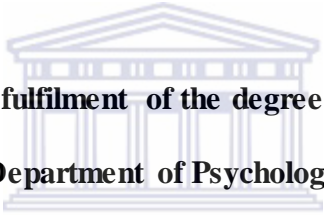


**NATURE AS CHILDREN'S SPACE: CONSIDERATIONS FOR CHILDREN'S
SUBJECTIVE WELL-BEING**

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Keywords: natural spaces; children; mixed methods; children's subjective well-being; structural equation modeling; focus group interviews; community mapping; Photovoice; discourse analysis; South Africa

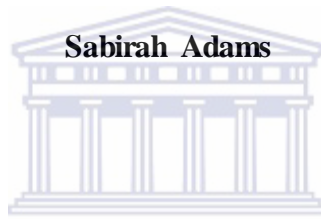
Abstract

The emerging interest in ‘spaces of childhood’ over the past two decades can be identified in a number of disciplines. A substantial body of research has indicated that children’s active engagement within the natural environment as a space has been associated with a range of cognitive, physical, affective, and moral developmental benefits. Given the exponential growth in research on children and nature interactions, it was imperative to explore how children make sense of nature and the influence this has on children’s subjective well-being (SWB) to address the current dearth in the literature; both internationally and in South Africa. The aim of the study was to explore children’s engagement with natural spaces. Within this process the study aimed to explore the extent to which children’s engagement with natural spaces influences their SWB. The specific objectives of the study were: 1) To systematically review and synthesise the findings regarding children’s understandings and engagement with nature as a space (*Chapter Four- Article 1 using a systematic review methodology*); 2) To explore the relationship between children’s environmental perceptions and their subjective well-being (*Chapter Five- Article 2 using Structural Equation Modeling*); 3) To explore how children discursively construct natural spaces and the influence on their subjective well-being, using specific discursive resources and repertoires to construct and assign meaning to their engagement with natural space, and how their constructions and assignments are manifested in their discourses (*Chapter Six- Article 3 using discourse analysis*); and 4) To explore children’s representations and perceptions of natural spaces using photovoice and community mapping (*Chapter Seven- Article 4 using thematic analysis*). The study employed a mixed methods approach to gain an inclusive understanding of children’s daily lives. In advancing the United Nations Convention on the Rights of the Child (UNCRC), the study included children as key agents and valid constructors of knowledge, with crucial contributions to make about their well-being. The study comprised three phases; Phase One encompassed a systematic review which aims to explore how children make sense of, assign meaning to, and perceive natural spaces (addressing objective 1). Phase Two and Three constituted the mixed methods study: Phase Two included the quantitative phase (addressing objective 2) and Phase Three included the qualitative phase (addressing objective 3 and 4) with children between 12-14 years of age. Phase Two encompassed a cross-sectional survey design with children aged 12 years in the Western Cape province of South Africa, and included a final sample of 1004 children. Phase Three employed a qualitative methodological design utilising focus group interviews, photovoice, and community mapping across three diverse communities in both urban and rural geographical locations. While Phase Two

showed no significant relationship between children's engagement in natural spaces (using Structural Equation Modeling) and their subjective well-being, the findings from the qualitative phase, utilising participatory methods, showed that socio-economic status (SES) was a key defining factor influencing how children made sense of their lives. The narratives of children from the low SES communities indicated that safety was a pervasive concern for children, with many having experienced first-hand negative experiences in their neighbourhoods. Many of these experiences have occurred in nature, which resulted in nature being constructed as synonymous with danger, while children from the middle SES community did not perceive safety as a concern in their community. Thus evincing the nuances which exist in children's understandings. Although children's environments are inherently unsafe, an important finding was that nature positively influenced children's subjective well-being. Given the significant role that nature plays in influencing children's subjective well-being, we advance children's environmental subjective well-being (ESWB) which merges the fields of environmental psychology and positive psychology which essentially have a shared goal of enhancing people's quality of life. 'Good places' for children should therefore give preference to children's safety in their neighbourhoods, as well as affording children opportunities for engagement in natural spaces which enhances their subjective well-being and life satisfaction. The study points to the need for environmental education in the formal and informal spaces which children inhabit, to foster an intrinsic care for nature.

Declaration

I declare that the research *Nature as children's space: Considerations for children's subjective well-being* is my own work. It has not been submitted before for any degree, or examination at any other university. All the sources I have used or quoted have been indicated and acknowledged as complete references.



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CHAPTER ONE: BACKGROUND AND RATIONALE

1.1. Background

The emerging interest in ‘spaces of childhood’ over the past two decades can be identified in a number of disciplines, ranging from sociology, psychology, law, anthropology and history to landscape architecture, urban design, human geography and children’s geographies. A growing body of researchers (Cross, 2001; Hart, 1979; 1994, Huynh, 2013; Kong et al., 2000; Langhout & Annear, 2011; Loxley, O’Leary, & Minton, 2011; Philo, 2000; Relph, 1976; Scannell, & Gifford, 2010; Tuan, 1974) contend that there are multiple ways of conceiving of the ‘spaces’ and ‘places’ in which children engage. While some scholars refer to ‘children’s places’ or ‘children’s spaces’, others make reference to the ‘intimate geographies of childhood’ (Philo, 2000), ‘children’s geographies’ (Hart, 1984), ‘children’s micro-geographies’ (Robinson, 1984), children’s ‘sense of place’, ‘place attachment’ (Hummon, 1992, Low & Altman, 1992; Moore & Graefe, 1994), ‘place to belong’ (Kjørholt, 2003) ‘topophilia’ (Tuan, 1974), ‘insidedness’, ‘rootedness’, ‘community sentiment’, or the ‘geographies of well-being’ (McKendrick, 2014).

Owing to its interdisciplinary nature, there is currently a lack of consensus amongst scholars as to a common definition of the concepts of ‘space’ and ‘place’. With its genesis in the work of human geographers such as Yi-Fi Tuan (1974), Anne Buttimer (1976), and Edward Relph (1976, 1981, 1985) in the early 1970’s, theorists became increasingly discontented with what they considered was “a philosophically and experientially anemic definition of place” (Seamon & Sowers, 2008, p. 43-51). As an alternative, these theorists explored ‘place’ as it plays a fundamental role in human experience (Seamon & Sowers, 2008). The study of place also expanded to include the application of metaphorical approaches to delve into the physical sites (i.e. the ‘spaces’ and ‘places’) which children¹ and young people occupy, and their multiple social positions within their societies (Kjørholt, 2003; Hammond, 2003; Meinert, 2003; Nairn et al., 2003; Nieuwenhuys, 2003).

¹ The terms children and adolescents are utilised interchangeably to more broadly refer to every child between the ages of 0 to 18 years. This position is consistent with the United Nations Convention on the Rights of the Child (UNCRC), as well as the Constitution of South Africa wherein a child is defined as any individual between 0 and 18 years.

General features of space and place have been established over the years by theorists such as Buttimer (1976), Relph (1976), and Tuan (1977). While *space* refers more broadly to types of settings for interaction (Philo, 2000; Relph, 1976; Shaw, 1987), *place* is denoted as a specific site of meaning, which children most often do not convey as ‘children’s place’, but instead they physically reveal these places; a more specific, discernible part of space. Tuan (1977) similarly accentuates that *space* is more abstract than *place*, that what commences in experience as an indistinct space, develops into a place as a child experiences a setting, and becomes familiar with it through lived experiences and by assigning particular meanings to it (Tuan, 1977). Ensuing theorisations and research on space and place has resulted in a burgeoning field of research (Kyle & Chick, 2007; Rasmussen, 2004) concerned with defining and understanding these terms in general, but more specifically gaining a greater understanding of children’s sense of space and place. Of the diverse spaces and places in which children engage and make use of, the natural environment has been identified as a significant space contributing toward children’s well-being (Adams & Savahl, 2015; Bird, 2007; Chawla, 1988; 2002; 2007; Evans, Juen, Corral-Verdugo, Corraliza, & Kaiser, 2007; Hart, 1997; Louv, 2008; Phenice & Grifföre, 2003; Wals, 1994; Wells, 2000).

While the interest in human’s connection to the natural world and their well-being is well-established in the literature, particularly with regard to adults, there is limited empirical initiatives which explore children’s perceptions of natural spaces and the influence on their subjective well-being (SWB) in particular. The importance of the impact of nature experiences on children’s SWB is emphasised in Kerret et al.’s (2014, p. 82) ‘explanatory theoretical model’ which ‘proposes psychological mechanisms through which ‘green’ schools may influence not only students’ learned environmental behaviour (EB) but also their subjective well-being.’ Subjective well-being is recognised as a component of Quality of Life, and is denoted as ‘people’s affective and cognitive evaluations of their lives’ (Diener, 2000, p.1). An influential scholar in the field of well-being, Diener (1984), purported that SWB comprises three distinct components, namely life satisfaction, positive experiences, and negative experiences. Diener, Suh, Lucas, and Smith (1999) postulate further that the advancement of the area of SWB was the result of the proclivity of society to ‘value’ the individual, attribute significance to subjective perceptions and appraisals of life, and ‘the recognition that well-being necessarily includes positive elements that transcend economic prosperity’ (p.276). In this regard, Tiliouine (2012, p.1) notes that ‘wellbeing can be used as a complementary robust measure to monitor societies’ and communities’ progress.’; echoing

the contention by economists that Gross Domestic Product (GDP) should not be used in isolation to appraise progress in a society (see Kahneman & Deaton, 2010). Ben-Arieh et al. (2014, p.10) note that “In social science as well as in social life, qualitative and quantitative measures, as have been mentioned, often complement one another in measuring well-being for children”.

This resonates with the driving force behind the focus on children’s SWB which was largely due to the United Nations Convention on the Rights of the Child (1989), as well as the ‘new social studies of childhood’ in the latter part of the twentieth century (Sandin, 2014; see e.g. James & James 2004). This proclivity in thinking about children and childhood more broadly mirrors the historical shifts advocated by the child studies movement in the early twentieth century (Sandin, 2014). As Casas (2016, p.10) maintains, “Only in the last few decades have scientists become interested in studying children’s and adolescents’ well-being from their own perspective. Until very recently, it was assumed that solely adult evaluations on children’s well-being data would be valid enough.” This culminated in the significance of children’s subjective appraisals and evaluations of their lives across numerous disciplines (Casas, 2000). Children’s SWB was one of these disciplines, in addition to children geographies, which espoused children’s rights to participation by enabling children’s voices to be heard (see Hart, 1989; 1994). An important consideration by Casas (2016, p. 10) is encompassed in the following:

“In addressing child well-being and quality of life, we must not forget that by definition, quality of life includes the perceptions, evaluations, and aspirations of everyone involved, and those of children and adolescents are therefore essential. In other words, we must not confuse child well-being with adult opinions of child well-being. Both are important, but they are not the same, and both are a part of the complex social reality we call child well-being. Therefore, we face the challenge of filling the large information gap concerning the younger population’s point of view of the social reality that affects humanity.”

In this respect, Kerret et al. (2014) proposed the encompassing concept of children’s ‘environmental subjective well-being’ (ESWB), delineating the importance of two related concerns of contemporary societies; that of conserving the natural environment and children’s well-being. Other researchers have proposed different concepts which encompass the same focus as that of Kerret et al. (2014), encompassed in the *positive psychology of*

sustainability (Verdugo, 2012), and *positive ecological attitudes* (Kasser, 2011); while Huby and Bradshaw (2006) point to the *environmental dimension of child well-being*. More so, this evinces a particular trend which has recently emerged in the literature in merging theory and research on environmental psychology (sustainability) and positive psychology (see Kerret et al., 2014; McKendrick, 2014; Venhoeven, Bolderdijk, & Steg, 2013; Verdugo, 2012; Wells, 2014; Wang & Wang, 2016). This merger places emphasis on the importance of engaging in nature for children's well-being and quality of life. It further speaks to the two distinct traditions in well-being, namely the hedonic tradition, which focuses on the 'good life' in relation to happiness and satisfaction with life as a whole (Diener et al., 1999), and the eudaimonic tradition, which advances the good life in relation to meaning and purpose in life, fulfilment, and self-determination (Ryan & Deci, 2000; Ryff, 1989; Verdugo, 2012). In this regard, the goals of environmental psychology and positive psychology are evidently consistent, by advocating for individual's well-being and quality of life, in addition to considerations of environmental quality; in effect evincing the theoretical and conceptual relation between the two disciplines.

Considering the importance of children's places, and given the vital role of nature in relation to numerous positive developmental outcomes for children, it then becomes essential to shift the lens of interest toward the places in which children spend the majority of their time- their neighbourhoods. The concept of 'neighbourhoods' does not only encompass geographic denotations, but is inherently associated with the 'social' as well (Coulton & Korbin, 2007). Coulton and Korbin (2007, p. 350) in their description of neighbourhoods note that:

“As units of social organization, neighborhoods have meaning as places to live or work. They have an identity in the minds of insiders and outsiders. Neighborhoods are more than collections of individuals or locations for populations; they also include space, physical structures, social networks, formal and informal organizations, businesses, systems of exchange and governance, and so forth.”

This meaning which is attached to the neighbourhood more generally, and the specific places therein, echo the basic tenets of place attachment- that is the emotional affiliation for a particular place (Lewicka, 2011; Scannell & Gifford, 2010). While the denotations of 'place attachment' vary in the literature, a proposed organising framework (see Scannell & Gifford, 2010) suggests that it encompasses three dimensions, namely person (Who is attached? To what degree is the attachment related to individual or collectively held understandings?) ,

psychological process (the role of affect, cognition, and behaviour in the attachment), and place (What is the attachment to? What are the characteristics of the place?) (Scannell & Gifford, 2010). It should be noted that these dimensions dovetail with the key components of SWB, and enables one to take into the consideration the influence of engaging in natural space and place, and the ensuing impact on children's SWB. A key motivation behind the focus on children's neighbourhoods as an indicator of children's well-being is that adverse conditions are especially present in neighbourhoods with an abundance of "adverse conditions and risk factors" (Coulton & Korbin, 2007, p. 350). As the overwhelming majority of children, 11 out of 18 million (Hall, Woolard, Lake, & Smith, 2012), live in impoverished and adverse conditions in this context, the places children live in and frequent contributes significantly to how they make sense of their lives. Montserrat et al. (2015, p. 115) critically note that: "Poverty among children has a decisive effect on key areas such as health, education and ultimately social opportunities...". An interesting contention, however, is that while impoverishment and poverty contribute to a lack of SWB, impoverishment and poverty in itself does not amount to negative well-being (Ben-Arieh et al., 2014). As McKendrick (2014, p. 279) argues: "where children live is an integral and central part of their childhood experience". Children's well-being in place is further confounded by the high levels of inequality in this country which in effect has resulted in distinct socio-economic status (SES) groups. These differing SES groups are characteristically associated with distinct outcomes for children, with children in the lower SES groups experiencing countless negative consequences owing to the social conditions of their environments. The impact of the countless challenges which children in South Africa are exposed to on a daily basis demands theorisations of children's participation to be mindful of the manner in which socio-economic conditions shape, and hinder the degree to which children are able to participate (Moses, 2008).

Yet, despite the substantial body of research indicating that children's active engagement within natural spaces are associated with a range of cognitive, physical, affective, and moral developmental benefits (Fjørtoft, 2001; Kaplan & Kaplan, 1989, 2002; Kellert, 2005; Louv, 2008; Moore, 1986; Wells, 2000; Wells & Lekies, 2006); many children across the world, particularly within developing countries such as South Africa, are confronted with the challenge of limited access to *safe* natural environments in contrast to the affluent minority of the population. A number of researchers in this context in fact indicate that in assessing the natural spaces in which they engage, children identify danger as an integral feature (Adams &

Savahl, 2015; Chawla, 2002; Isaacs & Savahl, 2013; Parkes, 2007, Savahl, 2010; Swart-Kruger, 2000) - in essence pointing to the unsafe nature of *nature*. Additionally, adults are becoming increasingly concerned about the diversity of social and environmental dangers facing children in the public realm (Philo, 2000). Thus, as articulated by Hart (1994, p. 95), “children’s access and mobility to outdoor environmental diversity across the world has to a large extent been curtailed due to fears of crime and traffic”. This trend has continued with contemporary literature reporting similar patterns of decreased outdoor engagement (Benwell, 2009; Karsten & van Vliet, 2006; Louv, 2008; MacDougall et al., 2009). Children are in essence losing their ability to appreciate and engage in nature, which could result in what Louv (2008) refers to as the ‘nature-deficit disorder’. The notion of a ‘nature-deficit disorder’ refers to the estrangement and separation of the child from nature. This estrangement is believed to have negative consequences for children, which includes diminished use of the senses, attention difficulties, increased rates of physical and mental illness, and decreased overall well-being (Louv, 2008).

Owing to the socio-political legacy of disenfranchisement, violence, oppression, and an institutionalised system of racism (Dawes, Tredoux & Feinstein, 1989), the spaces and places that the majority of the population had access to was controlled by discriminatory policies which separated ‘racial groups’²; resulting in widespread inequalities in the physical and social environments available to children (Moses, 2005). This created, and has greatly contributed to the current milieu of importunate threats which children are exposed to, as well as violence and crime committed against children which remains a pervasive challenge within South Africa (United Nations Children’s Fund, [UNICEF], 2009). As a result of this, children in this country are unable to exercise their right to utilise and engage in safe, child-friendly natural spaces. Children therefore, have fewer opportunities for outdoor recreation and engagement in natural spaces (Kahn, 2002), which is imperative in encouraging a sense of independence and autonomy, and the development of subjective geographies through the physicality of playing, exploring, living, and learning (Robertson, Cooper, & Walford, 2001). As Ben-Arieh, Casas, Frønes, and Korbin (2014, p. 1) maintain, in terms of the relation between children’s rights and well-being, that:

² The racial groups, that is ‘Coloured’, ‘Black’, and ‘Indian’, were employed as racial categories within the Apartheid era to reinforce a segregated society, and refer to those who were not afforded the same benefits ‘Whites’ in this era. These terms are used here solely for descriptive purposes, and does not imply acknowledgement of these terms by the author.

“Rights are implicitly understood as creating well-being or opportunities for well-being, referring to the quality of children’s lives economically and emotionally; to their psychological states; to their material, social, and cultural environments; as well as to their development and to realizing their potentials.”

As children have been historically marginalised from the social and political realm in this context, the government instigated a number of commitments to address the dissonant past experienced by children (Savahl, 2010). The ratifications and legislative enactments specific to the child have resulted in the “development of the Children’s Act (No. 38 of 2005), the associated Children’s Amendment Act (No. 41 of 2007)”, and the “promulgated Child Justice Act (2008)” (Savahl, 2010, p.7). Although the determination and dedication of civic and government establishments have enhanced social change and legislative structure, the advantages have not been attained by every child. Evidently, children’s conditions and well-being continue to be unfavourable (Barbarin, 2003). Despite the South African government having commenced with several initiatives to lighten the burden of social inequality and deprivation for children and society at large, fundamental factors in relation to poverty, access to primary health care services, safety, education, and demarcated safe natural spaces for children still plague the majority of children. Quintessentially then, it is obligatory upon government representatives, especially in South Africa, to take a more pronounced position and related action in bettering children’s environments by taking into account their rights as stated in the United Nations Conventions on the Rights of the Child (UNCRC). More so, while legislative enactments espouse the rights of children along a number of domains, the human right for children to connect with nature and to a healthy environment has not yet been internationally recognised, nor codified in any legally binding United Nations (human rights) treaty.

There is growing consensus amongst international (Chawla & Hart, 1995; Haikkola & Rissotto, 2007; Moore, 1986;) and local (Dawes, Bray & van der Merwe, 2007; Moses, 2008; Savahl, 2010; September & Dinbabo, 2008; September and Savahl, 2009) scholars that societies’ responsibility to advocate and guard children’s rights, such as survival, protection, and development warrants special precedence in developmental initiatives and human rights work (Himes, 1993). For this reason, Hart (1992) has emphasised the need for children’s meaningful participation in projects with adults. Research by Montserrat and Casas (2006; see also Dinisman, Montserrat & Casas, 2012; Montserrat, Casas, & Moura, 2015; Navarro,

Montserrat et al., 2015) specifically points to the significance of including children from marginalised groups and those enduring social disadvantage (such as children in care), as they offer unique perspectives on their well-being. As children play a pivotal role in society, their attitudes and perceptions relating to natural spaces are significant (Wilks, 2010). The manner in which children are educated about nature plays an important role in their future behaviour as adults (Chawla, 2007; Wells & Lekies, 2006). Much research has previously focused on the reveries of childhood; and the imagined and remembered spaces of childhood that adults recall. However, these accounts were scrutinised by child researchers who argued for the perspectives of children's experiences.

While studies have considered children's understandings of nature and their SWB in separate disciplines, there is an absence of research within the literature which has considered merging these areas, and thereby considering the influence of nature experiences on children's SWB. In light of the current global environmental crisis, research in this area is essential as it has the capacity to raise awareness among children about sustaining the natural environment, as well as considering their well-being in the present, and the future. The study endeavours to provide insights into the manner in which children's understandings of natural spaces may shape, and influence environmental concerns and ecological actions, and in turn their well-being (Littledyke, 2002). Moreover, the study endeavours to contribute to the literature by advancing dialogue between the fields of children's environmental views and their well-being.

1.2. Aim of the study

The aim of the study is to explore children's engagement with natural spaces. Within this process the study aims to explore the extent to which children's engagement with natural spaces influences their SWB. The objectives of the study are:

1. To systematically review and synthesise the findings regarding children's understandings and engagement with nature as a space (*Chapter Four- Article 1*)
2. To explore the relationship between children's environmental perceptions and their subjective well-being (*Chapter Five- Article 2*)
3. To explore how children discursively construct natural spaces and the influence on their subjective well-being, using specific discursive resources and repertoires to construct and assign meaning to their engagement with natural space, and how their

constructions and assignations are manifested in their discourses (*Chapter Six- Article 3*)

4. To explore children's representations and perceptions of natural spaces using photovoice and community mapping (*Chapter Seven- Article 4*)

1.3. Structure of the dissertation

The dissertation was completed by published manuscripts, and comprises nine chapters. Of these nine chapters, four chapters (Chapters Four to Seven) represent the four journal articles which address the four objectives of the dissertation. For this reason, it is to be expected that there will be some overlap of the literature in the chapters presented as articles. **Chapter One**, *Introduction*, detailed the background, rationale, and aims and objectives of the study. **Chapter Two**, *Method*, presents the methodological and ethics considerations of the study. In **Chapter Three**, the conceptual and theoretical considerations of the disciplines of environmental psychology, positive psychology, and place attachment; and the significance in the merger thereof are discussed. **Chapter Four**, *Article One*, presents the first of the four published manuscripts, in the form of a systematic review of children's perceptions of natural spaces. **Chapter Five**, *Article Two*, evinces the second manuscript which investigated the relationship between children's environmental perceptions and their SWB. **Chapter Six**, *Article Three*, considers children's discursive constructions of natural spaces and the influences on their SWB. **Chapter Seven**, *Article Four*, presents the findings from the fourth and final article which explored children's visual representations of natural spaces. **Chapter Eight**, synthesises the findings from the mixed methods study, and provides the implications of the findings from the articles (Chapter Four to Seven). And finally, **Chapter Nine**, concludes the dissertation by providing a reflexive account of the research process, as well as recommending the way forward by advancing children's Environmental Subjective Well-Being (ESWB) - the essential culmination of the concerns of the study.

1.4. Conclusion

This chapter provides the background and rationale for the study. It was emphasised that the main impetus for the study was the absence of research in exploring children's relationship with nature as a space, and the ensuing impact on their SWB. Research into this arena is crucial given the current global and local environmental problems. Children's communities, and neighbourhoods in particular provide varying developmental outcomes given the unequal level of threat which pervade children's lives in the South African context; with socio-

economic context playing a key role in children's lives. This chapter further alludes to the significance of merging the fields of positive psychology and environmental psychology to consider children's ESWB in the broader sense of the term- thus evincing how well-being is the *golden thread* which amalgamates the key concerns, disciplines, and theories in this study. The following chapter, **Chapter Two**, details the methodological and ethics considerations of the study.



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CHAPTER TWO: METHOD

2.1. Introduction

This chapter outlines the methodological considerations of the study. The study comprised three distinct sequential phases. *Phase One* consisted of a systematic review of the literature on children's engagement with natural spaces and the implications for their well-being. *Phase Two and Three* formed the mixed methods study using a sequential explanatory design- with the quantitative phase preceding the qualitative phase. *Phase Two* encompassed the quantitative phase which sought to ascertain the relationship between children's environmental perceptions and their subjective well-being (SWB) using a representative sample of children from the Western Cape of South Africa. *Phase Three*, the qualitative phase, explored how children construct and assign meaning to natural spaces, specifically providing an exploration of the extent to which children's engagement with natural spaces influences their SWB.

2.2. Phase One: Systematic Review

The aim of this phase was to systematically review and synthesise the findings of children's understandings and engagement with nature as a space. The findings of this review provided evidence-based knowledge critical for addressing the aim and specific objectives of the study.

2.2.1. Review question

- How do children make sense of, assign meaning to, and perceive natural spaces?

2.2.2. Search strategy

Multiple resources from both electronic and print were consulted for the review. Amongst electronic resources, several databases were searched to access studies published in English from the year 2000 until the present. It was envisioned to utilise only EbscoHost, JSTOR, Science Direct, and PsycINFO, however, three additional databases were included Academic search complete, and GreenFile, EconLit. An initial scoping search was conducted to identify key studies in the field. The following keywords were initially used to broaden the search within the aforementioned databases: nature; children; childhood/s; space and place.

The inclusion criteria of this phase were limited to studies which focus on children's perceptions, meanings or meaning-making, understandings and experiences of and within the

natural environment, and natural spaces or places that children engage in. Both qualitative and quantitative articles were included in the review as the review did not endeavour to categorise studies in terms of these two methods of research, but instead to provide a comprehensive picture of studies exploring children's perceptions of natural spaces. The exclusion criteria for the study were studies focusing on age groups other than children, as well as studies which did not ascertain children's perceptions directly (retrospective studies exploring adult's childhood experiences in nature were included). Reports on various aspects of children and engagement in nature were also excluded.

2.2.3. Quality Assessment

Inherent within each step of a systematic review is the evaluation of the quality of a study. Prospective studies to be included in the review were put through rigorous quality assessment utilising an adapted version of the *Evaluation Tool for Qualitative Studies* (Long & Godfrey, 2004) and *Evaluation Tool for Quantitative Research Studies* (Long, Godfrey, Randall, Brettle, & Grant., 2002; Long & Godfrey, 2004) (see Appendix A). Assessment is crucial in evaluating the strength of the inferences, and conclusions arrived at in the studies, as well as for making recommendations for future research. Whilst many appraisal tools for systematic reviews endeavour to assess studies with the end-goal of assigning a score for each study, for the overall aim of this review it was not suitable. The quality assessment of the studies for the review was evaluated according to several domains, namely study overview, literature review, method, ethics, and policy and practice implications.

2.2.4. Data extraction

The details of the final appraised studies included in the review were captured using an adapted Data Extraction Tool presented in Appendix B. The key focus areas in the data extraction table (Author, Focus of research, Age cohort, Sample composition, Area/ context, Method, and Framework) complemented the data synthesis technique employed, namely *Textual Narrative Analysis* (Lucas, Arai, Baird, Law & Roberts, 2007), discussed below.

2.2.5. Data synthesis

Data were synthesised using the *Textual Narrative Synthesis* approach as proposed by Lucas et al. (2007). This synthesis technique organises studies into homogeneous group. This method synthesised the selected studies for the review according to the following categories: study characteristics in terms of the type of research, scope and focus of research, context,

quality (content and method), theory, and findings; all of which were reported on according to a standard format, where similarities and differences were compared across studies. This synthesis technique has shown to be effective in synthesising evidence from both qualitative and quantitative studies (Lucas et al., 2007). Structured summaries were developed, thus expanding on, and illuminating the context of the extracted data. When comparing Textual Narrative Synthesis with thematic synthesis, Lucas et al. (2007) found that the former enables the identification of heterogeneity between studies, as well as concerns around quality appraisal. They attribute this to the explication of the context and key features of studies using Textual Narrative Synthesis. One of the weaknesses of this approach which was identified by Lucas et al. (2007) was that this type of synthesis is less equipped to detect similarities between studies. In this phase, this concern was addressed by grouping the vast number of studies into thematic domains, using thematic analysis, which allowed the researchers to clarify similarities and differences between studies. This was further supplemented by the data extraction tool which dovetailed the process.

2.3. Mixed Methods: Phase Two and Phase Three

2.3.1. Design: Sequential Explanatory design

Commenting specifically on the use of mixed methods in the field of children's SWB, Barata and Yoshikawa (2014) argue that the amalgamation of quantitative and qualitative methods in a single study offers the perspective of greater comprehension of the topic under investigation as opposed to using one method alone. Given the lack of studies exploring children's perceptions of natural spaces and their SWB in the current context, this study employed a mixed methods approach to explore this. Echoing a sentiment captured by Hemming (2008, p. 152; see also Greene & Caracelli, 1997; Langevang 2007; Leyshon 2002; Rawlins, 2006), a key motivation for using mixed methods in this study was "to capture the complexity and diversity of children's values, perceptions and experiences". More so, Creswell (2012) notes that the distinct sources of information gained from mixed methods studies presents a succinct overview and comprehension of the phenomenon under investigation, and the particulars thereof. The definition of mixed methods adopted in this study is one advanced by Creswell, Plano, Clark, Gutmann, & Hanson (2003), stating that:

"A mixed methods study involves the collection or analysis of both quantitative and/or qualitative data in a single study in which the data are collected concurrently or sequentially, are given a priority, and involve the integration of the data at one or more stages in the process of research."

While there is currently no consensus on the definition in the field, the operationalisation by Creswell et al. (2003) point to specific key considerations in conducting a mixed methods study, namely *sequence*, *priority*, and *integration*. While several designs are proposed in the literature for mixed methods studies, they have further been classified into six major types either as concurrent or sequential (with the transformative and multiphase design building on the convergent, explanatory, exploratory and embedded designs) advanced by Creswell and Plano-Clark (2011), namely:

- *Convergent parallel design* (The simultaneous collection of qualitative and quantitative data.)
- *Explanatory sequential design* (The sequential collection of quantitative followed by qualitative data.)
- *Exploratory sequential design* (The sequential collection of qualitative followed by quantitative data.)
- *Embedded design* (To collect quantitative and qualitative data simultaneously or sequentially, with one form of data supplementing the other form.)
- *Transformative design* (A more complex design, using either one of the convergent, explanatory, exploratory, or embedded designs within a transformative framework.)
- *Multiphase design* (A more complex design, building on the convergent, explanatory, exploratory, or embedded designs using a series of phases or separate studies all addressing one programmatic research objective.)

The design best suited to this study was a *sequential explanatory design*. While mixed methods studies generally comprise two distinct phases of quantitative and qualitative research, in the current study this was preceded by a systematic review (see 2.2. Phase One, p.19). The overall study thus consisted of three sequential phases namely: Phase One, systematic review; Phase Two, quantitative, and Phase Three, qualitative. The systematic review (Phase One) informed Phase Two and Phase Three, while the findings from the quantitative phase served to inform the qualitative phase (Onwuegbuzie, Bustamante, & Nelson 2010). In a sequential explanatory design priority can either be given to the qualitative or quantitative phase, or they can be given equal priority. Accordingly, *Phase Two*, which was the quantitative phase, explored the relationship between children's environmental views and their SWB, while *Phase Three*, the qualitative phase, explored children's perceptions of natural spaces. This phase sought to unpack and explore the findings from the

quantitative phase using qualitative methods, namely focus group interviews, community mapping, and photovoice. Both these phases (Phase Two and Three) were given equal priority (see Figure 1; Creswell, Fetters, Plano Clark, & Morales, 2009). Another important consideration in mixed methods studies is the stage in the research process in which data integration takes place. Data integration refers to the combination of qualitative and quantitative research within a particular stage of the research process (Creswell et al., 2003). In this study while integration was initiated during the conceptualisation of the research aim and objectives (See p.8, Chapter One), it comes to fruition during the discussion chapter (Chapter Eight), where the findings of the various phases of the study are integrated and considered in relation to various theories and conceptual frameworks. The motivation behind this integration strategy was that the data from both the QUAN and QUAL phases were so comprehensive, particularly for the QUAL phase, which encompassed three data collection techniques. More so, owing to the dissertation being written in article format, the word limit for the journal and scope of each article further detracted from, and made this untenable.

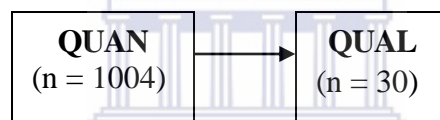


Figure 1: Sequential Explanatory Design with Quantitative and Qualitative Research given equal priority (Source: Morse, 1994)

While quantitative and qualitative research are distinct paradigms valuable in their own right, Johnson and Onbuegwuzie (2004) emphasise that mixed methods research should endeavour to dovetail the insights gained. They purport further that “*the bottom line is that research approaches should be mixed in ways that offer the best opportunities for answering important research questions.*” (p. 16). Thomas and Johnson (2002, as cited in Jones & Sumner, 2007, p. 6) note that mixing methods serve distinct functions, that is “to enrich or explain, or even contradict, rather than confirm or refute.” The following section details the quantitative (Phase Two) and qualitative (Phase Three) counterparts of the mixed methods study.

2.4. Phase Two: Quantitative

2.4.1. Design

Phase Two of the study encompassed the quantitative component, and followed a cross-sectional survey design. The data collected in this phase formed part of the *Children’s Worlds: International Survey on Children’s Well-Being* (ISCWeB), Wave One: Deep Pilot of

the larger project. The ISCWeB is an international collaborative study between Algeria, Brazil, Chile, England, Israel, Romania, South Africa, South Korea, Spain, Uganda, and USA, which aims to collect information about children's perceptions and evaluations of their SWB, time use, and daily activities, across three age cohorts (8, 10, and 12 years) (see iscweb.org). Since its inception, the Children's Worlds project has undergone two waves (Wave I and II). The project has been the largest international study on children's well-being, with Wave I including over 34 500 children from 14 countries, and Wave II including over 56 000 children from 15 countries. The core international group for this study includes: *Professor Sabine Andresen*, Faculty of Educational Science, Goethe University Frankfurt; *Professor Asher Ben-Arieh*, The Paul Baerwald School of Social Work and Social Welfare, The Hebrew University of Jerusalem and Haruv Institute, *Professor Jonathan Bradshaw*, Social Policy Research Unit, University of York; *Professor Ferran Casas*, EÍDIQV, University of Girona; and *Dr. Gwyther Rees*, Social Policy Research Unit, University of York. This project is endorsed by the International Society for Child Indicators (ISCI).

Wave One of the ISCWeB study in South Africa (referred hereafter as the *larger quantitative study*) encompassed a deep pilot with children aged 12-years. The data for the larger quantitative study was collected in mid-2012, and included a total representative sample of 1004 participants (girls, n = 541; boys, n = 463) from the Western Cape of South Africa across 15 schools. The next phase of the study, Wave III, will commence in 2017 subsequent to further modifications to the ISCWeB. A brief history and development of the Children's Worlds Project, as well as the process of data collection for the larger study of the ISCWeB in South Africa is presented forthwith.

History and development of the Children's Worlds Project

The project developed from a consensus amongst researchers in the field of children's SWB at a meeting hosted by UNICEF Geneva in 2009 regarding the need for a multinational study focusing on this niche area. Given the lack of data on children's subjective perceptions of their lives in general, and their well-being in particular, an initial version of the questionnaire was constructed and piloted in several countries in 2010 (Brazil, England, Germany, Honduras, Israel, Palestine, and Spain). A second version of the questionnaire was piloted in 2011 in Germany, Palestine, Romania, Spain, and Turkey following a research group meeting to appraise the pilot (December 2010). Each in-country study was conceptualised as independent studies which would contribute to the international database for the cross-

country comparative study. Based on feedback from the participating countries concerning the second version of the questionnaire, it was decided to develop distinct questionnaires for 8, 10, and 12-year olds. It was at this stage of piloting in late 2011, that South Africa was invited to participate in the study. The author's role in this project was as project co-ordinator of the South African component of the project. Data collection for Wave I of the study in South Africa was conducted in mid-2012 by the principal investigator of the study and the supervisor, Dr Shazly Savahl (ssavahl@uwc.ac.za), Ms Serena Isaacs (sisaacs@uwc.ac.za), and the author. To validate the integrity of the data collection process, these individuals can be contacted at the given email addresses.

2.4.2. Research context

Despite the central principle of equality in the South African Constitution, inequality remains pervasive in the country. Based on a philosophy of segregation and exclusion, the Apartheid legislative framework characterised the socio-political landscape of South Africa for nearly five decades. Widespread social inequality is one of the most detrimental consequences of the Apartheid regime. With one of the highest inequality coefficients in the world (Gini index = 0.63), the country demonstrates a highly unequal distribution of wealth and income between the privileged and the disadvantaged (World Bank, 2012). While this inequality is experienced by the majority of the population, the encumbrance of the “multiple overlapping layers of inequality” are often endured by children who require care and supervision from adults for both safety, and basic tenets of their well-being (Hall, Woolard, Lake, & Smith, 2012, p. 24). South Africa has a child population of 18.6 million, representing 37% of the total population. Forty-five percent are between the ages of 10–17 years, with a gender split of 49% female, and 51% male. National estimates show that 54.6% of the child population live in urban areas, while 45.4% live in rural areas. In the Western Cape, however, the majority of children (94.6%) live in urban areas, while a small proportion (5.4%) living in rural areas (Hall et al., 2012). Mid-year data from the General Household Survey (Statistics South Africa, 2014a) provides an estimate of the proportion of each population group in the country. The largest percentage of South Africans are classified as ‘Black African³’ (80.3%), followed by ‘Coloured’ (8.7%), ‘White’ (8.4%), and Indian/Asian (2.6%).

³ The group ‘Black African’ is used here to refer to ‘Africans’ of indigenous descent. While the South African constitution subsumes all people of ‘colour’ as ‘African’, population estimates (see Statistics South Africa (2014a) have been disaggregated in terms of specific ethnic groupings (‘Coloured’ and ‘Indian/Asian’).

The inequality in this context has manifested in the polarisation of communities and neighbourhoods into privileged or high SES, and disadvantaged or low SES. Privileged communities are characterised by high income, high educational attainment, high levels of employment, and low incidence of violence. Disadvantaged communities however, are characterised by low educational attainment and income, high rates of substance abuse, unemployment, and crime and violence. Located between the high and low extremes, a cohort presenting with a middle SES is emerging. This population cohort mainly consists of individuals that have managed intergroup mobility since the attainment of democracy in 1994. Typically this cohort is characterised as the emerging middle class and consists of previously disadvantaged individuals who through education, resilience, and other positive psychological traits managed to achieve a reasonable level of economic security.

