T.	2002	Finland	We examined the role of restorative experience and self-regulation in the formation of place preferences by Finnish children	Children (n-55) aged 8/9 or 12/13 and living in downtown Tampereor Helsinki answered open and closed-ended questions in a structured interview. One or both parents completed a questionnaire.	Use of the favourite place for restoration and emotion-regulation did not necessarily imply visiting the favourite place alone; however, 12^13-year-olds were more likely than the younger age group to visit the favourite place with friends. Surprisingly, many parents did not know their child's favourite place.
HEFT, H.	1988	USA	This paper aimed to understand outdoor affordances with children	A meta-analysis of observational studies on children's outdoor activities	Produced Taxonomy of affordances for children

KYTTA, M.	2002	Finland	This paper aimed to explore affordances of children's environments in the context of cities, small towns, suburbs and rural villages	The study was based on individual interviews with 8/9 year old children in Finland(n=98) and in Belarus (n = 143).	Significant differences were found among the communities and between the countries in affordance availability, in the level of affordances (perceived, used and shaped) and in the distribution of affordances within the categories of the taxonomy. Also the location of the affordances, whether they were at home, in the yard, in immediate surroundings or somewhere further differed significantly in different communities. Further studies are suggested on the elaboration of the affordance taxonomy for different user groups and varying settings.
PRIESKE, B., WITHAGEN, R., SMITH, J. & ZAAL, F. T. J. M.	2015	The Netherlands	The aim of this study was to focus on the invitational character of affordances, an aspect that has recently been brought to the fore in the ecological literature.	Thirty children (7-9 years) took part in an experimental study. The children played freely in a playscape consisting of blocks that varied in height and were placed at different distances from each other. After playing, several perceived and actual action boundaries of the children were measured	The study found that children are attracted not to affordances that are challenging for them but to affordances that they could easily actualize.
FJORTOFT, I.	2001	Norway	The aim of the study was to investigate how children's playing in the natural environment	An experimental study was carried out with five- to seven-year-old children in kindergartens in Telemark,	This study has indicated the relation between versa- tile play in the natural environment and the impact on motor fitness in children. Significant effects

			might stimulate their motor fitness and it was decided to focus on the affordances of the landscape and the correlation for versatile play.	Norway	were found in balance and coordination abilities. The forest itself represents an environment for play and learning that stimulates motor development and fostering in children.
JONES, A., HILLSDON, M. & COOMBES, E.	2009 a	UK	To understand the patterning of greenspace provision and use by area deprivation, and determine how deprivation moderates relationships with physical activity	The responses obtained from 6821 respondents to the 2005 'The Quality of Life in your Neighbourhood Survey' undertaken in Bristol, England, were combined with objective measures of access to greenspaces.	The accessibility of greenspaces was better in more deprived areas but those residents had more negative perceptions and were less likely to use the greenspaces.
MACINTYRE, S., MACDONALD, L. & ELLAWAY, A.	2008 b	Scotland	The aim of this study was to understand more about the extent of agreement between self reported and directly measured proximity of the same resource.	The study used previously collected data in a community survey in Glasgow in which 658 respondents aged around 40 and 60 were asked whether they lived within half a mile of a public park. Then compared with their answers with GIS measures of whether there was a park within a half mile service area of their home	One should be cautious about assuming that respondents' self reports of proximity to a resource are a valid proxy for actual distance, or vice versa. Agreement was no higher in any socio-demographic subgroup

Appendix C: Example interview guide for main study

Interview guide 12.08.15

Photographs
- Playground

What do you play here?
Who do you go here with?
How do you feel about the equipment here?
Which children play here?
What would you like in the playgrounds – equipment/surface/etc.

- Streets

How often do you play on the streets?
Is it quiet/busy?
Are you concerned about traffic?

- AstroTurf

What do you play?
How long have you been playing for?
Why do you like it?
Prefer it when it's outdoors?
Who do you play with?

- Playing

Where do you go the most outside?
Where is your favourite place to play?
Who goes there?
      Gender?
      Age?
Any negatives?

- Streets/roads

Traffic /street –
Stop you from going places?
Busy?
Is there an ability to walk or cycle?
What changes could be made?

- Pavements

Do you feel safe on them?
Do you walk/cycle?
Are there any changes you would make to the roads/traffic?

- School

How do you get to school?
Do you like walking/cycling?
Do you feel safe?

General
Favourite activity to do outside
Favourite place to play/go outside
What is the most important thing to you when you're outside?
Grass areas vs concrete areas
How important are your friends to being outside?
Where do you go most with your friends?
Do you go outside more with friends or family?
Which one influences you more? Friends vs family?
Who do you walk to the shops with/go alone?
How does being with your friends affect your activity?

Locations
What does being outside mean to you?
What do you like most about being outside?
Favourite – why/what does it offer?
Don't like going – why/unsafe/what features cause you to feel that way
Influence of friends/parents – do they influence where you go/how often you go there
or outside in general/one more influential than the other/how far - limitations
What do you like most about being outside?
Does the weather influence how much you're outside?
Is there equipment you would use but you choose not to?
Do you think living in a city would change your behaviour outside?

Neighbourhoods
We've talked a bit about your neighbourhood; can you tell me what you would consider 'your neighbourhood'?
What is your definition of the word neighbourhood?
Is it important that you know your neighbours?
If you moved to a new place would you go outside as much?
Do you feel safe in your neighbourhood?
What makes you feel safe/unsafe?

Activity
Where would you say you are most active when you're outside? - cycling
Is this somewhere you go frequently?
Would you say you're more active with your friends or parents?
Do you feel you're more active when you're outside?

Changes
Do you think adults listen to what children want?
If you could speak to the council, what would you ask them to change?

Finishing questions
Would anything in particular encourage you to spend more time outside?

Appendix D: Focus group guide for main study

Focus group guide 10.09.15

Photographs

Places I like to go –
Why do you like going here?
Why do you go here as opposed to other parks/fields?
Places I don't like to go –
Why don't you like going here?
What could be changed to encourage you to go here more often?
Things I like to see –
How does seeing this make you feel?
Do enjoyable views encourage you to spend more time outside?
Things I don't like to see –
Why don't you like seeing this?
What does it make you feel?
Are you less likely to go here because of this?

General

Play
Where would you say you play the most?
Is this where you go most when you're outside?
What are your favourite things to play?
Do you use playground equipment?
Is there equipment you would use but you choose not to?
What is the most important thing to you when you're outside?
Grass areas vs concrete areas

Streets/roads
Traffic /street –
Stop you from going places?
Busy?
Is there an ability to walk or cycle?
What changes could be made?
Pavements
Do you feel safe on them?
Do you walk/cycle?
Do you play on the streets/pavements

Friends
How important are your friends to being outside?
Where do you go most with your friends?
Do you go outside more with friends or family?
Which one influences you more? Friends vs family?

Outside
What does being outside mean to you?

What do you like most about being outside?
What's your favourite thing to do outside?
Do you think it's important to be outside?
Is there anywhere you don't like going? – why? What features cause you to feel that way? Could anything be changed?
What do you like most about being outside?
Does the weather influence how much you're outside/what you do when you're outside?

Neighbourhoods
What is your definition of the word neighbourhood?
We've talked a bit about your neighbourhood; can you tell me what you would consider 'your neighbourhood'?
Is it important that you know your neighbours?
If you moved to a new place would you go outside as much?
Do you feel safe in your neighbourhood?
What makes you feel safe/unsafe?

Activity
Where would you say you are most active when you're outside?
Is this somewhere you go frequently?
Do you feel you're more active when you're outside?

Changes
Do you think adults listen to what children what in their neighbourhoods?
If you could speak to the council, what would you ask them to change?

Finishing questions
Would you like there to be more of outside?
Would anything in particular encourage you to spend more time outside

Appendix E: Participant information booklet containing consent form

This sheet outlines the details of the study and what participation will involve for you. Please take the time to read the information carefully and discuss it with others (for example your parents/carer) if you wish. Please take time to decide whether or not you wish to take part.

What is the study all about?

This study hopes to gain more information about your views on how you experience your local area, and how this might affect how physically active you are. To find this information out, you will be asked to describe the areas around your home by doing drawings and writings, and by taking photographs about where you walk, play with your friends, hang out outside and why you choose not to spend time in certain areas.

Who are the researchers?

Felicity Hayball is the main researcher involved in this study. Felicity is doing this study as part of her PhD.

Why you?

We want to see where your age group are physically active and why. By finding this out, we can hopefully increase the amount of people going outside. For your age group, it's important to keep healthy and continue to develop in a healthy manner as you grow older. Physical activity is seen as a part of this process.

1

What do we need you to do?

You will be given a scrapbook and a disposable camera. You will be asked to take pictures with the camera and/or draw pictures in your scrapbook. The photos and drawings should be of where you go outside (like journey to school, parks, and the walk to a friend's house). You will be given sentences that will give you an idea of what to photograph/draw.

We will then arrange a time to come and pick up the data around nine days after our initial meeting. We will spend some time looking at what you have given us.

Once we have had a chance to look at what you have put together, we may ask to meet for a third time to talk about your pictures in groups of about six.

We may then ask you to participate in one-to-one interviews which would last around 45 minutes.

Do I need to do it?

No, it's totally up to you. If you don't want to do this, or any part of it, then feel free to say 'no'. Nothing will happen to you if you say 'no'. If you decide to take part but then change your mind at any time that's absolutely fine too - nothing will happen if you do this either.

2

Any benefits, disadvantages or side effects if I take part?

You will be able to talk about where you go in your neighbour-hood and the things you like to do, which you may find interest-ing. You might also enjoy being part of this important research study where you can find out more about what researchers do in their jobs.

Most of the study will not interfere with your normal day-to-day life.

After we've finished we'd be very happy to give you a copy of our results of your week's activity - all you need to do is ask.

I've heard about something called confidentiality. What's that?

Confidentiality is a word that is used to explain who has access to the information you provide (personal information as well as any other data) and to assure you that there are strategies in place to keep the data you provide secret from anyone else who isn't allowed to see it. Confidentiality is only lifted if the researchers are concerned something you have told us might be harmful to you or others.

For this study, we use made up names for each participant involved and any details that may identify you are removed as early as possible, and held in separate and secure locations from any other data you provide.

3

What happens to the results of the study?

At the end of the study the results will be published as written reports and presented in talks at scientific conferences. Your name and any identifiable details (such as your home address) will be completely removed, which means no-one will be able to tell who you are from any report or publication.

Will I get to keep anything?

Yes, you will be able to take home your drawings and photographs once we have taken photographs of them.

Who is organising and funding the research?

The project is funded by the Medical Research Council, a government funded but independent body. The study is being carried out by scientists from the Medical Research Council/Chief Scientist's Office Social and Public Health Sciences Unit, Glasgow, who specialise in public health research. We are based at the University of Glasgow.

Has anyone reviewed the study?

The research we want to carry out has been reviewed by an ethics committee at the University of Glasgow.

4
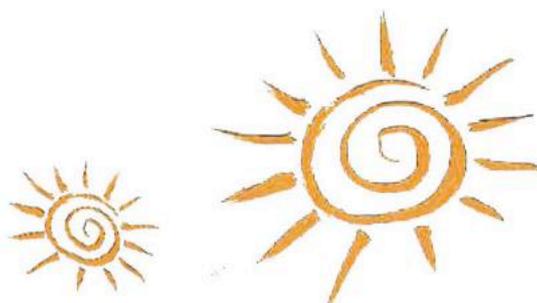
How to contact us

If you have any questions or queries about taking part in this study please feel free to contact the following:

Primary investigator - Felicity Hayball
Email: f.hayball@sphsu.mrc.ac.uk
Phone: 0141 353 7500

Supervisor - Professor Anne Ellaway
email: anne.ellaway@glasgow.ac.uk

Can I speak to someone if I have any concerns?

If you have any concerns regarding the conduct of the research project please feel free to contact the College Ethics Officer:

Dr Muir Houston, College of Social Sciences Ethics Officer,
Muir.Houston@glasgow.ac.uk

5

Consent Form

Title of project: Children's Opportunities for Outdoor Physical Activity (COOPA)

Name of researchers: Professor Anne Ellaway and Felicity Hayball

Please initial boxes below

	Child	Parent Carer
We confirm that we have read and understood the Participant Information Booklet for the above study and have had the opportunity to ask questions.		
We understand that participation is voluntary and that the participant is free to withdraw at any time, without giving any reason.		
We understand that cameras will be used and photographs will be taken in this study.		
We understand that audio recording will be used in this study		
We consent to the participant's artwork being published and presented at scientific outlets, and understand that the participant will not be identifiable from this.		
We understand that the participant will be referred to in any written documents by a false name and will not be identifiable in the research.		
We agree to the participant taking part in a group discussion about their and others' artwork.		
I agree to take part in the above study. I consent to my child taking part in the above study.		

_____   _____
Participant **NAME**   Participant **SIGNATURE**

_____   _____
Parent/Guardian **NAME**   Parent/Guardian **SIGNATURE**

Date _____

6

Appendix F: GUS information sheet

Physical activity follow-up study

Researchers at the Medical Research Council's Social and Public Health Sciences Unit (MRC SPHSU) at the University of Glasgow have been asked by the Scottish Government to collect information on physical activity levels amongst children growing up in Scotland.

To do so, they'd like to invite some GUS families to take part in an additional study. This would involve your child wearing an activity monitor, during the day, for 8 consecutive days. The activity monitor is attached to an elastic belt (as pictured) which your child would wear around his or her waist. The activity monitor would be posted to your household along with instructions and then returned using a prepaid envelope.