The research for the larger study was conducted in the Western Cape Metropole which is one of nine provincial regions in South Africa. It is a typical urban environment with a population of an estimated 6 million. The participants in the current study were selected from primary schools in both low and middle SES communities in the Western Cape.

2.4.3. Participants and sampling

The target population for the larger study included children attending primary schools within the Western Cape province of South Africa. The Western Cape consists of four urban Education Management District Councils (EMDC's) governed by the Western Cape Education Department (WCED); namely Metro South, Metro East, Metro North, and Metro Central. Given the small proportion of learners attending private schools in the province, notwithstanding restrictions in terms of access, these schools were excluded from the sampling frame, as well as schools which were inaccessible by road.

A two-stage stratified random sampling protocol was followed, ensuring that children from various cultural, SES, and geographical groups were selected. In the first stage schools were stratified in terms of EMDC's. In the second stage, schools were stratified by SES (low or middle), and thereafter randomly selected from these strata. The final sample was selected from eight low and seven middle SES communities. Within each school all 12-year old learners in the school were selected to participate in the study. This resulted in a total sample of 1048 children. Once the data were cleaned, the final sample consisted of 1004 participants. Of these 58.6 % (n = 588) were from the low SES group and 41.4% (n = 416) from the

middle SES group. Girls comprised 53.9% (n = 541) whilst boys comprised 46.1% (n = 463) of the sample.

2.4.4. Instrumentation

Adaptation of the ISCWeB

Using the latest version of the ISCWeB questionnaire, a pilot study was conducted with children aged 12-years with the aim of adapting the questionnaire to the South African context in terms of cultural, language, and contextual factors. The adaptation of the questionnaire included the translation of the questionnaire into Afrikaans, cognitive testing, and piloting the questionnaire. The translated Afrikaans version of the questionnaire was back-translated and compared with the English version to identify any ambiguity or inconstancy across items, and amended as required. The translation and back-translation were conducted by two independent reviewers. The questionnaire was then cognitively tested with 12-year old children from diverse income backgrounds. The first few questions on the questionnaire were read aloud to participants and response options explained. This process assisted in further modification of items and clarification of instructions to participants, and phrasing of the items.

The adapted version of the questionnaire was then piloted with 100 children from both low and middle SES communities.

The instrument for the study consisted of basic demographic information of the participants, such as age, SES (which was determined by the location of the school), suburb, and country of birth. While the questionnaire for the larger study contained several validated scales to ascertain various aspects of children's well-being and time use; the current study only utilised data from three standardised and validated scales to determine the relationship between children's environmental perceptions and their SWB. The scales which were utilised were the New Ecological Paradigm (NEP- which was an optional extra added to the ISCWeB) Scale for Children (Manoli, Johnson, & Dunlap 2007), the Students' Life Satisfaction Scale (SLSS) (Huebner, 1991), and the Personal Well-Being Index-School Children (Cummins & Lau, 2005) (these scales are presented in Appendix C).

2.4.4.1. *New Ecological Paradigm Scale for Children (Manoli et al., 2007)*

The 10-item NEP Scale for Children was used to collect data. The original NEP scale (previously the New Environmental Paradigm Scale, Dunlap and Van Liere, 1978) was developed to assess the environmental worldviews of adults and challenge the Dominant Social Paradigm (DSP) disclaiming the anthropocentric idea that nature exists exclusively for human consumption (Dunlap & van Liere, 1978). The scale was later revised by Dunlap, Van Liere, Mertig, and Jones (2000) and renamed the New Ecological Paradigm Scale-Revised consisting of 15 items. The NEP initially focused on specific local environmental problems but has since evolved to focus on “global problems with complex, synergistic causes and unpredictable, possibly irreversible effects.” (Manoli et al., 2007, p.4). Identifying a gap in the literature concerning the lack of a reliable measure to assess children’s environmental worldviews, Manoli, Johnson, & Dunlap (2005, 2007) then revised and validated the NEP scale for use with children. The revised scale for use with children consists of 10 items, with response options ranging from “strongly disagree” (1), to “strongly agree” (5), and items 3, 6, 7, and 9 negatively phrased and reverse scored (“strongly agree” [1], to “strongly disagree” [5]). The scale has shown acceptable fit indices amongst a sample of children between 10-12 years (Manoli et al., 2007).

2.4.4.2. *Students’ Life Satisfaction Scale (Huebner, 1991)*

The seven-item Students’ Life Satisfaction Scale (SLSS) was developed to assess children’s (ages 8-18 years) global life satisfaction (Huebner, 1991). The items are domain-free and require respondents to evaluate their satisfaction on a 5-point Likert scale ranging from “*very much disagree*” (0), to “*very much agree*” (4). The initial version of the scale comprised 10 items and was later reduced to 7-items owing to further item analysis, as well as data and reliability estimates (Huebner, Suldo, & Valois, 2003). The scale has been shown to display acceptable internal consistency, with alpha coefficients of 0.82 (Huebner, 1991; Huebner et al., 2004), 0.86 (Dew & Huebner, 1994); and 0.89 with a Portuguese sample (Marques, Pais-Ribeiro, & Lopez, 2007). The SLSS has also evinced convergent validity by correlating well with other life satisfaction measures (Dew & Huebner 1994; Huebner 1991) and overall life satisfaction (Casas, Bello, González, & Aligué, 2013). The scale has been shown to display good criterion (Huebner Suldo, & Valois, 2003), discriminant (Huebner & Alderman, 1993), and predictive validity (Suldo & Huebner, 2004). In the current context empirical guidelines for normative scores and ‘cut-points’ which classifies children into optimal, adequate, or low

levels of life satisfaction have not been determined. The SLSS has been transformed into a 100-point scale for the purpose of comparison between scales.

2.4.4.3. Personal Well-Being Index-School Children and Adolescents (Cummins & Lau, 2005)

The Personal Well-Being Index-School for School Children (PWI-SC) was developed by Cummins and Lau (2005) to assess children's SWB, and is based on the adult version of the scale by Cummins, Eckersley, Pallant, van Vugt, & Misajon (2003). The scale evaluates a number of life satisfaction domains, such as standard of living, health, achieving in life, persona; relationships, safety, community-connectedness and future security (Cummins & Lau, 2005). This seven-item scale, which is theoretically entrenched, fundamentally endeavours to expound the global question of "*How satisfied are you with your life as a whole?*" (Cummins & Lau, 2005). The original seven-item scale is often adapted to include items on religion/spirituality and school experience. The item on school experience has been included in the current study. Response options for the PWI-SC uses an 11-point rating scale where "complete dissatisfaction" (0), and "complete satisfaction" (10). While the PWI was designed for the general adult population (PWI-A), the term 'satisfaction' in the PWI-A, was replaced with 'happiness' in the PWI-SC. Although the terms are identical they have been shown to yield similar results (Cummins, et al., 2001, as cited in Cummins & Lau, 2005; Lau, Cummins, & McPherson, 2005). The PWI-SC generates a composite variable which is determined by calculating the mean for the items. The PWI-SC has shown acceptable levels of reliability ($\alpha = 0.83$ in Casas & Rees, 2015; $\alpha = 0.82$ in Tomyn & Cummins, 2011; Casas, Tiliouine, & Figuer, 2014). The PWI-SC has been transformed into a 100-point scale for the purpose of comparison between scales.

2.4.5. Data analysis

2.4.5.1. Confirmatory Factor Analysis and Structural Equation Modeling

This phase of the study used Structural Equation Modelling (SEM) and Confirmatory Factor Analysis (CFA) to address the stated aims and objectives with AMOS version 22. Structural Equation Modelling represents a set of data analysis techniques wherein a "series of hypotheses about how the variables in the analysis are generated and related" (Hu & Bentler, 1999, p. 2). The basic tenet of SEM is that proposed models (indicating the relationships between variables) have a strong theoretical rationale. Subsequently, designation of specified models needs to be based on underlying theoretical relationships between observed and

unobserved variables. Assessing the extent to which hypothesised models fit the observed data and the estimation of parameters are the key goals of SEM. Within SEM the two most popular techniques to assess model fit are Model Test Statistics and Approximate Fit Indexes (Hu & Bentler, 1999; Kline, 2010).

A Model Test Statistic, of which the Chi Square goodness-of-fit statistic is the most widely used, is an assessment of the degree to which the covariance matrix in the specified model significantly differs from the sample covariance matrix. It is often referred to as a badness-of-fit test, as lower values indicate a higher degree of correspondence between the specified models and the observed data (Kline, 2010).

Approximate Fit Indexes are conceptualised as continuous measures of model-data correspondence, and is not concerned with rejecting or accepting the null hypothesis (Kline, 2010). The two most common types of approximate fit indexes are absolute and incremental fit indexes. Absolute fit indexes determine how well a hypothesised model fits the sample data in comparison to no baseline model, while incremental fit indexes attempt to fit a hypothesised model to a baseline model wherein the null hypothesis is that the variables in the model are uncorrelated (Hooper, Coughlan, & Mullen, 2008; Hu & Bentler, 1999). Examples of absolute fit indexes include the standardized root mean square residual (SRMR) and the root mean square error of approximation (RMSEA). Examples of incremental fit indexes include the comparative fit index (CFI), the Tucker-Lewis Index (TLI) and the Normed Fit Index (NFI). It is recommended that more than one fit index be used to assess model fit (Hooper et al., 2008). If a good-fitting model exists the researcher is able to assess the strength and nature of causal paths between variables. Following recommendations by Jackson, Gillaspay, and Purc-Stephenson (2009) and Kline (2010), the CFI (comparative fit index), RMSEA and SRMR were used as fit indexes in the current study. These recommendations have been used in a number of studies on children's well-being by Casas (see e.g. Casas et al., 2012; 2013) using cut-scores of $>.950$ accepted for CFI, and scores $<.05$ regarded as a good fit for RMSEA and SRMR.

2.4.6. Procedure and Ethics

Once the final sample was selected, permission was sought from the WCED and the University Research Ethics Committee to access the schools. Schools were contacted telephonically and meetings arranged between the research team, the school principals, and

the appropriate grade head of department to discuss the details of the project. Once the schools agreed to participate in the study, an information session was arranged with the prospective 12-year old participants at the school where the aim, the nature of their involvement, and ethics of the study were discussed. Specific ethics principles of informed consent, confidentiality, and the right to withdraw were explained and highlighted to the children. The children who agreed to participate in the study were required to provide signed consent, and obtain signed consent from their parents. Only those who returned the consent forms participated in the study.

Prior to the administration of the ISCWeB, a dedicated amount of time was given to building rapport with the children. This rapport-building was cultivated by employing a few ice-breakers to learn a bit more about the children, as well as an interactive game. When the children felt more comfortable with the researchers, the aim of the study was again discussed with them as well as their rights in the research process. The notion that the questionnaire was not a test or an examination was reinforced to the children, and hence that there are no right or wrong answers, and that the rationale was to try and understand how they think and feel about different aspects of their everyday lives.

The questionnaires were administered following a researcher-administered protocol. To familiarise the participants with the response options, the items on the questionnaire were read aloud to the participants by a member of the research team while they were answering the questionnaire. This approach also assisted participants who may have experienced difficulty in answering some items on the questionnaire, and is generally used with young children and vulnerable groups. Between two to three members of the research team were present in the classroom while questionnaires were administered to answer any questions the children may have. The average time of completion of the questionnaire was 30 minutes. However, there was a disparity in the questionnaire completion time in terms of SES. Many children attending schools in the low SES communities took, on average, 10 to 15 minutes longer to complete the questionnaire than learners from the middle SES status communities. This was largely due to lower levels of literacy and overall education in lower SES communities owing to resource constraints and larger class sizes.

2.5. Phase Three: Qualitative

2.5.1. Design

The third phase of the study employed a qualitative methodological framework. This phase utilised the sustained contact model whereby the researcher builds rapport and spends a prolonged time with the participants, that is, in terms of numerous discussion groups. The data in this phase was collected between the end of 2014 to mid-2015 and formed part of the *Multinational Qualitative Study on Child Well-being*, an international project which aims to understand children's perceptions of well-being, between the ages of 11 to 14 years, and their daily lives using a qualitative perspective. The study endeavours to understand how children understand dimensions of well-being in a locally oriented, but multi-nationally comparative manner. The study currently includes 12 countries from across the world. This larger qualitative study, was conceptualised as the qualitative counterpart to the Children's Worlds project (see Phase Two). The study was conceptualised by a core international group comprising *Dr. Tobia Fattore* (Department of Sociology, Faculty of Arts, Macquarie University), *Professor Christine Hunner-Kriesel* (Department of Social Work, University of Vechta), and *Professor Susanne Fegter* (Institute of Educational Sciences, Technical University Berlin). This project is endorsed by the International Society for Child Indicators (ISCI). In South Africa, the principal investigator for the project is *Dr Shazly Savahl* (current supervisor of this study). The author's role in this project was as project co-ordinator of the South African component. Data were collected by the project team which included the author, Shazly Savahl, Gaironeesa Hendricks (gaironeesahendricks@gmail.com), Claudia Raats (craats.cj@gmail.com), Arnold Matzdorff (arnoldmatzdorff@gmail.com), Christelle Larke (christelle.larke@gmail.com), and Labeeqah Jaffer (jaffer.labeeqah@gmail.com). To validate the integrity of the data collection process, these individuals can be contacted at the given email addresses.

2.5.2. Research context

The study was conducted in the Western Cape province of South Africa. The participants were drawn from three primary schools in low and middle SES communities, from both rural and urban geographical locations. There is general acknowledgement amongst researchers that children reside in varying socio-economic backgrounds display disparate and diverse experiences of childhood, reflecting the plurality of 'childhoods' (Jenks, 2004). It is thus important to be mindful of the diversity of childhood in terms of class, gender, ethnicity and culture as well as the related construct of 'race' (Savahl, 2010). Research also indicates that

low-income neighbourhoods consist of environments which are of poor quality and embodied by perilous play spaces, less natural features, poorer services, more traffic and crime, and higher levels of physical deterioration in comparison to more affluent areas (Bannerjee & Driskell, 2002; Evans, 2004). Moses (2005) contends further that it is important to remain cognisant of the existing impact of city planning owing to the Apartheid regime which is still pervasive in children's daily lives.

The participants were selected from three socio-economically diverse areas in the Western Cape, namely Gordon's Bay, Mitchell's Plain, and Stellenbosch. These areas are expounded upon below.

2.5.2.1. Gordon's Bay

The suburb of Gordon's Bay is situated in the Western Cape Province of South Africa and forms part of the Helderberg Basin (Erasmus, Mans, Nel, David & Macrae, 2012). It is a pictorial coastal village located at foot of the Hottentots Mountain Range and the False Bay coastline, and is situated approximately 54 km from the Cape Town City Centre. Gordon's Bay subsumes several smaller areas namely Anchorage Park, Bay Park, Dobson, Fairview Golf Estate, Gordons Bay Harbour SP, Gordons Bay SP, Harbour Island, Mansfield, Onverwacht (Gordons Bay), Pine Acres, Sea Breeze, Temperance Town, and Winslow. The population of Gordon's Bay was estimated to be 15 786 with 5715 households and an average 2.66 people per household. National census data indicates that Gordon's Bay is predominantly 'White' (65.1%), followed by 'Coloureds' (20%), 'Black African' (11.2%), 'Other' (2.2%) and 'Asian' (1.5%) (Erasmus, Mans, Nel, David & Macrae, 2012). Key indicators show that 99% of the population live in formal housing with access to basic services (including piped water, flush toilets, refuse removal, and electricity). The vast majority (76%) of the population in this suburb have completed secondary schooling or higher. In terms of income, 77.7% have a monthly income of more than R3201 with most households falling within the R12 801- R25 600 (23.5%), and R6401- R12 800 (22.1%) income brackets. In comparison to provincial crime statistics, those reported in the 2013-2014 period were low, with the majority of reported crimes consisting of common assault, burglary at residential premises, theft out of or from motor vehicle, drug-related crime, and low reported incidence of sexual crimes and murders (South African Police Service, 2014).

2.5.2.2. Mitchell's Plain

Mitchell's Plain is situated approximately 32 km from the Cape Town City Centre. Mitchell's Plain encompasses several areas, namely Bay View, Beacon Valley, Colorado, Eastridge, Lentegur, Mandalay, Mitchells Plain Town Centre, Portland, Rocklands, San Remo, Strandfontein, Strandfontein Village, Tafelsig, Wavecrest, Weltevreden Valley, Westgate, Westridge (Mitchells Plain), Wolfgat Nature Reserve, and Woodlands. This township has been identified as one of the most dangerous areas in South Africa, with the highest incidence of reported crimes (www.crimestatssa.com), in particular in terms of: attempted murder, common assault, robbery with aggravated circumstances, malicious injury to property, burglary, possession of illegal firearms and ammunition, drug-related crime, kidnapping, and among the highest with regard to murder. The Mitchell's Plain population was estimated to be at 310 485 with 67 995 households, and an average household size of 4.57 (Statistics South Africa, 2014). The large majority of the population are classified as 'Coloured' (90.8%), with smaller proportions of 'Black African' (7.3%), Other (2.2%), Asian (0.6%), and 'White' (0.2%) (Statistics South Africa, 2011). National estimates show that 35% of individuals 20 years and older have completed secondary education (grade 12) or higher, with 76% of those aged 15 to 64 employed. In terms of income, 38% of households in Mitchell's Plain have a monthly income of R3200 or less, while 95% live in formal housing. While national census statistics indicate that a vast majority of the Mitchell's Plain population have access to basic services (such as piped water (95%), flush toilets (96%), weekly refuse removal, and electricity (99%)), the suburb is plagued by a range of social problems.

2.5.2.3. Stellenbosch

The Stellenbosch Municipality is situated in the centre of the Cape Winelands, and is situated approximately 50 km from the Cape Town City Centre. The municipality subsumes several towns and includes both formal and informal settlements, namely Stellenbosch, Franschhoek, Kayamandi, Klapmuts, Raithby, Jamestown, Kylemore, Idas Valley, Pniel and Cloeteville, (Statistics South Africa, 2011). Stellenbosch has a population of 155 733, with majority of the population classified as 'Coloured' (52.2%), with a further 28.1% 'Black', 18.5% 'White', and 1.2% Other. With regard to education, 42.5% have completed secondary education (grade 12) or higher while 3.1% have not completed any formal schooling (Statistics South Africa, 2011). This municipality consists of 43 420 households, with an average household size of 3.3 people. A proportion of 75.1% live in formal housing, with a moderately high percentage of households having access to basic amenities such as piped

water within the household or in the yard (80.5%), flush toilets (87.1%), and weekly refuse removal (87%). According to national reported crimes, Stellenbosch is ranked among the top 10 areas with the highest incidence of reported crime. More specifically, this municipality also evinces amongst the highest incidence of burglary at residential and non-residential premise, theft out of or from motor vehicle, commercial crime, and robbery (www.crimestatssa.com).

2.5.3. Participants and sampling

Data were collected by means of three interrelated, sequential data collection techniques, namely focus group interviews, community mapping, and photovoice. Focus group interviews constituted the primary data collection technique, whilst the community mapping and photovoice were employed as supplementary techniques. These are discussed below (see Appendix G for data collection protocol).

The total sample consisted of 28 children between the ages of 12 and 14, selected from three primary schools in low and middle SES communities, situated in rural and urban geographical locations in the Western Cape of South Africa. While it was envisaged to obtain an equal gender sample of girls and boys from each school, due to the voluntary nature of participation this was not always possible. The motivation for selecting this age cohort was due to the identification in the literature that children of this age group are more likely to assess their own behaviour and the impact of their subsequent actions upon the environment (Wilson, 1996). The primary schools included in the study were purposively selected. These three schools formed part of a research contractual arrangement and subsequently afforded the researcher unproblematic access to participants of the required ages. The primary motivation for the final selection of the three participating schools were dependent on whether they offered access to children from different racial, cultural, language, and socio-economic backgrounds. Additional inclusion criteria for participants included perceived reliability, enthusiasm, and willingness to participate in the study.

One group consisting of 10 participants each was selected from two schools, and 8 participants from the third school; resulting in a total of 28 children. Four sessions were conducted with each group, including two focus group interview sessions including a community mapping activity, one photovoice training session, one photovoice report back

group session where children discussed the motivations behind the photographs taken.

Further details of the sample composition are discussed below, and presented in Table 2.

- The sample of children from Gordon’s Bay included nine girls and one boy. The children in this group were recruited and selected with the assistance of the principal and the grade 6 head of department (HOD). All children in this group were aged 12-years, with majority residing in the Gordon’s Bay suburb, and one from the adjacent suburb of Strand.
- The sample of children from Mitchell’s Plain included five girls and five boys. The children in this group were recruited and selected with the assistance of the principal and the grade 6 HOD. Most of the children in this group were 12-years old, with a few turning 12 during the course of data collection. A few children lived close to the school, while one participant lived in Grassy Park, a suburb approximately 17km from the school. The other learners who did not live directly in the vicinity of the school, lived in one of the areas in Mitchell’s Plain and were either dropped at school with public transport, or walked to school.
- The sample of children from Stellenbosch included five girls and three boys. While the location of this school was in a middle SES community, the children attending the school were predominantly from surrounding farms and from an impoverished background. The children were recruited by the school counsellor. It was noted by the school counsellor, that while learners should be aged 12 in grade 6, this was not the case at this school. Due to an array of social problems and difficulties which children are faced with, learners in grade 6 are on average older than 13 years; children were therefore selected by age and not by grade at this school.

Table 1: Sample composition

Research site	Sample	Age	Grade	Socioeconomic status
Gordon’s Bay (urban)	n = 10 (9 girls; 1 boy)	12	6	Middle
Mitchell’s Plain (urban)	n = 10 (5 girls; 5 boys)	11-12	6	Low
Stellenbosch (rural)	n = 8 (5 girls; 3 boys)	12-14	5 - 7	Low

Attrition for the three groups was low and only occurred in one of the groups. In the sample from Mitchell’s Plain, data collection spanned from the end of 2014 to early-2015. Attrition

for this school was one participant who moved out of the area and therefore changed schools, thereby missing only one session. In the sample from Stellenbosch there was no attrition, however, one participant missed one session due to ill health.

2.5.4. Data collection

2.5.4.1. Focus group interviews

The advancement of the UNCRC maintains that children be given a voice and allowed to participate collaboratively with adults. The focus group interview technique is favoured in this view and was utilised in this study. It is characterised by a moderator facilitating and engaging a small group discussion between selected individuals regarding the proposed topic (Catterall & Maclaran, 1997). A total of nine focus group interview sessions were conducted with the participants. The data from the focus group sessions were used for Chapter Six: Article 3, using discourse analysis.

This technique is well-suited to the aim and objectives of the study as it promotes the direct interaction and communication with children, allowing them to respond more freely due to a more relaxed environment (Smithson, 2000). This method of data collection is based on the sustained contact or prolonged engagement model, where a series of focus groups are conducted. The advantage of the sustained contact model is that it gradually enables and facilitates greater access to children's "secrets and worlds as the social distance between adult researcher and child subject is lessened" (Punch, 2001, p.6). Once participants provided written signed informed consent (from parents/ guardians as well as from children themselves- See Appendix D and E) Participants were asked to provide both verbal and written agreement to treat the discussion which arises in the focus group interviews as confidential, and to remain strictly within the bounds of the focus group (See Appendix F). Consistent with the exploratory design, the focus groups followed a semi-structured interview format, with several core questions per group. These broad questions are portrayed in Table 3 below.

Table 2: Focus group guiding questions

Focus group 1:	Focus group 2-3
<ul style="list-style-type: none">• What does being happy mean to you?• What are the things that make you happy?• What do you do for fun?• What do you do in your free time?• What do you understand by the natural environment and natural spaces?	<ul style="list-style-type: none">• What does nature mean to you?• Tell me about how you spend your time in the natural environment?• How does spending time in the natural environment make you feel?• Do you think spending time in nature is important for children your age?• How would you feel if you were unable to engage in natural spaces?• What are your favourite places in nature? Why? What do you do there?

2.5.4.2. Photovoice

Photovoice (Wang, 1999, Wang, Yi, Tao, & Carovano, 1998), previously termed *photo novella* (Wang & Burris, 1994, 1997), was used to capture participant's reflections on significant spaces and places; that is photo journeys to discover neighbourhood experiences and perceptions of natural spaces. In this phase, one photovoice training session was held, and one photovoice feedback session, subsequent to photographs being printed by the researcher. Several steps were followed in using photovoice as a data collection method. Firstly, the three groups of children in the study formed part of a group discussion regarding issues about natural spaces and places they engage in, to collaboratively formulate research questions for the photovoice session as well as use of cameras, power, and ethics, and the responsibility and authority conferred on participants with cameras (See Wang & Redwood-Jones, 2001). Secondly, the participants were trained in basic camera and photography techniques by the author, and importantly familiarised with the ethical employment of community photography. The participants were then given disposable cameras and a broad directive concerning the focus of the research, and were asked to take photographs of their favourite spaces in nature, the spaces that make them happy and unhappy, and the areas which they would like to engage in but are unable to.

The photovoice mission session was carried out by the children independently after school; they were either accompanied by an older sibling or parent. While it was hoped that the researcher would accompany children on their photovoice mission, it was safer for the children to conduct this with their parent or guardian as the researcher was an outsider in these communities, and did not want to impose on children's mission. As proposed by Wang

and Burris (1994), the developers of this participatory method, the subsequent group discussions were facilitated by the following questions: *What do you see here? What is really happening here? How does this relate to our lives? Why does this problem or strength exist? What can we do about it?* An ensuing group discussion was conducted whereby the participant provided narratives explicating the significance and the meanings their pictures hold for them, which was followed by group views of what the photograph represents.

2.5.4.3. Community mapping

Community mapping was employed as a visual data collection technique which provided unique representations of children's worlds in this study. Amsden and VanWynsberghe (2005) note that community mapping may be utilised to not only document geographically significant spaces and places, but also additional varieties of abstract data. This abstract data and intricacies in children's maps are made sense of when children provide in-depth narratives for the detail therein. Widely considered as an empowerment and child-centred technique, community mapping is foregrounded on "validating the knowledge and experiences of participants" (Amsden & VanWynsberghe, 2005, p.361). Additionally, given the participatory nature of this technique, it is considered to address the issue of power dynamics and inequities present in the research-participant relationship. This data collection technique was complemented by photovoice, and the focus group interviews. The data from the photovoice and community mapping techniques were utilised in Chapter Seven: Article 4 (focusing on children's visual representations of natural spaces).

2.5.5. Data Analysis

2.5.5.1. Discourse analysis

The use of discourse analysis as a method of research within childhood studies has proliferated in recent years (See Alldred & Burman, 2005; Bondarouk & Ruel, 2004; Kjørholt, 2002; Potter & Wetherell, 1992; Savahl, 2010, 2014). Contemporary thinking on discourse analysis in childhood studies has been greatly influenced by the paradigm shift initiated by Alison James and Alan Prout nearly two decades ago focusing on social constructionism as it emerged within the sociology of childhood. Discourse analysis was used exclusively for Chapter Six: Article 3 which sought to explore how children construct and assign meaning to natural spaces and the influence on their SWB. For Chapter Seven: Article 4, thematic analysis (discussed subsequently) was used to synthesise the findings from the community mapping and photovoice sessions.

As a number of variations of discourse analysis exist, notwithstanding the absence of a unified approach or definition, two broad versions have generally been identified within psychology (Savahl, 2010). With its genesis in ethnomethodology and communication studies, the first version focuses on “discourse practices and how speakers draw on various forms of discursive resources to construct particular realities and to achieve certain aims in interpersonal contexts” (Savahl, 2010, p. 141; see e.g. Edwards, 1997; Edwards & Potter, 1992; Willig, 2000), while the second version is often associated with the Foucauldian tradition which “focuses on the function of discourse in the constitution of subjectivity, selfhood and power relations” (Savahl, 2010, p.141; see e.g. Hollway, 1984). For this qualitative phase of the study, in particular for Chapter Six: Article 3, the version as proposed by Potter and Wetherell (1987) was employed, which is a combination of the aforementioned types- a strand of discourse analysis which has been employed to scrutinise language in a broader social context. This version focuses on explicating the “discursive activity of the interlocuters whilst acknowledging the imbrication of discourse, power and subjectivity” (Savahl, 2010, p.141). Discourse in this sense consists of an amalgamation of both spoken and written texts. Potter and Wetherell (1987, p.7) thus state that “*As discourse functions independently of the intentions of speakers or writers, their ideas do not merely serve to order and reflect the social world, but also to construct it*”.

An important focus of discourse analytic work in psychology, and specifically in the work of Potter and Wetherell (1987), is that of the ‘interpretative repertoire’, referring to a cluster of terms, categories, and idioms which are closely conceptually ordered. It is further described as “available resources for making evaluations, constructing factual versions and performing particular actions.” (Potter & Wetherell, 1995, p. 89). Their perspective on discourse analysis recognises that language allows for multiple versions of an event (Potter & Wetherell, 1995). This analysis is therefore concerned with the ways that individuals construct their versions to *do* things. In particular, a study of the variations in language use can shed light on the ways that speakers and writers construct their accounts and structure them to appear factual (the epistemological orientation of discourse), and the ways that they use accounts to serve rhetorical functions (the action orientation of discourse) (Savahl, 2010).

2.5.5.2. Thematic analysis

This phase of the study utilised the thematic analysis technique as proposed by Braun and Clarke (2006), particularly for Chapter Seven: Article 4, for the community mapping and

photovoice sessions. Braun and Clarke (2006) recommend a six-phase guide to conducting a theoretical thematic analysis. Theoretical thematic analysis is closely linked to the researcher's theoretical or analytical interest and is typically coded to align with the research questions of the study. Phase one, familiarising oneself with the data, involved an immersion in the data which was characterised by repeated readings of the transcripts. In Phase two, the initial codes were generated, whilst Phase three focused on the identification of the themes based on the initial codes. In Phase four, the themes were reviewed and refined, and Phase five involved defining and final naming of the themes. Phase six focused on the production of the report based on the first five phases of analysis.

2.5.6. Procedure and Ethics

It is the obligation of the researcher to protect the rights and well-being of the child at all times (Hart, 1994). The core ethics principles include beneficence, non-maleficence, trustworthiness, responsibility, integrity, justice, confidentiality, anonymity, informed consent and respect for human rights and dignity; and were strictly adhered to throughout the study. Ethics clearance and permission to conduct the study was obtained from the Senate and Higher Degrees committees of the University of the Western Cape. Subsequent to obtaining ethics clearance (see Appendix J), the principals of the selected schools were contacted, telephonically and via email, and asked to participate in the study. Once permission was gained from the principals to participate in the study, the names of the three schools were submitted to the Western Cape Education Department (WCED) for permission to conduct the study at the participating schools. When permission was obtained from the WCED (see Appendix K), a meeting was arranged between the researcher and principal to discuss the finer details of the study and what exactly the schools' participation entailed. In this initial meeting with the principal, consent forms and information sheets which provided details of the study were given to the principal to distribute to potential participants. The participants who were interested in participating in the study were recruited by the grade 6 head of department or the school counsellor.

When the children from the three respective schools voluntarily agreed to participate in the study and signed consent forms were returned, times were scheduled for data collection. As data collection was based on the sustained contact model, this allowed the researcher to build rapport with the participants throughout the scheduled sessions. Data were collected from the end of 2014 to mid-2015 by the author and the aforementioned individuals (see 2.5.1. Design,

p. 32). Discussion groups were held either in the first session of the school day, or after school. The participants were provided with a safe lift home by the author when the discussion groups were held after school. An initial session was held with the selected participants wherein the purpose and aim of the study, what their participation would entail, as well as the core ethics principles of informed consent, voluntary participation and confidentiality, were described in detail. Participants were assured that they have the right to withdraw from the study at any time without negative consequences. Participants were requested to keep the content and discussions that take place within the sessions private and confidential. Permission was sought from the participants to audio record the sessions. The sessions were recorded using a digital dictaphone and transcribed verbatim. A counsellor was on standby in case sensitive matters arose in the focus group discussions with the participants warranting referral. The transcribed texts were verified by a research psychologist external to the study. The electronic files were stored securely in an encrypted format that only the primary researcher and the supervisor had access to. The files will permanently be deleted after a period of five years. Finally, participants were also informed that the data gathered will be used for a monograph thesis which will be publically available, as well as peer-reviewed publications and conference presentations.

2.5.6.1. Ethics for Photovoice

Photovoice is grounded in core principles which underlie the code of ethics for health education professions, namely respect for autonomy, promotion of social justice, active promotion of good, and avoidance of harm (Wang & Redwood Jones, 2001). To ensure participant's and community member's privacy, the following guidelines were enforced by the researchers and the participants, as outlined by Wang and Redwood-Jones (2001) concerning the ethics considerations for photovoice. As a standard for utilising photovoice, the researchers sought voluntary adherence to and respect for privacy law against four distinct types of invasion: intrusion into one's private space; disclosure of embarrassing facts about individuals; being placed in a false light by images; and protection against the use of a person's likeness for commercial benefit (Wang & Redwood Jones, 2001). In addressing the *intrusion into one's private space*, two written consent forms were administered to the participants. The first consent form addresses general ethics protocols developed by university institutional review boards and was adapted specifically to photovoice by including aspects such as the: (1) definition and goals of photovoice; (2) the duration of each session, number of sessions, total duration of participation, nature of group meetings to

discuss photographs, and intent to audiotape group discussions if applicable; (3) potential use of photographs for research and educational purposes, conditions of photographers' (see Appendix D and E). The second consent form included the participant's consent to use their photographs, and participants' ownership of negatives (Wang & Redwood Jones, 2001, p.555-565) (see Appendix H). Wang and Redwood Jones (2001) further discuss that the safety of the participants must be the fundamental consideration. This consent form also includes permission, thus a signature, from the individual being photographed prior to taking photographs, when appropriate. A third consent form was used once the photographs were developed for the participants to permit their photographs, which they have approved, to be published or used in the project (see Appendix I).

2.5.7. Validity

Whilst the term validity is highly contested in qualitative research (Creswell & Miller, 2000; Morse, Barrett, Mayan, Olson & Spiers, 2002), a general consensus exists that inquirers need to demonstrate that their studies are credible (Creswell & Miller, 2000). Validity can be understood as the manner in which the research describes, measures, or explains what it aims to describe, measure, or explain. As a result of the flexibility and open-endedness of qualitative research methods, it presents validity issues to be addressed (Ray, 2000). Thus, it is the degree to which the researcher is able to ensure that data collection, and analysis appropriately address the research question. Creswell and Miller (2000) suggest that validity is influenced by the researcher's perception of validity in the study and their choice of paradigm assumption. Researchers have often adopted, or interchangeably employed, what they consider to be more suitable terms, such as, quality, rigor and trustworthiness (Davies & Dodd, 2002; Lincoln & Guba, 1985, as cited in Golafshani, 2003). The following strategies were employed to ensure validity of the study, that is: *triangulation of data collection methods, peer debriefing, prolonged engagement, audit trails, and member checks and memos* (Creswell & Miller, 2000; Guba & Lincoln, 1981). Morse et al. (2002) maintain that these verification strategies should be built into the research process not to evaluate rigour post-hoc, but to ensure rigour throughout. The verification strategies employed in this study are discussed below.

Triangulation of data collection methods were employed in Phase Three whereby focus group interviews, community mapping, and photovoice were employed. Triangulation refers to a validity procedure whereby the researcher pursues convergence across sources of

information (Creswell & Miller, 2000). Denzin (1978) identified four variations of triangulation, namely across data sources (the participants), theories, methods, and different investigators. In this study triangulation was employed across data sources, methods, and theories (see Chapter Three: Conceptual and Theoretical considerations and Chapter Eight: Discussion). *Member checks*, refers to taking the data and interpretations back to the study participants in order to “confirm the credibility of the information and narrative account”. (Creswell & Miller, 2000, p.127). This was implemented after each discussion session, and also once the process of data collection was complete to identify any discrepancies in the researchers’ interpretations and the meanings of the participants. The nature of the study enabled *prolonged engagement in the field*, which encompasses staying in a particular research site for a sustained amount of time (Creswell & Miller, 2000). For the entire research process, approximately ten months were spent in engagement with the participants, and for Phase Three in particular around eight months were spent at the three research locations. The qualitative phase allowed the researcher to clarify any questions which may have arisen in a previous session.

Additionally, *audit trails* were used where a researcher external to the study audited the findings to examine the narrative accounts and conclusions reached (Creswell & Miller, 2000). “The goal of a formal audit is to examine both the process and product of inquiry, and determine the trustworthiness of the findings” (Creswell & Miller, 2000). The audit trail is instituted when the researcher keeps a rigorous account of the process of the inquiry (journals or memos, record of all activities, data collection implementation schedule etc.), and an external auditor scrutinises the documentation to determine the credibility of the narrative account. This strategy was employed in this phase of the study. *Thick, rich description* is another verification strategy, wherein the researcher provides as much detail of the context, participants, and the qualitative themes identified. Credibility is therefore established when the viewpoint of the readers of the narrative accounts are transferred into a particular context. *Memos*, an additional technique, was used which entailed detailed accounts of the entire research process. These memos were referred to throughout the data collection stage, as well as during the analysis and write up of the related chapters (Chapter Six and Seven). And finally, *peer debriefing* added to the validity of the qualitative findings, and is described as the review of the study by a researcher familiar with the research or topic under investigation. Peer debriefing was particularly important in this phase as the qualitative articles, Chapter Six

(Article 3) and Chapter Seven (Article 4) consisted of published journal articles which afforded peer review at three levels- by the editor, as well as two anonymous reviewers.

2.5.8. Reflexivity

Reflexivity in qualitative research is concerned with the “politics of location” between the topic at hand and the “voice of research” (Holliday, 2002, p. 146). It also encompasses the manner in which the researcher deals with, and gains from the intricacies of their particular presence in the research setting in a systematic manner. Research must therefore be carried out with the utmost sensitivity to the “nature of the setting” (Hammersley & Atkinson, 1983, p. 17, as cited in Holliday, 2002). Holliday (2002) purports that the researcher should in fact attempt to understand the impact of their presence, rather than attempt to reduce it (Holliday, 2002). It is therefore critical that the researcher maintains critical self-reflection throughout the research process. It should be noted that Chapter Nine: Conclusion, is a reflexive chapter, which provides a considered and reflective account of the research process, with particular emphasis on the methodological and theoretical considerations. As Creswell and Miller (2000, p. 129) poignantly note “Our primary lens, however, is always that of the participants in a study, and we have become more reflexive in our studies, acknowledging the inseparableness of the researcher and the process of inquiry”.

2.6. Conclusion

This chapter detailed the methodological and ethics considerations of the study. It explicated that the study employed a mixed methods approach, in particular a sequential explanatory design whereby the qualitative and quantitative phases were given equal priority, with integration occurring at the research aims and objectives and the discussion phase (with the quantitative preceding the qualitative phase). The study essentially comprises three phases: Phase One encompasses a systematic review and constitutes the first article (Chapter Four) of the dissertation which explored how children make sense of, assign meaning to, and perceive natural spaces. Phase Two, the quantitative phase, represents article 2 (Chapter Five) which endeavoured to ascertain the relationship between children’s environmental views and their SWB. The final phase, Phase Three, explores children’s understandings of natural spaces and the influence on their SWB, and comprises two articles (Chapter Six: Article 3 and Chapter Seven: Article 4). The next chapter, **Chapter Three**, expounds the conceptual and theoretical deliberations of the study.