As well as measuring how much physical activity children do, the researchers are also interested in where children are active. Understanding more about where children are most active (e.g. their local neighbourhood, parks, playgrounds) can help policy makers and planners decide what could be done to improve children's environments (e.g. street lighting, wider pavements, greenspace). To explore this, a small number of children will also be asked to wear a travel recorder on their elastic belt, alongside their activity monitor, for 8 consecutive days.

We would like to ask you for your permission to pass your contact details (your name, address and phone number) to MRC SPHSU. They would then contact you directly (in a few months), by letter, with more information about the study. You can decide then, with your child, whether or not he or she will take part.

If you have any questions or would like further information about this project, please contact Dr

Paul McCrorie on: paul.mccrorie@glasgow. ac.uk or 0141 353 3949.

As with all the information that you give us, the results from this project will be treated in the strictest confidence and used for research purposes only. By giving us consent, you are only permitting us to pass on your contact details. MRC SPHSU will not have access to any other personal data or information that we hold securely.

By providing your consent you agree that:

• You have read or heard the above information about the Growing Up in Scotland study asking for permission to pass your details to the MRC SPHSU so that they may contact you about taking part in a study on physical activity levels amongst children in Scotland, and have had the opportunity to ask questions.

• You understand that not taking part in this project will have no influence on your future participation in Growing Up in Scotland.

• You understand that you do not need to make a decision on participation today and that you can refuse or cancel your permission, without having to give any reasons, by contacting the GUS team on 0800 6522704 or gus@scotcen.org.uk

• You understand the results from these exercises will be treated in the strictest confidence and used for research purposes only.

ScotCen
Social Research that works for society

Appendix G: Coding table for urban and rural comparison analysis

[Global theme] Affordances
[Sub theme] Actualised Affordances
[Theme discussed] *Activities*

RURAL		URBAN	
Raw codes	**First order theme**	**Raw codes**	**First order theme**
It's my favourite thing to do outside	Cycling	Cycle on the roads	Cycling
I like to go cycling in nature		My favourite activity is cycling	
Playing in a den is fun	Dens	Traffic doesn't stop me cycling	
I go to the den with my friends		Favourite activity outside it football	Football
I play football outside	Football	I went to football training camp	
Playing football is fun		I enjoy playing football	
We play football by my granddads house		I play football at the park	
I go for walks in the fields	Walking	I'm a member of the golf club	Golf
I go for jogs in the field	Jogging	My favourite activity is skateboarding	Skateboarding
A fox hunt is where you look for foxes, clues of foxes that they've been there	Fox hunting	Skate affordances	
I go hill climbing because it's good exercise	Hill Climbing	Where I skate	
One of my favourite activities outside	Golf	I go there to sledge	Sledging
I'd go out on my scooter if I was outside	Scooting		
You can go sledging in the park	Sledging		

Equipment

RURAL		URBAN	
Raw codes	**First order theme**	**Raw codes**	**First order theme**
Equipment in our park	Equipment	Equipment for different ages	Equipment

Equipment to play on		Favourite piece of equipment	
I play on the swings but not the slide		Monkey bars and slide	
Swings		Tire swing	
Trampolines		We play with the equipment because we can use it	
We've been attempting mad stuff on the monkey bars			
There's equipment in a park further away			
Flying fox is my favourite thing to do at the park			

Non-normative

RURAL		URBAN	
Raw codes	**First order theme**	**Raw codes**	**First order theme**
Climbing on top of the slide		Trees for multiple affordances	
It's not fun if you use it properly	Non-normative	Using equipment in a unique way	
I go to the park to climb the trees		We're more able to use the stuff how we want to	Non-normative
		Climbing the whale jaw replica	

Play

RURAL		URBAN	
Raw codes	**First order theme**	**Raw codes**	**First order theme**
Different affordances for playing		Climbing trees	
Climbing trees - playing		You can play tig – there's more room	
Journey to the skate park	Play	I like playing on the obstacle course	Play
Playing games		Overgrown area for play	
There's not enough space to play inside		I like to play in the playground	

| | | You can play tig – there's more room | |
| | | Ball games | |

Preference of surface

RURAL		URBAN	
Raw codes	**First order theme**	**Raw code**	**First order Theme**
Cutting the grass	Changing the surface	I prefer having grass to lie down on	Relaxing
Having a surface to play on when it's wet		You can sit, lie down, grass is better	
Concrete for speed	Surface for Cycling	Surface for scooting	Scooting
Flats good for speed		Concrete is good for skateboarding	Skateboarding
Grass for safety		If there's concrete I'll skate	
I like the Bumps		Different Surfaces for football	Football
I go through the stream		If I fall over I won't hurt myself	Surface for play
Surface for Football	Football	Play bulldog or tig	
Surface for playing	Surface for play	Grass is safer	
Surfaces for different activities	Different Activities	Grassy areas for playing on	
		I wouldn't feel safe	
		I'd rather be on grass than concrete	
		It's all concrete so there's nowhere to play	
		There's loads of grass to play and run about	
		When I'm messing round with my friends	

Purpose of locations

RURAL		URBAN	
Raw codes	**First order theme**	**Raw codes**	**First order theme**
Open spaces of fields	Fields	Walking back from school	Lack of traffic
Playing in the fields		The idea of the 'perfect place'	Locations with multiple affordances
We play football there		Cycling	Pavements
Hills for cycling	Hills	Skating	

Quote	Theme	Quote	Category
I like sitting on top of the high hills		It's a bit further so we don't go there	
It's a place for adventure	Intrinsic associations of place	Parks proximity to friends	
It's a secretive place		Parks proximity to school	
I feel mountain-bikey		Parks proximity to school	Proximity
Play football there - no one goes there	Lack of people	Proximity to home	
Play tig there – not many people there		Proximity to house	
Range of activities depending on my mood	Locations with multiple affordances	Proximity to school	
Why I go to one park more than the other		Affordances in the school playground	
Climbing trees		It used to just be a plain wall	
Nature – nice to walk through	Nature	It's got loads of different things	School grounds
I like nature a lot so it's nice for me		They made it into arches so you can run through it	
Parks proximity to school	Proximity	If you're outside you have so much space - you can do anything	
Playing on roads	Roads	It's a huge place you can run about and do stuff	
Quiet roads		It's got room for everyone	
More space to play		Main thing when outside - space	
Lots of space		Outside you get lots of space	
More space outside		Space for football	
More space to do stuff	Space	There's a big open green place you can play in	Space
There's more space in the park		There's a lot of space	
Not enough space inside		There's more room	
I go to the park to climb the trees		There's more space	
Most active - at the park playing football	The park	When there's a big large space you can play hide and seek	
I go there for the view of the sunset		You don't have much space inside	
I like going up there and just looking down		After school we go here and play football	
I like sitting on top of the hill and looking at the view	The view	it's got a farm and swings	The park