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CHAPTER THREE: CONCEPTUAL AND THEORETICAL CONSIDERATIONS

Toward a conceptual understanding of children's engagement with natural spaces: Theoretical and Conceptual Debates

3.1. Introduction

In the literature there are existing debates concerning the concepts of 'nature', 'children's place and space', and 'child well-being'; which have essentially been considered as contested concepts. The pioneering work of Gallie (1956) was the first published work to consider the notion of '*essentially contested concepts*'. Gallie (1956) was interested in concepts that are the focus of endemic debates pertaining to their meaning. Given the strong normative valence associated with some concepts (Collier, Hidalgo, & Maciuceanu, 2006), usually combined with numerous considerations, it provides users with a basis to strongly prefer a particular meaning. While some researchers and theorists actively maintain their own usage, others assert preference for an alternative usage- *hence* the idea of a contested concept. An important consideration is whether our understanding of that concept is advanced by perceiving it through the lens of that contestation. This chapter provides the critiques around the aforementioned taken-for-granted concepts which formed the basis of this study, namely nature, place and space, and child well-being. The core debates surrounding each concept are explicated. More so, within each concept, the key theories within each of the fields are presented. The chapter concluded with a summary of the conceptual and theoretical literature, and the implications thereof for the current study.

3.2. Nature: 'The contested other'

Nature is assumed to be a *given, singular entity*, and to exist exclusively in areas which have been *untouched by humanity*; places demarcated as undisturbed virgin areas or wilderness (Macnaughten, 1993). The contestation surrounding the term is situated within three complex and interrelated meanings, that is (i) *intrinsic nature*, which refers to the essential characteristics of a thing (e.g. the nature of childhood); (ii) *external nature*, referring to 'nature' as the unmediated material world external to humanity (e.g. the natural environment); and (iii) *universal nature* as universal law or reality that may or may not include humans ('natural' laws or 'Mother nature') (Macnaughten, 1993).

Whilst a growing number of authors critique the all-encompassing, definitive view of nature, others argue for centrality of the concept (Attfield, 2006). Some scholars (e.g. Giddens, 1994; McKibben, 1990; Merchant, 1990, as cited in Attfield, 2006) claim that nature has become socialised, and extend this argument to assert that “nature no longer exists”- that we have reached what McKibben (1990) refers to as “the end of nature” (p. 11). McKibben’s (1990) argument resonates with contemporary criticism that nature, in terms of entities untouched by humanity, no longer exists. The uncertainty surrounding whether nature encompasses humans is a long-standing debate with an historical focus, revealing that prevailing social and cultural politics are embedded in these distinctions (Macnaughten, 1993). Crist (2004), critiques the postmodern constructionist view of nature, contending that the social construction of nature is “narrow and politically unpalatable” (p. 6). She maintains that whilst constructionists endeavour to unearth the sociocultural genesis, they do not deconstruct their own rhetoric.

Taylor (2011) contends that within the contemporary western cultural vernacular the conflation of children with an “idealized form of *pure nature*” (p. 423) has become an enveloping trend in contemporary thinking and research. Her contention resonates with Rousseau’s (1762, as cited in Taylor, 2011) premise of ‘Nature’s’ uncontaminated child, proposed in *Emile*, his fictionalised philosophical exposition about the utopian natural education for a young boy living in the country. Aitken (2001), a noted child geographer, however, maintains that the concept of nature is socially constructed: “Two hundred years after the publication of *Emile*, young people are still thought to be naturally closer to nature with little thought to how childhood is constructed closer to nature.” (as cited in Taylor, 2011, p. 36). This proclivity in contemporary thinking on the nature of *nature* is manifest in current dualisms of *nature/culture* and *childhood/adulthood* debates, often attributed to Descartes’ (as cited in Long, 1969) ‘mind-body’ dualism. This resonates with Macnaughtan and Urry’s (1995, p. 95) conjecture that: “there is no single ‘nature’, only natures. And these natures are not inherent in the physical world but discursively constructed through economic, political and cultural processes.”

3.2.1. Measuring children’s environmental views

The absence of validated scales to measure children’s environmental views and attitudes and their subjective well-being (SWB) perpetuated the development of several scales. Amongst those scales determining children’s environmental views are the ‘Children’s Attitudes Toward the Environment Scale’ (CATES) by Musser and Malkus (1994), Children’s

Environmental Attitude and Knowledge Scale (CHEAKS) by Leeming, Dwyer, and Bracken (1995), the New Ecological Paradigm (NEP) Scale for Children (Manoli et al., 2007), the Environmental Scale (2-MEV) by Bogner and Wilhelm (1996), General Attitude Scale about Environmental Issues (GASE) by Metin (2010), and the Attitude Toward Environmental Issues Scale (ATEIS) by Yilmaz, Boone and Anderson (2004d).

These scales, however, have come under scrutiny for several reasons (Johnson & Manoli, 2011; Leeming et al., 1995; Musser & Diamond, 1999). The CATES has been criticised for utilising bipolar response options, and its poor psychometric properties; while the CHEAKS has been criticised for the deficiency of a theoretical grounding (Johnson & Manoli, 2011). The NEP Scale has been the most widely used scale assessing environmental attitudes and concerns (Stern, Dietz, & Guagnano, 1995). The original NEP scale developed by Dunlap and van Liere (1978), for use with adults, proposed a one-dimensional scale, and has been shown to display good psychometric properties in varying contexts and countries worldwide. The scale was later revised by Manoli, Johnson, and Dunlap (2005, 2007) for use with children evincing a uni-dimensional construct. Overall scores on the scale exist on a continuum, where low scores indicate anthropocentric attitudes (valuing nature due to the material and physical advances it affords humans) (Thompson & Barton, 1994), and high scores indicating ecocentric attitudes (valuing nature intrinsically, in its own right) (Manoli, Johnson, and Dunlap, 2007; Thompson & Barton, 1994).

3.2.2. Theories on nature

3.2.2.1. Biophilia hypothesis (Wilson, 1984)

In 1984 Wilson proposed the *Biophilia hypothesis* which is defined as the “innately emotional affiliation of human beings to other living organisms” (Wilson, 1993, p. 31). The *biophilia* concept relates to the notion that people have an innate predilection toward nature and living things. This theory comprised two key premises- firstly, that biophilia is intrinsic and considered part of the makeup of human “*genetic heritage and evolved human nature*” (Heerwagen, 2007); secondly, biophilia is an emotional response that “*can be an end in itself (feeling a sense of pleasure and well-being) or it can stimulate emotions that motivate behaviors (interest motivates exploration)*” (Heerwagen, 2007, p.2). While theorists concur that human’s historical relationship with nature has in turn influenced how we see and react to the environment, they propose distinct reasons for this. Wilson (1984) proposed that biophilia consists of a collection of intricate rules directing individual’s adaptive response to

stimuli based in nature, with these rules requiring constant contact with nature to be sustained. On the other hand, Tooby and Cosmides (1992) purport that the brain encompasses numerous 'modules' which deal with problem-solving across human evolution. The 'modules' contain a particular '*reasoning process and information gathering structure*'. Heerwagen (2007) makes a crucial point that, while biophilia should be encouraged as nature affords countless benefits for well-being, it also poses a possible quandary for sustainability by exploiting natural resources and spaces, with urbanisation as a threat as well.

Adding to this, Preuss (1991) and Fliegenschnee and Schelakovsky (1998) posit that emotional involvement is a learned ability to react emotionally to intricate, and at times very abstract environmental problems (as cited in Kollmuss & Agyeman, 2002). As varying degrees of abstraction exist, the lack of knowledge pertaining to the causes and consequences of ecological degradation can result in emotional non-involvement (Fliegenschnee & Schelakovsky, 1998; Preuss, 1991, as cited in Kollmuss & Agyeman, 2002). A likely consequence of premature abstraction, such as educating children about abstract concepts like rainforest destruction, acid rain, ozone holes, and whale hunting, can be dissociation with nature if exposed to these environmental problems before they are developmentally prepared. Asking children to address problems which are beyond their cognitive abilities may bring about feelings of anxiousness, which may culminate in the development of fear toward environmental issues. This fear may escalate to *biophobia*, which essentially a fear of the natural world and ecological dilemmas, and a fear of simply being outside. A vital point which Sobel (2002) notes is that parents and guardians should allow children to develop love for the earth before they urge them to save it.

Support for Wilson's (1984) supposition of individuals' intrinsic care for nature is evident in research demonstrating increased psychological well-being when engaging in and experiencing nature. Research employing Wilson's *biophilia hypothesis* (1984, as cited in Blizard & Schuster, 2007) has provided substantial evidence for the benefits of direct experiences with nature in childhood (Kellert, 2002). Nabhan and St. Antoine (1993, as cited in Blizard & Schuster, 2007), developing upon this concept, have proposed that direct experiences with nature during childhood may be a precondition for the full development of biophilic tendencies in adulthood. Additionally Kellert (2002) documented a wealth of affective, evaluative, and cognitive benefits resulting from children's experiences in natural places. A study by Burgess and Mayer-Smith (2011) utilised the *biophilia* framework to

contribute to *biophilia* dialogue and research by researching *biophilia* in early childhood development, an area which the author's dispute is neglected. The study then went further to incorporate and build upon Kellert's (1996) conception of typologies of environmental values, namely scientific-ecological, naturalistic, symbolic, aesthetic, humanistic, negativistic, moralistic, utilitarian, and dominionistic.

3.2.2.2. Attention Restoration Theory (Kaplan, 1983; 1995)

Attention Restoration Theory (ART) proposes that natural environments encompass preferred and varied objects which possess the ability to promote, harness, and restore attention (Kaplan, 1995). Attention Restoration Theory has its basis in William James' early proposition of humans possessing two main types of attention, namely *directed/voluntary attention*, and *involuntary attention* or *fascination*. Directed attention involves 'the ability to control distraction through the use of inhibitory mechanisms' (Wells, 2014), with Kaplan (1995) indicating that James emphasised effort and focus as key in this kind of attention. It was Olmsted (1865, as cited in Kaplan, 1995) who identified that an individual's capability to focus may become *fatigued*, and in turn proposed the need for being in nature to convalesce from this; a state which is referred to as directed attention fatigue (DAF). Directed attention fatigue may result from protracted periods with insufficient rest (Kaplan, 1995), and is exemplified by "difficulty concentrating, distractibility, reduced inhibitory control, and often, irritability." (Wells, 2014, p.102). It therefore becomes imperative to rest directed attention with the purposed of locating a different outlet to preserve focus- re-directing directed attention. This introduces the second kind of attention, *involuntary attention* or *fascination*. *Fascination* is crucial as it enables an individual to rest, with its inherent resistance to fatigue as well as requiring no effort. While several sources of fascination have been identified, being in nature has shown to be significant, and is central to the ART. Kaplan (2002) refers to these opportunities for reducing DAF as 'restorative experiences' or 'restorative environments'.

Kaplan (1995) initially discussed in Kaplan and Kaplan (1989) proposed four requisite qualities for an environment to be considered a 'restorative environment. The first quality, fascination, is requisite for an environment to be considered restorative. This type of attention is evident in content or process. Kaplan (1995) notes that "*Quiet fascination, characteristic of certain natural settings, has a special advantage in terms of providing an opportunity for reflection, which can further enhance the benefits of recovering from directed attention fatigue*" (p.7). The second quality, *being away*, refers to seeking out a restorative place, such

as taking a walk in the park, which on its own does not ensure a restorative environment. The third quality is *extent*, denoting the intensity and depth of experience; indicative of a restorative environment, should be rich and coherent presenting a place of solace for the individual. The final quality, *compatibility*, means that an individual's environment should be well-suited to the use and functions for it; with a bi-directional relationship existing between the environmental demands and their own requirements.

Research with children using the ART have provided evidence linking nature to cognitive functioning. The study by Wells (2000) was the first to employ this theory, and examined children who had recently relocated. The findings indicated that enhancements in children's cognitive functioning (from pre to post-move) were due to increases in nearby nature and not as a result of the variation in housing quality. A study by Faber Taylor, Kuo, & Sullivan (2001) investigated a group of children who were diagnosed with Attention Deficit Hyperactivity Disorder (ADHD), and due to parents' responses, it was found that children functioned better subsequent to engaging in natural spaces in comparison to non-green settings. This was also related to a decrease in ADHD symptoms in the children.

Corroborating these findings, an experimental design was used to carry out an evaluation of children diagnosed with ADHD ensuing either: a nature walk, a neighbourhood walk, or a downtown walk. Children's cognitive functioning in this study was superior after a nature walk in comparison to the neighbourhood or downtown walk. In this regard, Wells (2014, p.104) states that:

“Together, the evidence provides a compelling argument for the bolstering of cognitive functioning as a plausible protective mechanism explaining how exposure to the natural environment contributes to children's resilience”

3.2.2.3. Person-Environment Fit Theory (Horelli, 2007)

In an attempt to locate a theoretical framework which is suitable to use with children, Horelli (2007) identified a particular shortcoming in the literature. This inadequacy pertained to a shortage of holistic theories concerning child friendly environments (Horelli, 2007). Whilst a great deal of research in this area considers the “micro environment” (the immediate environment of the child) (Bronfenbrenner, 1973; 1993), there is a lack of consideration of the impact of numerous social, political, and historical factors. Due to the scarcity of appropriate theories which consider the significance of the child's perspective, a group of researchers developed a cluster of studies to ascertain the extent and likely criteria for

environmental child friendliness, and its relationship to planning and governance (Horelli & Prezza, 2004).

The findings indicated that a number of the variables, or criteria of environmental child friendliness, for instance a unified community identity, provision of activity settings, and safety and free mobility, are alike regardless of time or area. These findings were supported by Chawla (2002), Driskell (2002), and Horelli (1998), who worked on the Lynch follow-up study, *Growing Up in an Urbanizing World* (2002). On closer inspection of the results through the lens of locality, it became apparent that the merits of a good local environment entail serenity and cleanliness, spaces for an array of youth activities, educational services, communal transport, and nearness to nature (Horelli, Kytä, & Kaajä, 1998, as cited in Horelli, 2007).

The history of the Person-Environment (P-E) fit theory can be traced to Parson's (1909) congruence concept in vocational guidance (as cited in Spokane, Meir & Catalano, 2000). This notion of congruence echoed the social and cultural context in which Parson's (1909) wrote (as cited in Spokane et al., 2000). However, in 1959, a more detailed and intricate version of congruence as posited by Holland (1959) was evident, drawing on principles of P-E psychology. Osipow and Fitzgerald (1996, as cited in Spokane et al., 2000), in a synopsis of Holland's theory, consequently declared that the aspect of relations between P-E fit, namely *congruence*, and contentment remains unsettled. The model of *congruence* has continually progressed and persists as significant in directing research, and practice in vocational psychology. The congruence relationship is stated plainly in what Meir (1989, as cited in Spokane et al., 2000) calls a mapping sentence. This mapping sentence embodies the core of the congruence model, in that the level of congruence is closely related to an individual's well-being. Although the P-E fit theory was utilised predominantly in the vocational field, a shift occurred whereby the model was used increasingly in other psychological spheres, such as in environmental psychology, conservation psychology, ecological psychology, and ecopsychology.

The P-E fit theory was also significantly influenced by Lewin's (1938) supposition that behaviour is an outcome of the interaction between the person and environment (as cited in Sekiguchi, 2002). The child's environmental perceptions is not viewed as static, instead it emphasises an array of factors which impact upon it. It is posited that if the fit between the

person and environment is poor, the outcome may be experienced as stressful and demanding. Environmental stress can be reduced if the child perceives even a slight opportunity of influencing their circumstances, and managing the stressful sources of the environmental stressor. Thus, potential difficulties which a child may experience within the home, school, or community environment may enhance environmental stress. Thus, if the child perceives a slight possibility of being able to influence their environment, for example by creating a more child friendly city (CFC), community, or neighbourhood, this may in turn lessen their environmental stress. It is, however, posited by Kaplan (1983, as cited in Horelli, 2007), that the ultimate control of one's environment is idealistic. Instead the P-E fit should be considered by ascertaining the manner in which the environment encourages goal accomplishment. This framework has been utilised in research conducted with children thus making the applicability of this framework apparent (Cassidy, 1997; Horelli, 2007).

Although the P-E fit principally refers to the quality of the relationship between the child and their environment, the experience of congruence means that it in addition refers to *the perceived quality of that environment*. Taking the above arguments into consideration, the evidence indicates that the “perceived P-E fit or congruence can be applied as a dynamic, individual criterion of environmental child-friendliness” (Horelli, 2007, p.276) It also signifies the effect which good environments provide, such as their encouragement of personal goals or projects which is reciprocally linked to contentment with life or well-being (Wallenius, 1999). Contemporary operationalisations of the P-E fit were assessed on the foundation of a series of studies (Horelli et al. 1998, as cited in Horelli, 1998; Horelli, 1998; Kytta, Kaaja, & Horelli, 2004), proposing that a good environment from children's perspective entails an adequate P-E fit.

3.2.2.4. Gibson's (1979) Theory of Affordances

The theory of affordances was put forward by perceptual psychologist, Gibson (1979), and is a fundamental theory in ecological perceptual psychology. Gibson's theory is an example of a psychological transactional theory (Altman and Rogoff, 1987, as cited in Kytta, 2004). In transactional research the relationship between the person-environment is understood as a “dynamic, interactive system” which needs to be considered within the context in which it occurs. The transactional component is emphasised in the fact that the individual has an impact on and can alter their environment, and in turn, the environment influences the

individual on a number of domains. Kyttä (2003) points out that the idea of *transactionalism* is encompassed within the concept of *affordance*.

Gibson's theory of *affordances* proposed that our perceptual experiences encompass our consciousness of objects and occurrences in the environment, as well as "an awareness of their functional significance, that is, their functional meaning." (Heft, 1988). Gibson (1979) challenged the putative notion in both philosophy and perceptual psychology that "the meaning of objects and events" are forced on the perceivers sensory input by cognition; and instead contended that an individual directly perceives this meaning. For this reason, Gibson's (1979) theory is also referred to as the framework of direct perception. An affordance is therefore the physical opportunities, as well as safety concerns which the individual perceives when in a particular environment or setting (Kyttä, 2004). What the environment offers as an affordance is what Heft (1988) refers to as *functional significance* (p.29). Environmental components and aspects can be understood in this *functional* way in mentioning the types of activities they present people with. Heft (1988) provides the example of a tree affording the opportunity for a child to climb if the child is able to grasp, and use the branches to pull themselves up. Thus, "The affordance is neither in the tree, nor in the child, but in the relationship between them" (Chawla, 2007, p.150). Kyttä (2004) indicates that environments differ in the quality of the affordances they offer children.

The prominence of the theory of affordances is evident in several studies in the past decade in which it has been used to understand children's experiences in nature (see Chawla, 2007; Fjørtoft, 2001; Kyttä, 2003, 2004; Linzmayer & Halpenny, 2013). Kyttä (2003) operationalised child-environment congruence by applying the concept of affordances. *Affordance* is an essential construct in ecological perceptual psychology. Conventionally, it has been defined as the functional opportunities and dangers which a creature perceives when behaving in a particular context (Gibson 1979; Heft 2001, as cited in Horelli, 2007). Reality is then perceived as significant for opportunities, either good or bad in context. As an illustration, the environment affords grasping, twisting, throwing, and climbing, yet also emotional, social and cultural opportunities. The concept of affordance involves environmental and individual aspects, and can therefore be considered as truly transactional (Chawla, 1992; 1997; Kyttä, 2003, as cited in Horelli, 2007). The environment consists of an endless amount of potential affordances which individuals or groups realise as they perceive, make use of, or mould them. Designed affordances may represent an endeavour to convey

and draw the affordances of the current environment and those of the ideal one nearer (Kyttä et al., 2004). Various individual, social, and cultural characteristics, guidelines, and practices govern which affordances can be employed or moulded, taking into account when, where, and how this is completed (Kyttä, 2003). The accessibility of preferred affordances and the opportunity to utilise, mould, or design (actualise) them can be deemed an indicator of the perceived P-E fit. The actualised affordances of the existing environment which is a small portion of all potential affordances, aligns with Stokols' (1979) environmental facilitation of the individual's activities. The motivational significance however, can be assessed, by children's personal preferences for affordances.

Additionally, using concepts from Reed (1996), namely fields of 'free action', 'promoted action', and 'constrained action', Kyttä (2004) merged these concepts with research on children's affordances. In doing so, she identified four place variants which children made sense of, they were: firstly, '*wastelands*', where children have independent mobility yet there are limited affordances capturing children's attention. The second type of place is categorised as a '*cell*', where children's mobility is heavily constrained, and are thus not able to explore their environments. The third place type is '*glasshouses*', this entails that while children perceive the world as full of opportunities for activities and engaging, they do not have access to these places. In the final place type, identified as the 'Bullerby' (Swedish term denoting a noisy village), children have the ability to freely move around their environment, with the environment positively influencing them. This type is considered children's place, and comprises 'positive cycles'- whereby the greater the agency and exploratory range the child has, the more pleasurable the child's experiences and affordances in their environments, which ultimately encourages them to engage further. Chawla (2007) indicates that nature provides this encouragement in children.

In a 2007 article, Chawla proposed a theoretical framework to understand active care for nature in adulthood which is connected to positive childhood experiences. This framework merges two theories, that of the ecological psychology of Gibson, Eleanor, and Reed, as well as the attachment theories of Bowlby and Winnicott. Kyttä (2003) argues that while reference has been made to Gibson's theory countless times in the environmental psychology literature, it has largely been cursory. More so, the concept of *affordance* has been a predominant focus in these studies, overlooking the rest of the theory.

3.3. 'Place' and 'Space'

It was Yi-Fi Tuan (1974) in his work, *Topophilia: a study of environmental perception, attitudes, and values*, which rekindled interest in the concept of place (Cighi, 2008). Tuan (1974) defined *topophilia*, *topo* (place) and *philia* (love of/for), as the love for place and defined it broadly to "to include all emotional connections between physical environment and human beings" (p.2). In refining and developing his theory of both space and place he published *Space and Place: The perspective of experience* in 1977- engendering an academic debate which continues in contemporary times, across an array of disciplines. Although there is no consensus on what children's space or 'sense of place' encompasses, researchers have provided numerous accounts to elucidate the meanings of these spaces and places.

Kjorholt (2003) contends that "Children's special places have been connected to place identity and attachment to place, to creativity, to the need for children to find a place of peace and 'refuge' from the adult world, to closeness to nature, and as places for ecstatic experiences and more" (Chawla, 1986, 1990, 2002; Dovey, 1990; Hart, 1979; Matthews & Limb, 1999). A closely related concept to that of children's places is that of identity, which has received much attention in recent years by geographers (Vanderbeck & Dunkley, 2003). A distinctive feature of this body of work is the focus on place in the construction of personal and social identities (Bauder, 2001; Ruddick, 1996). Chawla (2000) speaks of 'places of conviviality', which refer to busy public or commercial place; 'places of solidarity', which demonstrate that others acknowledge one's existence and confirm one's rights and needs; and finally 'places of possibility', which convey the child's intimate geographies.

Another view is put forward by Abbott-Chapman and Robertson (2009) who assert that 'children's special places' are in fact cultural constructs which may alter with time, what Haraway (1991, as cited in Instone, 2004) refers to as 'situated knowledges'. She maintains that these 'knowledges' are always historical, located, political and partial as the world is at all times articulated from a particular point of view. Children's favourite places are idealised constructs of places enjoyed and revered- places which aid in regulating negative feelings and coping with perceived stress (Korpela & Ylén, 2007). Suchet (2002, p. 155) instead suggests a mode of 'situated engagement' where one opens "one's self to an engagement with different ways of seeing, thinking and doing" relating to various spaces. It is evident in the literature that conceptions of place and space vary across academic disciplines. Commenting from the architectural studies perspective, Najafi and Shariff (2011) indicate that place refers

to a strong affective bond between a person and a specific setting. They further maintain that 'Place Attachment', 'Place Identity' and 'Sense of Place' are amongst concepts which are employed to describe the quality of people's relationships with a place. Accordingly, sense of place is utilised in studying human-place bonding, attachment and place meaning; and is often defined as an overall impression comprising the ways in which people feel about places, sense it, and assign concepts and values to it (Najafi & Shariff, 2011). Semken and Freeman (2008) theorise further that place attachment and place identity are subsumed within the broader concept of sense of place.

Cross (2001), whilst acknowledging the diverse meanings associated with sense of place in her study investigating participants connections to place, identified two components of sense of place, that is *relationship to place* which consisted of six aspects: *biographical, spiritual, ideological, narrative, commodified and dependent*; and *community attachment*. She emphasises that this typology of place should be considered as ideal types or analytic categories developed to foster understanding. We do not have one particular sense of place as Cross (2001) maintains; instead the relationships between people and places are transactional. In engaging with place we possess various cultural notions which harness our responses to a place, which to some extent reshapes a place to correspond with these notions (Cross, 2001). Thus, as we create our own place, place does not exist independent of us. Massey (2005) however, contends that there is a sense of belonging of the body that is *of space* and profoundly subjective (Biehl, Good, & Kleinman, 2007). These spaces are found within indoor and outdoor spaces in the home surroundings, and the local neighbourhood, and are all significant places of childhood and adolescent activities, and a basis of feelings of belonging (Abbott-Chapman & Robertson, 2009). Harrison and Dourish (1996) in their interpretation define space as the structural, geometrical qualities of a physical environment and place as the notion that includes the dimensions of lived experience, interaction, and use of a space by its inhabitants. They add that a place is generally a space with an auxiliary social meaning, convention, cultural understandings about role, function, and nature. The sense of place transforms the space (Harrison & Dourish, 1996).

3.3.1. Theories on Space and Place

3.3.1.1. Place attachment

While there has been a surge of research on place attachment over the past 40 years, there is a notable gap in the literature concerning theories of place attachment (Keniger, 2013;

Lachowycz & Jones, 2013; Lewicka, 2011; Zia, Norton, Metcalf, & Hirsch, 2014). A small amount of recent publications (Raymond, Brown, & Weber, 2010; Scannell & Gifford, 2010; Zia et al., 2014) have seen theorists putting forward distinct, and at some points overlapping theories of place attachment. Yet prior to the past five years, the discipline suffered a great absence concerning the lack of a theory. The problem inherent in developing a theory of place is the lack of consensus on terminology, as well as a unifying definition of place. Various conceptualisations of place attachment have been put forward since its popularity in the 1970's, evident in the various concepts proposed - 'children's places' or 'children's spaces', others make reference to the 'intimate geographies of childhood' (Philo, 2000), 'children's geographies' (Hart, 1984), 'children's micro-geographies' (Robinson, 1984), children's 'sense of place', 'place attachment' (Hummon, 1992, Low & Altman, 1992; Moore & Graefe, 1994), 'place to belong' (Kjørholt, 2003) 'topophilia' (Tuan, 1974), 'insidedness', 'rootedness', or 'community sentiment'; to name but a few.

A review article by Maria Lewicka (2011) was amongst the first to attempt to organise and provide a comprehensive account of research on place attachment, since its prominence in the work of human geographers over four decades ago. Moreover, the review also presents the *Tripartite Organising Framework* (Scannell & Gifford, 2010) of place attachment which emphasises the significance of *person-process-place* (explicated below). This key review article (Lewicka, 2011) presents a milestone for integrating the otherwise disjointed and unsystematic literature on place research and directions for theory. Given the absence of a place theory, this section draws on this important contribution to the field by Lewicka (2011). Although various operationalisations and understandings of place attachment and related concepts have influenced the field, these studies do not explicitly specify theoretical considerations. Lewicka (2011) emphasises that one of the greatest gaps in the literature is the *process* by which individual's develop attachment to places. The three main components of her article looks at empirical research and evidence of place attachment, methodological considerations of research which has been conducted, and finally theory of place. It is thus appropriate for this section to outline the key components of the literature in the same manner, with brief considerations of research and method on place attachment, which have served to inform the *Tripartite Organising Framework*, which is thoroughly expounded below.

Lewicka (2011) notes that of 400 published papers on place attachment in over 120 various journals, in excess of 60% were published only in the last decade. Appended to the fact that no theory of place attachment exists, Lewicka (2011) also shows that there is no place-based journal, with most articles published in the *Journal of Environmental Psychology*, and *Environment and Behavior*.

Lewicka (2011) identifies a timeline in place theorisation, and notes that much of the research on person-place attachments have been preoccupied solely with issues around denotations and operationalisations to make sense of the concepts such as 'place attachment', 'place identity', 'rootedness', 'sense of place', 'place dependence', or 'place satisfaction'- which have often been used interchangeably. A key scholar in the discipline emphasises that "*sense of place is a term used liberally but often differently in humanistic, sociological, geographic, and educational discourse to encapsulate connections among people and places.*" (Semken & Freeman, 2008, p.1043). It is further asserted by Lewicka (2011) that two so-called theoretical approaches are evident in the literature, the first is aligned to qualitative research and incorporates phenomenological perspectives; the second is aligned to qualitative research which is often employed by community and environmental psychology scholars. A key limitation in this delineation is the assumption that quantitative and qualitative research endeavours are treated as distinct, opposing theoretical approaches in place research instead of research traditions which have inherent strengths and weaknesses, and align to specific research questions. A mixed methods approach would contribute richly to the literature, and is in short supply in the discipline.

While several review articles (see Bott, Cantrill, & Myers, 2003; Easthope, 2004; Farnum, Hall, & Kruger, 2005; Giuliani, 2003; Giuliani & Feldman, 1993; Gustafson, 2002; Jordan, 1996; Lalli, 1992; Lewicka, 2011; Manzo & Perkins, 2006; Nicotera, 2007; Patterson & Williams, 2005; Scannell & Gifford, 2010; Trentelman, 2009; Twigger-Ross, Bonaiuto, & Breakwell, 2003) on place attachment research have been recognised in the literature over the last two decades, they have done little to answer key questions which remain unanswered particularly relating to theory. It is noted that:

"At present the literature on people-place relationships is rich with empirical results, conceptual distinctions, and authors' own ways organizing the material. Finding one's way through the thicket and offering a perspective which will throw a new light on place research presents a real challenge." (Lewicka, 2011, p.206)

As a theory of place attachment is lacking from the discipline, a contemporary framework was put forward by Scannell and Gifford (2010) which focused on three elements that is *person*, *place*, and *process*. In her synthesis of the literature, Lewicka (2011) observes that far more focus has been given to the *person* component, with far less work concerning the *processes* component which would afford the prospect of understanding the intricacies through which place attachment develops. The following section looks more closely at the *Tripartite organizing framework* by Scannell and Gifford (2010).

3.3.1.2. The Tripartite organizing framework (Scannell & Gifford, 2010)

The Tripartite organizing framework (Scannell & Gifford, 2010) puts forward a three-dimensional framework of place attachment which systematises the array of definitions evident in the literature. The framework considers place attachment as a multi-dimensional concept encompassing *person*, *psychological* (process), and *place* dimensions. The first dimension is referred to as the *actor*, the second is the *psychological process*, and the third is the *object of the attachment*. More so, the framework consolidates the key denotations offered in the literature. A further strength of the framework which Scannell and Gifford (2010) propose is that the more knowledge which is accumulated about the particular components or sub-components, the more inclusive the understanding of place attachment. The three dimensions are further explicated below.

a. The person dimension (Individual and collective place attachment)

While place attachment occurs at the individual and collective (group) levels, with denotations focusing on either of the two, Scannell and Gifford (2010) indicate that the two often coincide. The individual level entails the individual connections and links to a place. Research evinces that place attachment is greater when particular locales arouse personal memories (which is believed to further influence a stable sense of self) (Twigger-Ross & Uzzell, 1996); when places are linked to specific memories of experience, such as meeting a significant other or accomplishing a personal milestone. This provides support for individual experiences as a source of place attachment in addition to the physical characteristics of the place (Scannell & Gifford, 2010).

At the collective level (group), place attachment includes symbolic meanings of a particular place which is shared amongst group members. This level of place attachment has been explored across diverse settings and groups namely cultures, religions, and genders. Arguing

for the religious affiliations of place attachment, Mazumdar and Mazumdar (1993) indicate that the meanings and significance related to specific places are advanced owing to sacred status, such as Makkah or Jerusalem, places of worship etc. Scannell and Gifford (2010) thus propose that various meanings at the collective level are influenced by historical circumstances, religion, as well as other shared experiences amongst members- with these meanings conveyed to ensuing generations. As Scannell and Gifford (2010, p.3) contend: “*Cultural place meanings and values influence the extent of individual place attachment, and individual experiences within a place, if positive, can maintain and possibly strengthen cultural place attachment.*”

b. The psychological process dimension of place attachment

This dimension looks at considers the manner in which individuals and groups interact with a place, including the extent of the psychological interactions that take place in the locales or settings that are significant. The literature points to three psychological components which are involved in place attachment or sense of place, that is *affect*, *cognition*, and *behaviour*. These three components are detailed below.

- **Affect**

In terms of affect, several studies show that predilection for certain places encompass an emotional affiliation (Scannell & Gifford, 2010). Seminal scholars in the field, such as human geographers for example, Tuan (1974) proposed the concept of ‘topophilia’ which denotes ‘love of place’, with Relph (1976) referring to the genuine emotional connections individuals have with an environment. Scannell and Gifford (2010) indicate that the notion of affect in place attachment is also evident in environmental psychology comprised in concepts such as ‘emotional investment in a place’, a ‘general sense of well-being’, and ‘intrinsic care for nature and places’ (Adams & Savahl, 2015). Support for the affective basis of place attachment was also found in displacement research. A crucial point is that the bond with places are not inherently positive- negative experiences in a place can reciprocate negative feelings.

- **Cognition**

Cognitive components are also evident in place attachment and includes one’s memories, beliefs, meaning making, and knowledge which together contribute to the significance of a

place. The process of place attachment is also argued to involve one's sense of self, such as incorporating memories (Scannell & Gifford, 2010). This creation of place meaning has been referred to as 'symbolic communities' (Hunter, 1974). The social information in our environments are categorised into schemas (a collection of cognitions) which consist of knowledge and beliefs concerning specific features of oneself (Bartlett, 1932, as cited in Scannell & Gifford, 2010). The application of schemas to place attachments has resulted in several contributions to the field by various scholars. Fullilove (1996) proposed *familiarity* as an important cognitive component, Feldman's (1990) *settlement identity* suggested that certain places encourage people's attachment to it, while Stokols and Schumaker (1981) make reference to the analogous concept of '*generic place dependence*'. More so, the commonly referenced term is 'place identity' (Proshansky & others, as cited in Scannell & Gifford, 2010), denotes an individual identifying with a place whereby people extract the likeness between the self and place and in so doing, integrate this into their cognitions about the environment. The significant aspects of a particular place may also be incorporated into one's self-concept, referred to as 'place-related distinctiveness' (Twigger-Ross & Uzzell, 1996). An individual's attachment to a place also outlines their distinctiveness or individuality or similarity- with similarity characterising a 'sense of belonging', while distinctiveness referring to unique aspects of an environment. Attachments to place thus become incorporated into an individual's 'sense of self' portraying a part of them (Scannell & Gifford, 2010).

- **Behaviour**

The final component is that of behaviour, "in which attachment is expressed through actions." (Scannell & Gifford, 2010, p. 4), and is exemplified in behaviours which conserve an individual's physical propinquity to a place. This notion of 'proximity-maintaining behaviours' is reflected in research which focuses on length of residence. The exploration of the reconstruction of place in post-disaster regions has been another nuance to this line of inquiry. This component of place attachment is thus based on the need to maintain closeness to a place, and as Scannell and Gifford (2010) describe, is linked to proximity-maintaining, journeys away from favourite places, reconstruction of place, and relocation to similar places.

- c. Place dimension of place attachment**

The final dimension of place attachment is the particular place, and has generally been divided into two levels, the social and the physical. Findings show that both the social and

physical dimensions are significant in the bonding process, inclusive of the spatial level, such as home, neighbourhood, and city, of place attachment. Scannell and Gifford (2010) indicate that emphasis has been placed on the social aspect of place attachment, with the notion that people are attached to places that foster social relations and collective identity. While the physical features of a place are important, when the focus of the attachment is around other people residing in a place and not the physical features of the place it is regarded as a “socially based place bond” (Scannell and Gifford, 2010, p.4), akin to ‘sense of community’. Two overarching categories of community, *community of interest* and *community of place*, with the latter emphasising the bond between people through geographical location, is more amenable to the *Tripartite framework*. Lewicka (2011) notes that attachment to physical dimensions may be stronger than the social dimension in new residents or tourists who visit places as environmental features develop attachment more rapidly in comparison to locals favouring the social dimension. The reasoning behind this is the shorter time it takes to develop and cultivate a bond with natural places than to develop social relationships. Notwithstanding, nature has only become the focus of place research in more recent years (Scannell & Gifford, 2010). Research has further shown a positive relationship between place identity and environmentally responsible behaviours (Vaske & Kobrin, 2001; Scannell & Gifford, 2010). The concept of *environmental identity* (Clayton, 2003) denotes the integration of nature into one’s self-concept, portraying an attachment to nature. This provides further evidence for the physical dimension of place attachment. This diverges from Stedman’s (2003) conceptualisation of the meaning-mediated model of place attachment which put more emphasis on the meaning of the physical features of a place than the place directly.

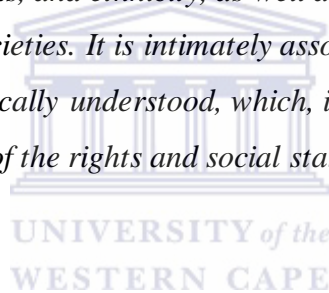
3.4. Child Well-Being

The nascent interest in children’s well-being has expanded exponentially since the adoption of the (UNCRC). The propagation of the concept of well-being can be located in the work of Jahoda (1958), and more specifically the concept of positive psychological health, and is later evident in studies of quality of life, and happiness (See Casas, 1997; 2000; Cummins, 1995), standard of living and health; as well as the field of social psychology. The conventional understanding of well-being was premised upon the absence of ill-health and disease. The history of the concept of well-being in the scientific research arena (in the health and social sciences), followed two distinct pathways both unfolding in the 20th century (Ben-Arieh, Casas, Frønes & Korbin, 2014). The foundations of well-being in the health sciences was premised upon a more positive conception, based on the World Health Organisations’ (1946)

preface of its initial articles of association, wherein it is defined well-being as “Health is a state of complete physical, mental and social well-being, and not merely the absence of disease or infirmity” (as cited in Vásquez, Hervás, Rahona & Gómez, 2009, p.16).

Within the social sciences, however, the foundations were fuelled by the ‘social indicators movement’ of the 1960’s, consisting of an interconnected web of understandings and perspectives from academics across several disciplines. Social scientists as well as public officials in this ‘movement’ demonstrated that well-measured and coherent social indicators afford an approach to monitor and examine the circumstances of groups of individuals- in particular families and children (Land, 2000). Contemporary notions of well-being have envisaged developing an integrated model that amalgamates the treatment and prevention of problem behaviour and promoting strengths approaches. As Sandin (2014) critically notes:

Consequently, well-being is also dependent on the definitions of childhood as shaped by gender, class, age definitions, and ethnicity, as well as on how care for children has been organized in different societies. It is intimately associated with how welfare surrounding children is historically understood, which, in turn, is also dependent on, among others, the definitions of the rights and social status of children and the legal role of the family. (p. 31)



The accruing importance assigned to subjective well-Being (SWB) is acknowledged around the world (Diener, 2000). The concept of SWB, considered a component of Quality of Life, is defined as “people’s affective and cognitive evaluations of their lives.” (Diener, 2000, p.1). It was Diener (1984) who suggested that SWB was composed of three discernible components, that is, life satisfaction, positive experiences, and negative experiences. While numerous research endeavours have examined adult’s SWB, the notable absence in the literature on children’s SWB was taken to task. The welfare and significance of the status of children’s lives then became of particular concern in the child indicators field with the culmination of interest from various professionals and the public for “a better picture of children’s well-being” (Ben-Arieh et al., 2014, p.13). Research endeavours and frames of understanding in the field of children’s well-being shifted from more objective notions of survival, to those focusing on children’s quality of life (Casas, 2000), and more recently children’s subjective well-being (SWB). Savahl et al. (2015b, p.3) note that given the considerable “progress made in the development of objective indicators and the collection of aggregate data, there is however, still a lack of child centred data as well as children’s subjective perceptions of their

well-being.” This sentiment is shared by Casas, Bello, González, and Aligué (2013) who affirm that subjective indicators centred on children’s self-reported information have a more transitory lifespan in comparison to objective indicators.

Contemporary conceptions of well-being have endeavoured to develop an integrated and inclusive model which incorporates treatment and precludes problem behaviour, and in so doing advances strengths approaches (see Pollard & Rosenberg, 2003). Ryan and Deci (2001) indicate that the lack of consensus may, to some extent, be attributed to the inclination for two divergent interpretations of well-being; that is the hedonic and eudaimonic perspectives. Hedonic perspectives of well-being focus on subjective well-being or happiness and are frequently denoted in relation to circumventing pain and attaining pleasure (Ryan & Deci, 2001). Eudaimonic perspectives focus on psychological well-being which is more broadly denoted as encompassing dynamic processes and the degree to which an individual is fully functioning in society and refers to concepts such as *meaning of life, life goals, and self-actualisation* (Casas, 2011).

Children’s well-being has been denoted in various ways. Aked, Steuer, Lawlor and Spratt (2009) define well-being as a dynamic state “...emerging from the interaction between their external circumstances, inner resources and their capabilities and interactions with the world around them” (Aked et al., 2009, p.29). Alternatively, Diener (1984) proposed the idea of SWB to be perceived as a multidimensional model comprised of three major indices of well-being that is satisfaction with life, positive affect, and negative affect. Furthermore, children’s well-being has also been regarded as “...a positive and sustainable mental state that allows individuals, groups and nations to thrive and flourish” (Clarke et al., 2010, p.6). These denotations point to the multifaceted conception of well-being as significant for children’s overall functioning and well-being (Camfield & Skevington, 2008). In keeping with the multidimensional nature of well-being, Pollard and Rosenberg (2003) define well-being as:

“A state of successful performance throughout the life course integrating physical, cognitive, and socio-emotional function that results in productive activities deemed significant by one’s cultural community, fulfilling social relationships, and the ability to transcend moderate psychosocial and environmental problems” (p. 14).

Konu and Rimpelä (2003) on the other hand emphasise children’s well-being as an entity in the school setting, and draw largely on Allardt’s (1976) sociological theory of welfare. This

notion of well-being takes into account numerous aspects which impact upon the child, such as environmental considerations, social relationships, personal fulfilment, and health aspects. Demonstrating this multifaceted perspective, the United Nations Children's Fund (UNICEF) propose six dimensions, that is, material well-being, health and safety, educational well-being, family and peer relationships, behaviours and risks, and SWB. Whilst it is apparent that these dimensions of well-being span across a range of aspects concerning child development, there is no clear differentiation between the sub-dimensions of underlying well-being, and no temporal developmental distinctions. Therefore, indices relating to different 'stages' of childhood are grouped together devoid of consideration given to the timing of measurements and the importance of the prenatal period and the first few years of a child's life (Conti & Heckman, 2012).

It is ostensible that well-being is not solely an individual property, but also a social property (Ben-Arieh, 2009). This brings to the fore three salient motivations as to why the well-being of children necessitates particular attention (Fernandez, Mendes & Texeira, 2012). Firstly, the concern of child well-being is not limited to the present lives of children, as it has corollaries for their future. Secondly, children remain, particularly within South Africa, one of the groups most affected by poverty; and finally despite a burgeoning amount of research and theorisation on children's well-being, there is a lack of child-specific information and data both nationally and internationally. Camfield, Streuli, & Woodhead (2009) assert that the concept of well-being is often considered as all-encompassing concept comprised of specific concepts and indicators, namely 'psychosocial adjustment', 'positive self-concept', 'nutritional status' or 'educational attainment'. The status of the field and concept of well-being evidences its broad, contested nature which is amenable to multiple and diverse interpretations and research approaches (Camfield, Streuli, & Woodhead, 2010).

While not strictly a theory of SWB, it is notable to consider the *Capability Approach* (CA). The CA has been developed over the past two decades by Sen (1985; 1993; 2005; 2007) and Nussbaum (1988; 2000), and focuses on participation, human well-being, and freedom as core components of development- merging ethics and economics (Comim, Ballet, Biggeri & Iervese, 2011). Clark (2005, p.2) captures the essence of the CA in the conjecture that "Over the last decade Amartya Sen's Capability Approach (CA) has emerged as the leading alternative to standard economic frameworks for thinking about poverty, inequality and human development generally." The CA as proposed by Sen (1993) is embedded in his

appraisal of famine and poverty, with its basis on the critical assessment of Rawls's Theory of Justice and the notion of 'primary goods' (Dang, 2014). More so, the CA is a framework which enables an assessment of the individual welfare and social provisions. As Dang (2014, p.460) indicates, "The approach highlights the importance of improving individuals' substantive freedoms or real opportunities to achieve valuable states of being and doing." The CA has been used to explore a number of social phenomena, from inequality to well-being, poverty, liberty and freedom, living standards and development, gender bias and sexual divisions, and justice and social ethics (Sen, 2003).

The emphasis of the CA is on the quality of life that individuals are capable of achieving. The key closely-related concepts which the framework proposes are *functionings*, *capabilities*, *freedom*, and *agency* (Dang, 2014). Functionings embody aspects of the 'state' of an individual, in particular, the different things they are able to do in living their life (Sen, 2003). An individual's capability demonstrates the various permutations of functionings they are able to attain and thereby select one of these collections. This approach is founded on the view that living is a combination of 'doings and beings' where quality of life is evaluated by assessing the capability to achieve valuable functionings. Amongst these functionings are those which are basic such as sufficient nourishment or sustenance, and having good health; with acknowledgment around its importance. On the other hand there are more complex functionings such as attaining self-respect and social integration. Variant emphasis is placed on these functionings by individuals. Of particular interest in developing contexts and economies is the fewer number of functionings exercised (basic capabilities), with more developed economies having a more robust list of functionings and related capabilities. Sen (2003) delineates that it is the *relevant* functionings which are of importance and the choices which lead individuals to this- with evaluation as integral.

Another key component of Sen's (1985; 1993; 2005; 2007) CA is value-objects and evaluative spaces. In the appraisal phase there are two key questions which are put forward "(1) What are the objects of value? and (2) How valuable are the respective objects?" (Sen, 2003, p.32). The distinguishing of these objects of value refer to an *evaluative space*. In economics, within standard utilitarian analysis, the evaluative space comprises individual utilities, often defined in terms of pleasure, happiness or fulfilment of desires. The CA is predominantly focused on identifying value-objects and makes sense of the evaluative space in relation to functionings and capabilities to function (Sen, 2003).

The second concept which the CA employs is that of freedom- “The freedom to lead different types of life is reflected in the person’s capability set.” (Sen, 2003). Capabilities thus encompass the notion of freedom and represent valid opportunities to live the life one chooses; and is dependent on the social environment and likelihood of variation and further the transformation of commodities or various resources. Freedom further includes two features, namely the ‘opportunity aspect’ and the ‘process aspect’ (Sen, 2002). The former relates to the prospect access an array of ‘valuable’ functionings and to select from among them. The latter concerns whether individuals have the freedom to partake in decision-making processes. While individual freedom should include personal objectives, it more broadly includes human capabilities, the notion of freedom is not uncontested.

Agency is the final concept to be discussed in the CA, with well-being and advantage as core encompassments. Sen (1985) denoted agency as the ability to attain valued goals; with agency being a broader concept than well-being. In the CA four concepts are utilised to assess an individual’s circumstance, they are *well-being achievement* and *well-being freedom* in relation to an individual’s personal well-being as well as *agency achievement* and *agency freedom* in relation to an individual’s goals.

One of the major critiques of Sen’s (1985; 1993; 2005; 2007) CA is that it is multidimensional and incomplete. There have however, been several attempts at operationalising the CA, with a growing body of literature on children’s capabilities and well-being. More recently, the CA has been applied specifically to research with children. Handbooks and edited book series such as *Children and the good life: New challenges for research on children* (2010, edited by Sabine Andresen, Isabell Diehm, Uwe Sander, & Holger Ziegler), *Children and the capability approach* (2011, edited by Mario Biggeri, Jérôme Ballet, & Flavio Cummin), *Handbook of Child Well-Being: Theories, Methods and Policies in Global Perspective* (2014; edited by Asher Ben-Arieh, Ferran Casas, Ivar Frones, & Jill E. Korbin) and *Children’s Rights and the Capability Approach: Challenges and Prospects* (2014, edited by Daniel Stoecklin & Jean-Michel Bovin) evince this growing focus on children’s capabilities. Biggeri, Ballet and Comin (2011) argue that children’s development cannot be synonymous with reducing poverty and impoverishment and further that well-being on a broad scale cannot solely consider material components of well-being. Additionally, while recognising the multidimensional nature of well-being, Biggeri et al (2011) note that this point is especially important for children. Many scholars have sought to

breach the gap between the capability and human development approach and children's well-being by merging this with the 'new social studies of childhood' (see Biggeri, Ballet, & Comin, 2010; Biggeri et al., 2011; Clark & Eisenhuth, 2010; Dixon & Nussbaum, 2012; Fegter & Richter, 2014). Both Sen (1998) and Nussbaum (see Dixon & Nussbaum, 2012) have applied the CA approach to research with children, with Nussbaum having extensively explored the nuances therein.

The following section looks particularly at indicators and measures of child well-being.

3.4.1. Indicators and measures of child well-being

Seminal work on the multi-dimensional measurement of child well-being can be located in two research movements in the mid 1970's, namely the social indicators and quality of life movements, founded by Campbell, Converse, & Rodgers (1976) and Andrews and Withey (1976) (in North America), and Allardt (1976, in Scandinavia) (see Camfield, Streuli, & Woodhead, 2010). Early efforts in the measurement of children's well-being emphasised the development of all-inclusive indices which were constructed from established indicators evident in the work by the aforementioned scholars. It was in the late 20th century that measures and indices focusing on children were developed, addressing the critique of early indices which did not consider children's subjective perceptions (Watts & Hernandez, 1982). Camfield et al. (2010) in fact note that less than one percent of these indices were employed in developing countries. Work by Tiliouine (see 2012; Casas, Tiliouine, & Figuer, 2014; Tiliouine, Cummins, & Davern, 2006) focusing on adults and children's well-being in Algeria, from an Islamic perspective has contributed to this dearth in research from developing contexts, particularly from Africa.

Ben-Arieh (2010) points to the dynamic nature of child well-being indicators. Further, Ben-Arieh (2010) summarises nine major shifts in the child indicators movement over the preceding few decades, that is: (i) Early indicators emphasised child survival, while contemporary indicators focus on child well-being; (ii) Early indicators centred on negative life outcomes, whereas contemporary indicators focus also on positive outcomes; (iii) Contemporary indicators integrate a children's rights perspective, and look beyond it as well; (iv) Early indicators put emphasis on children's well-becoming, thus children's endeavours to attain well-being; while recent indicators focus on children's present well-being; (v) Early indicators were developed from more 'traditional' domains of child well-

being, predominantly governed by professions; with contemporary indicators drawn from new interdisciplinary domains; (vi) Early indicators focused solely on adult's perspective, while new indicators accentuate children's perspectives; (vii) Early indicators examined national geographic units, with contemporary indicators measuring various geographical units; (viii) There has been an increase in the development of several composite indices of children's well-being in recent years; and finally, (ix) Contemporary endeavours are directed by policy relevance.

Amongst the early child-focused indices and measures were the United Nations Children's Fund (UNICEF) National Index of Children's Quality of Life (NICQL) (Jordan, 1993), and the Multiple Indicator Cluster Surveys currently based in a rights-based framework (Dawes, Bray, & Van de Merwe, 2007). Within the international literature, a number of instruments have been developed which have shown good validity across a range of cultural contexts. Amongst the most widely used scales are those that measure global life satisfaction (Student's Life Satisfaction Scale, Huebner, 1991) and those measuring multiple dimensions (Personal Well-Being Index-School Children, Cummins & Lau, 2005; the Multidimensional Student Life Satisfaction Scale, Huebner, 1994, and the Brief Multidimensional Student Life Satisfaction Scale, Huebner, Seligson, Valois, & Suldo, 2006). The SLSS was developed to measure children's global life satisfaction using affirmations for children to assess the quality of their life as a whole (Huebner, 1994). The scale has been used in several countries and has demonstrated good psychometric properties and functioning with children from diverse contexts. The PWI-SC was adapted from a scale that was originally developed for use with adults as part of the Australian Unity Index of Well-Being (Cummins, Eckersley, Pallant, Van Vugt & Misajon, 2003). The scale measures SWB across a range of life satisfaction domains. Several studies have reported sound psychometric properties of the PWI-SC (Tomy & Cummins, 2011). Casas (2016) notes that "When analysing children's answers to SWB scales, their tendency for extreme positive options is even more evident than among adults, suggesting their life optimism tends to be "extreme". More recently, Diener et al. (2009; 2010) proposed two scales, the first was the Flourishing Scale was "designed to measure social-psychological prosperity, to complement existing measures of subjective well-being" (Diener et al., 2010, p. 144), the second the Scale of Positive and Negative Experience (SPANE) which was developed to assess subjective feelings of well and ill-being. These scales assess the eudaimonic dimension of well-being, however, they were not designed for use with children.

In summary, contemporary efforts to monitor child well-being ‘have begun to address the need for broad-based indicators and the inclusion of information on children’s perceptions and experiences, but are restricted by the lack of appropriate international data that can be disaggregated by age and gender.’ (Camfield et al., 2010, p.406). Attempts to address this shortcoming has been undertaken by initiatives such as the *Multi-National Project for Monitoring and Measuring Children’s Well-Being* (<http://multinational-indicators.chapinhall.org>) and the *International Society of Child Indicators* (ISCI) (www.childindicators.org). More recently the *Children’s Worlds Project: International Survey on Children’s Well-Being (ISCWeB)*, which is endorsed by ISCI, (see Chapter Two: Method, Phase Two; see iscweb.org) and the *Multinational Qualitative Study of Child Well-being* have contributed to this gap in the literature (see Chapter Two: Method, Phase Three). While Camfield et al. (2010) assert that most initiatives in developing countries focus on objective domains such as nutrition, health, and education, the participation of three African countries (Algeria, Ethiopia, and South Africa [see Savahl et al., 2015b]) in the *Children’s Worlds Project* has provided much needed data on children’s subjective perceptions of their lives and their well-being in these contexts.

3.4.2. Child well-being theories

3.4.2.1. Historical foundations of formative theories of well-being

As discussed, the historical foundations of well-being has roots in an array of disciplines, with a general consensus that well-being comprises several domains. Several formative theories formed the basis, and impetus for more contemporary theories on well-being, and more specifically *subjective* well-being (SWB). Since Aristotle’s key contributions to the study of happiness, several theories have been proposed to make sense of well-being and happiness. These theories can be classified according to three key groups, namely (i) *need and goal satisfaction theories*, (ii) *process or activity theories*, and (iii) *genetic and personality predisposition theories* (Diener, Lucas, & Scollon, 2006). *Need and goal satisfaction theories* emphasise that when tension is lowered, such as getting rid of pain, or the fulfilment of biological and psychological needs, this will result in happiness. Notably, Freud (1933/1976), with the *pleasure principle*, and Maslow (1970), in his model of hierarchical needs embody this category. The key premise of need theories was supported by Omodei and Wearing’s (1990) early finding that the extent to which an individuals’ needs are met was positively correlated with their level of life satisfaction.

On the other hand, goal theorists posit that individuals attain SWB when they approach an ideal state or achieve a valued aim regarded as the standard. This notion was further developed by researchers who integrated the concept of extent of discrepancy from other possible comparable standards. One of these theorists was Michalos (1985) (in his Multiple Discrepancy Theory), who proposed that happiness is “inversely related to the degree of discrepancy from multiple standards” (Diener, Lucas, & Oishi, 2005, p.66) such as an individual’s wants, what an individual had in the past, and what other known individuals have. Similarly, Higgins (1987) maintained that negative emotions arise when incongruities exist between an individual’s ‘ideal self’ and ‘ought self’. An inference of tension-reduction theories as a whole is that happiness is attained once needs are satisfied and when goals are met, indicating that happiness is an anticipated outcome of the *totality* of all activities. The mentioned theories are comparable to models of happiness which propose that engaging in a particular activity produces happiness. Csikszentmihalyi (1975) put forward that people are happiest when they are involved in activities which correspond to their skill level; referring to this mind state brought about by the correspondence between skill and challenges referred to as *flow*-contending that when people experience *flow* regularly they are more likely to be happy. Goal researchers concede that identifying and endeavouring toward one’s goals are reliable indicators of well-being. Considering this point, Diener et al. (2006) argue that goal theories can integrate components of tension reduction as well as pleasurable activity and engagement to explicate SWB. It has been shown that when individuals have significant goals they are more likely to be energetic, report more positive emotions, and perceive life to be meaningful (see McGregor & Little, 1998).

While needs theorist and activity theorist assert that SWB alters with an individual’s life circumstances- thus, as individuals move toward their goals and participate in activities which are significant to them the accompanying affect should be positive well-being, which is reflected in *Self-determination Theory* posited by Deci and Ryan (1985; 1991; 2008). A contrary stance is taken by theorists who believe that a component of stability in well-being cannot be accounted for by the stability in individual’s life circumstances. Theorists maintaining this viewpoint declare that SWB is strongly impacted upon by stable personality dispositions. As evaluations of SWB reveal both cognitive and emotional responses to life situations which can be transitory and temporary, or more stable; researchers have investigated transient as well as long-term well-being. Levels of transient well-being have been shown to vary (see Diener & Larsen, 1984). While attempting to predict an individual’s

level of happiness at a particular time when individuals reveal average affect across particular times it is evident that stable patterns of individual variations are revealed. Early work by Diener and Larsen (1984) indicate that people have typical emotional responses to a number of life events. This characteristically stable component of SWB has culminated in theorists proposing that while life events directly influence an individual's SWB, changes experienced by individuals are adapted to where individuals return to biologically regulated 'set-points' or 'adaptation levels'. This is evident in the early work of Headey and Wearing (1992), as well as Cummins' (1995) *Homeostasis theory* of subjective well-being. Research by Diener, Sandvik, Seidlitz, and Diener (1993) showed that stability in SWB was evident amongst individuals whose income increased, decreased, or stayed the same over a decade long.

The stability in SWB can be understood in its substantially genetic element- thus to a certain extent, some individuals are born to be happy, and others to be unhappy. Genes have been shown to impact upon typical emotional responses to life events. In considering personality influences on SWB in particular, it is demonstrated that extraversion and neuroticism are constantly related (Diener & Lucas, 1999). Employing meta-analysis as well as factor analysis techniques, extraversion has been shown to consistently correlate (moderately to strongly) to pleasant affect (Lucas & Fujita, 2000); while neuroticism and negative affect were undifferentiated, subsequent to controlling for measurement error. Other personality traits from the Five Factor Model such as agreeableness, conscientiousness, and openness to experience, have also been found to correlate with SWB, albeit with smaller correlations and less stable. "Thus, it can be said that an extraverted non-neurotic has a head start in achieving happiness, but that other traits, as well as life circumstances, matter as well." (Diener, Lucas, & Oishi, 2006, p.67). Variations and differences in SWB are also influenced by stable individual differences in people's perceptions of the world. Variations in availability of pleasant or unpleasant information, including people's ability to integrate and make sense of this information (pleasant or unpleasant) impacts on SWB. This may also be influenced by individual differences in the ability to remember pleasant events, and for this to take precedence. Particular cognitive dispositions, for example hope (Snyder et al., 1991), dispositional optimism (see Scheier & Carver, 1993) and expectancy for control (Grob, Stetsenko, Sabatier, Botcheva, & Macek, 1999) all impact on one's SWB. Diener, et al., (2006) poignantly note that "It is not just who we are that matters to happiness, but how we think about our lives." (p. 67).

The theories of well-being display great dispersion, with former theories informing subsequent theories. Many theories of SWB borrow concepts from other theories, and in some way modify these concepts to align with proposed theories, from Brickman and Campbell (1971), Headey and Wearing (1989), and Cummins' (1995) Homeostasis Theory, to more contemporary theorisations of children's well-being (Minkinen's Structural Model of Child Well-Being; Raghavan & Alexandro's Two Source Theory of Child Well-Being).

A challenge when approaching the child well-being theory literature is the lack of delineation of a timeline of proposed theories. While some articles make reference to other authors who have contributed to the field, the literature is quite disjointed. A gap in the literature is a recent, comprehensive review article which presents the various theories of SWB. While an extensive history to the concept of well-being is provided in *The Handbook of Child Well-Being* (Edited by Ben-Arieh, Frones, Casas, Korbin, 2014), as well as journal articles by seminal scholars in the field (see Ben-Arieh, 2009; Ben-Arieh & Frønes, 2011), there is no such article summarising contemporary applications of the theories to children's SWB.

3.5. Hedonic theories

3.5.1. Adaptation Level Theory of well-being (Brickman and Campbell, 1971)

The original *hedonic treadmill theory* was developed and put forward by Brickman and Campbell (1971) which posited that people momentarily respond to good and bad events and revert to neutrality in a brief period. Bouts of happiness or unhappiness are only temporary responses to alterations in an individual's circumstances. The *hedonic treadmill* refers to processes akin to sensory adaptation in which individuals experience emotional responses to particular life situations. Brickman and Campbell (1971) proposed that an individual's system of emotions adjusts to one's present life situation, with all responses related to previous experiences; which Myers (1992) considered vital to comprehending happiness. The theory further proposes that individuals endeavour to attain happiness in particular life domains; this however, is an erroneous belief as both individual and societal efforts to increase happiness are pointless (Diener, Lucas, & Scollon, 2006). This is due to pursuing new and different goals which shift an individual's attention, and not due to attaining happiness.

The treadmill theory of happiness is founded on an 'automatic habituation model' wherein psychological systems respond to divergence from an individual's present adaptation level (see Helson, 1964). The 'automatic habituation' processes are considered adaptive as the

enable continual stimuli which an individual encounters wane, which allows system resources to address stimuli which needs direct and instant attention. Diener et al. (2006) observes that this happiness system detects variations in an individual's circumstances instead of the total desirability of the actual circumstances. Early empirical evidence for the *treadmill theory* was put forward by Brickman, Coates, and Janoff-Bulman (1978), considered seminal studies in the field. Their study demonstrated that lottery winners were not happier than non-winners, additionally, individuals who were paraplegic were not considerably less happy than individuals who can walk. While the empirical evidence for hedonic adaptation was mixed, the notion of hedonic adaptation was appealing as it provided an explication for the observation that an individual's happiness seems to remain moderately stable although alterations to their wealth have occurred. Diener et al. (2006) note that including themselves, many academics and psychologists accepted the adaptation theory due to the empirical support and evidence for this. They show that external conditions are not strong correlates of reported happiness; with income and happiness evincing a weak correlation in the United States of America (Diener et al., 1993), and objective physical attractiveness also showing weak correlations with well-being (Diener, Wolsic, & Fujita, 1995). Evidence from longitudinal studies have provided further evidence that adaptation takes place. Early evidence from Silver (1982) found that individuals who were affected by spinal cord injuries reveal strong negative emotions within one week subsequent to the tragedy, and two months later reported happiness as their predominant emotion. Similarly Suh, Diener, & Fujita (1996) showed that positive and negative life events influenced happiness solely if they took place in the last two months. Despite the strong empirical evidence which particular components of the treadmill theory have received, Diener et al. (2006) argue that based on more recent findings, the theory needs particular modifications. These five key revisions to the treadmill theory by Diener et al. (2006) are considered below.

3.5.1.1. Diener, Lucas, and Scollon's (2006) Revision to the original Treadmill Theory

Diener et al. (2006) indicate that based on research within the last decade, evidence points to the necessitation for certain revisions to the original *treadmill theory* (Brickman & Campbell, 1971), as well as the implications of these revisions for psychology. The five revisions centre upon the following: *Revision 1: Nonneutral set points; Revision 2: Individual set points; Revision 3: Multiple set points, Revision 4: Happiness can change, and Revision 5: Individual differences in adaptation.*

Revision 1: Nonneutral set points

Diener et al. (2006) purport that the original supposition of the treadmill theory that individuals return to a *neutral* set point following an emotionally important event has proved to be incorrect based on decades of research. Research has instead shown that individuals are generally happy; with Diener and Diener's (1996) review of studies indicating that about three quarters of the studies samples indicated that '*affect balance scores*'. Therefore, the study's findings show that positive moods and emotions or negative moods and emotions, were above neutral. Results from a study with diverse samples (Amish, African Maasai, and Greenlandic Inughuit) support the finding that majority of people report well-being levels which are above neutral (Biswas-Diener, Vittersø, & Diener, 2005). The key point which Diener et al. (2006) make in this revision to the treadmill theory is that when individuals adapt and revert to a baseline it is not a neutral but positive one. Positive moods have been shown to enable an array of 'approach behaviours' as well as positive outcomes (Lyubomirsky, King, & Diener, 2005). Diener et al. (2006, p. 307) thus conclude that "the ubiquity of a positive emotional set point, in concert with the less frequent experience of unpleasant emotions, likely results from the adaptive nature of frequent positive emotions."

Revision 2: Individual set points

The second revision which Diener et al. (2006) recommend is that subsequent to the original *treadmill theory*, empirical research has found that individual's set points vary substantially across individuals. These variations in individual's set points can partly be explained by inherent and personality-related influences. Three strands of research support this notion. The first is based on research which consistently indicates that individual's well-being levels are relatively stable across time. The second thread is based on research indicating that well-being is partially heritable, with twins studies showing that identical twins raised separately had similar well-being levels in comparison to dizygotic twins raised separately (see Tellegen et al., 1988). The final strand of research indicates that personality traits are strong correlates of well-being variables, positing that personality factors could predispose individuals to experience various levels of well-being (Diener et al., 2006).

Revision 3: Multiple set points

The third revision by Diener et al. (2006) concerns the notion of the original theory of a unitary set point, which they argued is not plausible as this would imply that well-being is a singular "entity with a single baseline" (p.307). This is based on research by Lucas, Diener,

and Suh (1996) that overall happiness comprises distinct well-being variables, which shift in various directions, such as that positive and negative emotions may decrease simultaneously, or the one may increase while the other decreases. Diener et al. (1996, as cited in Diener, Lucas, & Scollon, 2006) use data from wave 1 of the *Victoria Quality of Life Panel Study* (see Headey and Wearing, 1989, 1992; Scollon, 2004) and the 1990 World Value Survey (see Inglehart & Klingemann, 2000). Based on probability samples, the data for both of these studies show that a consistent global happiness set point which stays stable across life does not exist, secondly, that happiness is not a single, unitary concept with a fixed set point which individuals adapt to. Rather the findings from these large-scale studies show that various types of well-being shift in different directions. More so, using longitudinal data from the *Victoria Quality of Life Panel Study*, Scollon and Diener (2006) found that changes in individual differences were significant on variables of work and marital satisfaction over an eight-year period; evincing that individuals change at distinct rates as well as in divergent directions. Furthermore, Diener et al. (2006) conclude that various components of well-being change in different manners across an individual's life; yet alterations in one domain does not necessarily result in alterations in other domains. Diener et al. (2006, p. 308) affirm that *“These findings suggest that stable individual baselines might be more characteristic of negative affect than positive affect. However, over a period of a few years, life satisfaction was most stable.”*

Revision 4: Happiness can change

The point most contentious in the original treadmill theory is that individual's endeavours to change their extended levels of happiness and life satisfaction are futile, as Diener et al. (2006) identify. Diener et al. (2006) indicate that accepting this point of the hedonic treadmill theory implies if adaptation as eventual, then life events would not impact upon or influence long-term changes in happiness. Additionally, a lack of longitudinal empirical evidence evaluating this hypothesis has left key questions unanswered regarding the life events which have a long term effect on an individual's happiness set points. One line of empirical support stems from cross-country comparative studies of well-being. Diener et al. (2006) posit that if strong national variations in well-being exist, and can be predicted from the objective features of those countries, this would be indicative that the stable external situations differ across countries having a long-term influence on happiness. Findings from Diener, Diener, and Diener (1995) indicate that the wealth and human rights of nations were good predictors of average national income. Further findings from a review by Diener and Biswas-Diener

(2002) indicate that country-level indicators of wealth strongly predict the subjective well-being of nations, while variations in wealth were erratic in its effects across these studies. Longitudinal evidence reinforcing that life circumstances are important for happiness is demonstrated in a study by Fujita and Diener (2005) which investigated if long-term average happiness levels changes. It was found that while there was largely stability in reported levels of well-being tracked over 17 years, a large proportion (24%) of the participants differed significantly from their baseline levels, particularly in the initial and five years of the study. Thus showing that long-term happiness levels alter for some individuals.

Evidence is provided for the initial adaptation model of Brickman and Campbell's (1971) as individuals are shown to adapt to certain life events. The degree of adaptation differs for various life events. Individuals who were widows or widowers, lost their jobs, or got divorced, indicated longer-term variations in life satisfaction following these life events. Widows revealed the largest adaptation when compared to the increase from their lowest levels of happiness, and even eight years subsequent to this event did not entirely adapt. This demonstrates that it is possible for happiness to change, and that it does change. Diener et al. (2006) question the conclusion that were made based on the original data of Brickman et al. (1978) in support of the *treadmill theory*. When scrutinising these data, Diener et al. (2006) deduce that the evidence is not as compelling as many psychologists accepted. Additionally, more recent reviews of individuals affected by spinal cord injuries are actually less happy than the general population (Diener et al., 2006). Another study, conducted by Lucas (2005) utilised two representative national panel studies to investigate adaptation to disability of participants seven year prior to and after a disability. Moderate to strong decreases in satisfaction were indicated by these participants with insufficient evidence for adaptation across time. Individuals who were completely disable indicated scores of life satisfaction that were 1.20 standard deviations below the nondisabled baseline levels, providing evidence once again that life circumstances robustly influence happiness. Diener et al. (2006) show that evidence for adaptation cannot merely show that individual's having experienced a negative life event indicate well-being scores higher than is expected. Instead they argue that to ascertain adaptation, individuals who have experienced a life event should be compared with those who have not in a longitudinal nature.

Revision 5: Individual differences in adaptation

While the original hedonic treadmill theory posited that adaptation to situations takes place in related ways for all individuals, Diener et al. (2006) however, found that individual variations in the degree and rate of adaptation which takes place to the same event. Findings by Lucas et al. (2003) show adaptation to marriage, yet there was a huge amount of variability in these effects. Diener et al. (2006) argue that individuals who are more prone to positive events gain less from an additional positive event than individuals who are more prone to negative events. They go further to add that divergences from one's usual life events may result in the largest alterations to happiness set points. Based on two main research strands it is possible to ascertain whether individuals do or do not adapt to negative life events. These research strands emphasise firstly, the 'utility' of particular coping strategies, while the second, emphasises the personality characteristics which impact upon the particular coping strategies that individuals employ. These strands of research have identified that specific coping strategies are more efficacious in some individual's in comparison to others, and that individual's differ in favoured strategies. Results show that individuals who employ reappraisal strategies undergo more positive experiences and less negative emotions when compared to individuals that use a strategy such as, for example suppression.

On the other hand, personality researchers indicate that several stable individual variations predispose individuals to employ particular coping strategies. Similarly, individuals who are neurotic usually employ coping strategies which are ineffective, resulting in that negative event have a greater impact on them; while individuals who are optimistic employ active coping techniques which serve to alter the negative affect experienced. This points to particular individual variations in successful adaptation and coping to stressful and challenging events. Diener et al. (2006) note that research and subsequent evidence that noteworthy individual variations exist, refutes the habituation model explicating that adaptation works in similar ways for most individuals. More so, it implies that further work investigating individual differences may potentially serve to inform psychologists about the detailed processes of adaptation. Finally, Diener et al. (2006) maintain that contemporary research has afforded a more robust evaluation of the hedonic treadmill theory in comparison to early studies which faced particular shortcomings, such as methodological constraints. The use of large, representative samples in contemporary work on the theory have been able to determine individuals prior to and subsequent to the event, whereas early studies used cross-sectional data without tracking well-being levels prior to the event. Current studies

employing large-scale longitudinal have contributed to the rigour and reliable findings, allowing for an accurate measurement of variations in happiness as well as sophisticated statistical techniques to identify individual differences in adaptation.

3.4.2.1. Key implications of the revised model

Although comprehensive revisions have been made to the original treadmill theory, Diener et al. (2006) maintain that the study of adaptation is still significant for the discipline. They also indicate that these revisions to the theory mean that interventions to increase happiness can be effective, with research supporting this finding. However, care should still be taken when designing and evaluating well-being interventions. For interventions to be effective, they must aim to change individual's baseline levels of well-being, and assessed over a long-term period to be assured that the intervention does not only transiently increase well-being. It is recommended that in developing these types of interventions, researchers should have a thorough understanding of adaptation theories to increase the prospect of lasting success. It is also important for researchers to begin unpacking which factors result in long-term change. Diener et al. (2006) continue that from their research, questions have emerged regarding whether some aspects of well-being are more adaptable than others. An example considered is that of cognitive evaluations (satisfaction), and whether it adapts at a slower rate than moods and emotions? While pertinent modifications have been suggested to the original theory, the *treadmill theory* still represents a seminal work and landmark theory to understand happiness. Diener et al. (2006) suggestions represent a critical starting point for further research to further understand adaptation in terms of happiness and well-being.

3.5.2. Cummins' Homeostasis Theory of Subjective well-being (1995; 2003; 2010; 2014)

Cummins (2014) notes that subjective well-being is a fundamental component of human experience, manifest in the refining and developing of measurement scales as well as theories to expound its relation to buffer 'ill-being'. The theory of *Subjective Well-Being Homeostasis*⁴ proposed by Cummins (1995) puts forward a model which addressed the control and regulation of subjective well-being (SWB) by means of homeostasis. The theory propounds that, akin to the homeostatic maintenance of body temperature, SWB is "actively controlled

⁴ Cummins (see Cummins, 1995; 2010; 2014; Cummins et al., 2002) theory is explained comprehensively in the aforementioned readings. As it is not possible to cover the great detail which the author makes reference to, this section covers the core tenets of the theory.

and maintained by automatic neurological and psychological processes” (p.636). Subjective well-being homeostasis therefore aims to uphold a *normal positive sense of well-being*, considered to be generalised and indiscriminate, and abstract (Cummins, 2014). To make sense of the positive stability in SWB, it is proposed that the ‘homeostatic system’ (Cummins, Gullone, & Lau, 2002) for each individual has a controlled ‘set-point range’ of SWB which is genetically determined. Each individual has an inherent ‘set-point’ for their normal level of SWB (Headey & Wearing, 1992), with their observed well-being usually around this set-point. The response to the traditional question to assess this, “How satisfied are you with your life as a whole”, while not grounded on a cognitive life evaluation, instead reveals a considered, stable, positive mood characteristic of SWB. Based on empirical inference, Cummins (2010) propose that the set point of individuals exist in the range of 60-90 points (with a mean of 75). Homeostasis thus endeavours to maintain and preserve SWB within this set-point range for each individual.

A key concept in this theory is the *threshold* concept, which exists at the boundaries of this inherent set-point range. It is proposed that when SWB moves toward the margins of the homeostatic system it opposes additional change. If it happens that the threshold is surpassed, the system then functions to revert these SWB levels back with the *normal* range (Cummins et., 2003). Homeostasis theory also predicts that if an individual experiences something which inhibits their SWB below the threshold, in due course, this will result in enhanced levels of SWB. This also makes reference to the process of *adaptation*, which Andrews and Withey (1976) considered vital to a comprehensive understanding of SWB. This concept is incorporated from Adaptation Level theory (see Andrews and Withey, 1976). Cummins et al. (2002) indicate that unmet needs, deemed a critical motivational constituent in the SWB homeostatic system, are founded within the aspiration for satisfaction. While needs fulfilment is not considered a direct predictor of SWB, the condition of a need as met or unmet is a predictor of the activation of a *buffer*.

Concerning how SWB is managed, Cummins (2014) provides a detailed description of various models explaining quality of life. Amongst the initial models proposed was by Liu (1975) who developed a composite model comprising nine ‘component indicators’ inclusive of a formula; the components proposed were only objective and therefore deemed problematic. Another two models were proposed in 1976- the *Lewinian life space model* by Campbell et al. (1976), and the *Two-dimensional conceptual model* by Andrews and Withey

(1976). Both these models focused on subjective and objective constituents of SWB but failed to include psychometric characteristics. More than a decade later, Headey and Wearing (1989) in their acclaimed study, identified that people have an 'equilibrium level' of SWB- thus people are inclined to maintain stable SWB levels, and if an event may result in their SWB altering it would revert to its former level. This 'dynamic equilibrium model' was located in "a genetically inbuilt psychological system, based in stable personality characteristics, which had the primary purpose of maintaining self-esteem" (Cummins, 2014, p. 637). Tesser (1988; Beach & Tesser, 2000) then put forward a self-evaluation maintenance model, emphasising the preservation of positive feelings regarding oneself, guided by a predilection for positive affective states and goal achievement. The model however, did not contribute to SWB stability. Stones and Kozma (1991) proposed the '*magical model of happiness*', and in a similar manner to Headey and Wearing (1989), suggested that SWB maintains stability as a self-adjusted process using set-points that vary from individual to individual (a function of this dispositional system- known as the 'propensity model'). The significant contribution of the model to the field was that the best predictor of future SWB is the level of past SWB. The shortcoming identified in these models was that they did not integrate the psychometric characteristics of SWB, or the makeup of the relationship between SWB and demographic and psychological variables.