		My favourite thing to do at the park	
		I Play in the park	
		Playing football at the park	
		The park has stuff that the field doesn't	
		The secret park	
		There's more to do at the park	
		What I do in the park - football	
		What we do at the park - sit around	
		A big field	
		I look for a big space	
		It's quite a big park	The size of the space
		Massive field	
		Big area to play	
		I can go there anytime I want	
		Affordances for games	
		Where I meet all my friends	
		We go to talk	Why I go there
		We can eat and then play	

Sports/Sports facilities

RURAL		URBAN	
Raw codes	First order theme	Second order theme	Sub Theme
Access to sports facilities	Sports Facilities	Favourite thing about being outside - sports	
		Favourite thing to do at the park – sports	
		I don't like playing school sports inside	Sports
		I like doing them because they're outside	
		Playground equipment too busy	

Potential Affordances

Adult Restrictions

RURAL		URBAN	
Raw codes	**First order theme**	**Raw codes**	**First order theme**
No ball games	Adult restrictions	Closing school pitches out of school hours	Adult restrictions
We're not allowed to go in there		No ball games	
		Teach restrictions	

Social Intimidation

RURAL		URBAN	
Raw codes	**First order theme**	**Raw codes**	**First order theme**
Teenagers doing drugs	Avoiding teenagers	Hanging out at the skate park and doing bad stuff	Avoiding teenagers
They just sit on it	Crowds	Teenagers are scary	
		You can't get on anything	Crowds
		They might be crazy	Strangers

Time of day/light

URBAN	
Raw codes	**First order theme**
I avoid going there at night	Time of day
A would go there during the day but not at night	

Unsuitable equipment

RURAL		URBAN	
Raw codes	**First order theme**	**Second order theme**	**Sub Theme**
Baby swings	Not age appropriate	Babies can fit in them	Not age appropriate
Equipment for younger kids		It may look big but is actually quite small	
I don't like seeing the small slide		It's a bit small for us	

I kinda, get out of that now		Only younger children using park equipment	
They should put in proper swings		some people think that people our age are grown out [of] it	
Equipment is dangerous	Hazardous equipment		

Weather

RURAL		URBAN	
Raw codes	First order theme	Raw codes	First order theme
Better weather would encourage me to go outside more	Weather as a barrier	It's winter - no chance to play	Weather as a barrier
Doesn't go outside if the weathers bad		Unless it's raining	
Rain and snow stop me going outside		When it's raining I go home	
We're not allowed there when it's wet		Weather extremes	
If it rains we go under the shelter and play wall'y	Weather changing affordances	It's better if it's sunny	
It was a sunny day so I went out on my bike		Nice weather makes me go outside more	
Splash in the puddles		I go there to sledge if it's snowy	Weather changing affordances
Tig or sledging		I'm actually quite active - weather	
We don't go there unless it's sledging		Weather changing affordances	
		I'm used to the rain	Acceptance of weather

Traffic

RURAL		URBAN	
Raw codes	First order theme	Raw codes	First order theme
Cars block off the cycle paths	Cycling	Busy roads influencing cycle routes	Cycling
I won't cycle at rush hour		Cycle path	
Problems with cycling		Cycling on the road is very dangerous	
Too much traffic to cycle		Pavements are for cycling	
We can't cycle because of the fast roads		They don't like us skating there at rush hour	Rush hour

If there's fast cars I don't feel safe	Road safety
Travelling to school - no pavements	

Lack of affordances

URBAN	
Raw codes	**First order theme**
it's like just plain and there's nothing too exciting	Lack of affordances
Planting trees to create affordances	

Fear

RURAL	
Raw codes	**First order theme**
Cycle paths are quiet - scary	Fear

Mood

RURAL	
Raw codes	**First order theme**
I would go there if I wanted to relax	Changing locations depending on mood
If we didn't want to do activities	
If we were feeling jumpy and excited	
If we were tired	
We'd go there if we wanted to play	

Social Affordances
Friends

RURAL		URBAN	
Raw codes	**First order theme**	**Raw codes**	**First order theme**
Cause my friend is always outside	Friends providing	I don't like being by myself	Friends for Company

Friends influence being outside	encouragement to go outside	I like to cycle with two of my friends	
Friends is the biggest influence of being outside		If I didn't have any friends then I wouldn't actually be able to do anything	Friends creating affordances
If I don't find Connor I just go back in		If you don't have friends then you can't do anything	
If there was more friends around I'd go outside more		There's lots of things you can do together	
It's fun cause your friends are there		We climb trees and play tig	
My friend started going and asked if I want to come along		We just go down tae the parks and kinda play football	
There's no one outside		When you're outside you just want to play with friends	
There's people there to play with		You can do more with your friends	
What would be the point in playing outside if there's no one to play with		You can talk to your friends	
Company for cycling	Friends for Company	Being with friends makes you more active	Friends influence on activity levels
Friends have taught me a lot		More active with friends	
Going to the shops with friends		My friends encourage me to be active	
I walk there because I like spending time with my friends		I don't really go there on my own	Friends influence on location
Walking to school with friends		I go there with my best friends	
When my friend's away I'm bored		I go there with my friends	
Friend's siblings	How friends can influence place preference	I would never go there on my own	
I have lots of friends there		I wouldn't go here on my own	
I wouldn't go there by myself		I'd go there if jack was free	
only go there with friends		If I'm with my friends I'll go to the park	
Where I go when I'm with my friends		If I'm with my friends I'll go to the park	
		Security with friends	
		We go to the shop then go play football	
		We know we're going to play football	
		Weekends when my friends are round	

Friends are a bigger influence than family	Friends providing encouragement to go outside
I don't like to be outside on my own	
I wouldn't go outside if it wasn't for them	
More likely to go out with friends	

Family

RURAL			
Raw codes	**First order theme**	**Raw codes**	**First order theme**
I'm not allowed that far	Boundaries	I'm not allowed to go...	Boundaries Company
Talk of boundaries		My parents give me a set time when I have to come home	
Cycling with dad	Family encouragement	Cycling with my sister and dad	
going outside with family		Going to the park with my dad	
Helping on the farm		I go there with my family	
I'd still do it but it wouldn't be as exciting		I'd go there with my dad	
It makes me feel happy when hes there		Playing football with dad	
my sister has clubs now		there's less company by myself	
They go out and do stuff with us		I think I started being active because my mum and dad were really active	Family encouragement
I get pushed outside by my mum		I'm outside more cos' of mum	
We play football there	Grandparents location to affordances	Me and my dad will play football	
Grandparents proximity to fields		My cousin does photography so I go with her	
Neds	Safety concerns	My mum was a PE teacher - we do a lot of sporty things My older cousin played it	
Parents concerns about traffic			
		Unless my mum told me to go outside	
		I would listen to my parents over my friends	Respecting parents
		Sorry but my parents said I can't come	

Community

RURAL		URBAN	
Raw codes	**First order theme**	**Raw codes**	**First order theme**
Cubs	Community	I know people's names	Community
Everyone's nice		It's hard walking to school when there's no lollipop man	
I can talk to them		It's important that I know my neighbours	
I feel safe there		it's easy because he can cross me	
People are important in a neighbourhood		Strangers	
Influence of nice people		Travelling to school - Lollipop lady	
Nice people make me feel safe		somewhere safe if you hurt yourself - neighbours	
Lollipop man retired			
Neds make me feel unsafe			
People my age to play with			
Types of people			
Traffic controls			

Mobile phones

RURAL		URBAN	
Raw codes	**First order theme**	**Raw codes**	**First order theme**
I take my phone so I know when to come home	Telephone	Having a phone - confident	Telephone
		He has an iPhone so he can just call someone	
		I like it cause I can contact mum and stay out	

I like knowing I can contact someone	
I've got my own phone	

Variety of Affordances
Variety of activities

RURAL		URBAN	
Raw codes	**First order theme**	**Raw codes**	**First order theme**
If there's lots of different things to do then it's fun.		There's more stuff to do	Variety of activities
It's fun at the park - a ton of things to do		There's more stuff to do there	
Lots to do	Variety of activities		
More things to do			
More to do			
We did a lot of outdoor activities			

Variety of equipment

RURAL	
Raw codes	**First order theme**
Putting more equipment in the park would make me go more	Variety of equipment
You get bored with the same stuff	

Perceived benefits of being outside
Physical Benefits

RURAL		URBAN	
Raw codes	**First order theme**	**Raw codes**	**First order theme**
It gets you active	Being Active	What being outside means to them	Being Active

Parents being active		why I go outside - getting active	Exercise
I get pushed outside by my mum	Physical fit	You're doing it without knowing	
It's good for your health	Health	Cycling is more exercise	
		More people would be obese	Obesity
		It's keeping you fit	Physical fitness
		To get you fit	
		What being outside means to them	
		Why I keep fit	

Psychological Benefits

Companionship

RURAL		URBAN	
Raw codes	**First order theme**	**Raw codes**	**First order theme**
I don't like being on my own	Companionship	Being with friends is the most important	Companionship
I like spending time with my friends		Favourite thing about being outside - meeting new people	
Make new friends		I feel safe around my friends	
Making friends		I get more company with my friends	
talk to people and communicate		I get quite bored on my own	
What would be the point in playing outside if there's no one to play with		if I had no friends then I'd be lonely	
		It's a team thing - not an individual thing	
		Meeting new people	
		My friends stick up for me	
		Unsafe is when I'm by myself	
		What being outside means to them	
		why I go outside - Playing with friends	

Fresh air

RURAL		URBAN	
Raw codes	**First order theme**	**Second order theme**	**Sub Theme**
I like cycling because of the fresh air - don't get that in the car		I like exercising outside because there's more fresh air	
I like the fresh air	Fresh Air	It wakes you up	Fresh Air
Walking to school - Fresh air		Most important aspect of being outside	
You get the wind in your face		why I go outside - fresh air	

Fun

RURAL		URBAN	
Raw codes	**First order theme**	**Raw codes**	**First order theme**
Having fun is the most important thing		Being outside means - That I'm having fun	
I go outside because it's fun		I look for fun	
It's fun at the park because there's a ton of things to do	Fun	It's so much fun!	Fun
0Look how muddy I am!		Should I go outside I think yeah, I should because it'd be fun	
Playing football is fun		What being outside means to them	
Playing in a den - fun			

Mentally and Physically Stimulating

RURAL		URBAN	
Raw codes	**First order theme**	**Raw codes**	**First order theme**
Competing with friends		More of an adventure	Adventure
I've done that!	Accomplishment	I go outside for excitement	
We've been attempting mad stuff on the monkey bars		Life would be boring without outside	Excitement

Climbing trees - challenging		When I'm bored I go tae the park	
Activity trail is more adventurous	Adventurous	you'd just be looking at it from windows, wouldn't be actually be able to go experience what it's like.	Experience
Bear Grylls		You get to see so much more outside	
You get quite adventurous		Being away from mum and dad	Freedom
Climbing trees - exploring		Being free from parents	
something is going to happen	Apprehensive	Lack of adult restriction	
I get bored - indoors	Boredom (inside)	There's a big area to be free	
Muck about			
It's the freedom I enjoy	Freedom		
Time away from my brother			
Confidence	Life Skills		

Relaxation

RURAL		URBAN	
Raw codes	**First order theme**	**Raw codes**	**First order theme**
Countryside makes me feel relaxed		It helps you to relax	Relaxation
I like the quiet - makes me feel relaxed			
If I want to relax	Relaxation		
It's a nice place to hang out and relax			
Nice views are relaxing			

Belonging

RURAL	
Raw codes	**First order theme**

Being a countryside boy	
It's mountain-bikey	Belonging
Not a city boy	
Wildlife helps with identity	

Views

RURAL	
Raw codes	**First order theme**
Enjoys looking out and not seeing lots of cars	
Going to specific places for the view	
I like looking at all the views	Views
I like seeing different types of trees	
I like the texture of clouds and the trees are nice	
The view is a quarter of why I go outside	

Waste of a soul

URBAN	
Raw codes	**First order theme**
It's a waste of a soul	Waste of a Soul

Perceptions of the Neighbourhood

Changes to the Neighbourhood

RURAL		URBAN	
Raw codes	**First order theme**	**Raw codes**	**First order theme**
They should put in proper swings		Add more sports equipment	
They've got more stuff in their parks	Adding more equipment	get some things fit to us.	Adding more equipment
Adding more sports stuff		More swings and a roundabout	
Adding a MUGA pitch		Outdoor gyms for kids	

Astroturf		The swings - they could put more in	
Dog Foul		There should be more stuff to play with	
Picking up litter	Anti-social behaviour	Banning smoking	
Rubbish on the road		Signs to stop smoking	Anti-social behaviours
More crossings for the main road		Dog foul	
Problems with cycling		I don't like to go to places with rubbish	
Putting a path to make it easier	Changes related to traffic	the skatepark - lots of graffiti and rubbish	
Speeding cars		A separate road for cyclists	
There's vans down there		Cycle lanes	
Clubs for children	More opportunities for children	Faster speed limits	
a park that stays open during winter		I would make the roads safer	
Having a surface to play on when it's wet		I would put in a pavement	
More signs in neighbourhood	Signage	I'd put in cycle lanes	Changes relating to traffic
		Potholes	
		Speed limits just for school times	
		There's a need for cycle paths	
		Traffic calming measures	
		Traffics too loud	
		Wider pavements - safety	
		You're waiting 5 minutes to cross a road	
		Placing lights in the park	
		Potholes on pavements	Overall perception of improved safety
		Put cameras up	
		they just need to make places a lot more safer	
		Closed parks	
		Do more things on the roads	Play related changes
		Everyone having big gardens - space	
		More areas to play	