Given regular challenges individuals experience, homeostatic processes maintain in a set-point range within three defense levels known as *buffers*. The first buffer is *behaviour*. People learn to navigate their way through challenges and make daily life manageable. Although adaptation to positive challenges is understood; two external buffers, relationship intimacy and money, helps with the adaptation to negative challenges. Strong and supportive relationships have been found to be an important moderator of probable stressors on SWB. These internal and external buffers ensure that SWB is actively protected. There is general consensus amongst scholars that SWB comprises both affective and cognitive components. Recent research shows by Cummins (2010) shows that the affective component plays a central, in terms of a profound and *stable positive mood* known as *homeostatically protected mood* (HP Mood). The essence of HPMood is a combination of hedonic (pleasant) and arousal values (activation). Describing HPMood, Cummins (2014) notes that "*It is measured by asking how people generally feel on the three affects of contented, happy, and alert. We propose that each person has genetically generated level of HPMood which provides them with a unique level of felt positivity. This level constitutes an individual difference between*

people and represents their “set point” which, in turn, is the level of SWB which homeostasis seeks to defend.” Research using SWB measures have shown that normal ranges can be determined, suggesting that results which fall outside of these ranges are potentially abnormal.

When focusing on research with children in terms of homeostatic theory, and the composition of their well-being, Cummins (2014) shows that findings (see Davern et al., 2007; Blore Stokes, Mellor, Firth, & Cummins, 2011) support the *affectively-driven model of SWB*, accounting for 80% of the variance (with a poor fit for the personality-driven model). This fundamentally disputes the body of literature advocating that personality drives SWB. It was instead found that the greatest proportion of shared variance between personality and SWB was rooted in HPMood, concluding that HPMood is the dominant constituent of SWB in adolescents. Cummins (2014) concludes that subjective well-being manifests as reliable, sensitive and valid for children, assessed using the Personal Well-Being Index- School Children, fall within the normal range, and has been shown to be similar for adults. Similarly, the composition of children’s SWB has also been shown to be governed by HPMood, as with adults, with the estimate age of 12 years old provided as a suggested age when children gain cognitive maturity to provide self-report data. Ascertaining 12-year old children’s SWB is put forward as an index indicating if children are “experiencing normal circumstances for development” (Cummins, 2014, p.655). Data obtained when assessing children’s well-being in the specified age cohort, when understood within SWB homeostasis, can illuminate the difficulties and supports they experience at this period in their lives.

3.5.3. The 3P Model (Durayappah, 2011)

The 3P Model was put forward by Durayapah (2010), with the purpose of developing a model which integrates existing theories and research of subjective well-being (SWB) into a *temporal* model. This model classifies the constituents of encompassing three temporal states, namely, *present*, *the past*, and *the prospect* (future). Durayapah (2010) notes that research incorporating time and temporal viewpoints in understanding SWB have only received attention recently. The proposed inclusive framework emphasises three key objectives. The first is to develop a model which is general, and relevant across SWB theories, incorporating top-down and bottom up models. The second objective is to elucidate the association between transitory experiences with global appraisal and explicate the incongruities present when shifting to subsequent appraisals. The final objective of the model is to demonstrate how the

incorporating happiness within these temporal states generate a meaningful, robust form of SWB.

Durayapah (2010) points out that one central question is requisite when considering the components of SWB in a temporal sense, that is, *'What influences our happiness?'*

Durayapah (2010) concludes that *thoughts* influence our happiness. It is not our thoughts per se, but instead thoughts about our experiences which influence our happiness. The essence of the 3P Model is based on temporal assessments of SWB. He proposes that *experiences* assesses SWB in the *present*, *evaluation* assesses SWB in the *past*, while *expectation* assesses SWB in the *prospect* state. More so, global appraisals of life satisfaction are rooted not only in thoughts from the present, but including the past, and future; thus proposing that theorists employ the temporal building blocks of the past, present, and prospect as an organisational framework for SWB as it derives from pleasurable thoughts of all three. Reference has also been made to engagement (Peterson et al., 2005), also known as *'flow'* (Csikszentmihalyi 1990), which is a type of happiness in the present. It has therefore been posited that we maintain the memories of our experience- perceiving our lives from the viewpoint of our *'remembering self'*.

An important consideration which Durayapah (2010) refers to is that of cognitive biases, which are patterns of faults in judgment that occur in particular situations. These cognitive biases play a role in individual's appraisals of their subjective well-being. Durayapah (2010) posits further that inconsistencies exist between SWB judgements in each temporal state. Another type of bias is known as a meta-bias, which also influences our evaluations of SWB. Three types of meta-biases are presented, that is personality, temporal salience, and SWB stability and adaptation. With personality, extraversion and neuroticism have been shown to specifically impact SWB. In terms of temporal salience, it is maintained that when thinking about one's life while in a positive mood, one may discriminately recall the good aspects of one's life and therefore report a more positive evaluation of life (Schwarz and Strack 1991). Finally, regarding SWB stability and adaptation as a meta-bias, the literature abounds with evidence of the stability of SWB (see Brickman and Campbell, 1971; Cummins, 2010; Headey & Wearing, 1989). Theory, supported by empirical research, has shown that SWB maintains stability around a set-point, with past SWB as the best predictor of future SWB. Adaptation impacts global SWB appraisals, and individual temporal evaluations. Given this,

it is evident that various thoughts from different temporal states combine to form appraisals of life satisfaction.

Durayapah (2010) suggests that the 3P Model is expedient in comparison to other frameworks for several reasons. Firstly, the model combines top-down and bottom-up theories of SWB evincing how objective and subjective components explain SWB appraisal. Secondly, the model integrates personal preferences towards components of SWB, as well as temporal preferences to produce subjectively meaningful well-being that remains germane as the individual's preferences progress and change. Thirdly, the model contains implications for the theoretical definition of SWB adaptation and recommendations for restricting this to sustain and potentially increase SWB. Finally, the 3P model infers that a happy occasion in an individual's life is significant when it is meaningful for the present, future, and past self. More so, it is proposed that subjective well-being evolves temporally, just as temporal evaluations of well-being.

3.5.4. The Structural Model of Child Well-being (Minkkinen's, 2013)

The impetus behind Minkkinen's (2013) *Structural Model of Child Well-Being* (SMCW) was to address a needed common framework for understanding child well-being as recommended by Ben-Arieh and Frønes (2011). The proposed model of child well-being integrates the core dimensions of well-being, various conditions for well-being, as well as the reciprocal relationships between the various components into a graphic model. Based on the numerous definitions and theorisations offered in the literature, Minkkinen (2013) argues that a multidisciplinary approach is requisite to develop a model which takes into account the comprehensive nature of well-being. This *Structural Model of Child Well-Being* (SMCW) draws from several sociological and psychological theories, namely the Bioecological theory of child development (Bronfenbrenner & Morris, 1998), Social Support Theory (Cobb, 1976), and the Socio-cultural approach to human development (Vygotsky, 1962; Leont'ev, 1978). The approach of this model is aligned to the 'sociology of childhood' (James & Prout, 1990; Jenks, 1982), which advocates for children's agency, and perceives the child as a social actor. More so, the dimensions of the SMCW are based on the definition of health put forward by the World Health Organisation (1946) in the preface of its initial articles of association "*Health is a state of complete physical, mental and social well-being, and not merely the absence of disease or infirmity*". This definition highlights the significance of physical, mental, and social domains. Minkkinen (2013) proposes that material well-being is

incorporated into this definition. Well-being is not considered as a fixed state, but is rather seen to fluctuate. Minkkinen (2013) notes that given the phases of development children experience, which is characteristically changing it is crucial to consider a comprehensive model which takes cognisance of this. Additionally, child well-being is deemed a process, governed by both vicissitudes to the internal and external prerequisites of well-being, which are incorporated into the SMCW. The premise of Minkkinen's (2013) model is conceptually similar to the bioecological theory of child development put forward by Bronfenbrenner and Morris (1998). The SMCW comprises four key domains or what Minkkinen's (2013) refers to as 'circles'.

At the centre of the Structural Model of Child Well-Being (SMCW) are the dimensions of child well-being, that is the physical, mental, social, and material, as well as the internal prerequisites for well-being which interact with one another. The first outer circle, *subjective action*, is considered a mediating level between an individual's well-being, as well as the societal frame of well-being. The societal frame encompasses a *circle of care*, the *structures of society*, and *culture*; each representing its own circle in the model. *Subjective action* entails action as a resource of well-being, associated with the eudaimonic perspective of well-being that is on attaining fulfilment in being fully functioning. The components of the SMCW are explicated in the following section.

Subjective actions convey both the internal and external activities which the child participates in that result in well-being, as well as negative actions which may diminish well-being. The prerequisite for *subjective action* is *capability*, which is denoted as the individual's "ability to act by utilizing the resources available" (Minkkinen, 2013, p. 6). Based on the perspectives of Vygotsky (1962) and Leont'ev (1978), as subjective action includes a 'mediating circle' between the dimensions of child well-being and the societal frame of well-being, occurring in the way that societal prerequisites of well-being impact on child well-being via the child's actions. The activities which children engage in are believed to impact both the present, and the future.

The 'societal frame of child well-being' encompasses three core components, namely, circle of care, the structures of society, and culture, evincing the environmental and societal prerequisites of well-being. Minkkinen (2013) indicates that the societal circles of the SMCW are similar to the ecological circles of the micro, exo, and macrosystem developed by

Bronfenbrenner- with the key distinction between the two in the SMCW espousal of the child as a social actor and contributor to society in their own capacity. Minkkinen (2013) proposes that the relation between well-being and children's development is reciprocal. The next circle of the SMCW is the *circle of care*, which maintains the child's right to receive special care and assistance. The *circle of care* comprises people who the child interacts with on a personal level, and are integral to the child's well-being. Social support has also been identified as increasing children's well-being, for the present and future. Minkkinen (2013) again draws the distinction between SMCW and the bioecological model, indicating that SMCW emphasises the role of other's to safeguard children, in keeping with the United Nations Convention on the Rights of the Child (UNCRC). The third circle of the SMCW, constituting the second component of the societal circle, are the *structures of society*. The structures referred to in this circle are those conceptual and concrete which influence child well-being through subjective action. Conceptual structures are those which enforce social order and cooperation of children, such as various institutions. These *structures of society* in addition, refer to children's participation, or opportunities which they are presented with to participate, in decision-making processes which impact them, such as sense of security, welfare services, and environmental factors, including environmental degradation. This circle of the SMCW is comparable to the exosystem of the bioecological model, with the SMCW incorporating the direct impact of these structures on the child, again promoting children's rights as advanced in the CRC. The final circle, and component of the societal frame is *culture*. *Culture* is considered the broadest societal frame of child well-being in this model, and is comparable to the macrosystem in the bioecological model. It is proposed that culture is the most extensive of the circles of SMCW as it encompasses all human and societal activity, as well as other circles in the model. In conclusion, Minkkinen (2013) posits that children are affected by their own culture, but in turn contribute to and reproduce culture which echoes the concept of *interpretive reproduction* as posited by Corsaro (1992; 2011; 2014).

3.5.5. Factors contributing to child well-being: A conceptual framework to situate place in context (McKendrick, 2014)

While not a theory per se, McKendrick's (2014) conceptual framework to understand the influence of neighbourhood on children's well-being is significant. McKendrick's (2014) premise for this framework is based on the notion that children's well-being is shaped by the area and context in which they live. He further argues that it is not only children's immediate environment which influences their well-being, but also the wider realm of society. It is

however, crucial to be cognisant of the context in which children live, and not to generalise the influence of neighbourhoods across areas or nations. This essentially speaks to the proposed concept of the *geographies of children's well-being*, and the ensuing considerations of what 'good places' for children encompass. 'Good places' are places where children have the ability to attain positive development outcomes in health and education and where children are not constrained by low socio-economic status (SES) and impoverished conditions, such as low household income and underprivileged housing. 'Good places' then are those which deter any risk, negative behaviours, and deleterious relationships (McKendrick, 2014). McKendrick (2014) notes further that in children's communities, they should have access to resources, opportunities, and the ability to participate as valid actors about the things which affect them- indicative of the inclusive nature of children's neighbourhoods by affording children equal opportunities across an array of demographic factors (age, gender, SES, cultural factors).

In line with these contentions, McKendrick (2014) developed a tool to expound the influence of place on children's overall well-being, in addition to his conceptual framework of place well-being. His tool, 'The impact of places on the well-being of children' is analogous to Hart's (1997) ladder of children's participation. It comprises a continuum ranging from the lowest rung which is 'damaging' to 'transforming', the highest rung. The lowest rung, *damaging*, refers to a neighbourhood which 'severely' negatively influences children's well-being (e.g. a context ravaged by war). The second rung, *impairing*, refers to neighbourhoods which has detrimental effects on children's well-being (e.g. neighbourhood which are deficiently designed for children, characterised by fewer opportunities and inadequate access to resources). The third rung, *reinforcing*, denotes the level of well-being that children receive from the 'domestic realm', and thus results in children having access to adequate opportunities and resources; coinciding with what children experience at home. In the fifth and second highest rung, *enriching*, place augments children's well-being, as these are well-designed neighbourhoods which are child friendly, and advances children's right to maximise the resources children acquire from the 'domestic realm' (McKendrick, 2014). The highest rung, *transforming*, is the ideal place for children as it proffers the child with a realm which is 'transformative', where they are afforded opportunities and resources which exceed those which they receive at home. An important distinction is that the tool should be used for making sense of the overall influence of places on children's well-being, and *not* a tool to explicate children's overall levels of well-being. This enables one to emphasise "the direct

evaluation and contribution of place.” (McKendrick, 2014, p. 293). The impact then of place on children’s well-being according to this tool delineates well-being as: good (rungs 4 and 5), bad (rung 1 and 2), and indifferent (rung 3). The places which children inhabit should ultimately be: *inclusive* (where all children have equal opportunities and experiences), *participative* (where children have are valid actors able to influence their environments, and deciding how that environment is used), *provide opportunities* (where children have spaces which augment their well-being), and finally *be resourced* (which considers current services which are critical to children’s quality of life, but also considers well-being for the future).

McKendrick (2014) notes further that the contribution of children’s neighbourhood toward their well-being can also be interpreted and made sense of using a classification of stars, thus ‘no star’ to ‘four stars’, assigned to neighbourhood quality which aligns to the four key considerations of children’s environments being inclusive, participative, opportunities available, and are resourced. A neighbourhood classified as ‘no star’ resonates with children having inadequate opportunities, is not inclusive, do not have necessary resources, and do not have the opportunity to participate; ranging to ‘four stars’ where children have resources which affords them opportunities; is inclusive, and enables children right to participate.

Finally, the conceptual model of children’s well-being highlights the factors which contribute to children’s well-being. This model takes into consideration how children’s well-being is influenced by their neighbourhoods, which should be environments of opportunity, provide local resource provision, and participation which in effect means it is inclusive; which in turn leads to a child being an active agent in their community, and ultimately results in child well-being. Family life is another contributing factor to children’s well-being, and encompasses aspects such as socio-economic status, parenting, and dynamics of family life; which when positive also results in the child being an active agent, and ultimately child well-being (McKendrick, 2014). McKendrick (2014) notes further that beyond children’s neighbourhoods, the impact at the regional, national, and global level also play a role in children’s well-being. This model thus points to how children have an active role in moulding their personal well-being. As a conclusionary, and cautionary note, McKendrick (2014) maintains that whilst evidence may show that some children attain an adequate level of well-being *in spite of* their impoverished and under-privileged neighbourhoods. or an unsupportive family, this should not be used as a motivation to not address these inadequacies in these spheres.

3.6. Eudaimonic theories

3.6.1. Self-determination Theory (Deci & Ryan, 1985; Ryan & Deci, 2008a; 2008b)

Self Determination Theory (SDT) as initially proposed (Deci & Ryan, 1985), and further developed, by Ryan and Deci (2008a) distinguishes between two broad categories of motivation that is *autonomous* and *controlled*. Whereas traditional theories of human motivation have regarded motivation as unitary concept with varying amounts, and that the particular type of motivation is considered more significant than the “amount in predicting life’s important outcomes” (Ryan & Deci, 2008a, p. 14), such as psychological health and well-being. Ryan and Deci (2008) note that research on this theoretical orientation has proliferated in the last two decades, elaborating certain components of the theory in an array of disciplines and life domains.

In terms of the two key motivation types, it has been detailed that *autonomous* motivation encompasses both intrinsic motivation and types of extrinsic motivation, and includes acting with the utmost sense of volition and choice thereby experiencing self-approval. Intrinsic motivation entails executing a behaviour as it satisfies the individual, bringing about positive feelings due to the value attached to such an activity. With extrinsic motivation, the individual engages in an activity as it results in a distinct outcome, such as to attain a reward or avoid a punishment. *Controlled* motivation however, includes acting due to pressure and demand to achieve particular outcomes which originate from sources external to the self, with individual who are controlled experiencing pressure. Noting that research has shown that extrinsic motivators negatively affect intrinsic motivation as individual’s experience being controlled, it is possible that individuals can experience autonomy even though they are extrinsically motivated. This process is explained using what Ryan and Deci (2008a, p.16) refer to as *organismic integration*, perceiving development as “the process through which humans internalize, elaborate, refine, and integrate inner structures or representations of themselves and their world.” *Controlled* motivation encompasses *external regulation* (where behaviour is a function of external contingencies or reward or punishment) and *introjected regulation* (where the regulation of one’s actions are in part internalised and improved by for eg. approval motive, avoidance of shame, dependent on self-esteem). Both these types of motivation guide and direct behaviour and are proposed to efface amotivation. Individuals must however, experience fulfilment of basic psychological needs, and if these needs are not met individuals will be less likely to internalise and integrate regulations.

Self-determination Theory proposes three such types of internalisation which impact on motivation, namely *introjection*, *identification*, and *integration*. The weakest type of internalisation is *introjection*, which is engaging in an activity with an external contingency, demand, or regulation but not assimilating it as one's own. The second internalisation type, *identification*, centres on the individual acknowledging the significance of the behaviour and acceding to it as their own. The third type of internalisation is *integration*, wherein people are able to integrate "an identification with other aspects of their true or integrated self" (Ryan & Deci, 2008, p.16). *Integration* represents the highest attainable internalisation and affords the individual to become fully autonomous or self-determined through extrinsically motivated behaviours.

The SDT developer's show that autonomous regulation has shown to be associated with greater persistence, increased positive affect, increased performance and greater psychological well-being (Ryan & Deci, 2008). And that extrinsic rewards decreased intrinsic motivation amongst individuals varying in age, type of activities, rewards and reward contingencies, based on a meta-analysis (Deci, Koestner & Ryan, 1999). That is, when individuals were provided with extrinsic rewards, such as money or awards for carrying out an intrinsically motivated activity, it in turn impacted on their intrinsic motivation for the activity; these findings however, had particular limitations. While tangible rewards have been shown to have adverse effects on intrinsic motivation, positive performance feedback has been shown to enhance intrinsic motivation in specific situations. A motivation for this is that the positive feedback directly communicates positive competence information. Events which communicate competence, which is not controlling, as referred to as being *informational*. Research has also been conducted using SDT in relation to the context of goal attainment and aspirations; that is for controlled or autonomous purposes.

Kasser & Ryan (1996) indicate that individual's long-term goals could be categorised into categories, namely *extrinsic goals* which incorporates 'external indicators of worth' such as accumulating wealth, being famous, and portraying a desirable image. The second type of goal is *intrinsic goals*, which are closely related to the fulfilment of basic psychological needs of autonomy, competence, and relatedness, incorporating factors such as personal growth, building relationships, and being generative for the community. It was found that people who put emphasis on extrinsic aspirations evince low levels of psychological well-being, and conversely when greater emphasis was put on intrinsic aspirations evince high levels of well-

being; thus indicating that the content of people's goals are related to indicators of psychological health. Therefore, "Autonomous motivation has been found to have a variety of advantages in terms of effective performance, especially on heuristic tasks, psychological well-being, and healthy development. Furthermore, autonomous motivation has been found to be more in evidence when people experience satisfaction of their basic psychological needs for competence, relatedness, and autonomy." (Ryan & Deci, 2008a, p.21). Wang and Wang (2016) note that SDT forms part of the top-down perspectives on SWB. Significantly, Self-determination theory merges eudaimonic and hedonic well-being as it differentiates between *happiness*, which is considered a subjective experience of positive as opposed to negative mood, and *wellness*, which focuses on full and vital functioning.

3.6.2. The Two Source Theory of Child Well-Being (Raghavan & Alexandrova, 2014)

One of the more contemporary theories of child well-being was proposed by Raghavan and Alexandrova (2014), referred to as the *Two Source Theory*. While studies on children's well-being abound in the literature, as well as work on the determinants of well-being, there is an absence of a specific child well-being theory. This theory comprises three goals, namely to elucidate the reasons for the focus on particular indicators and causal factors of child well-being; to integrate the evaluations from scholars in the field; and finally to provide direction and recommendations to enhancing existing child well-being measures. The proposed theory integrates conceptualisations of child well-being from an array of disciplines (history, policy, and philosophy), using theory-building concepts from philosophy to make sense of its components. The authors (Raghavan & Alexandrova, 2014) detail the historical conceptualisations of child well-being which later informs the summary of theories of well-being. They outline three categories of well-being theories into *mental state theories*, *desire-based theories*, and *needs-based theories*. In terms of *mental state theories*, hedonism is an eminent theory which holds that feeling well occurs when one feels well across life reflecting a positive mental state. *Desire-based theories* differs from mental state theories in that well-being is based on the attaining or fulfilment of one's desires or predilections, values, or life trajectory, and not on how one feels about the fulfilment of desires. These theories are also referred to as subjectivist theories. It is only the attainment of informed and cogent desires which will result in well-being. Needs-based theories incorporate the need for happiness which hedonists put forward, as well as fulfilling one's life plan as subjectivists put forward, with the need for close relationships and truth and other objective values. This gave rise to

these theories also being known as objectivist theories. An explication of these theories led the authors to conclude that as they were not developed specifically with children in mind, they are not appropriate to be applied to children.

These three theories are then tested by Raghavan and Alexandrova (2014) as potential for further development to a child well-being theory. It is argued that a complete focus on future-orientation is not suitable for children as it undermines children as agents and individuals in their own right. A key contingent of the *Two source theory* proposed is that it must adhere to a non-reductionist constraint; that is a theory of well-being should not diminish childhood into a mere progression to adulthood. Raghavan and Alexandrova (2014) state that hedonist theories, representing mental state theories, and desire-based are unsuitable for integration into a child well-being theory; while need-based theories appear to be more suitable.

Motivation for this is rooted in the focus of work of early philosophers (Aristotle) notion of Eudaimonia which denotes flourishing and being fully functional. Kraut's (2009) *developmentalism* is flagged as significant for incorporation into the *Two Source Theory* given his definition of well-being as "flourishing, that is possessing, developing and enjoying physical, cognitive and emotional powers of human beings, at whatever level that is appropriate to their stage of development." (p. 9). Kraut's (2009) developmentalism has however come under scrutiny. Raghavan and Alexandrova (2014) assert that while Kraut's theory holds import, it requires an integration of ecological, social, and cultural context with a child well-being theory which explicitly differentiates the universal from the individual.

Given these theoretical considerations, Raghavan and Alexandrova (2014) delineate a unifying child well-being theory. A key point taken from *developmentalism* is the future-orientation of well-being, as well as the multi-dimensional nature of well-being. The non-reduction constraint which was proposed earlier requires that this theory of well-being contains considerations of children as having agency and seen as individuals in their own right. The Two Source Theory comprises four key components, namely *Stage-appropriateness*, *Successful future*, *Environment*, and *Child Appropriateness*. Two conditions are specified in order for children to be well, that is (i) "Develops those *stage-appropriate* capacities that would, for all we know, equip her for *successful future*, given her *environment*", and (ii) "And engages with the world in *child-appropriate* ways, for instance, with curiosity and exploration, spontaneity, and emotional security." (p.10). *Stage-appropriateness* maintains that a theory of child well-being should be developmental, and

suitable to children's developmental age. *Successful future* makes reference to child well-being as partially well-becoming, which points to success a child's future success up into adulthood. The future-orientation component given the skills children acquire in childhood, which ultimately results in effective utilisation of these skills in adulthood. Environment refers to how *stage-appropriateness* and *successful future* are influenced by a child's social, economic and cultural environment, referring to a congruence between the child and their environment. Two Source Theory also makes reference to overlapping consensus, which refers to the social conditions and capabilities developing a sense of child well-being particularly in diverse societies. The theory further addresses the limitation of developmentalism concerning powers, by incorporating a future-orientation. Research has shown that when a child is able to successfully surmount key internal states during childhood, this leads to greater mental and physical health when they are adults. Additionally, when children develop attachments to adults it acts as a protective factor against mood and anxiety disorders when older.

The third goal of the *Two Sources Theory* is to show how it can influence improved measurement of child well-being with several key considerations. First, it emphasises that measuring children's well-being should include both children's subjective perceptions and objective indicators. Second, the first condition mentioned above indicates that child well-being is undoubtedly developmentally-located, and measures should integrate aspects of well-being at various stage-appropriate domains, as well as the temporal implications. Third, consideration should be given to children with disabilities and their well-being, specifically to adapt well-being measures to incorporate these children's perceptions. Fourth, condition 1 and 2 note that well-being is context-dependent, varying by socioeconomic conditions, location etc. Additionally, Raghavan & Alexandro (2014) recommends that psychometrically sound cross-national or population-level core indicators are developed. Fifth, the consideration of social ecology in the theory means that indicators of child well-being cannot assume 'normative child-rearing practices'. Finally, "indicators can either be transitive- being based on the successful attainment of prior indicators- or final, and measurement models should ideally consist of a mix of the two." (p.13). This theory thus incorporates the multi-dimensional conceptualisation of children's well-being integrating history, policy, and philosophy.

3.7. Merging disciplines: Environmental Psychology and Positive Psychology

A trend has recently emerged in the theoretical and empirical literature in integrating environmental psychology, (in particular sustainability as an aspect of conservation psychology), and positive psychology (see Kerret, Ronen, & Orkibi, 2014; McKendrick, 2014; Venhoeven, Bolderdijk, & Steg, 2013; Verdugo, 2012; Wells, 2014; Wang & Wang, 2016). The goals of these two research traditions are consonant; that is to enhance individual's well-being and quality of life, as well as their environmental quality- pointing to how these traditions are theoretically related. Wells (2014) notes that a paradigm shift has ensued across disciplines since the WHO's (1946) definition of health focusing on *salutogenesis*, thus on the basis of health as opposed to pathogenesis. Paramount to these two fields is the 'future orientation' focus, to not only enhance feelings of well-being and happiness in terms of the interplay between the person and environment, but to strive toward aspirations, flourishing, and gain a sense of meaning in life, thus assimilating eudaimonia. This attention to 'future orientation' in turn feeds into discussions around positive behaviours, such as sustainability and the current influences which mould future environmentally protective behaviours.

It is significant in this regard to consider the two main streams of well-being, namely *hedonic* and *eudaimonic* well-being, specifically for the associated impact on children's engagement with nature. *Hedonic perspectives* of well-being focus on subjective well-being or happiness, and are frequently denoted in relation to circumventing pain and attaining pleasure, having received a predominant focus in the literature on both adult and children's SWB (Ryan & Deci, 2001). *Eudaimonic perspectives*, concordantly, focus on psychological well-being which is more broadly denoted as encompassing dynamic processes, and the degree to which an individual is fully functioning in society, and refers to concepts such as meaning of life, flourishing, life goals, self-actualisation (Casas, 2011), and living life in a fully satisfying manner (Verdugo, 2012).

Researchers devoted to this wide-ranging field of study over the past two decades became acutely aware of the link between children's experiences in natural spaces, and the impact on various domains of their well-being (Adams & Savahl, 2015; Gill, 2014; Hart, 1997; Louv, 2008; Wals, 1994). Kerret et al.'s (2014) concept of '*environmental subjective well-being*', is essential in this regard. This current trend in research to merge these two fields has, however, predominantly focused on adult populations (see Yeatts, Cready, Pei, Shen, & Luo 2014),

which focused on environmental behaviour and the associated “positive antecedents and consequences” (Kerret et al., 2014, p.84). Kerret et al. (2014) further identified that only a small amount of research has considered children’s perceptions, particularly in terms of environmental education, which promotes sustainability and conserving the environment to facilitate and mitigate environmental damage and in turn enhancing their SWB. Adding to this point, Gordon and Crabtree (2006) challenge educational disciplines’ emphasis on counteracting negative student outcomes instead of harnessing children’s potential and capabilities (as cited in Verdugo, 2012). The current study considers two principal concepts in these two traditions children’s environmental views (environmental psychology) and their SWB (positive psychology). Additionally, it is argued that “*studying the positive psychological repercussions of sustainable behavior is necessary because achieving the individual and collective wellbeing is a declared goal of sustainable development*” (Verdugo, 2012, p. 662).

Within the field of psychology, Wells (2014) indicates that an emphasis and burgeon of research has focused on positive psychology, and the related concept of resilience. Additionally, in the field of environmental psychology increasing focus has been on the environmental features which improve health, and more importantly the exploration of the positive effects of nature on individual health and functioning; relating to both hedonic and eudaimonic traditions of well-being. Research has examined how experiences and engagement in nature is associated with an array of social, psychological, physical, cognitive, and physiological well-being dimensions. Studies on children’s physical well-being have explored how nature in the home and school contribute to children’s healthy development and how play in nature influences their motor fitness by placing emphasis on the ‘loose parts’ (See Nicholson, 1971, as cited in Chawla, 2009) in nature which enable children affordances for play and leisure activities. Studies on children’s psychological and emotional well-being have examined the effect of nature on children’s ability to cope with stress and Attention Deficit Hyper-activity Disorder (ADHD) symptoms, the impact of nature on children’s cognitive functioning, and how engaging in nature contributes to children’s environmental identity, and in particular their motivations for intrinsic care for nature (Chawla, 2006; Kuo & Taylor, 2004).

Based on the evidence provided in the literature, it is thus comprehensible to surmise that increased time spent in nature increases various aspects of children’s SWB - experiences in

nature enriches children's lives and positively influences their quality of life (Kerret et al., 2014). However, research which focuses specifically on children's engagement with nature and the influence on their SWB is absent in the literature. This gap in the literature provided the key impetus for the current study which endeavoured to contribute to the literature in this regard. Given the above discussion, Wells (2014, p.96) poignantly remarks that "*despite the seemingly convergent foci of research on human resilience and studies of nature and well-being, relatively little attention has been given explicitly to the connection between the two literatures*". Yet, the evidence from contemporary research in merging these two traditions shows promise in further ascertaining how children's engagement in nature influences their SWB in particular, and further to develop an encompassing theory.

3.8. Summary of conceptual and theoretical considerations of nature as children's space and the implications for children's well-being

Having given a considered and comprehensive approach to the numerous conceptualisations and theories of *children's places*, *children's well-being*, and *engagement in nature*, it is crucial to consider the implications for research and theory of the integration of these concepts and theories. A cursory look at these key concepts evinces that they are contested concepts, with numerous scholars in each field making sense of these concepts in related, but distinct ways. Further, this lack of consensus on operationalisation has not hindered the growth of these fields of study, although the field of place attachment is a notable exception. Despite this, it is evident from the explicated theories and concepts that there is considerable overlap across disciplines. There is consensus across the fields of environmental psychology (explored through children's engagement in nature), place attachment (children's places), and positive psychology (children's SWB) of the significance of children's health and well-being across an array of domains; demonstrating the shared core theoretical relation between these fields.

Concordantly, both traditions emphasise a 'future orientation' making reference to being fully functioning, attaining life goals, and self-actualisation; embodying eudaimonia, but also considerations for sustainable development. Huby and Bradshaw (2006) add that the environment also impacts upon children prospective economic well-being. The environment holds the possibility to influence children's health, safety, enjoyment of life, their mobility, and their ability to contribute to their communities, and more broadly society. In addition, they maintain that the "...environment indirectly impacts upon children's readiness and

ability to engage in further education and employment and to play their part in developing sustainable communities.” (Huby & Bradshaw, 2006, p.10). They therefore contend that the economic well-being of children is contingent on environmental factors, which in turn impacts on physical and mental well-being, as well as personal and social development (Huby & Bradshaw, 2006). A fundamental deliberation here is the reciprocal nature of the relationship between the individual and their environments, both influencing each other. This future orientation is significant not only for the individual but for collective well-being of communities and nations.

What is interesting to note is that while these three fields of research gained increasing attention in the late 20th century, around the 1970's, some fields have developed more than others, particularly in relation to theoretical contributions and evolution and progress to the field. Of particular note in this regard is the field of SWB. Although the field was developed on the perspectives of adult populations, as with most disciplines, the focus on the significance on children's SWB was advocated with early efforts to elevate the status of children's self-reported well-being. Notwithstanding the role of key academics in the paradigm shift from a focus on pathogenesis to salutogenesis, in particular the WHO (1946) was a key proponent with their definition of health which emphasised not only the absence of ill-health but also the physical, mental, and social components related to an individual's health. The influence of this shift was evident across numerous disciplines, which resulted in a changing focus of research and theory. Additionally, the ratification of the United Nations Convention on the Rights of the Child (1989) and the 'sociology of childhood' provided further momentum in espousing the rights of children. Considerations of children's lives across an array of domains were no longer sought from adults (such as parents or teachers) or guardians as proxies for children, but rather research was being conducted *with* children as social actors and no longer as subjects (Ben-Arieh, 2009, 2010). The field of environmental psychology too placed value on children's perspectives, not only for its inherent significance, but also with impending environmental problems being a key motivator to rekindle the relationship between children and nature which were disillusioned by globalisation, technological advancements, and the increased fear of 'stranger danger'. It became increasingly essential to delineate how children relate to nature, to explore children's favourite nature spaces and the places they revere to further foster the bond, which was crucial for the field of children's place attachment. Even though the import of on focusing

research with children is manifest in all the discussed fields of studies, it has most strongly been advocated for in the SWB literature.

The concepts and theories discussed in this chapter can be seen as complementary, not only within particular fields, but across fields of study as well. The complementary nature of the various explicated theories is considered in this section. It is clear that the suitability of the theories cuts across disciplines, with many theories informing others. The *biophilia hypothesis* (Wilson, 1984) put forward the notion that humans have an innate affiliation to nature which results in a sense of pleasure or well-being, with various studies showing the positive outcomes for experiences in nature. However, it is also important to note that *biophilia* can also be considered a challenge to sustainability as it may result in the exploitation of nature. Premature abstraction thus may be a problem if children are overwhelmed with environmental problems at too young an age, as this may lead to biophobia and viewing nature as the ‘other’. Instead children should be able to gain the benefits of direct experiences in nature. However, research in an array of contexts show that these experiences are not always possible due to issues around access and safety concerns. Attention Restoration Theory (ART) (Kaplan, 1983; 1995) on the other hand has goals analogous to the P-E fit theory (Horelli, 2007), Gibson’s (1979) Theory of Affordances, as well as the Social Determination Theory (SDT) (Deci & Ryan, 1985; 2008a; 2008b) which posits that the environment should suit the individual’s needs, again evincing a reciprocal relationship. There has been cross-pollination of concepts across theories as well, with ART (Kaplan, 1983; 1995) referring to the concept of congruence between the individual and their environment, a key concept in the P-E fit theory (Horelli, 2007).

Echoing this sentiment, and linking congruence to SWB, it is noted that “Children exist within a complex social ecology, and well-being is in many ways a goodness of fit between the child and her environment” (Earls & Charls, 2001, as cited in Raghavan & Alexandro, 2014, p. 10). Several theories here employ the concept of congruence, with studies showing that the level of congruence is related to an individual’s well-being. If the P-E fit is found to be poor, this can result in stress, which has often been found to be the case when children live in low SES contexts characterised by high levels of crime and violence, and in extreme cases with children evincing PTSD symptoms (Bradley & Corwyn, 2002). This stress is reduced if the child has a sense of influencing their environment, and if their environment encourages goal accomplishment, which speaks to the key tenets of SDT (Deci & Ryan, 1985; Ryan &

Deci, 2008a; 2008b). Children are more likely to succeed in life and attain their goals if they reside in safe communities where they have independence, are able to explore, have access to recreational and natural spaces, as well as quality education. While the significance of personality characteristics has been shown to be an important determinant of SWB, SES has become increasingly important as a determinant of SWB, place attachment and children's environmental worldviews, particularly in developing countries with high levels of inequality. McKendrick's (2014) conceptual model shows how children's neighbourhood plays a pertinent role in their well-being, with key considerations of adequate resources, equal opportunities for all children and children's active participation; and more broadly family aspects (SES, parenting, and dynamics of family life). These considerations advance 'geographies of well-being' for children', and ultimately 'good places' for children which negate risk and promote children's quality of life. Low subjective SES has been found to be related to increased physical symptoms and psychological distress among adolescents, as well as a higher prevalence of children as victims of abuse, peer aggression, and community violence (Garbarino, 1999). This consideration is particularly crucial in the current study, as South Africa has one of the highest levels of inequality in the world, which has resulted in children from different SES communities reporting distinct childhoods.

A common feature across the theories in the different fields of study has been the significance afforded to the environment. In this regard, Gibson's (1979) Theory of Affordances is noteworthy. While the theory is quite comprehensive, the concept of *affordances* has been used most considerably in the literature. Children's environmental affordance, the physical opportunities and safety concerns perceived by the child, relates to Corsaro's (1992) concept of *interpretive reproductions* in which children influence their environment, and their environment influences them which includes social and cultural affordances. This notion is also employed in Minkkinen's (2013) Structural Model of Child Well-being (SMCW).

Much of the focus on the P-E fit, congruence, and affordance of the environment more specifically relates to research and theory on place preferences and attachment, and more broadly to spaces of childhood across disciplines. Understandings of children's places is foregrounded in childhood studies. The field of place research has been criticised for overly focusing on issues around definitions, instead of theory building and development. This has resulted in the absence of place theories, despite the introduction of a few theories in the past five years. It has been argued that if children have their own special places, this acts as a

buffer and helps to regulate negative feelings and cope with stress (Bradley & Corwyn, 2002; Chen, 2004). The literature shows further that natural spaces in particular has been shown to be a significant contributor to children's well-being (see Adams & Savahl, 2015; Bird, 2007; Chawla, 1988, 2002, 2007; Evans, Juen, Corral-Verdugo, Corraliza, & Kaiser, 2007; Hart, 1997; Louv, 2008; Phenice & Griffore, 2003; Wals, 1994; Wells, 2000). More so, when children show intrinsic care for nature as the biophilia hypothesis (Wilson, 1984) purports, they incorporate nature into their sense of self which in turn contributes to their environmental identity. The issue of identity is also addressed in SWB as well as in place research in the concept of place identity, and in the only theory of place, the Tripartite Organizing framework. This relates to Kytta's (2004) model concerning the extent of children's independent mobility and the number of actualised affordances therein, and is categorised with its application to child-friendly cities into four types, namely: *wasteland* (independent mobility but limited affordances); *cell* (mobility heavily constrained, no exploration); *glasshouses* (perceive opportunities, but no access); *Bullerby* (translated as a 'noisy village'- free mobility, environment positively influences children: the more they are able to engage, the more they want to). Kytta (2004) notes that in her study, increased urbanisation resulted in fewer reports of the Bullerby type and more of the glasshouses type amongst children. Further, this model appears to relate Hart's (1992) ladder of participation⁵. In essence, Hart (1992; 1997) and Kytta (2004) are incorporating concepts of children's participation, children's mobility, children's place preferences, and ultimately how this impacts their well-being and has strong overtones of children's rights as put forward by the UNCRC. Sancar and Severcan (2010) elaborate further that a well-developed and fostered sense of place is critical for children's well-being. Tuan (1977) hypothesised that when children observe their treasured places being degraded or polluted, this can damage their life worlds. The probable negative outcomes of this tainting of a child's special place may result in dissonance, loneliness, heightened sense of fear, unhappiness, and behavioural disorders (Brown & Perkins, 1992, as cited in Sancar & Severcan, 2010). Hay (1998) goes as far to argue that sense of place is *not* developed in children whose mobility is constrained.

⁵ Hart's (1992; 1997) ladder of participation, adapted from Arnstein (1969, as cited in Chawla & Heft, 2002), states that there are different levels of child participation (1997). The concept behind the ladder implies that the higher one goes up the ladder, the more meaningful participation becomes. The ladder consists of 8 rungs, the lower 3 rungs are often presented as participation but which Hart (1992; 1997) considers as nonparticipation, namely manipulation, decoration, and tokenism. True participation starts at the 4th rung of the ladder until the 8th which are ascendingly: assigned but informed, consulted and informed, adult-initiated, shared decisions with children, child-initiated and directed, and finally child-initiated, shared decisions with adults.

Related to the absence of a place theory, Scannell and Gifford (2010) attempted to address this major shortcoming in the discipline by putting forward the Tripartite Organizing framework. Lewicka's (2011) review article was crucial in the field to organise and provide a comprehensive account of place research and theory. The Tripartite framework considers three dimensions namely person, process, and place. The person dimension emphasises individual and collective place attachment, with religion as an important consideration, such as with SWB (see Diener et al., 2006). The second dimension, psychological processes closely associates with the features of SWB namely affect, cognition, and behaviour, and the role these features play in producing place attachment. The final dimension of place neatly encompasses SWB, place attachment, and the positive relationship between place identity and environmentally responsible behaviours (Vaske & Kobrin, 2001; Scannell & Gifford, 2010). It also integrates an environmental psychology concept, that of environmental identity, referring to the integration of nature into one's self-concept. The time factor here is significant as it related to the 3P Model of SWB by Durayyapah (2010), and also portrays the link between adult environmentalism and childhood engagement in natural spaces, but also taking into account two main strands of research on place that of the social and physical components and the impacts on well-being.

Theories of well-being abound in the literature, yet there are very few child-specific theories. Many well-being theories have been applied to research with children, with studies showing the appropriateness thereof. What is clearly lacking in the literature is a review article on child well-being theories. While children's subjective perceptions of their well-being has become increasingly important, along with other disciplines, it has been shown to exhibit a more transitory lifespan in comparison to objective indicators. While there is a lack of consensus on the operationalisation of children's well-being, scholars do concede that it is multidimensional in nature. Previously hedonic approaches have dominated research with children, but recent years have shown an increase in eudaimonic endeavours as they relate to goal accomplishment, and flourishing evident in SDT, the 3P Model, the Two Sources Theory, and the Flourishing Scale (Diener et al, 2010). Diener et al. (2010, p.10) aptly note that "Seligman (2002), Ryff (1989), Ryff and Singer (1998), and Steger, Kashdan, Sullivan and Lorentz (2008) present arguments and data supporting the notion that purpose and meaning are beneficial to human functioning." Some scholars classify well-being theories into three categories, (i) need and goal satisfaction theories, (ii) process or activity theories, and (iii) genetic and personality predisposition theories. Higgins (1987) asserted that negative

emotions develop when there is incongruence between the individual's *ideal* and *ought self* which considers cognitive and affective components, and resonates with Gibson's (1979) concept of congruence, the P-E fit theory, and SDT (Ryan & Deci, 2008a; 2008b). It has been shown that when individuals have significant goals they are more likely to be energetic, report more positive emotions, and perceive life to be meaningful which again relates to these four theories. One of the seminal theories of well-being, the Adaptation Level Theory of well-being (Brickman and Campbell, 1971), has contributed greatly to the field. However, continued analysis of the theory evinced several shortcomings. Amongst these is the notion that efforts to increase happiness is futile, and that after good and bad events people quickly revert back to neutrality. In this regard Diener et al. (2006) proposed several revisions to the theory, based on empirical evidence. It is this type of scholarly debate which is absent from place attachment research as there is no theory for scholars to engage with. A crucial inference from Diener, Lucas, and Scollon's (2006) article, is that evidence from early and key works in a field of study should not be blindly accepted, but instead continually engaged with, and analysed and re-analysed, with the use of large representative samples and longitudinal data to draw sound conclusions.

Cummins' Homeostasis Theory of SWB (1995; 2003; 2010; 2014) relates to the Adaptation Level Theory, in its notion of maintaining a 'normal' sense of well-being. Cummins (1995; 2003; 2010; 2014) theory however, has been applied in a number of contexts with diverse samples, and has more recently been employed in research with children specifically (Cummins, 2010; 2014). Cummins' (1995; 2003; 2010; 2014) theory in a manner also relates to the Tripartite organizing framework of place attachment; specifically in relation to the activation of a buffer (when needs are met or unmet) and the ensuing behaviour of an individual and how close relationships are crucial. In terms of the Tripartite model, the second dimension of psychological processes and the aspect of behaviours ties in with the Homeostasis theory. The findings here show that children's SWB is similar to that of adults, with the affectively-driven model of SWB (as opposed to the personality-driven model) explaining a large proportion of the variance (80%), with Cummins (2014) indicating that the theory be used with children from 12-years old as they encompass the cognitive maturity for self-report. The affective component also played an important role in mood stability, thus HPMood. The relevance of the theory to children is also evident in the recommendation that the theory can be used to pinpoint certain areas of difficulties children are experiencing in life, and thereby provide possible solutions to address this. Diener et al. (2006) assert that

researchers endeavouring to develop intervention programmes to improve happiness should have a thorough knowledge of theory (adaptation theory) to make sure that the impact is not merely transitory, but long-lasting. The 3P Model of SWB is premised upon a temporal model looking at the past, present, and prospect. Similar to the Adaptation Level and Homeostasis Theories, the 3P Model (Durayappah, 2011) shows that current life events influence happiness, however, the extent of this is escalated in the 3P Model which affirms that the memories of our experiences govern our feelings of SWB. Additionally, the cognitive biases which Durayappah (2011) makes reference to as affecting SWB, is akin to the process of adaptation in the Adaptation Level theory which is made sense of in the 3P Model in transition from different temporal states.

Two recent well-being which were developed specifically for children was the Structural Model of Child Well-being (SMCW) (Minkkinen, 2013) and the Two Source Theory (Raghavan & Alexandrova, 2014). While the former based her theory on that of Bronfenbrenner's Ecological Theory composing of concentric circles representing the domains of a child's life, the latter was based on philosophical theories of well-being, most notably Kraut's (2009) developmentalism.

The SMCW (Minkkinen's, 2013) employed a multidisciplinary approach and used the WHO's (1946) definition of health, which was also employed by Wells (2014), in merging the disciplines of environmental and positive psychology. Moreover, the SMCW also proposes a reciprocal relationship between child development and child well-being, a feature evident in several other theories which have been considered (ART, biophilia, P-E fit theory, Gibson's theory of affordances, 3P Model). Minkkinen (2013) also considers the importance of social relationships, the importance of which is considered across all theories in this chapter, and is closely linked to the concept of *social capital*. Diener et al. (2010) indicate the work of Putnam (2000) and Helliwell, Barrington-Leigh, Harris, and Huang (2009) who proposed that social capital is rudimentary to the well-being of societies. Wells (2014, p. 100) also indicates that engagement in nature harnesses "social interactions and contributes to the development of social relationships", as well as neighbourhood social ties, and childhood resilience. The concepts of 'flow', interest, and engagement (Csikszentmihalyi, 1990) are considered key to human well-being, which in turn is the basis of 'psychological capital'. This is further related to SDT (Deci & Ryan, 1985; Ryan & Deci, 2008a; 2008b) and its emphasis on the basic needs of autonomy, competence, and relatedness. While good social

relationships were initially denoted as receiving support from others, Diener et al. (2010) show that contemporary research has demonstrated that people also need to support others (see Brown Nesselrode, Vinokur, & Smith., 2003; Dunn, Aknin, & Norton, 2008; Peterson et al., 1988; Scheier & Carver, 2003; Seligman, 2002).

It is crucial to note that much of the research cited in this chapter, which provides support to the specific theories, have predominantly been conducted in developed contexts, with a few exceptions. Wang and Wang (2016) proposed that people residing in communities with varying SES display distinct levels of life satisfaction (see Dittmann and Goebel, 2010) and happiness (see Ludwig et al., 2012). In developed contexts, research often points to how people living in rural environments have higher SWB than those living in urban contexts. However, studies from impoverished rural communities in South Africa show that in this context rural communities are synonymous with low-SES, low-income, poor infrastructure and service delivery, high levels of crime and violence, and informal housing (Adams & Savahl, 2015; Isaacs & Savahl, 2013; Parkes, 2007; Savahl, 2010; Savahl et al., 2015a). It is indicated by Wang and Wang (2014) that “there are significant spatial differences in SWB at different levels of regions and various geographical factors have important effects on an individual’s SWB. Specifically, the economic indicators, cultural differences, climate, urban facilities, neighbourhood environment and housing conditions all have important impacts on SWB.” - thus incorporating the three core fields of study focused on in this study namely SWB, place attachment, and children’s engagement in nature. While some theories have been applied and specifically developed for children, there is the necessity to test the applicability of these theories with children in diverse contexts, with more research required in developing countries, and further cross-national comparison studies. In reviewing literature from two fields of research, namely pro-environmental behaviour and well-being, Venhoeven et al., 2013) assert that

“...engaging in sustainable behaviour is actually meant to - bring a better quality of life of individuals in the long run. Following this definition, pro-environmental behaviour can thus only be called sustainable if it does not threaten human well-being. Indeed, this is also one of the basic premises in the World Happiness Report, in which it is claimed that- “the quest for happiness is intimately linked to the quest for sustainable development” (p. 3).

An important contention which Venhoeven et al. (2013) speak to is that of environmental and positive psychology, and two contrasting views on pro-environmental behaviour- firstly that it increases individual well-being, and on the other that it decreases well-being. They show that engaging in behaviour for the environment does not necessitate a decrease in well-being, particularly when individuals feel it is the right thing to do, and when people have the freedom to behave in this way. This also links to discussions on eudaimonic well-being as it has impacts for both the individual and society, as well as to SDT as it involves intrinsic motivation. The main point to be taken away from this review of the literature on research and theory is that the merger between the fields of place research, child SWB, and nature seems to be plausible, a notion which has begun accumulating interest in international endeavours and is wholly encompassed in the concept of environmental SWB (ESWB).

3.9. Conclusion

This chapter sought to elucidate the conceptual and theoretical considerations of the study by focusing specifically on the manner in which children's engagement in nature (with nature as children's place) and their SWB merge to contribute to understandings of children's environmental subjective well-being (ESWB). The chapter introduced the three key concepts, delineated above, and demonstrated that these concepts are contested, with numerous denotations presented across disciplines. The conclusion then is that these concepts are multi-dimensional in nature, and hold significance within the particular context in which it is used. While there are several theories within the disciplines of children's well-being, children's place attachment, and children's engagement in nature, the aims of these disciplines dovetail as they endeavour to promote children's quality of life.

Moreover, these disciplines espouse the key motivation of the UNCRC which is to highlight the significance of affording children the opportunity to participate in research endeavours which concern them to allow their unique voices to be heard. Children's subjective perceptions are therefore, the common overlapping concern which is promoted collectively by these disciplines, both in research and theory. While some theories have been developed in general in terms of adults, others have revised these theories to include considerations of children specifically who have been a marginalised and disempowered group. There are particular theories which have in fact been developed specifically in relation to children. The emerging trend in research and theory to amalgamate these disciplines affords crucial insights into the topic at hand, and enables an inclusive understanding of the manner in which natural

spaces and children's environments (both physical and social) influences their SWB on a daily basis, as well as for the future. This essentially advocates for children's ESWB, which takes into consideration the context of South Africa which is extremely unequal and children's experiences from varying socio-economic contexts which evince distinct childhoods, and enables a more in-depth understanding of these phenomena. The integration of the mixed methods study's findings are presented in Chapter Eight, which also points to the significance and relevance of these theories in terms of the implications of these findings. The following four chapters, Chapter Four to Seven, present the articles which the study comprises. The next chapter, **Chapter Four:** Article 1, presents the systematic review which sought to ascertain children's understandings of natural spaces.



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CHAPTER FOUR (ARTICLE 1): 'NATURE AS CHILDREN'S SPACE: A SYSTEMATIC REVIEW'

4.1. Introduction

This chapter presents the first article of the dissertation, and represents Phase One of the study which encompassed a systematic review to determine how children make sense of, understand, and assign meaning to natural spaces. The journal review process for this article is presented below; subsequent to which the article is presented.

4.2. Journal review process

Article 1 (Chapter Four) was submitted to the *Journal of Environmental Education (JEE)* on the 03 October 2014. The JEE is an international peer-reviewed journal which provides a platform for critical debate in various aspects of research, theory and practice in environmental and sustainability education (see www.tandfonline.com), with a 2014 5-year Impact Factor of 1.513 (Thomson Reuters Journal Citation Reports).

Feedback from the journal in terms of the manuscript was only received on the 08 May 2015; thus resulting in a 9 month journal review process. The manuscript went through three rounds of revisions, and received contrasting overall appraisals from the four reviewers (consulting editors) as well as from the executive editor. The reviewer comments and authors' rebuttals are presented below under the three headings of revision 1, 2 and 3, and the corresponding authors' rebuttal to reviewer comments. Following these lengthy comments, the authors' reflections on the review process are presented. Feedback for revision 3 was provided on the 10th May 2016 and underwent a 5 month review period. Finally, the article is presented, which has been accepted and is currently in the copy-editing process.

4.2.1. Revision 1

This article went through four rounds of revisions, and was a prolonged process. The editors' and reviewer's comments (consulting editors) for each of the three revisions are presented below, as well as the corresponding rebuttal to these comments.

jennifer.nicholls@my.jcu.edu.au <jennifer.nicholls@my.jcu.edu.au>

Fri, May 8, 2015

at 11:17 AM

To: sabirah.adams@gmail.com

08-May-2015

Dear Miss Adams:

The reviewers of The Journal of Environmental Education have made a thorough examination of manuscript ID 02-14-186 entitled "Nature as Children's Space: A Systematic Review.

Implications for Research in South Africa" and have determined that the manuscript requires some moderate revisions. Therefore, I invite you to respond to executive editor's comments, which will inform you which aspects of reviewers' comments should be addressed in your revision.

Once again, thank you for submitting your manuscript to The Journal of Environmental Education. Please contact me with any questions and I look forward to working with you.

Sincerely,

Managing Editor, The Journal of Environmental Education

jennifer.nicholls@my.jcu.edu.au, fiona.mwaniki@my.jcu.edu.au, ellen.field@my.jcu.edu.au

Executive Editor's Comments to Author:

Thank you so much for submitting your manuscript for review to JEE. The reviews were mixed. One reviewer suggested only minor amendments and had kindly sent you a document with suggested amendments. The other reviewer found difficulty with the purpose of your work. I think your analysis could be updated to include a review of very recent publications. This is why a moderate to major revision is requested.

The first reviewer was concerned that in looking for how your literature review findings might serve to "more effectively to offer positive opportunities to low-income children", those findings were not substantiated by the research process. The "main lesson" gleaned from your manuscript was that little research attention has been paid to the matter of providing nature learning for children who are impoverished. And, frankly, this is a so what? finding.

Why have we bothered to read the review? We know disadvantaged children are disadvantaged. Don't we really need to know what can be done at this time?

The first reviewer is concerned that the purpose of your review is not made clear enough in either the abstract nor the review itself. Yes, we are taken on a comfortable and skilful narrative, but what we are left with is the "so what?" This reviewer suggests that you really focus your purpose and make it very clear in your manuscript that you are investigating how children living in poverty in the developing world or anywhere, could be provided with meaningful experiences in nature. As the reviewer says, "If this idea could actually be developed with regard to the literature review and meta-analysis, the article could potentially say something quite meaningful." Without this research focus, the first reviewer does not think you are adding much to what we already know.

The second reviewer liked your systematic review much more, and found intrinsic purpose in your work. This reviewer was excited to see what you had done, and sent in corrections with small revisions suggested.

My own opinion, as editor, sits between these two reviews. I agree that the focus of your research should be made much, much clearer, as in, what does the recent literature tell us about providing (how and why to provide) nature experiences to young children in Southern Africa.

You showed that up until the point of your review, that this hadn't been fully researched. And yet, the Millennium Development Goals have promoted more research on children and their wellbeing, and having nature experiences is part of well-being. So, I am wondering why the review stops suddenly at 2013, when, in fact, this is a burgeoning area for research as you point out.

More of relevance to your literature review has been published very recently on children, wellbeing and access to the nature experience (including recent work from authors you have already covered).

I suggest you undertake a scan of very recently published literature from 2013, 2014, 2015 as part of the requested revisions, which would bring your manuscript up to date and ensure your work is more useful and powerful in its application.

*There are 327 research articles curated in the Children and Nature Network site at:
<http://www.childrenandnature.org/research/>*

And researchers such as Amy Cutter Mackenzie and Julie Davis and Sue Elliot have been actively publishing as has Louise Chawla, see Davis, J. and Elliott, S. (2014) 'Research in Early Childhood Education: International perspectives and provocations', Routledge.

I also suggest you scan for recent publications in journals such as JEE and Environmental Education Research and related national environmental education journals.

No-body ever said systematic reviews were easy. However, with a much sharper and focused research question for the meta-analysis, I think you will be able to make a stronger case based on your robust selection of literature. You will be able to revise, edit and update the review to ensure greater usability and applicability. And I urge you to do so.

In addition, please make clear how you derived the categories / themes for analysis and address all other suggestions made by the reviewers. Your writing is of high quality and the overall experience of reading the manuscript is enjoyable and informative.

The reviewers are divided on the current state of the manuscript, but I am looking for the possibilities. I urge you to undertake these revisions and update and focus your work. If you wish any further assistance, or elaboration or clarification, please contact me. And I sincerely wish you all the best for your revisions.

Consulting Editor(s)' Comments to Author:

Consulting Editor: 1

Comments to the Author

I've read through this article twice, looking in particular for how its findings might serve to more effectively offer positive opportunities to low-income children, especially those in the developing world, to connect with and learn about nature. I also tried to gain a clearer sense

of what can be learned from earlier research about children's perceptions about nature. The main lesson I gleaned from the article is that little attention has in fact been addressed to this issue--even though 65 articles were reviewed with an eye to learning more about what had been previously studied. From this standpoint, the article provides few new insights that could advance the instruction, theory, method, and/or practice of EE.

I feel that what the author is attempting to discover is important, especially with regard to ways children in the developing world (or children in urban poverty anywhere) could be provided with meaningful experiences in nature. If this idea could actually be developed with regard to the literature review and meta-analysis, the article could potentially say something quite meaningful.

Consulting Editor: 2

Comments to the Author

There are some minor typos to attend to as noted in the edited pdf attached.

An interesting paper and well researched.

4.2.1.1. Authors' rebuttal to reviewer comments for Revision 1

The authors' rebuttal to revision 1 of this manuscript is presented below.

Executive Editor Comments

Comment 1

The purpose of the review is not made clear enough.

Authors' response

This has been attended to by the re-writing of the rationale of the article. Essentially we are arguing that our study aims to provide a systematic account of children's subjective perceptions, sense making, meaning assignation, and experiences of natural spaces. The focus is therefore on children's subjective understanding and children as primary respondents. It is not intended, as the first Consulting Editor contends: "a focus on children living in poverty in the developing world and how they could be provided with meaningful experiences in nature". The reference to South Africa is to contextualise the study. Hence we reviewed all studies, regardless of their development and economic status. The results in fact point to locations with diverse socio-economic contexts wherein studies were conducted. We feel

that the strength of this article is on the rigorous article appraisal process and the in-depth textual narrative analysis technique that was used to synthesis the findings.

Comment 2

The review ends at 2013

Authors' response

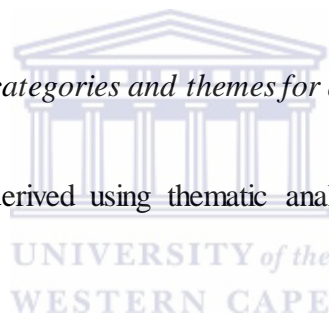
This review was completed in early 2014. However, due to protracted internal review processes at the home University and an unfortunate extended manuscript review process at the Journal, the articles missed the publications between 2014 to 2015. This has been attended to by conducting further article appraisals as suggested by the executive editor. It is important to note that the inclusion criteria for this review was empirical articles and excluded theoretical and commissioned reports. The new articles included in the review has been synthesised into the discussion of the results.

Comment 3

Make clear how you derived the categories and themes for analysis

Authors' response

The themes and categories were derived using thematic analysis. This has been mentioned in the manuscript.



Consulting Editor 1

The concern raised by the editor is addressed above.

Consulting Editor 2

The reviewer provided recommended changes related to stylistic and grammatical errors. All of the recommendations have been attended to.

*We would like to thank the executive editor and consulting editors for the comprehensive review which has contributed to substantial improvements to the article.

4.2.2. Revision 2

ee@jcu.edu.au jee@jcu.edu.au

Wed, Aug 19, 2015 at 1:35 AM

To: *sabirah.adams@gmail.com*

18-Aug-2015

Dear Miss Adams:

The reviewers of The Journal of Environmental Education have made a thorough examination of manuscript ID 02-14-186.R1 entitled "Nature as Children's Space: A Systematic Review" and have determined that the manuscript requires some major revisions. Therefore, I invite you to respond to executive editor's comments, which will inform you which aspects of reviewers' comments should be addressed in your revision.

Thank you for submitting your manuscript to The Journal of Environmental Education. Please contact me with any questions, and I look forward to receiving your revision.

Sincerely,

Jennifer Nicholls

Managing Editor, The Journal of Environmental Education
jee@jcu.edu.au



Executive Editor's Comments to Author:

The reviewers have considered your work again, please see their comments. Neither reviewer considers the quality, breadth or depth of the manuscript to be publishable in its present form. You will have to spend a great more time and effort on your paper if you wish to have it published in an international journal such as the JEE. One reviewer suggests an outright rejection and the other has made number of suggestions (please see the attached pdf) for a moderate revision. I have looked at the manuscript and I see progress, but you are not there yet. I have recommended major revisions. It is up to you whether you wish to keep working on revisions and improving your manuscript. My advice is that for this paper to be published, you do have to reach international standard and there are still areas of weakness in your analysis and synthesis. The opportunity for you remains open. I wish you the very best with your research.

Consulting Editor(s)' Comments to Author:

Consulting Editor: 1

Comments to the Author

Not enough has been changed in this article to lead me to feel that it should be published. What remains clear is that the research the author was able to identify does not really grapple with the issues that concern him/her: information about what nature actually means to children. The author does assert that despite this limitation extant research does "provide key insights into children's perceptions of natural spaces and places," but these insights are not highlighted in the article nor used to suggest more productive lines of inquiry. As before, what I find especially lacking is much discussion of what can be found from earlier studies about ways lower-income children relate to nature, something that could have been potentially discovered in a number of studies with regard to "children's perceptions of natural spaces and places" that do focus on this demographic. Although the author looked at a wide range of articles, what I miss is a meta-analysis that provides some new level of understanding.

Consulting Editor: 2

Comments to the Author

This is a comprehensive review, but does require detailed revision to ensure clarity and consistency throughout. The author should address the following items:

consistently applying past tense; rewording to be more concise and clear; avoiding two headings in a row always provide an introduction for each of the four themes; renaming the themes with letters not numbers to enhance clarity; reviewing the reference list in detail; indicating ages of children; and, checking cities and/or countries for consistency. Detailed editing is offered in the pdf attached.

The numbers of papers in each theme is worth noting and perhaps a comment about this, why is it skewed towards certain themes? Also, more could be made of the point about children's perceptions not being so evident in the research papers reviewed.

4.2.2.1. Authors' rebuttal to reviewer comments for Revision 2

The authors' rebuttal to revision 2 of this manuscript is presented below.

Dear Editor,

The initial feedback received from you on the 10th of June 2015 indicated that one consulting reviewer recommended substantial changes, while the other mostly pointed to minor editorial amendments. You also pointed out that your opinion sits between these two reviewers, where after you provide substantial details on the amendments that should be effected. Our first resubmission was therefore largely based on following your recommendations. Subsequently we have received a second round of feedback from reviewers which we have now addressed as outlined below. We would like to point out that we have attended to all the changes as suggested by the second consulting reviewer which we feel has contributed significantly to improving the article. The comments made the first consulting reviewer were largely addressed. The reviewer's main concern was as follows:

“I feel that what the author is attempting to discover is important, especially with regard to ways children in the developing world (or children in urban poverty anywhere) could be provided with meaningful experiences in nature. If this idea could actually be developed with regard to the literature review and meta-analysis, the article could potentially say something quite meaningful.”

We would like to point out that it would not be possible for us to address the above concerns given that the aim and design of this study was to provide a systematic review of the literature, specifically using Lucas et al.'s (2007) Textual Narrative Synthesis as the analysis technique. We are unable to conduct a meta-analysis given the scope of the review which included studies employing both qualitative and quantitative methods. Narrative textual analysis is an acceptable technique within a systematic review design. We feel that it provides sufficient depth of interpretation in the current study.

Consulting Editor 1 comments

Comment 1

What remains clear is that the research the author was able to identify does not really grapple with the issues that concern him/her: information about what nature actually means to children.

Authors' response

As pointed out in the review, there are very few studies that explicate how children make sense of nature; thereby identifying a gap in the literature. While all the studies asked children about their perceptions of a particular aspect of nature, it was identified that there are very few studies using a qualitative methodological framework which asks children about

their perceptions and constructions of natural spaces. More so the authors state that “more research is required to allow for a better understanding as to how children in differing circumstances and SES communities construct nature, and what their perceptions of nature are before we can begin to ask them when, how or why they engage in nature.”

Comment 2

The author does assert that despite this limitation extant research does "provide key insights into children's perceptions of natural spaces and places," but these insights are not highlighted in the article nor used to suggest more productive lines of inquiry.

Authors' response

The key contributions of each the studies in the review which enable us to better understand children's understandings are specified within the analysis section as well as in the discussion and conclusion of the article. More specifically, the discussion section outlines the findings of the study in terms of method, context, and theory and key findings of the reviewed studies. It is key to note that the review has left us with many questions unanswered, thereby providing a rationale for future studies to focus on this dearth of scholarly research.

Comment 3

what I find especially lacking is much discussion of what can be found from earlier studies about ways lower-income children relate to nature...

Authors' response

As mentioned in an initial response to this comment by the first consulting editor, the focus of the review was not on children from lower-income groups. The main purpose of the review was to address the gap in the literature concerning a systematic review to systematically locate and present the findings of studies which explore children's subjective perceptions of nature. We have now added a paragraph which speaks to the nuances and diverse understandings of low and middle socio-economic status communities in the identified studies. Given this dearth in the literature, the authors have, however, conducted a study to explore children's discursive constructions of nature to begin addressing the dearth identified in the review.

Comment 4

Although the author looked at a wide range of articles, what I miss is a meta-analysis that provides some new level of understanding.

Authors' response

It is critical to note that the systematic review in this manuscript utilised the synthesis technique of *Textual Narrative Analysis* which aims to provide a synthesis of the studies in terms of its content, age cohort, context and method, and theory. As the review included studies employing both quantitative and qualitative methodological paradigms, we did not use a meta-analysis which would have biased the qualitative studies.

Consulting Editor 2 comments

All grammatical and editorial changes suggested by this reviewer were effected.

Comment 1

This consulting editor suggested that introductory paragraphs are added to each theme, as well as the number of articles within each theme and comment on the skew toward certain themes.

Authors' response

The authors have addressed the comments of the second consulting editor. We have added a section to the analysis and discussion section which speaks to the number of studies in each theme, and a possible explanation for this. Additionally, we have also addressed the issue of children's voices not being very evident in many of the research studies in the review.

Comment 2

A clear time frame is important for such reviews.

Authors' response

The time frame for the review is specified in the method section of the manuscript. However, the point is taken that in reference to the last two decades in the introduction, older references should be removed.

Comment 3

why additional databases, why not state seven were used?

Authors' response

It is crucial in a systematic review to detail the process which brought the researcher to the current studies. The initial databases which were used did not yield the most appropriate results, and when doing further searches using these additional databases many more appropriate articles were found. For the systematic review it was critical to document this process in the method section.

Comment 4

It was suggested to change the word appraisal to initial.

Authors' response

We however, cannot change this word as this is the formal phase which is made reference to in the literature on systematic reviews.

Comment 5

Refine this last paragraph the detail seems unnecessary .Why mention this review and later addition?

Authors' response

It was important to include the later inclusion of relevant 2015 articles as the review we conducted only included articles until the end of 2014 as this was the time we submitted the manuscript. This addition was external to the initial systematic review we conducted and is crucial to document in the article search strategy section of a systematic review due to the importance of rigour.

Comment 6

are there any from indigenous communities? This is an essential group to consider and include

Authors' response

None of the studies included children from indigenous communities, however, we have included this neglected cohort of children as a recommendation for future research studies.

4.2.3. Revision 3

jee@jcu.edu.au <jee@jcu.edu.au> Mon, Dec 7, 2015 at 1:02 AM

To: sabirah.adams@gmail.com

06-Dec-2015

Dear Miss Adams:

The reviewers of The Journal of Environmental Education have made a thorough examination of manuscript ID 02-14-186.R2 entitled "Nature as Children's Space: A Systematic Review" and have determined that the manuscript requires some moderate revisions. Therefore, I invite you to respond to executive editor's comments, which will inform you which aspects of reviewers' comments should be addressed in your revision.

Once again, thank you for submitting your manuscript to The Journal of Environmental Education. Please contact me with any questions and I look forward to working with you.

Sincerely,

Managing Editor, The Journal of Environmental Education

jee@jcu.edu.au

Executive Editor's Comments to Author

Comments to Author:

Thank you for your previous revision. The expert reviewer has kindly looked at the next version of your manuscript and has indicated that the standard of your writing is still not of the level to be accepted for international publication. At JEE we can only consider manuscripts that are cleanly written and correct in all aspects of grammar and punctuation. Please attend to all the comments provided by the reviewer, who has spent a lot of time with your manuscript. You need to take greater care with sentence length, narrative rhythm and presentation. It is no good publishing a manuscript that will be ignored due to scrappy writing and presentation. You must think of your readers' needs. You still sound like you are trying to convince yourselves in this work, when really, you should be on top of the content and technicalities, and be aiming your work at convincing and informing others. My advice is to keep writing your way into understanding and use this next revision as a serious opportunity to improve the quality of your writing. Seek further advice on how to write well. There are many resources available. Your reviewer has been very kind to provide further commentary. My best wishes for this next round of revision. And if you have any further queries, please contact the JEE.

Consulting Editor(s)' Comments to Author

Consulting Editor: 1

Thanks for attending to the previous edits, now a second revision is indicated to ensure this is the best possible article. The issues noted in the attached pdf relate mainly to somewhat long and unclear sentences in parts, inappropriate tense, incorrect referencing and grammar and the need for some academic generosity in critique. The tables are comprehensive, but when listing the research foci it would be more readable if the items were grammatically consistent, ie begin all with a noun or verb not varied. Publishers will advise this in texts

where dot points are listed. I trust you will be able to attend to these aspects and wish you well in finalising this paper.

4.2.3.1. Authors' rebuttal to reviewer comments for Revision 3

The authors' rebuttal to revision 3 of this manuscript is presented below.

Dear Editor,

Your email communication dated the 06th December 2015 refers:

You indicated that the "The reviewers of The Journal of Environmental Education have made a thorough examination of manuscript ID 02-14-186.R2 entitled "Nature as Children's Space: A Systematic Review".

However, when attending to the changes suggested by the reviewer for this third round of revision, it was noted that the reviewer made comments to the previously reviewed first resubmission (Manuscript ID: 02-14-186.R1) and not the second resubmission (revision 2-manuscript ID 02-14-186.R2), which was uploaded on the 22nd September 2015. All the issues pointed out by the reviewer have already been attended to in the ID 02-14-186.R2. The R2 version also reflects the useful recommendations made by Reviewer 2 in the previous round of reviews. These include changes to the introduction, the addition of further information under a separate heading for the rationale, further consideration of children's rights in the discussion section, and the addition of introductory narratives for each theme. Based on recommendations of Reviewer 2, the R2 version of the manuscript was also sent to a professional academic editor for editorial review prior to being resubmitted. There was some discrepancies between the academic editor recommendations and those of Reviewer 1.

As a way forward, we have uploaded Revision 3 which reflects all the changes as suggested by the reviewers; we have also attempted to reconcile differences in opinion between Reviewer 1 and the academic language editor with regard to grammar and stylistic issues.

Revision 3

Comment 1

a spirit of academic generosity is required here and elsewhere

Authors' response

This article was deleted from the review after the second round of re-submissions based on one of the Reviewer comments of reviewer 2.

Reviewer comment 2

quotation marks should be single t'out

Authors' response

The quotation marks cannot be single as it is a direct quote taken from Malone (2004).

Reviewer comment 3

can any review do this? is this a reasonable critique? (While these reviews provided substantial insights into the content explored, particularly the review by Chawla & Cushing (2007a), the reviews were not systematic reviews, and did not include all studies in the field.)

Authors' response

The point which the authors are making here is that these were literature reviews which did not follow the standardised process of a systematic review which are governed by rigorous methodological guidelines. These include for example, an indication of the article search strategy (detailing inclusion and exclusion criteria), the appraisal tool and data extraction protocol. The articles which were included in the review by Chawla and Cushing (2007a) were purposefully selected by these authors.

4.2.4. Revision 4

jee@jcu.edu.au <jee@jcu.edu.au> Tue, May 10, 2016 at 8:50 AM

To: sabirah.adams@gmail.com

10-May-2016

Dear Miss Adams:

The reviewers of The Journal of Environmental Education have made a thorough examination of manuscript ID 02-14-186.R3 entitled "Nature as Children's Space: A Systematic Review" and have determined that the manuscript requires some revisions. Therefore, I invite you to respond to executive editor's comments, which will inform you which aspects of reviewers' comments should be addressed in your revision.

Because we are trying to facilitate timely publication of manuscripts submitted to The Journal of Environmental Education, your revised manuscript should be uploaded as soon as possible.

Once again, thank you for submitting your manuscript to The Journal of Environmental Education. Please contact me with any questions and I look forward to working with you. Sincerely,

Managing Editor, The Journal of Environmental Education jee@jcu.edu.au

Executive Editor's Comments to Author:

Firstly, I sincerely apologise for the time this paper has been in review and for the length of time you have had to wait for this next feedback on your manuscript. The reviewer has provided an annotated copy of your manuscript to consider. There are still revisions to be made concerning the quality of your sentences and general readability of the entire piece. Please go through this manuscript very carefully, sentence by sentence, and edit for clarity and readability. You may wish to double check latest publications to see if there is any new work to be added to update and refresh your work. Please make sure this potential paper is as clearly written as possible, thank you. Again, I apologise for the delay and I wish you all the best with your latest revisions.

Consulting Editor(s)' Comments to Author:

Consulting Editor: 1

Comments to the Author

The author(s) has made significant progress in refining and consolidating this work and responded to the feedback offered effectively. The paper is much stronger and more coherent. There are some further minor edits required around tense, referencing, clarity of meaning, spelling, table alignment with text and over use of some words. When checking your work do ensure that the same words are not over used in the one sentence. The aim is to be with key terms, but also to create a clear and engaging read for the audience. Attention to detail is important in finalising papers for publication. With some further minor edits I support publication.

4.2.4.1. Authors' rebuttal to reviewer comments for Revision 4

The authors' rebuttal to the final revision of this manuscript is presented below.

Dear Editor,

09 June 2016

We have now effected the recommended changes by the executive editor as well as the consulting editor for the manuscript entitled "Nature as Children's Space: A Systematic Review" (Manuscript ID 02-14-186.R3). The particular amendments to the manuscript are detailed below.

As per the executive editor's suggestion we conducted another title search for any relevant latest published articles. From this search, another six articles were added to the review. The manuscript has also undergone another round of English editing as recommended.

Additionally, all the changes suggested by the reviewer in the annotated document of revision 3 have been effected. We have maintained the table numbers as numeric as they follow a coherent sequence at present, and reference is made to them in the appropriate sections.

Best regards,

Sabirah



4.3. Reflections on the review process

The review process for this journal was protracted and culminated in a period of one year and five months. The greatest challenge other than the extended review process was the major discrepancies in the reviewer comments across the three revisions. In the first round of revisions, the feedback from the executive editor was generally positive, while reviewer one recommended major changes to the manuscript and reviewer two recommended minor changes, predominantly related to editorial and grammatical amendments. In the second round of revision, however, the comments by the second reviewer in revision one were unacknowledged, and the reviewer one was maintained, and included an additional third reviewer. Again, the comments from the first reviewer were not positive, as this reviewer found difficulty in understanding the importance of the work, while the third reviewer provided crucial feedback in terms of structural and content. This third reviewer appeared to be more familiar with the methodology of systematic reviews, and provided feedback which substantially improved the manuscript.

The key concern with the comments by reviewer one in the second round of revisions was the recommendation that the data synthesis technique employed, Textual Narrative Analysis,

should be changed to meta-analysis which is a quantitative disaggregation of the data. This suggestion was however, untenable as the systematic review included both quantitative and qualitative studies. More so, this suggested synthesis technique did not suit the purpose of the review. Notwithstanding the prolonged review process, in round three of the revisions, only reviewer one was asked to comment on the third round of changes. The reviewer incorrectly reviewed the previously changed second revision, and not the third revision. The comments by the reviewer in this round were only around grammatical and structural revisions.

Feedback for the fourth round of revisions (reviewer comments on the correct revision 3) were similar to those for revision three, and comprised attending to editorial changes and conducting another round of searching for the latest articles. This culminated in the final changes to the manuscript. Given these reflective comments on the review process, Chapter Four: Article 1 is presented below.