More green spaces	
So the younger ones can't get in	
When it rains	

Children's Voices

RURAL		URBAN	
Raw codes	**First order theme**	**Raw codes**	**First order theme**
Council listen to children because the come to school	Children feeling heard	Contentment with neighbourhood equipment	Children feeling heard
Junior Community Council		Council listen to the majority	
They listen to some things and some things they don't - Council		They do add stuff for kids - I wouldn't change anything	
Adults not listening to children	Knowledge Hierarchy	Because we're young they just think we're talking rubbish	Knowledge Hierarchy
		Do the council listen to children	
		some adults don't think that children can be as responsible as they are	
		The government think adults are so much more smarter than kids	
		They ignore no dog foul so I ignore no ball games	
		They think adults know more about important stuff so they just want to hear from them	

Perceived definition of the term neighbourhood

RURAL		URBAN	
Raw codes	**First order theme**	**Raw codes**	**First order theme**
It's a community	Community	It's a happy community	Community
Nice people	People	It's like a community	

Raw codes	First order theme	Raw codes	First order theme
People that live around you		boundaries - until I didn't recognize anyone	Neighbourhood boundaries
Your neighbours and where you live		Boundaries of my neighbourhood	
Your neighbourhood	Possession	Map of local environment	
Your street		Knowing the people around you	People
		Somewhere where you feel safe and you recognise people	
		Your house and people living next to you	
		Your house and there's lots of people	
		Your neighbours are really friendly	
		You're all friends and there's loads of children to play with	
		It's like a street where I live	Possession

Aesthetics

URBAN	
Raw codes	**First order theme**
I like seeing trees - I like nature	Neighbourhood features
I like to see the fountain - really pretty	
It's a nice view from up there	
Favourite thing about being outside	Neighbourhood upkeep
Flowers look nice	
It's important that places are pretty	

Perceptions of Safety

URBAN	
Raw codes	**First order theme**
bad people - teenagers	Feeling unsafe

Graffiti	
Places I don't like going	
Street lighting wouldn't make a difference	
I don't really find any people that aren't nice	High perceptions of safety
I try and feel safe by not judging people	
Nowhere she feels unsafe	
I don't really find any people that aren't nice	Traffic related safety
There's not much traffic	
Traffic lights - getting to school	

Comparison of Urban and Rural Living

RURAL	
Raw codes	**First order theme**
City life - fumes	Comparison of Urban and Rural Living
Fresh Air	
I love going outside no matter what	
You're not with lots of cars	

Media Influence

RURAL	
Raw codes	**First order theme**
I don't really get put off by that - media	Media Influence
I'm not going outside	
It was all over the newspapers - I get scared	

Nature

RURAL	
Raw codes	**First order theme**
I like seeing trees	Nature
I like the scenery walking into school	
Lots of trees	
You get different types of trees	

Appendix H: Coding table for area deprivation comparison

Affordances

Actualised Affordances

Activities

High dep		Low dep	
Raw codes	**First order theme**	**Raw codes**	**First order theme**
Den building	Dens	Favourite thing to do outside	Cycling
Playing in a den		Favourite activity is cycling	
Playing football is fun	Football	I like to cycle in nature	
Cycling on hills	Cycling	Play football outside	Football
		I search for clues that foxes have been there	Fox finding
		I'm a member there	Golf
		That's the hill I was trying to take, I like to climb up it.	Hill climbing

Equipment

High dep		Low dep	
Raw codes	**First order theme**	**Raw codes**	**First order theme**
Swings	Pieces of Equipment	Favourite piece of equipment – swings	Pieces of Equipment
Trampolines		Flying fox	
Monkey bars		I play on the swings but not the slide	
Climbing stuff		Swings and monkey bars	
Equipment for different ages	Perceptions about the Equipment	Happy with the equipment	Perceptions about the Equipment
Equipment in our park		We play with this equipment because we can use it	
No equipment but park around the corner			
There's more to do at the park			

Non-normative

High dep		Low dep	
Raw codes	**First order theme**	**Raw codes**	**First order theme**
Climbing on top of the slide		It's not fun if you use it properly	
Climbing the whale jaw replica		Using equipment in a unique way	Non-normative
creating football affordances	Non-normative	Sitting by a tree	
we play football there and like they set up just goal nets against the fence			

Play

High dep		Low dep	
Raw codes	**First order theme**	**Raw codes**	**First order theme**
Being able to play in the garden		If there's lots of different things to do then it's fun.	
Climbing stuff		Purpose of being outside	Play
Climbing trees		Why I go outside	
Different affordances for playing			
Places for play			
Favourite part of the playground to play	Play		
Play on the journey to the skate park			
Over grown areas for play			
Play in the park			
Playing games			
Playing in the playground			

Preference of surface

High dep		Low dep	
Raw codes	**First order theme**	**Raw codes**	**First order theme**
Grass area for playing with friends	Grass for playing	There's lots of green grass	Cycling

Grassy areas for playing on		concrete for speed	
I wouldn't feel safe [on concrete]		Flats good for speed	
If you fell it would hurt on concrete		The stream - go through it fast	
If I fall over then I don't hurt myself		I like the bumps	
Grass to lie on	Grass for relaxing	grass for safety	
Different surfaces for football	Surface changing affordance	If it's too hot to run about – go on grass	Grass for relaxing
Surfaces for different things		You can sit, lie down, grass is better	
Concrete is good for skateboarding	Surface for skateboarding	Choosing what to play on	Surface changing affordance
For playing on my bike	Surface for Biking	Grass to play and run about	Surface for playing
		Playing – astro or grass	
		Make roads flat so I can scoot	Surface for scooting

Purpose of locations

High dep		Low dep	
Raw codes	**First order theme**	**Raw codes**	**First order theme**
Proximity of the park to school	Proximity	parks proximity to school	Proximity
Proximity to the house		Go there less because it's further	
More space to do stuff	Space	Proximity to school	
More space outside		Walking to school	
There's more room outside		There's more space to play in the countryside	Space
Favourite thing about being outside - scenery	Views	Lots of space	
Going to specific places for the view		Main thing when outside – space	
I like seeing trees		Open spaces of fields	
I like the scenery walking into school		playing inside isn't as fun 'cause there's not as much space	
		That's a nice view	Views
		The view is a quarter of why I go outside	
		I like to see nice views	

We go and play in fields	Fields
It's a place for adventure	Intrinsic associations of place
It's a secretive place	
Going somewhere because it offers multiple opportunities	Locations that offer multiple affordances
Play area that's got more nature	Nature
Walking through nature	
We go there to play football because no one goes there	Lack of people
Not many people	
Cycling on the pavements	Roads and Pavements
Playing on the pavements	
Playing on the roads	
Cycling on the roads	
Big clear space	Size of location
I look for a big space	
Massive field	
Favourite thing to do at the park	The park
Lots of play opportunities	
What the park has	
What I do in the park	
What I play in the park	
What we do in the park	
Why I go to one park more than another	
That's where I meet all my friends	
We go there to talk	
We eat there then we play	Affordances for games

Sports/Sport facilities

High dep		Low dep	
Raw codes	**First order theme**	**Raw codes**	**First order theme**
Favourite thing about being outside - sports	Sports/SF	Access to sports facilities	Sports facilities
Favourite thing to do at the park			

School grounds

High dep	
Raw codes	**First order theme**
Affordances in school playground	School grounds
It used to just be a plain wall - more fun	
They made it into arches so you can run through it	

Potential affordances

Unsuitable equipment

High dep		Low dep	
Raw codes	**First order theme**	**Raw codes**	**First order theme**
Baby swings	Unsuitable equipment	Age appropriate equipment	Unsuitable equipment
They should put in proper swings		Using equipment that's meant for smaller children	
I don't like seeing the small slide		some people think that people our age are grown out it and that's why they do smaller equipment for smaller people	
		It may look big but is actually quite small	
		Equipment for younger kids	

Busy Roads

High dep		Low dep	
Raw codes	**First order theme**	**Raw codes**	**First order theme**
Cars block off the cycle paths	Busy roads	Busy roads influencing cycle routes	Busy roads
Problems with cycling		Too much traffic to cycle	
		I won't cycle at rush hour	
		Cycle path	
		Do more things on the roads	
		Travelling to school - no pavements	
		Safety on busy roads	
		parked cars taking up space	

Weather

High dep		Low dep	
Raw codes	**First order theme**	**Raw codes**	**First order theme**
I'm actually quite active - weather	Not influenced by weather	When it's raining I go home	Weather as a barrier
It's winter - no chance to play	Weather as a barrier	Better weather	
		Weather extremes	
Rain and snow			
Rain influencing play		How locations change their affordances	Weather changing affordances
The weathers bad		Weather affecting play	
You missed the chance to play		We play wall-y	
Nice weather	Weather changing affordances	Trees as a shelter from rain	
We don't go there unless it's sledging		It was a sunny day so I went out on my bike	
		If it's hot we'll go on the grass	
		I go there to sledge if it's snowy	

Hierarchy of locations

High dep	
Raw codes	**First order theme**
Don't need to go back there - least favourite place	Hierarchy of locations

Fear

High dep	
Raw codes	**First order theme**
Cycle paths are quiet - scary	Fear

Change to the affordance

High dep	
Raw codes	**First order theme**
Having a surface to play on when it's wet	
Planting trees to create affordances	Change to the affordance
They should put in a climbing frame	
Way to school	

Adult restrictions

High dep	
Raw codes	**First order theme**
If it's raining we're not allowed to go on it	
No ball games	
Not allowed to play ball games	Adult restrictions
We're not allowed there when it's wet	
We're not allowed to go in there	

Mood

Low dep

Raw codes	First order theme
I would go there if I wanted to relax	Locations depending on mood
We'd go there if we wanted to play	
If we were tired	
If we were feeling jumpy and excited	

Animals

Low dep	
Raw codes	First order theme
A dog would encourage me to go out	Animals

Other Children

Low dep	
Raw codes	First order theme
When it's crowded you can't get on anything	Other children
Young children at the park	

Social affordances

Friends

High dep		Low dep	
Raw codes	First order theme	Raw codes	First order theme
Being bored without friends	Company	Company for cycling	Company
if I had no friends then I'd be lonely		Friends have taught me a lot	Friends creating affordances
It's fun cause your friends are there		Friends vs family	
Walking to school with friends	Friends creating affordances	Being with friends makes you more active	Friends influence on activity levels
Friends are very important		Where I go when I'm with my friends	
When you're outside you just want to play with friends		We know we're going to play football	
There's people there to play with		most active with my friends	Friends creating

			affordances
If you don't have friends then you can't do anything		I have lots of friends there	Friends influence on location
		Not going to the park on your own	
		I wouldn't go there by myself	
		Cause my friend is always outside	
Going to the shops with friends	Friends influence on location	Friends are a bigger influencer than family	Friends providing encouragement to spend time outside
Weekends when my friends are round		If there was more friends around I'd go outside more	
only go there with friends		More likely to go out with friends	
It's got room for everyone		My friend started going and asked if I want to come along	
If I'm with my friends I'll go to the park		What would be the point in playing outside if there's no one to play with	
Friends influence being outside	Friends providing encouragement to spend time outside		
There's no one outside			
If I don't find Connor I just go back in			
Friend's siblings			
Friends is the biggest influence of being outside			

Family

High dep		Low dep	
Raw codes	**First order theme**	**Raw codes**	**First order theme**
Playing mini golf with the family	Activities with the family	Cycling with dad	Activities with the family
Different affordances with family and friends			
Family's attitude to activity	Family encouragement	Going to the park with my dad	
Parents concerns about traffic	parent concerns	I'd still do it but it wouldn't be as exciting	
		I'd go there with my dad	

My cousin does photography so I go with her	
Play tennis with my dad	
Playing with dad	
They don't just go out to the pub every night	
Friends vs parents	Boundaries
I'm not allowed that far	
Talk of boundaries	
I just like to cycle with my dad.- less company	Company
Walking with parents for company	
Grandparents proximity to fields	Grandparents location
My sisters a teenager - doesn't want to go out	Siblings
older siblings not wanting to be active	
'Go outside Lisa'	Parents encouragement
I get pushed outside by my mum	

Community

High dep		Low dep	
Raw codes	**First order theme**	**Raw codes**	**First order theme**
Cubs	Community	Everyone's nice	Community
Hard to walk to school with no lollipop man		I feel very safe there	
He crosses me every morning, which is good because it's a busy junction		Importance of people in the neighbourhood	

	It makes me feel safer because they're nice people	
	lollipop man retired	
	People my age to play with	
	Travelling to school - Lollipop lady	

Social Intimidation

High dep		Low dep	
Raw codes	**First order theme**	**Raw codes**	**First order theme**
Teenagers being intimidating		Avoiding teenagers	Social intimidation
They just sit there and I'm like get off!	Social intimidation	I wouldn't go here on my own	
teenagers doing drugs			

Mobile Communication

High dep		Low dep	
Raw codes	**First order theme**	**Raw codes**	**First order theme**
I like it cause I can contact mum and stay out		Having a phone - confident	Mobile communication
I've got my own phone	Mobile communication	I like knowing I can contact someone	
I take my phone so I know when to come home			

Other children

High dep	
Raw codes	**First order theme**
Children that go to the play par	
Older children at the skate park	Age of children
Type of kids at skate park	