Nature as Children's Space: A Systematic Review

Sabirah Adams¹ & Shazly Savahl¹

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***Article submitted to: *Journal of Environmental Education* (Accepted 08 December 2015)**

Abstract

The emerging interest in 'spaces of childhood' over the past two decades can be identified in a number of disciplines. A substantial body of research has indicated that children's active engagement within the natural environment as a space has been associated with a range of cognitive, physical, affective, and moral developmental benefits. Although research on children's space and place is a burgeoning field, there is currently only one identified systematic review within the literature investigating the benefits of children's engagement in nature. The aim of this paper was thus to systematically review and synthesise the findings of children's understandings and engagement with nature as a space. After a systematic search of the literature, 81 articles were included in the review with reviewed studies spanning across children from aged 3 to 18 years old. The review underscores four thematic domains derived utilising thematic analysis. It is ostensible from the results that children's perceptions of, and engagement in nature as a space and place are multifarious, benefiting children's well-being in a myriad of ways. At a foundational level, more research is required to better understanding how children in differing contexts construct nature.

Keywords: children's environmental perceptions; systematic review; children's well-being; nature; space and place

Introduction

The emerging interest in ‘spaces of childhood’ over the past two decades can be identified in a number of disciplines, ranging from sociology, psychology, law, anthropology, and history to landscape architecture, urban design, human geography and children’s geographies. A growing body of researchers (see Cross, 2001; Hart, 1994; Huynh, 2013; Kong et al., 2000; Langhout & Annear, 2011; Loxley, O’Leary, & Minton, 2011; Philo, 2000; Scannell, & Gifford, 2010) contend that there are multiple ways of conceiving of the ‘spaces’ and ‘places’ in which children engage. While some scholars refer to ‘children’s places’ or ‘children’s spaces’, others make reference to the ‘intimate geographies of childhood’ (Philo, 2000), ‘children’s geographies’ (Hart, 1984), ‘children’s micro-geographies’ (Robinson, 1984), children’s ‘sense of place’, ‘place attachment’ (Hummon, 1992, Low & Altman, 1992; Moore & Graefe, 1994), ‘place to belong’ (Kjørholt, 2003), ‘topophilia’ (Tuan, 1974), ‘insidedness’, ‘rootedness’, or ‘community sentiment’. Place-based notions and their related imaginative geographies (Holloway & Valentine, 2000) hold significance for exploring how children make sense of and attach meaning to their lives. The exploration into children’s subjective accounts of their lives, allows one a brief journey into how their socio-spatial identities are constructed (Jones, 1999). As Louv (2008) points out, within the spaces they inhabit, children need to be able to test, experiment, fail, and succeed. For children, experimentation, play, and leisure activity are elements of the process of discovery, socialisation, and the expression of emerging identity (Kleiber, 1999). The natural environment in particular has been identified as a significant space that children engage in and explore, and been shown to contribute positively to their well-being (Adams & Savahl, 2015; Bird, 2007; Chawla, 1988, 2002, 2007; Evans et al., 2007; Hart, 1997; Louv, 2008; Phenice & Griffore, 2003; Wals, 1994; Wells, 2000).

A substantial body of research has indicated that children’s active engagement within the natural environment as a space has been associated with a range of cognitive, physical, affective, and moral developmental benefits (Fjortoft, 2001; Kaplan & Kaplan, 1989, 2002; Kellert, 2005; Louv, 2008; Moore, 1986; Wells, 2000; Wells & Lekies, 2003). Children’s engagement with nature has also been linked to the acquisition of a sense of independence and autonomy, and the development of subjective geographies through the physicality of playing, exploring, living, and learning (Robertson, Cooper, & Walford, 2001, as cited in Abbott-Chapman & Robertson, 2009).

However, many children across the world, particularly within developing countries are confronted with the challenge of limited access to safe natural environments. In South Africa, for example, children are still burdened by the socio-political legacy of disenfranchisement, violence, oppression, and institutionalised racism. The spaces and places that the majority of the population had access to was controlled by discriminatory policies which separated ‘racial groups’⁶, resulting in widespread inequalities in the social and natural environments and spaces available to children (Moses, 2005). Children therefore, have fewer opportunities for outdoor recreation and engagement in natural spaces (Kahn, 2002) - essentially denying them their right to engage in safe, child-friendly natural spaces.

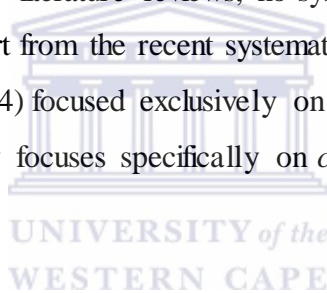
Whilst the issue of environmental conservation and protection has gone beyond that of a seasonal or fashionable interest in many countries, many governments globally are now considering the multi-layered issues and concerns of environmental damage, protection, mitigation, and advocacy as key on their agendas. Despite the importance and urgency afforded to environmental concerns the world over, the burden of social inequality and deprivation for many populations including children often outweighs this and takes precedence (United Nations Children’s Fund, 2013). For many individuals, the majority of whom reside in developing contexts, basic needs of food, shelter, and sanitation, have either not been met, or met adequately. For these reasons, fundamental factors in relation to poverty, access to primary health care services, safety, education, and demarcated safe natural spaces for children still impact the majority of children. There is general acknowledgement amongst researchers that children residing in varying socio-economic backgrounds display disparate and diverse experiences of childhood, reflecting the plurality of ‘childhoods’ (Jenks, 2004). It is thus important to be mindful of the diversity of childhoods in terms of class, gender, ethnicity and culture as well as the related construct of ‘race’ (Savahl et al, 2015), and how these factors impact on children’s engagement and experiences with nature.

Rationale for the review

As noted by Chawla (2007), much of the research concerning children’s environmental perceptions in the late 1980’s was retrospective studies - research on the significant life

⁶ The racial groups, that is ‘Coloured’, ‘Black’, and ‘Indian’, were employed as racial categories within the Apartheid era to reinforce a segregated society, and refer to those who were not afforded the same benefits as ‘Whites’ in this era. These terms are used here solely for descriptive purposes, and does not imply acknowledgement of these terms by the author.

experiences of adults drawn from their childhoods. The dearth of studies concerning children's perceptions about natural spaces gave rise to the need for further research. This was followed by a burgeoning number of studies across various disciplines endeavouring to explicate children's natural environmental preferences and perceptions (see Aaron & Witt, 2011; Boeve-de Pauw, & Van Petegem, 2011; Collado et al., 2015; Fjortoft, 2001; Wals, 1994). Although research on children's space and place is a burgeoning field, evident in the extant international literature, accounts from developing countries remain limited. Furthermore, as Gill (2014) notes, empirical initiatives vary in terms of theoretical focus, context, and quality. Systematic reviews provide a methodologically rigorous opportunity to evaluate the state of research on children's engagement with natural spaces (Abalos, Carroli, Mackey, & Bergel, 2001). In particular, this review provides a systematic account of how the research studies were conceptualised, the sampling strategy and participants, the research context, data collection methods, theoretical grounding, and key findings. While the literature in the field abounds with countless literature reviews, no systematic review of this robust literature has been conducted apart from the recent systematic review by Gill (2014). However, in his review (Gill, 2014) focused exclusively on the benefits of children engaging in nature; while the current review focuses specifically on *children as respondents* and their *perceptions of nature as a space*.



Aims of the study

The aim of the current study was to systematically review and synthesise the findings regarding children's understandings and engagement with nature as a space. Within this process, the review was concerned with providing a systematic account of empirical initiatives that investigated how children subjectively assign meaning to, make sense of, experience, and perceive natural spaces. The review focused on empirical studies conducted with children aged 3 to 18 years old, from the year 2000 to 2015.

Method

Review question

- How do children make sense of, assign meaning to, experience, and perceive natural spaces?

Article Search

Multiple resources, from both electronic and print, were consulted for the review. Amongst electronic resources several databases were searched to access studies published in English from the year 2000 to 2016. The intent was to utilise only EbscoHost, JSTOR, Science Direct, and PsycINFO, however, three additional databases were included, namely Academic search complete, GreenFile, and EconLit to identify additional related studies. A preliminary scoping search was conducted to identify key studies in the field. The following keywords were initially used to broaden the search within the aforementioned databases: nature; children; childhood/s; space and place. The initial searches using these keywords only yielded a small number of studies pertaining to the topic. When using the additional keywords: 'children's spaces' and 'children's places', 128 results were returned; and adding the word 'nature' to these keywords, yielded 247 articles. By adding the key words 'childhood experiences' and 'children', an additional 10 articles were found.

The inclusion criteria for this review was limited to studies which focused on children's perceptions, meanings or meaning-making, understandings and experiences of and within the natural environment, and natural spaces or places that children engage in. Both qualitative and quantitative studies were included as the review did not endeavour to categorise studies in terms of these two broad methodological frameworks, but instead to provide a comprehensive picture of studies exploring children's perceptions of natural spaces. The exclusion criteria were studies focusing on age groups other than children and adolescents, as well as studies which did not directly ascertain children's perceptions. An exception was made for retrospective studies with adults which focused on their engagement with nature during childhood. Reports and commissioned literature reviews on various aspects of children and engagement in nature were also excluded.

A difficulty encountered in the appraisal phase of the review was that many studies were found which holistically examined children's local environmental mobility and perceptions of their neighbourhood environment. In almost all of these studies (Bjorklid, 2004; Dahl et al., 2013; Laughlin & Johnson, 2011; Staempfli, 2009), it emerged that nature was mentioned by children as a space with which they engaged at various times, or a space which was synonymous with danger. However, the focus of these studies was not on children's understandings of nature per se, nor nature as a space. Whilst these studies are important and

provide important insights into child-friendly cities and communities (CFC), it was decided to exclude these studies.

Quality Assessment

Inherent within each step of a systematic review is the evaluation of the quality of a published study. The studies included in the review were rigorously assessed by utilising an adapted version of the *Evaluation Tool for Qualitative Studies* and the *Evaluation Tool for Quantitative Research Studies* (Long et al., 2002; Long & Godfrey, 2004). The assessment was crucial in evaluating the strength of the inferences and conclusions arrived at in the specific published studies, as well as making recommendations for prospective research. It was at this stage that a second independent reviewer appraised studies to be included in the review.

Data extraction

The details of the final appraised studies included in the review were captured using an adapted Data Extraction Tool as presented in Table 1. The key focus areas in the data extraction table (Author, Focus of research, Age cohort, Sample composition, Area/ context, Method, and Framework) complemented the data synthesis technique employed, namely *Textual Narrative Synthesis*, (Lucas, Arai, Baird, Law, & Roberts, 2007) discussed below.

Data synthesis

Data were synthesised using the *Textual Narrative Synthesis* approach as proposed by Lucas et al. (2007). This synthesis technique enables the researcher to organise studies into homogeneous groups. Using this synthesis method, the studies included in the review were categorised in terms of six main categories: study characteristics in terms of the type of research, scope and focus of research, context, quality (content and method), theory, and findings. All of these categories were reported on using a standard format, where similarities and differences were compared across studies. This synthesis technique has shown to be effective in synthesising evidence from both qualitative and quantitative studies (Lucas et al, 2007). Structured summaries were developed, thus expanding on, and illuminating the context of the extracted data. When comparing *Textual Narrative Synthesis* with thematic synthesis, Lucas et al. (2007) found that the former enables the identification of heterogeneity between studies, as well as concerns around quality appraisal. They attribute this to the explication of the context and key features of studies using *Textual Narrative Synthesis*. One

of the weaknesses of this approach which was identified by Lucas et al. (2007) was that this type of synthesis is less equipped to detect similarities between studies. In this paper, we addressed this concern by grouping the vast number of studies into thematic domains, using thematic analysis, which allowed the researchers to clarify similarities and differences between studies. This was further supplemented by the data extraction tool which dovetailed the process. The studies in the review were categorised into four main thematic domains, as outlined in full below.

Results

The aim of this study was to systematically review and synthesise the findings of children's understandings and engagement with nature as a space. Using *Textual Narrative Synthesis* as proposed by Lucas et al. (2007), the key aspects referred to above are addressed, preceded by a detailed summary of the final article search procedure. The studies were synthesised within the four thematic domains based on the focus of each study, namely *Children and outdoor activity spaces*; *Environmental Education and promoting active care for nature*; *Direct experiences in and effects of natural spaces and places*; and *Children's perceptions of natural spaces and places*. These thematic domains are discussed in detail below.

Article search procedure

A total of 247 articles were yielded from the specified database searches (see Method). Based on a subsequent title search of these, 127 were included for abstract appraisal, thus excluding 120 as they did not meet the inclusion criteria. In addition, many used the term 'nature' in terms of the first denotation which Macnaghtan (1993) refers to, that of *intrinsic nature* referring to the essential characteristics of a thing (e.g. the nature of childhood), and not as the authors define *nature* in terms of the natural world. Of the 127 articles included for abstract appraisal, a further 71 were excluded after this process; thus, the remaining 57 articles were included. An additional 34 articles were included for appraisal based on reference list mining of the initial 57 articles. Of the 91 articles (that is the initial 57 plus the additional 34 from the reference list mining), 64 articles met the inclusion criteria and were incorporated in the final systematic review. The 34 excluded studies did not have a specific focus on children's perceptions of natural spaces but instead that of adults and teachers; while five studies were poorly executed, explained, or had unaligned methods sections. During the review process for this manuscript, from the date of submission until the point of the executive editors' decision to accept the manuscript, several relevant articles were published

which also contributed richly to this review. Along with reviewer and editors' suggestions, another title and abstract search was conducted using the aforementioned databases to locate and include these articles. Once this final search was completed, an additional 21 articles were found and assessed based on a title search. Thereafter, 4 were excluded as they either did not convey children's voices, or were not empirical studies. This resulted in an extra 17 articles being included, with a final total of 81 articles included in the review.

Figure 1 below depicts this process.

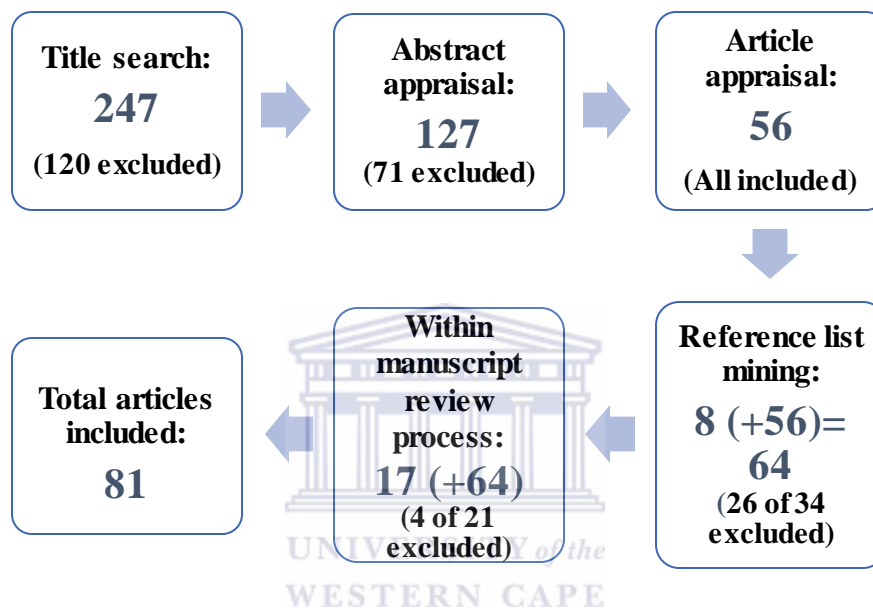


Figure 1. Article search and appraisal process

1. Type of research

The 80 articles included in the review were broadly categorised into four types, that is empirical work with children, review articles, retrospective studies on formative nature experiences during childhood, and articles proposing a framework for understanding more broadly children's engagement with nature (See Table 1 below). It was found that most articles were empirical studies employing both qualitative and quantitative methods and with various age cohorts of children ranging from pre-school (aged three to five years old), primary school (aged 7 to 12 years old), to children in secondary school (aged 13 to 18 years old). Additionally, 9 of the articles were review articles focusing on various aspects of child-nature interaction, and engagement and experiences, while only two retrospective studies were found. A further two articles endeavoured to construct a framework for understanding the connection between children engaging in nature and health outcomes (Lachowycz & Jones, 2009) and harnessing a lifelong appreciation for nature (Chawla, 2007). Only one

systematic review study was found in the literature focusing on the benefits of children's engagement with nature (Gill, 2014).

Table 1: Type of research article

Article type	Amount	Authors
Empirical article	65	Aaron & Witt (2011); Adams & Savahl (2015; 2016); Adams, Savahl, & Casas, (2016); Bell et al. (2008); Benson (2009); Bixler et al (2002); Bizzarri (2004); Boeve-de Pauw et al., (2011); Bogner & Wiseman (2004); Burgess & Mayer-Smith (2011); Burke (2005); Castonguay & Jutras (2009); Cheng & Monroe (2012); Collado et al. (2013); Collado & Corraliza (2015); Collado et al., (2015); Corraliza et al. (2011); Dai (2011); Dymont & Bell (2008); Evans et al. (2007a); Evans et al. (2007b); Fjortoft (2001); Fjortoft & Sageie (2000); Gunindi (2012); Hordyk et al., (2014); Huynh et al (2013); Kals & Ittner (2003); Kerret et al., (2016); King & Church (2013); Kopnina (2011a; 2011b); Kong (2000); Kuo & Taylor (2004); Li & Lang (2014); Liefländer et al., (2016); Linzmayer & Halpenny (2013); Leong et al. (2014) MacDougall et al. (2009); Mahidin & Maulan (2012); Malone & Tranter (2003); Manoli et al. (2014); Melhuus (2012); Min & Lee (2006); Nairn et al. (2003); Ozdemir & Yilmaz (2008); Palmberg & Kuru (2000); Panelli & Robertson (2006); Rasmussen (2004); Ridgers et al. (2012); Sancar & Severcan (2010); Snaddon et al. (2008); Taylor et al. (2001); Taylor et al. (2002); Tranter & Malone (2004); Tuncer et al. (2005); Turtle et al., 2016; Veitch et al. (2007); Van Petegem & Blicck (2006); von Benzoni (2011); Wells & Evans (2006); Wells (2000); Yatiman & Said (2011); Yilmaz et al. (2008); Zhang et al., (2014)
Review article	10	Aziz et al. (2012); Chawla (2006b; 2009); Chawla & Cushing, 2007; Gill (2014); Keniger et al. (2013); Malone (2004); Moore & Marcus (2008); Strife & Downey (2009); Taylor & Kuo (2006)
Retrospective studies	2	Chawla (2006a); Wells & Lekies (2006)
Framework	3	Chawla (2007); Kerret et al. (2014); Lachowycz & Jones (2009)

2. Scope and focus of research

The research focus of the 80 studies in the review can generally be divided into four thematic domains, as referred to above, namely:

- a) *Children and outdoor activity spaces;*
- b) *EE and promoting active care for nature;*

- c) *Direct experiences in and effects of natural spaces and places*; and
- d) *Children's perceptions of natural spaces and places* (See Table 2 below).

Each of these domains will be discussed in greater detail below.

Table 2: Thematic Domains

Thematic domain	Authors	Amount
1. Children and outdoor activity spaces	Aziz et al. (2012); Bell et al. (2008); Castonguay & Jutras (2009); Malone & Tranter (2003); Palmberg & Kuru (2000); Tranter & Malone (2004)	6
2. EE and promoting active care for nature	Bogner & Wiseman (2004); Burgess & Mayer-Smith (2011); Chawla & Cushing (2007); Collado et al. (2013); Hordyk et al. (2014); Liefländer et al. (2016); Malone (2004); Manoli et al. (2014); Turtle et al. (2015)	9
3. Direct experiences and effects of natural spaces and places	Bixler et al (2002); Chawla (2006a); Chawla (2006b); Chawla (2007); Chawla (2009); Corraliza et al. (2011); Dymment & Bell (2008); Fjortoft (2001); Fjortoft & Sageie (2000); Gill (2014); Gunindi (2012); Huynh et al (2013); Kals & Ittner (2003); Keniger et al. (2013); Kellert (2005); Kerret et al. (2014); Kuo & Taylor (2004); Lachowycz & Jones (2009); Linzmayer & Halpenny (2013); Moore & Marcus (2008); Panelli & Robertson (2006); Rasmussen (2004); Strife & Downey (2009); Taylor & Kuo (2006); Taylor et al. (2001; 2002); Wells & Evans (2006); Wells (2000); Wells & Lekies (2006)	27
4. Children's perceptions of natural spaces and places	Aaron & Witt, (2011); Adams & Savahl (2015; 2016); Adams, Savahl & Casas (2016); Benson (2009); Bizziril (2004); Boeve-de Pauw et al., (2011); Burke (2005); Cheng & Monroe (2012); Collado & Corraliza (2015); Collado et al. (2015); Dai (2011); Evans et al. (2007a); Evans et al. (2007b); Kerret et al. (2016); King & Church (2013); Kong (2000); Kopnina (2011a; 2011b); Li & Lang (2015); Leong et al. (2014); MacDougall et al. (2009); Mahidin & Maulan (2012); Melhuus (2012); Min & Lee (2006); Nairn et al. (2003); Ozdemir & Yilmaz (2008); Ridgers et al. (2012); Sancar & Severcan (2010); Snaddon et al. (2008); Tuncer et al. (2005); Van Petegem & Blieck (2006); Veitch et al. (2007); von Benzon (2011); Yatiman & Said (2011); Yilmaz et al. (2008); Zhang et al. (2014)	39

a) Children and outdoor activity spaces

The focus of the six studies in this domain explored outdoor spaces in which children interact and engage, encompassing aspects of nature, and how these experiences impact on the child cognitively, physiologically, and emotionally. Using *Textual Narrative Synthesis* as a guide, this domain discussed specifically in terms of content, age cohort, context and method, and theory.

Content

The content and specific focus of the research studies in this domain ranged from children's perceptions of, and the impact of outdoor environmental education programmes (Palmberg & Kuru, 2000), children's favourite places in the outdoors (Castonguay & Jutras, 2009), the influence of green spaces and play in children's school grounds (Bell et al. 2008; Malone & Tranter, 2003; Tranter & Malone, 2004), and a review of the factors impacting children's use of the outdoors in terms of individual, physical and social aspects.

Age Cohort

The review of literature showed that studies in this research area focused predominantly on middle childhood, with children between the ages of 6 and 12-years.

Context and method

The context of the research studies was primarily in developed countries, particularly in middle-income urban areas. The majority of the studies employed qualitative methods (n = 5) with most utilising individual interviews with children, as well as photo-elicitation methods, observations and various types of mapping. The one quantitative study (Bell et al., 2008) utilised multiple linear regression as well as logistic regression, with one review study investigating the factors which influenced children's use of the outdoors.

Theory

None of the studies in this thematic domain were conceptualised using a theoretical framework.

Table 3: Children and Outdoor Activity Spaces

a) Children and Outdoor Activity Spaces						
Author	Focus of research	Age cohort	Sample composition	Area/ context	Method	Framework
Aziz et al. (2013)	This review focuses on factors influencing children's use of outdoors	Children and youth	Published Studies 1985-2010	Malaysia	Review	None
Bell et al. (2008)	The focus of this study was relationship between greenness and children's Body Mass Index (BMI)	3-6years	3831 children	Indianapolis, USA (Urban, middle-income)	Quantitative (Time series: Multiple linear regression, Logistic regression)	None
Castonguay & Jutras (2009)	Children's outdoor place preferences in an impoverished neighbourhood were explored in this study	7-12years	28 (15 girls; 13 boys)	Canada (Low-income)	Qualitative (Photo-elicitation, Interviews)	None
Malone & Tranter (2003)	The focus of this study was one children's outdoor environmental learning and cognitive play at school	8-10years	50 children (5 schools)	Canberra (3) & Melbourne (2) (middle income schools) with varying greenery and landscapes	Qualitative (In-depth interviews, playground observations, drawings, photographic mapping and analysis)	None
Palmberg & Kuru (2000)	This study aimed to understand outdoor activities as basis for environmental responsibility in children	11- 12years	36 children (a)Rovaniemi (n=22: 16boys; 6girls) & (b)Vaasa(uni.) (n=8; 6girls& 2boys); (c)Vaasa(school) (n=6; 2boys; 4girls)	Finland- (a)Rovaniemi & (b)Vaasa(uni.); (c)Vaasa(school)	Qualitative (Questionnaires, Individual interviews, drawings, photo elicitation, participant observation)	None
Tranter & Malone (2004)	The impact of school grounds on the play behaviours of children in primary schools was the emphasis in this study	8-10years	20children (10per 2 schools)	Canberra, Australia (Middle-high income)	Qualitative (Behaviour mapping, interviews with children, and analysis of children's drawings)	None

b) Environmental Education and promoting active care for nature

The nine studies in this thematic domain centred on the impact of environmental education (EE) programmes and initiatives on children's perceptions and behaviour in nature. A key finding across the studies in this theme highlights the various ways through which EE programmes and initiatives for children have been used to foster intrinsic care for nature.

Content

The studies within this domain investigated the effect of environmental education programmes on children's environmental knowledge, their ecological behaviour, possible cognitive changes, positive developmental attributes, nature connectedness, and how this ultimately contributed to children developing a sense of affinity with, and stewardship toward nature. The two review articles (Chawla & Cushing, 2007; Malone, 2004) which were included in this grouping comprised bodies of research that illuminated ways to foster intrinsic care for nature. The article by Chawla and Cushing (2007) specifically highlighted retrospective studies of childhood experiences in, and recollections of nature which laid the foundation for appreciation and protection of the natural world by adult environmental activists and educators. Both reviews placed great emphasis on children's rights and active engagement with issues affecting them, with nature highlighted as an important contributor to children's well-being. The importance of children as decision-makers was maintained, reinforcing the impetus for environmental conservation and sustainability engagement at the political level. An important component of Malone's (2004) review was to frame the understanding of the 'holding environments' concept for children in terms of the three aspects of the social sphere that is the micro, meso, and exosphere to explain children's environmental learning and experience. A holding environment "links the potential space between the self and the environment as having a key role in developing a cultural identity embedded in place" (Winnicott, 1974 as cited in Malone 2004, p. 61). Adding to this definition, Cosco and Moore (2002) emphasised that the more diverse and abundant in opportunity this symbolic space is both socially and physically, the greater the possibility to create an abounding and diverse environmental identity (Cosco & Moore, 2002). Considering the above, Malone (2004) puts forward that natural spaces as 'holding environments' allow one to value the role of children's play spaces by fusing children's intrinsic care for nature with their preference for nature outdoors.

The findings from the studies in this thematic domain indicated that the most effective EE programmes encompass a prolonged period of time, as well as potentialities to learn, encounter, and carry out acquired proficiencies for the environment (see Chawla & Cushing, 2007). Study findings (see Liefländer, 2016) also showed how connectedness with nature should be advanced with children younger than age 11 as EE programmes have found to be more sustainable amongst this age cohort. Additionally, the sense of accomplishment in reaching goals set out by educators in these EE programmes were considered crucial, but more importantly, those determined by children themselves.

Age Cohort

While the review articles included children and youth, the trend of most studies in this domain was to conduct research with children between the ages of 10 and 12 years. The sample composition varied dependent on the method and particular aim of the study.

Context

The studies included in this domain were carried out in differing contexts, namely the United States of America (USA), Bavaria, England, Germany, Spain, and Australia and were all school-related. The socio-economic conditions of the schools from which the participants were selected were only described in a few studies (see Bogner & Wiseman, 2004; Turtle et al., 2016). The study by Collado et al. (2013) explicitly mentioned that the children who participated in the study were drawn from middle-income families, while it was deduced from the other studies, based on the EE programme and description of the research site that the participants resided in middle-income communities. Two of these studies (Bogner & Wiseman, 2004; Burgess & Mayer-Smith, 2011) were school-initiated EE programmes, in particular the study conducted by Burgess and Mayer-Smith (2011) which evaluated a series of summer camps in Spain. The study by Hordyk, Dulude, and Shem (2014) explored children's lived experiences in nature with 19 children who were either refugees or immigrants from five continents within a summer camp.

Method

In contrast to the previous domain, two studies used quantitative methods and used qualitative. The quantitative studies used experimental design to assess the effect of an EE programme. Two review studies were also included in this domain, the first a comprehensive review by Chawla & Cushing (2007) of research on EE to promote active care for nature by

children and youth; the second, a review by Malone (2004) focusing on spaces to promote environmental learning with children. One study employed a mixed methods design by exploring the Earthkeepers education programme (Manoli et al., 2014).

Theory

The study by Burgess and Mayer-Smith (2011) was the only study in this domain which utilised a theoretical framework, namely *biophilia*. The *biophilia* concept relates to the notion that people have an innate predilection toward nature and living things- the “innately emotional affiliation of human beings to other living organisms” (Wilson, 1993, p. 31). These authors endeavoured to contribute to the *biophilia* dialogue and research by exploring *biophilia* in early adolescent development, an area which the author’s dispute is neglected. The study further incorporated and built upon Kellert’s (1996) conception of typologies of environmental values, namely Scientific-Ecological, Naturalistic, Symbolic, Aesthetic, Humanistic, Negativistic, Moralistic, Utilitarian, and Dominionistic.



Table 4: EE and Promoting Active Care for the Environment

b) EE and Promoting Active Care for the Environment						
Author	Focus of research	Age cohort	Sample composition	Area/ context	Method	Framework
Bogner & Wiseman (2004)	The impact of a weeklong outdoor education unit on pupils' knowledge of conservation and their attitudes toward nature and the environment was ascertained in this study	12years	287 (165 intervention group); 122 (control group)	Bavaria (EEP, National Park)	Quantitative Pre-test, post-test	None
Burgess & Mayer-Smith (2011)	Children's perceptions and experiences of nature during a residential outdoor environmental education program was investigated and how this contributes to an understanding of how nature experiences arouse biophilia.	10-11years	35 (grade five students from various SES and cultural backgrounds)	Washington State (Mountain School, Residential EE programme for children in urban areas)	Qualitative Interviews (semi-structured), naturalistic observation, and artifact collection	Biophilia framework
Chawla & Cushing (2007)	This review article highlights four bodies of research that shed light on how to promote active care for the environment in children and youth	Review of children and youth	N/A	University of Colorado	Review	None
Collado et al. (2013)	This study evaluated whether a summer holiday camp changed children's willingness to display ecological behaviour,	10.88 (mean age)	397 (Time 1 and 2; 4 camps: Camp 1 & 2: Catholic religious denomination)	Spain (natural mountain areas-3, urban area-1, religious affiliation-2); Middle-income	Quantitative Experimental design (Control: No EE programme; Experimental: Received EE programme)	None
Hordyk et al. (2014)	The study endeavoured to elucidate the phenomenological encounter between children and nature.	Not mentioned	18 immigrant children	Montreal	Qualitative (Phenomenological)	None
Liefländer et al. (2016)	The study aimed to ascertain differences in connectedness with nature in children with differing ages and academic tracks and to further determine whether EE can mitigate connectedness with nature.	9-13years	(Study 1 = 304; Study 2 = 264)	Germany	Quantitative (Pre-test post-test design; non-parametric statistics)	None
Malone (2004)	Children in their role as future decision makers and environmental stewards by them participating in, and contributing to global sustainability were explored here.	Children	N/A	Australia	Review	None

Manoli et al. (2014)	The impact of an earth education programme, Earthkeepers, on children's ecological understandings, environmental values and attitudes, and behaviour was examined in this study	9-14years	n = 491 (children in 4 th to 7 th grade)	Cyprus, Greece	Quantitative, Paired-sample t-test	None
Turtle et al., (2015)	The study explores children's attitudes towards the natural environment, focusing on Forest School programmes as a mechanism to promote a pro-environmental attitude.	8-11years	N = 195 (136 non-Forest schools; 59 Forest schools)	England (Cumbria and Glasgow)	Quantitative (independent sample t-test)	None



c) Direct experiences and effects of natural spaces and places

This thematic domain included 27 studies which explicitly focused on children's direct experiences in, and engagement with nature within their schools and communities. While studies in the previous domain could also be classified as direct experiences in nature, the distinction between domains b) and c) is that the studies in this domain did not include a formal EE programme.

Content

A holistic synthesis of the content of the studies in this domain revealed that the focus was on the influence and impact that experiences in nature had on children's lives and importantly their well-being. The focus of the empirical studies spanned across various aspects of children's direct experiences in natural spaces, and underscored three components of children's well-being, namely physical, emotional, and psychological (Pollard & Lee, 2003). In terms of children's physical well-being, the studies explored how nature in the home and school sphere contributed to children's healthy development in general, as well as how play in nature impacted upon their motor fitness by enabling play affordances. Another component investigated was children's psychological and emotional well-being. The various studies examined the effect of nature on children's ability to cope with stress and Attention Deficit Hyperactivity Disorder symptoms, the impact of nature on children's cognitive functioning, how nature nurtures children, how engaging in nature contributes to children's environmental identity, and in particular their motivations for intrinsic care for nature (See Table 5 below).

The review papers highlighted the decisive experiences and developmental paths which initiate and shape individuals environmental compassion and actions (Kellert, 2005; Keniger, 2015). Additionally, research studies noted within these reviews were examined to determine whether contact with nature was vital for children's positive development. The only systematic review study (Gill, 2014), investigated the benefits of children engaging in nature, as well as their style of engagement in nature. Socio-economic status was also explored as a variable to determine whether children in privileged and disadvantaged communities faced similar or dissimilar environmental burdens in natural spaces, and whether children residing in low-income neighbourhoods were less likely to play and engage in nature. In addition, two studies using theoretical frameworks were found. In the first study a theoretical framework was developed using socio-ecological theories to provide a lens for understanding the hypothetical causal pathways between 'greenspace' and health outcomes (Lachowycz &

Jones, 2009). The second article presented an interdisciplinary framework to promote adolescents' environmental behavior (EB) and their SWB (Kerret et al., 2014), and proposed the novel concept of environmental subjective well-being (ESWB).

Age cohort

Most of the empirical studies in this domain were conducted with children aged 5-12 years. While the review studies included children from various age groups, the retrospective studies included individuals from 18-90 years (Chawla & Cushing, 2007).

Context

An important finding was that most studies were conducted in various contexts and regions across the USA, as well as in Norway. A small number of studies were also conducted in Denmark, Turkey, New Zealand, and Spain. There were few studies which provided the context of the research sites. However, given the description of the schools and natural spaces where the studies were conducted, it was inferred that most studies were situated in middle to high income neighbourhoods. There were three studies in particular that focused on children from varying social and economic backgrounds (Huynh et al., 2013; Strife & Downey, 2009; Wells, 2000), one of which focused specifically on the experiences of children living in low-income communities (Wells, 2000). One of the review studies (Strife & Downey, 2009) focused on environmental inequality research. The findings of this review maintained that future research on children and nature should consider how children from varying backgrounds experience, and are affected by natural surroundings.

Method

It was found that most studies in this domain utilised quantitative methods (n = 10), predominantly with children between the ages of 5-10. Various designs and data analysis techniques were applied in these studies. The research designs employed ranged from descriptive studies to experimental, quasi-experimental, and correlational approaches. Only three studies employed a longitudinal design (see Fjortoft, 2000; Fjortoft & Sageie, 2001; Wells, 2000). Many of these quantitative studies used data analysis techniques such as correlation, multiple and multilevel logistic regression, and one study employed structural equation modelling.

Fewer studies employed qualitative methods (only 5 out of 27). Both of the retrospective studies utilised qualitative methods to explore the source of the research participants' environmental concerns. The qualitative studies were conducted predominantly with children aged 5-7, and 5-12 years. Data collection techniques included content analysis of drawings, and photo-elicitation. Additionally, four review studies focused on the significance of experiences in nature for children (Chawla, 2006; 2009; Gill, 2014; Kellert, 2005), and one study proposed a framework to understand the causal relationship between engaging in nature and associated positive health effects (Lachowyz & Jones, 2013).

Theory

Several theories were evident in the framing and interpretation of studies in this domain; while a few frameworks were developed to better understand specific aspects of children's interaction with nature. Two retrospective studies by Chawla (2006a; 2007) adopted Ecological psychology and Object Relations theories, while three studies proposed frameworks – the first a Model of Nature-Protective commitment (Kals & Ittner, 2003), the second proposed socio-ecological theory to understand the causal pathways between 'greenspaces' and health outcomes (Strife & Downey, 2009), and the final sought to promote adolescents' positive environmental behaviour and its relation to their SWB. The final study employed social constructionism to understand children's experiences of a river (Panelli & Robertson, 2006).