Peer Acceptance

High dep	
Raw codes	**First order theme**

Doesn't like to be seen with parents	
I don't want to look like a loner	Peer acceptance
I don't go there with my parents - embarrassing	

Variety of affordances

High dep		Low dep	
Raw codes	**First order theme**	**Raw codes**	**First order theme**
It's fun at the park because there's a ton of things to do		If there's lots of different things to do then it's fun.	
It's got loads of different things	Variety	Location affordances for games	Variety
Lots to do		Lots to do	
More to do		More things to do	
There's more stuff to do		We did a lot of outdoor activities	

Perceived benefits of being outside
Physical benefits

High dep		Low dep	
Raw codes	**First order theme**	**Raw codes**	**First order theme**
It gets you active	Being Active	To get fit	Being Active
Parents being active		why I go outside - getting active	
What being outside means to them		Good for your health	Healthy
		More people would be obese	
You're doing it without knowing you're doing it			
It's keeping you fit	Physical fitness		
What being outside means to them			
Why I keep fit			

Psychological Benefits

Companionship

High dep		Low dep	
Raw codes	**First order theme**	**Raw codes**	**First order theme**
Favourite thing about being outside - meeting new people	Companionship	Favourite thing about being outside - playing and friends	Companionship
Getting into football		Friendship	
I like spending time with my friends		I don't like being on my own	
Meeting new people		Making friends	
What being outside means to them		Most important aspect of being outside	
		Playing with friends	
		What would be the point in playing outside if there's no one to play with	
		why I go outside - Playing with friends	

Freedom

High dep		Low dep	
Raw codes	**First order theme**	**Raw codes**	**First order theme**
Being free from parents	Freedom	There's a big area to be free	Freedom
Muck about			
It's the freedom I enjoy			
What does freedom mean			

Fun

High dep		Low dep	
Raw codes	**First order theme**	**Raw codes**	**First order theme**
Getting to school	Fun	Having fun	Fun
I just like being on the scooter more than		Outside is fun	

being in a play park			
I look for fun		Should I go outside I think yeah, I should because it'd be fun	
It's fun at the park because there's a ton of things to do			
It's fun cause your friends are there			
Journey to the skate park			
Playing football is fun			
Playing in a den - fun			
Way to school			
we've been attempting mad stuff on the money bars			
What being outside means to them			

Mental and physical stimulation

High dep		Low dep	
Raw codes	**First order theme**	**Raw codes**	**First order theme**
Life would be boring without outside	The experience of being outside	I've done that!	Accomplishment
Wouldn't be actually be able to go experience what it's like.		Adventurous More of an adventure	Adventure
Trying new things	New Skills	Bear Grylls	Life skills
It's a waste of a soul	Waste of a soul	Climbing trees	challenging
		Climbing trees	exploring
		Competing with friends	Competition
		something is going to happen	Anxiety
		Going for a walk	Purpose
		I don't like playing school sports inside	The experience

Belonging

Low dep	
Raw codes	**First order theme**
Being a countryside boy	Belonging
Things I like to see - Animals	

Fresh air

Low dep	
Raw codes	**First order theme**
Fresh air	Fresh air
You get the wind in your face	
why I go outside - fresh air	

Happiness

Low dep	
Raw codes	**First order theme**
I love seeing cats	Happiness
Look how muddy I am!	
It makes me feel happy when I'm with people	
Places I like go to - Wind in hair	
Trees and leaves - happiness	
Weather influencing mood	

Independence

Low dep	
Raw codes	**First order theme**
Going out on my own	Independence

Relaxation

Low dep	
Raw codes	**First order theme**
If I want to relax	Relax

Relax	
Countryside makes me feel relaxed	
Nice views are relaxing	

Space

Low dep	
Raw codes	**First order theme**
I don't like enclosed spaces	Space
Feeling enclosed	

Perceptions of their neighbourhood

Changes in the neighbourhood

High dep		Low dep	
Raw codes	**First order theme**	**Raw codes**	**First order theme**
Add more sports stuff	Adding in equipment	Adding in a MUGA pitch	Adding in equipment
They've got more stuff in their parks		Equipment I'd like in the park	
They should put in proper swings		It would be nice to get some, like, things fit to us.	
They should put in a climbing frame		just has a baby climbing frame	
The swings - they could put more in		Putting more equipment in the park would make me go more	
More equipment at the skate park		Roof over play equipment	
Add more stuff to the park		So the younger ones can't get in	
Dog foul	Anti-social behaviour	Dog foul	Anti-social behaviour
Closing school pitches out of school hours	More opportunities for children	Smoking in the environment	
Going to the park in the winter		What I would change first	More opportunities for children
Clubs for children		Everyone having big gardens - space	
Having a surface to play on when it's wet		More places for activity	
More crossings for the main road	Traffic related	Comparison of roads	Traffic related
Traffic calming measures		Faster speed limits	

You're waiting 5 minutes to cross a road		I don't like...	
Wider pavements - safety		if there were traffic lights here it would make it easier	
There's a need for cycle paths		Potholes on pavements	
Speed limits just for school times		Blocked drain	Appearance
Putting a path to make it easier to walk		What the council could do	
Problems with cycling		weeds	
More traffic calming measures			

Children's voices

High dep		Low dep	
Raw codes	**First order theme**	**Raw codes**	**First order theme**
Adults not listening to children	Knowledge Hierarchy	Do the council listen	Feeling heard
Council listening to the children		Does the council listen	
Junior Community Council		Do the council listen to children	Knowledge Hierarchy
They ignore no dog foul so I ignore no ball games		They listen to some things and some things they don't - Council	
		some adults don't think that children can be as responsible as they are	

Perceived definition of the term 'neighbourhood'

High dep		Low dep	
Raw codes	**First order theme**	**Raw codes**	**First order theme**
It's a community	Definition	generally nice people	Definition
Neighbours		it's a happy community	
Your neighbourhood		People that live around you	
Your neighbours and a place where you live		people who live near you	
Your street		You're all friends and there might be loads o' children to play with	

Perceived Safety

High dep	Low dep

Raw codes	First order theme	Raw codes	First order theme
no crossings doesn't bother me	High perception of safety	Feeling safe	High perception of safety
Nowhere she feels unsafe		I don't really find any people that aren't nice	
		I try and feel safe by not judging people	
		going out after dark and just kinda hanging about	Social intimidation
		Places I don't like going	

Media Influence

High dep	
Raw codes	First order theme
I don't really get put off by that - media	Media influence
It was all over the newspapers - I get scared	
I'm not going outside	

Comparisons of neighbourhood

Low dep	
Raw codes	First order theme
City life - fumes	Preferences
Fresh Air	
countryside vs city play	
Ned's make me feel unsafe	
Free facilities	

Aesthetics

Low dep	
Raw codes	First order theme
I think it makes the place look nicer	Aesthetics
They've not just made it a giant ugly building	
weeds	

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