Table 5: Direct Experiences in and effects of natural spaces and places

c) Direct Experiences in and effects of natural spaces and places						
Author	Focus of research	Age cohort	Sample composition	Area/ context	Method	Framework
Bixler et al (2002)	The focus of this study was childhood play experiences in wild environments and later environmental preferences	(Study 1: middle & Study 2: high school students)	Study 1: n =1337; Study 2: n =1337	South Carolina and Texas	Quantitative	None
Chawla (2006a)	The basis for motivation to act to protect nature, related to 'ecological psychological' terms of 'free play in nature' and 'bonds of attachment and attention' were explored in this study.	Adults (varied ages - 19 over 50, and youngest early-late 20's)	n = 56 Adult Environmentalists (26: Oslo, Norway; 30: Kentucky, USA)	Oslo, Norway; Kentucky, USA (varying contexts)	Qualitative (Retrospective)	Ecological Psychology & Interpersonal theories of object relations
Chawla (2006b)	The article reviewed various research approaches to understand significant experiences which influence people's environmental concern and behaviour.	N/A	N/A	Kentucky State University	Review	None
Chawla (2007)	This study delineated a framework for understanding childhood experiences in nature (Paper is revised and expanded version of Chawla, 2006)	Adults (varied ages - 19 over 50, and youngest early-late 20's)	n = 56 Adult Environmentalists (26: Oslo, Norway; 30: Kentucky, USA)	Oslo, Norway; Kentucky, USA (varying contexts)	Qualitative (Retrospective)	Framework (Ecological Psychology & Object relations)
Chawla (2009)	The article reviewed research regarding developmental paths to active care for the natural world in childhood,	N/A	Studies with children and adolescents	University of Colorado, Denver	Review	Expectancy-value model of achievement motivation and Bandura's 'self-efficacy'
Corraliza et al. (2011)	The effect of nearby nature on urban children's stress was determined in this study	10-13years	n = 172: 53% boys; 47% girls	University of Madrid, Spain	Quantitative	None
Fjortoft (2001)	The affordances of children's landscapes for versatile play was explored in this article with a particular focus on whether play in nature stimulates motor fitness	5-7years	n = 75 (46: experimental group; 29: reference group; 9 months	Forest in Norway	Quantitative (Quasi-Experimental)	None
Fjortoft & Sageie (2000)	The study aimed to describe and analyse a woodland area as a playground for children	5-7years	n = 75 (46: experimental group; 29:	Forest in Norway	Quantitative (Quasi-Experimental)	None

			reference group); 9 months			
Gill (2014)	This study reports on a systematic review of the research literature on the benefits of children (under 12) spending time in natural environments.	N/A	N/A	N/A	Systematic Review	None
Gunindi (2012)	Kindergarten children's perceptions of the environment were analysed using the pictures they drew	5-6years	n = 183	Aksaray, Turkey	Qualitative (Draw-and-tell; content analysis)	None
Huynh et al (2013)	The relationship between exposure to public natural space and positive emotional well-being among young adolescent Canadians was investigated in this study.	10-16years	n = 17429 (Based upon the Canadian 2009/10 Health Behaviour in School-aged Children Survey; grades 6-10 from 317 schools)	Canada	Quantitative (Survey; Multilevel logistic regression)	None
Kals & Iltner (2003)	The study examined the developmental aspect of environmental identity from two perspectives	9-17years	(n1 = 175; \bar{x} = 9 years) (n2 = 137; \bar{x} = 13 years); (n3 = 148; \bar{x} , 13 years); (n4 = 105; \bar{x} , 17 years).	USA	Quantitative (Experimental design)	A Model of Nature-Protective Commitments
Kellert (2005)	This review explored the significance of childhood contact with nature.	Children	N/A		Review	
Keniger (2013)	This review constructs novel typologies of the settings, interactions and potential benefits of people-nature experiences	N/A	N/A	N/A	Review (qualitative approach)	None
Kerret et al. (2014)	This article presents an interdisciplinary framework to promote adolescents' environmental behavior (EB) and their SWB.	N/A	N/A	N/A	Framework	None
Kuo & Taylor (2004)	The impact of natural settings on attention-deficit/hyperactivity disorder symptoms amongst children was assessed in this study	Parents/guardians of children aged 5-18years	n = 452 (6 translated in Spanish)	USA	Quantitative	None
Lachowycz & Jones (2009)	This study developed a framework to understand hypothetical causal pathways between access to 'greenspace' and health outcomes.	N/A	N/A	Norwich, United Kingdom	Framework	(Socio-ecological theories)

Moore & Marcus (2008)	Children's concern for and access to natural areas was considered in this review article	N/A	N/A	N/A	Review	None
Panelli & Robertson (2006)	Young people's experience and knowledge of a river in southern New Zealand was explored here	5-12years	n = 151 (79 girls; 72 boys)	Taieri River Catchment	Qualitative (Drawings and written Survey)	Social Constructionism
Rasmussen (2004)	The exploration of children's favourite places was the focus of this study	5-12years	n = 88 (60 child informants)	Denmark	Qualitative (Photovoice)	None
Strife & Downey (2009)	This review focused on the role of SES as a mediator in children's engagement in nature	Children and adolescents	N/A	University of Colorado , USA	Review	None
Taylor & Kuo (2006)	This review examined the literature to determine whether contact with nature is important for healthy child development	Children	N/A	N/A	Review (Experimental & Quasi-experimental studies)	None
Taylor et al. (2001)	The relationship between children's nature exposure through leisure activities and their attentional functioning was investigated in this study	Children, parents, professionals	\bar{x} age = 9.4	-	Mixed-methods	Attention Restoration Theory
Taylor et al. (2002)	The relationship between near-home nature and three forms of self-discipline was explored here		n = 169 (91 boys; 78 girls); \bar{x} age = 9.6	Chicago, USA	Quantitative	Attention Restoration Theory
Wells & Evans (2006)	Nature as a buffer of life stress among rural children was investigated in this study	\bar{x} = 9.2years	n = 337 (grades 3-5)	Rural	Quantitative	None
Wells (2000)	This study explores the linkage between the naturalness or restorativeness of the home environment and the cognitive functioning of low-income urban children	7-12years	n = 17 (8 girls; 9 boys)	Low-income communities University of California	Quantitative (Pre-move, post-move longitudinal design)	None
Wells & Lekies (2006)	The connections between childhood involvement with the natural environment and adult environmentalism from a life course perspective was studied here	18-90 (\bar{x} = 45)	n = 2004	112 areas, USA	Quantitative (SEM) Retrospective	None

d) Children's perceptions of natural spaces and places

The 39 studies in this thematic domain looked more broadly at children's perceptions of natural spaces and places. These studies explored how children make sense of nature, the importance they attach to nature, their perceptions of what nature encompasses, the varying levels of nature interaction, as well as issues around children's place attachment.

Content

The studies in this domain examined and explored an array of topics regarding children's perceptions of nature (See Table 6 below). A key focal area was children's favourite places and connectedness to nature (Sancar & Severcan, 2010). In all these studies nature as a whole, and specific elements in natural spaces, were considered fundamental in children's lives. Nature therefore, represented a space for children's play, but also a special place to which children attached great value as it provided a sanctuary and a place they could call their own. Children's place preferences and favourite places were researched in a variety of contexts such as suburban, urban, and rural settings; the 'rural idyll' of children in the latter context as inherently closer to nature was challenged here (Nairn et al., 2003). Certain studies endeavoured to ascertain the relationship between: adolescents' environmental worldviews and their personality (Boeve-de Pauw et al., 2011), children's sense of connectedness with nature and their related cognitive styles (Leong et al., 2014), and children's perceptions of nature and their SWB (Adams, Savahl, & Casas, 2016). School grounds were examined to ascertain how this influenced children's perceptions of nature (Ozdemir & Yilmaz, 2008), and the role of public open space was also explored (Veitch et al., 2007).

Many studies advocated for engaging children as active research participants, co-collaborators, and researchers within the research process. Four studies specifically endeavoured to understand children's conceptions of nature, and their relationships with nature employing qualitative methods (Aaron & Witt, 2011; Adams & Savahl, 2015; Adams & Savahl, 2016; Collado et al., 2016; Dai, 2011). A few empirical studies employed cross-country comparative analysis of children's environmental attitudes, as well as children's perceptions of consumption at home and the related environmental implications (Kopnina, 2011a). The association between children's frequency of contact with nature, environmental attitudes, and ecological behaviours was investigated using a Structural Equation Model (SEM) (Collado et al., 2015). Also using SEM (multi-group), the study by Kerret et al. (2016)

explored adolescents green engagement, environmental behaviour and positivity ratio, and the mechanisms which link these components; with environmental hope used as mediator.

Whilst some studies employed existing scales to measure children's environmental attitudes and behaviour, three studies in particular sought to develop measures of connection to nature (Cheng & Monroe, 2012; Evans et al., 2007a; Yilmaz et al., 2004). The study by Evans et al. (2007a) used the New Ecological Paradigm (NEP) scale for children to develop an appropriate instrument to assess pre-school (kindergarten- aged three to five years) children's environmental awareness and behaviour. The NEP scale was also the basis of focus group discussions to determine how children related to and made sense of the scale (Kopnina 2011b). Yilmaz, Boone and Anderson (2004), however, explored children's views of global and local environmental issues by developing the 51-item Attitude Toward Environmental Issues Scale (ATEIS). Only three studies were identified which employed theoretical frameworks to provide a basis for children's engagement in, and perceptions of nature.

Age cohort

The studies in this domain included children from all age groups from as young as three years to 18 years of age. One study in particular sought to understand experiences in nature of adolescents and young adults in their childhood. While children belonging to varying age cohorts were included promoting greater comprehension of children's perceptions of nature, it was clear that most studies focused on children between the ages of 7-12 years.

Context

The studies in this research domain were carried out in an array of contexts and countries. Several studies were conducted in England, more specifically Cambridge, South Manchester, and East Leeds. The participants from the East Leeds study were drawn from one impoverished and one middle-income community (Burke, 2005), while children from South Manchester were selected from low-income communities (Von Benzon, 2011) A few studies were also conducted in various locations in the USA, from both urban and rural communities. The two cross-cultural comparative studies were conducted between the USA, Austria, Mexico, and Spain (Evans et al, 2007b), and between Belgium and Zimbabwe (Van Petegem & Blicck, 2006). The other African study in this domain was conducted in South Africa (Adams & Savahl, 2015), and explored children's perceptions of the natural environment with adolescents from an impoverished community using focus group interviews. Studies

were also conducted in China (Li & Lang, 2014; Zhang et al., 2014), Singapore (Kong, 2000; Leong et al., 2014), and, Belgium (Van Petegem & Blieck, 2006).

Other studies included in this domain were conducted in high and low-income Turkish communities, as well as in a recreational park with Malaysian children from both low and middle-income families in the cities of Kuala Lumpur and Serdang (Mahidin & Maulan, 2012). The only review study was conducted by Malaysian academics to better understand children's favourite places and place preferences (Yatiman & Said, 2011). Additionally, two Australian studies were conducted in Adelaide (metropolitan), Kangaroo Island (rural), and Victoria, respectively, investigating children's place preferences (MacDougall et al., 2009; Veitch et al., 2007). Further studies were conducted in New Zealand (Nairn et al., 2003) contesting the taken-for-granted notion of the 'rural idyll', as well as in Amsterdam (Kopnina 2011a; 2011b) and in Norway (Melhuus, 2012) to better understand both children and adults experiences of the outdoor environment as an education contexts.

Method

In contrast to the three previous domains considered in this review, there was a fairly equal number of studies employing quantitative ($n = 17$) and qualitative methods ($n = 20$), one mixed-methods study (Aaron & Witt, 2010), and one review (Yatiman & Said, 2011). The qualitative studies employed various data collection techniques with children; drawings, photo-elicitation, and semi-structured individual and in-depth interviews emerged as the most frequently utilised techniques.

Among the quantitative studies various techniques were employed, such as correlation (Bizzeril, 2004) and chi-square (Snaddon et al., 2008), Analysis of Variance (ANOVA) (Tuncer et al., 2005), Rasch analysis (Yilmaz et al., 2008), and Factor Analysis (Van Petegem & Blieck, 2006), as well as Structural Equation Modeling (Boeve-de Pauw et al., 2011; Collado et al., 2014; Li & Lang, 2014; Adams, Savahl, & Casas, 2016; Zhang et al., 2014).

Theory

There were very few studies which made use of theoretical frameworks in this domain. The study by Linzmayer and Halpenny (2013) in particular considered an amalgamation of *Vygotsky's socio-cultural development theory* and *Gibson's theory of affordances* to understand children's relationship with nature. While the study by Dai (2011) utilised the

Contextual Learning Model highlighting personal, socio-cultural and physical contexts to understand how children make sense of nature; and the study by Veitch (2007) employed the *Ecological model* to examine children's perceptions of public open space.



Table 6: Children's perceptions of natural spaces and places

d) Children's perceptions of natural spaces and places						
Author	Focus of research	Age cohort	Sample composition	Area/ context	Method	Framework
Aaron & Witt (2011)	This study focused on urban (minority) student's definitions and perceptions of Nature	Fifth grade students	n = 50	Houston Independent School District, Houston, Texas, USA	Mixed methods	None
Adams & Savahl (2015)	Adolescent's perceptions of the natural environment was explored in this study	13-14years	n = 32 (16 boys; 16 girls)	Impoverished community, Cape Town	Qualitative (focus group interviews)	None
Adams & Savahl (2016)	The study aimed to ascertain the relationship between children's perceptions of the natural environment and their subjective well-being.	12-14years	n = 1004 (541 girls; 463 boys)	Western Cape, South Africa	Quantitative (Structural Equation Modeling)	None
Adams, Savahl, & Casas (2016)	The study aimed to explore how children construct and assign meaning to natural spaces	12-14years	n = 28 (9 boys; 19 girls)	Western Cape, South Africa	Qualitative (focus group interviews; discourse analysis)	None
Benson (2009)	The contribution of children's special places to child development, place attachment, and environmental stewardship values was investigated here	8-11years	Phase 1: n = 82; Phase 2: n = 12	Humboldt Bay, Northern California	Qualitative (Drawings; Brief Interviews, Photography)	None
Bizzeril (2004)	Evaluations of Brazilian student's perceptions of the Cerrado (savanna-like vegetation) were examined in this study	11-17years	n = 174 (90 boys; 84 girls)	Brasilia (Urban, suburban & rural)	Quantitative (correlation; descriptive statistics)	None
Boeve-de Pauw et al. (2011)	The relationships between adolescents' environmental worldview and their personality were examined here	14-16	n = 959 (371 boys; 567 girls; 21 unknown), Mean=15.05; SD= .28	Flanders	Quantitative (Structural Equation Modeling)	None
Burke (2005)	Children researching their own places to play in an impoverished and middle-income community were explored in this study	7-11years	n = 32 (16 from each community; 7- attrition)	East Leeds, Yorkshire (Seacroft-impoverished; Rothwell- middle-income)	Qualitative (Photo-elicitation, Interviews)	None

Cheng & Monroe (2012)	This study focused in the development of a connection to nature index to assess children's affective attitude toward nature	9-11years	n = 1432 (4 th grade)	Brevard County, Florida	Quantitative (Exploratory factor analysis; correlation)	None
Collado & Corraliza (2015)	This study explored how positive experiences in nature act as a motivational factor enhances children's pro-environmental behaviour	6-12years	n = 832 (402 boys; 424 girls) (20 schools - two types: 12 schools with medium/high amount of nature; n = 515 children) and non-natural (8 schools with low/no nature; n = 317)	Central Spain	Quantitative (Structural Equation Modeling)	None
Collado et al. (2015)	This study explored the association of children's frequency of contact with nature on children's environmental attitudes and ecological behaviours	6-12years	n = 832 (mean =10; SD= 1.30)	Spain	Quantitative (Structural Equation Modeling)	None
Collado et al. (2016)	The study explores children children's concepts of nature, focusing specifically on the role of	Children	n = 832	Spain	Qualitative (Content analysis)	None
Dai (2011)	The factors that influence children's conceptions of and relations to nature were explored in this study	5-6years; parents	n = 12	Taiwan (kindergartens)	Qualitative	Contextual Learning model
Evans et al. (2007a)	The study aimed to develop a reliable and valid set of instruments to assess young children's environmental attitudes and behaviours	6-8years	n = 100 (1 st & 2 nd grade)	Upstate New York Upper-middle income families	Quantitative (NEP scale as a basis)	None
Evans et al. (2007b)	This study focused on the cross-country comparisons of environmental attitudes and behaviours of children from the USA, Austria, Mexico, and Spain	6-8years	USA, n = 100; Austria, n = 41; Mexico, n = 126; Spain, n = 25	Rural towns	Quantitative	None
King & Church (2013)	This study explored the role of countryside spaces and nature in youth in terms of leisure, lifestyle and identity formation	13-25years (mountain bikers)	n = 40	Forest in South East England	Qualitative (group interviews; observations)	None

Kerret et al. (2016)	This study investigated the rudimentary mechanisms that link students' green engagement with their environmental behavior and their positivity ratio. Environmental hope was assessed as a mediator for these associations.	13-17years	n = 254	Central Israel	Quantitative (Multigroup Structural Equation Modeling)	Environmental subjective well-being (Kerret et al., 2014) & Snyder's (2000) Hope theory
Kong (2000)	This study explored urban Singaporean children's constructions and experiences of nature	7-12years	n = 20	Singapore	Qualitative (focus group interviews)	None
Kopnina (2011a)	This study focused on children's attitudes of their personal consumption and the implications thereof for nature	7-10years	n = 91	Amsterdam (Various backgrounds)	Qualitative (consumption diaries, mapping)	None
Kopnina (2011b)	Children's perceptions of the New Ecological Paradigm scale were unpacked in this study	10-12years	n = 59 (Dutch children)	Amsterdam	Qualitative (interviews)	None
Leong et al. (2014)	This study examined whether adolescent's sense of nature connectedness is related to cognitive styles	13-17years	Study 1: online survey (n = 138- 75 boys; 63 girls) Study 2: pen and paper survey (n = 187- 98 boys; 87 girls)	Singapore	Quantitative (Correlational and regression analysis)	Kirton's adaptation-innovation (KAI) and Analytic-holistic Thinking (AHT) cognitive styles
Li & Lang (2014)	The influence of children's school and parents on their views of human-nature relationship using five items from the New Environmental Paradigm (NEP) scale were explored here	6 th grade primary school children	n = 1307	Nanshan district, Shenzhen, China	Quantitative (Exploratory factor analysis; paired t-tests, correlational analysis, SEM)	None
Linzmayr & Halpenny (2013)	Children's relationship with nature was examined by understanding their subjective experiences in of a camp	6-10years	n = 5 (2 boys; 3 girls)	Rural central Alberta, Canada (middle-income)	Qualitative (visual methods- photography, drawings, sand tray pictures; and semi-structured interviews)	Vygotsky's socio-cultural development theory & Gibson's affordances theory.
MacDougall et al. (2009)	Children's perspectives of places which impact on their experiences of	8-10years	n = 33	Adelaide school (metropolitan),	Qualitative	None

	play and physical activity were explored here			Kangaroo Island (rural), Australia	(Interviews & focus groups)	
Mahidin & Maulan (2012)	Children's preferences for natural environments was determined in this study	7-11years	n = 17 (6 boys; 11 girls)	Recreational park, Kuala Lumpur & Serdang, Malaysia	Qualitative (photo-projective method)	None
Melhuus (2012)	Children's experiences of an outdoor environment was explored in this study	4-6years	n = 13	Norway	Qualitative	None
Min & Lee (2006)	Children's favourite places in their neighbourhood were investigated in this study	7-12years	n = 91	Hansol Village, Bandang, Seoul	Qualitative (Interviews, observations)	None
Nairn et al. (2003)	The representations of rural communities as closer to nature was contested in this study	13-18years	n = 131 (95 girls; 36 boys); Own consent (Article 12, UNCRC)	Dunedin, New Zealand	Qualitative (Street interviews, photographs)	None
Ozdemir & Yilmaz (2008)	The associations between the physical characteristics of children's schoolyards and their physical activity was explored here	9-10years	n = 290 (students, teachers) 155 girls; 135 boys	Ankara, Turkey	Quantitative (descriptives)	None
Ridgers et al. (2012)	Children's perceptions, knowledge and experiences of play in the nature were investigated in this study	6-7years	n = 17 (6 boys; 7 girls)	North West England (12-week Forest School)	Qualitative (focus groups)	None
Sancar & Severcan (2010)	This study focused on children's place preferences and the attributes of these places along a rural-urban continuum.	9-11years	n = 82 (24, 24, 16, 18) (village, small town, 2 urban metros)	Turkey, Bodrum Peninsula	Qualitative (Participatory photography)	None
Snaddon et al. (2008)	Children's perceptions of rainforest biodiversity was explored here	3 cohorts: 3-5years; 6-7years; 8-11years	n = 167	Cambridge, UK	Quantitative (descriptive statistics & chi-square)	None
Tuncer et al. (2005)	The effect of school type and gender on children's attitudes toward the environment were investigated here	Grade 6,7,8,9,10	n = 1497 (n = 765 girls; n = 715 boys; and n = 17 gender not provided)	Ankara, Turkey	Quantitative (MANOVA; ANOVA)	None
Van Petegem & Blicck (2006)	This study focused on young people's environmental worldviews using the revised 'New Ecological Paradigm' scale for children	13-15years	n = 524 (Zimbabwe: 242 boys and 280 girls); n = 613 (Belgium: 246 boys and 347 girls—20 unknown)	Belgium & Zimbabwe	Quantitative (factor analysis)	None

Veitch et al. (2007)	The role and use of public open spaces was explored here	6-12years	n = 132 (71 girls, 61 boys)	Victoria, Australia	Qualitative (focus group interviews)	Ecological model
Von Benzon (2011)	This study explores learning disabled children's relationship with the natural environment.	11-16years	n = 100 (high school children with mild-moderate learning disabilities)	South Manchester (Low-income families)	Qualitative (various data collection methods)	None
Yatiman & Said (2011)	This review studies explored children's favourite places across diverse contexts	Children	N/A	Malaysia	Review	None
Yilmaz et al. (2008)	This study identified the intensity of children's views with regard to environmental concerns	Children	n = 458 students (grade 4-8)	Turkey (high and low-income communities)	Quantitative ANOVA Rasch analysis (51-item Attitude Toward Environmental Issues Scale (ATEIS))	None
Zhang et al. (2014)	The study aimed to understand how contact with nature affect's children's propensity for biophilia, biophobia, and their conservation attitudes.	9-10years	n = 1119 (grade 4 students from 15 schools)	China (various cities and areas)	Quantitative (General linear modelling and Structural Equation Modeling)	None

Discussion and Implications of findings

The current systematic review considers nature in its entirety as a space which children appear to favour and engage in, demonstrating nuances of children's environmental perceptions. The articles identified in this systematic review focused on various aspects of child-nature interactions, including children and outdoors research that promotes active care for the environment; childhood exposure and access to nature; and children's subjective perceptions of nature, and natural spaces.

When examining the findings of the studies reviewed, it is ostensible that children's perceptions of nature as a space and place are multifarious. In essence, the findings echo those of a seminal study by Wals (1994) which presented eight experiences of nature by adolescents. These experiences originated from children's perceptions in two school communities with distinct socio-economic and cultural contexts in Detroit, USA. The eight experiences of nature which emerged in Wals' (1994) study were: *Nature as entertainment*; *Nature as a challenging place*; *Nature as a reflection of the past*; *Nature as a threatening place*; *Nature as a background to activities*; *Nature as a place for learning*; *Nature as a place to reflect*; and *Nature as a threatened place*. Considering these eight experiences of nature (Wals, 1994), those which emerged most often in the reviewed studies were *Nature as entertainment*, *Nature as a threatening place*, *Nature as a place to reflect*; and *Nature as a threatened place*.

A common thread present in all the studies reviewed here was the benefits of engaging in nature throughout childhood. A consistent contention emerging from the studies was that nature offers opportunities and experiences for engagement which contribute to children's well-being in a myriad of ways, such as improving physical, psychological, social, and emotional development. This resonates with the three categories of nature experiences identified by Kellert (2002) and evident in these studies, namely *direct*, *indirect*, and *vicarious* or *symbolic*. *Direct* experiences entailed the child having tangible physical contact with natural elements such as habitats and living things which function autonomously, with a definitive feature of children's engaging in spontaneous play. *Indirect* experiences in nature also entail physical contact with nature, with less opportunity for spontaneity and in a more restricted and supervised manner. While *vicarious* or *symbolic experience* takes place devoid of actual physical contact with nature, nature can also be experienced vicariously in images and representations through various sources. A related notion by Wals (1994) regarding the distinction between

perception and experience in nature is that the former is “*solicited definitions or descriptions of nature*” and the latter “*narrative accounts of...personal interactions with or in nature.*” Thus, it is evident from the work of Kellert (2002) and Wals (1994) that various types of experiences and engagement in nature significantly contribute to children's perceptions, and more so worldviews, of nature.

Children's exposure to nature varied in the reviewed studies, from exploring the effects of children observing nature within the home representing vicarious or symbolic nature experiences, to the impact of short term and long term environmental educational programmes examining children's direct experiences in nature. This coincides with the core nature experiences adolescents referred to in the study by Wals (1994); in particular *nature as entertainment, nature as background to activities, nature as a place for learning*; and that of *nature as a place to reflect*. In synthesising the findings of the various studies the presence of numerous binary opposites in children's perceptions and understandings of nature was noteworthy. For example, in a study conducted in South Africa (Adams & Savahl, 2015) nature was perceived as a space of solitude and sanctuary, but also as the ‘dangerous other’; as a threatened place but often as a threatening place. While children displayed intrinsic care for nature whether receiving formal or informal environmental education, indifference towards nature was also evident.

Based on the analysis and synthesis of method, theory, context, these findings offer implications for future research. When considering the number of studies across the four thematic domains, it is clear that the majority are located within the third (*Direct experiences and effects of natural spaces and places*; n = 27) and fourth (*Children's perceptions of natural spaces and places*; n = 38) domains, with far fewer in the first (*Children and outdoor activity spaces*; n = 6) and second (*EE and promoting active care for nature*; n = 9) domains. The few studies which were conducted about children's school playground preferences (thematic domain a) predominantly included children aged 7 to 12 years old, thus presenting a gap in this domain on research with adolescents. A few important considerations for future studies would be to explore whether school grounds are amenable to their type of play. Findings (Adams & Savahl, 2015; 2016) showed that adolescents are unhappy with their playgrounds which tend to cater more for younger children. Some children described how open fields at school are often not accessible to them as they may damage these natural spaces, or are reserved solely for certain sports codes (Adams & Savahl, 2015). Given the

array of benefits of engaging in nature for children's well-being, and the significance of EE programmes in enhancing children's relationship with nature (*EE and promoting active care for nature*- domain b), there is a need for more studies to better understand the role EE plays in children's lives. The case of Mountain School (Burgess & Mayer-Smith, 2011) is one such example which has been adopted in several countries, yielding positive results with children.

Methodologically, the reviewed studies used qualitative, quantitative, and mixed-methods frameworks. The focus and scope of the qualitative studies in terms of the aspects of nature they explored were quite specific. An interesting finding was that only three studies investigated children's perceptions of nature by asking them to discuss what nature means to them, what it encompasses, and the impact it has on them (see Adams & Savahl, 2015; Hordyk et al., 2014; Kong, 2000). These studies focused on similar age cohorts of children, with a particular emphasis on adolescents. Considering current global advocacy for children's rights, particularly in countries which have adopted the United Nations Convention on the Rights of the Child (UNCRC; United Nations General Assembly, 1989), it is surprising that there have not been more studies giving children a voice to express their subjective perceptions. There is a growing consensus among scholars engaging in research with children that societies' responsibility to advocate and guard children's rights to survival, protection, and development warrants special precedence in developmental initiatives and human rights work (Ben-Arieh, 2008; Lloyd & Emerson, 2016; Chawla, 2007; Green, 2015; Himes, 1993; Savahl et al., 2015). For this reason, Hart (1992) has emphasised the need for children to be part of meaningful projects with adults, as it is "unrealistic to expect them to all of a sudden become mature, participating adult citizens at the age of 16, 18, or 21 devoid of previous exposure to the skills and responsibilities involved" (Hart, 1992, p. 5). These more inclusive understandings of children's perceptions and constructions of their environments are crucial to address the challenges children experience with regard to the access and utilisation of natural spaces. The benefit of this would be to enhance children's ability to negotiate their mobility, explore nature, and engage in child-led initiatives to counteract safety and security issues within their communities.

Within the studies employing a qualitative framework, the most commonly used data collection techniques were drawings (primarily with children between the ages of 5-7 years); observations (with children aged 7-18 years); and interviews (in-depth and focus groups) with children between the ages of 5-12 years. Photo-elicitation was utilised in the majority of these

studies and allowed children to be active participants, and in some cases function in the role of co-researchers. The children in the studies utilising this technique were predominantly between the ages of 7 and 11 years. Through this participatory research method, children as collaborators possessing agency were given a voice and a platform to present photo journeys to discover neighbourhood experiences and their perceptions of natural spaces.

In terms of theory, there were very few studies which utilised theoretical frameworks. The theories used in the studies endeavoured to encapsulate and make sense of children's engagement in nature by highlighting developmental concerns and how they construct their environmental perceptions. The importance of several factors which influenced children's perceptions of nature was considered such as social, cultural, economic and physical spaces, as well as the formative motivations for children's care for nature. A synopsis of the application of theory in these studies points to the importance of context in children's evaluations, and understanding of natural spaces.

While there were a few studies that provided descriptions of the research context, on the whole this was a neglected *yet* critical aspect. The majority of studies were conducted in the USA and European countries. Accounts of research in African countries were sparse in the field, calling for a greater focus on research initiatives in these regions. Similarly, a review by Keniger et al. (2013) identified that while the majority of research studies focusing on children's engagement with nature have been undertaken in Europe and North America, there is a paucity of research in South America and Africa in particular. Also, previous studies show a tendency for conducting research in urban contexts with children from privileged backgrounds- in contexts which were predominantly in middle-income communities with school grounds which boast natural beauty and affordances for nature-based play. A salient gap in the literature is empirical research with children from diverse backgrounds, particularly those from lower SES and impoverished communities, as well as children from indigenous communities, to create more inclusive understandings of children's engagement in, and perceptions of natural spaces. There is a shortage of accounts from low-income and impoverished communities concerning what nature experiences may mean to children living in these conditions.

Noting the above, Thompson et al. (2006) argue that nuances exist in young people's understandings and experiences of their neighbourhood environment, particularly in relation

to their age, class, as well as cultural groups. The socio-economic status of children's families has also shown to have a significant influence on the meanings they attach to natural spaces. A systematic synthesis of the literature in this review identified great variation in children's understandings of nature in low and middle socio-economic status communities globally. A trend that has emerged in the USA and many European countries is that the more urbanised the area, the less access children have to natural spaces, regardless of socioeconomic status. Furthermore, children living in rural and lower socioeconomic status suburban communities were shown to have more access to experience nature independently and with a sense of safety (Leong et al., 2014; Wells & Evans, 2003; Zhang et al., 2014). A common finding amongst studies conducted in varying SES communities was the fear of 'stranger danger'; and the potential threat of harm to children which has often limited children's access to nature. However, in studies conducted in South Africa (SA), children's perceptions of and experiences in nature were quite different (See Adams & Savahl, 2015). In the SA context children from middle to higher socio-economic status communities have access to safe natural spaces, with the ability to independently explore and experience- a privilege solely enjoyed by children from higher income brackets. For these children, 'wild nature' was a source of potential threat and fear. For children from low-income communities nature was seen as the 'dangerous other', with threats to children's safety a key concern in their communities in general, but more so in natural spaces as various forms of violence and abuse against children were regularly cited in children's narratives. For the children living in the low-SES communities, nature experiences were sporadic, with superficial understandings of nature provided.

As children spend a preponderance of their time in school and home settings, these settings should provide children with a multitude of opportunities for learning and playing in natural spaces. A strategic aim should be to cultivate an environmental ethic and appreciation for nature, not solely for the benefit of future generations, but for nature itself which is a crucial feature of *sustainable development* (Hart, 1994). This also points to the importance of environmental education in children's lives, both within the formal school curriculum and as part of unstructured leisure activities.

Conclusion and Recommendations

Whilst there has been a dramatic increase in research with children in general, and in particular studies to determine children's environmental perceptions, when teasing out the

studies which focus on children's perceptions of natural spaces in and around their neighbourhood or city, very few studies have asked children directly about what nature means to them and what it encompasses. At a foundational level, more research is required to promote better understandings as to how children in differing circumstances and SES communities construct nature, and what their perceptions of nature are before we can begin to ask them when, how or why they engage in nature. Only once we are equipped with a greater understanding of the meaning children attach to nature can we begin to understand children's connection or lack of connection to nature. There is an urgent need for studies with children to begin to explore children's subjective understandings, perceptions, and discursive constructions of natural spaces, especially in developing countries. While these perceptions are context-specific, they can begin to supplement much of the research with children which quantitatively attempts to answer some core questions about child-nature interactions and engagement. Fundamentally, this review enables researchers to reflect on past studies to inform and improve future research, with the intention of influencing policy and grassroots initiatives with children in their neighbourhoods. This corpus of research provides evidence that childhood experiences in nature are crucial for children in their daily lives as it contributes to several developmental outcomes and various domains of their well-being. Essentially, these experiences also foster an intrinsic care for nature.

Acknowledgements

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CHAPTER FIVE (ARTICLE 2):

‘THE RELATIONSHIP BETWEEN CHILDREN’S PERCEPTIONS OF THE NATURAL ENVIRONMENT AND THEIR SUBJECTIVE WELL-BEING’

5.1. Introduction

This chapter presents article 2 of the study which represents Phase Two, the quantitative phase of the study. This Phase essentially exemplifies the quantitative component of the mixed methods study which sought to determine the relationship between children’s environmental views and the influence on their subjective well-being (SWB). The detailed journal review process, including reviewer comments and authors’ rebuttal are given below.

5.2. Journal review process

The article was submitted to the *Children’s Geographies* journal on the 07 June 2015. *Children’s Geographies* is an international peer-reviewed journal which provides an international forum for explicating concerns around the influences on children’s geographical worlds. The journal considers papers with a focus on children’s geographies, space, place, across disciplines. The journal’s 2014 Impact Factor was 1.279 (with a 5-year impact factor of 1.411). Feedback from the journal was received on October 06, 2015, which comprised of a four-month review period, and required major revisions to the manuscript prior to acceptance. Revisions according to reviewer suggestions were effected, and a revision (Revision 1) was then resubmitted on the 24 December 2015. On the 19 January 2015 further feedback regarding revision 1 was received which indicated that the revised paper was accepted for publication in the journal. The published manuscript is presented after the reviewer comments, authors’ rebuttal below, and reflection on the review process.

5.2.1. Revision 1

The feedback from the editor and reviewers from the *Children’s Geographies* journal is presented below, as well as the authors’ rebuttal to the reviewers comments.

john.horton@northampton.ac.uk

Tue, Oct 6, 2015 at 6:57 PM

To: sabirah.adams@gmail.com

06-Oct-2015

Dear Dr Adams:

Your manuscript entitled "*The Relationship between Children's Perceptions of the Natural Environment and their Subjective Well-Being*", which you submitted to *Children's Geographies*, has now been reviewed. Apologies for the time it has taken to obtain two reviews. The reviewer comments are included at the bottom of this letter.

The reviewer(s) are generally really favourable, but they would like to see some relatively major revisions made to your manuscript before publication. I can therefore accept your paper, subject to your making some major revisions.

When you revise your manuscript please indicate how you have responded to each of these comments within the 'Author Response' section of submission.

The revised manuscript will be sent out to the original referees. We will write to you again once we have received feedback from the referees. We anticipate that this will take six weeks. Because we are trying to facilitate timely publication of manuscripts submitted to *Children's Geographies*, your revised manuscript should be uploaded by 03-Apr-2016. If it is not possible for you to submit your revision by this date, we may have to consider your paper as a new submission.

Once again, thank you for submitting your manuscript to *Children's Geographies* and I look forward to receiving your revision.

Sincerely,

Dr John Horton

Commissioning Editor, *Children's Geographies*

john.horton@northampton.ac.uk

Reviewer(s)' Comments to Author:

Reviewer: 1

This is a really clear and well written paper. Its focus is the environmental perspectives of children in South Africa and the relationship between environmental perceptions and well-being. Specifically the authors state the aim as being to “fit a structural model depicting the nature of the relationship between children’s environmental views and their global and domain specific life satisfaction”. The paper does undoubtedly achieve this aim in terms of developing a model that demonstrates an appropriate statistical relationship. However, what is less clear is how much this tells us about either children’s environmental lives children’s or their subjective well-being.

The literature and theoretical section is very well done. It examines the literature on testing and nature and environmental relationships well. The children’s research on environmental measures is well summarised.

The study includes an impressively large sample of 1004 children. I’m assuming that the NEP was seen to equate to environmental perception. In the methods was any data on ethnicity or income available or on the type of environments children live in as we don’t get any sense of the lives of the children in the study or the geographic character of their lives. I realise this was beyond this paper perhaps but it would make the paper’s findings more accessible and interesting to readers.

The discussion presents some really interesting information especially the second paragraph on page 12. What level of crime is there against children in South Africa? In the discussion there is a mix of discussion of general trends as in the literature, e.g. TV viewing and in South Africa but it often isn’t clear which of these trends or statistics are reflected in the South African situation and to what degree. The statement about “children have no access to safe natural spaces” and to the lack of use of the coastline is interesting. What evidence is there for these statements and what data from the study supports them?

In the conclusion it states that “While the current study provides some insights into understanding children’s environmental views, it engenders more questions than explanations, such as how do children make sense of nature? What does the term ‘nature’ mean to children? Does nature play an important role in children’s lives? Does nature have an impact on how children are feeling, and on their well-being?...” I feel at this point the

author summarises well the paper in that while we do get a model that has been tested and results from the model the more interesting questions that would give insights into children's lives remain unanswered. To conclude I find this paper difficult to assess as it does achieve very well its intentions to develop and test a model but the more interesting questions and information about children's environmental relationship aren't well developed.

A couple of typos on pages 10 and 12.

Reviewer: 2

This manuscript is based on a large piece of research about an under-researched topic (children's environmental views in South Africa). This is clearly of interest to readers of Children's Geographies. However, I think the authors could do more to make the manuscript accessible to readers of the Journal and to engage more directly with existing literature by Children's Geographers.

I would ask the authors to make the following revisions.

1). Give a stronger sense of how the manuscript interacts and relates with existing literature in the journal and field of children's geographies. At present, the authors make some fairly generic comments about the importance unpacking the relationship between children's perceptions of nature and subjective wellbeing. I would like to see some more detailed commentary on why this is an important task for readers of the journal. More detailed critical engagement with existing geographical and sociological literature on children's views of environments would also be useful in addressing this.

2). The contextual sections of the manuscript give a lucid discussion of features and limitations of key scales and measurement techniques in this area. I would like to see more commentary on the usefulness of such sales and measures for geographical research (therefore, again, emphasising the originality and importance of the manuscript in this context).

3). The authors could say more about the importance and originality of considering South African children's geographies. Relatively little has been written about this geographical context – can the authors outline, more broadly, why it is important to consider the geographies and wellbeing of children in this context?

4). Above all, I would like to see some more detailed discussion of the data, saying more about how the findings are important for readers. I guess the difficulty I have with this paper is that it is very much about developing and testing a model but at the end of the paper I'm not sure I know very much about the lives and environmental experiences of children in the Western Cape which is the part I would find most interesting. So more discussion which draws out some of the detail and richness of the data would be really valuable.

5.2.2. Authors' rebuttal to reviewer comments for Revision 1

The authors' rebuttal to the comments by the editor and reviewers are presented below.

Dear Editor,

We thank you for your comments and those of the two reviewers. The reviewers provided critical feedback which we feel has substantially improved the manuscript. Please note that we have included an acknowledgment to the reviewers in the manuscript.

We have addressed all the comments of the reviewers. One of the key points emphasised by both reviewers was that while the study achieved its objective to determine the relationship between children's environmental worldviews and their subjective well-being, the second reviewer mentions that "The more interesting questions that would give insights into children's lives remain unanswered" and further that "the more interesting questions and information about children's environmental relationship aren't well developed.

While we take this point, the quantitative nature and narrowly defined scope of the study did not allow for this. Initially we had envisaged that the article would report on two studies: the quantitative and a qualitative exploration which provides more in-depth insight into the role of children's engagement with nature and its impact on their subjective well-being. This, however, was not possible as both studies were of extensive scope and we were not able to reduce the word-count to journal requirements. We decided to submit the current 'more narrowly' defined quantitative study to Children's Geographies based on the belief that the readership would find the adaptation and validation the NEP Scale; and the structural equation model including subjective well-being of interest. We are unfortunately unable to address the second reviewer's above mentioned points based on the quantitative data of the study. It is however available in another manuscript which is currently under review.

Reviewer 1

Comment 1

However, what is less clear is how much this tells us about either children's environmental lives children's or their subjective well-being.

Authors' response

We have now further elaborated on the results, and not only the confirmatory factor analysis and Structural Equation Model. The interesting results have further been discussed in the Discussion.

Comment 2

In the methods was any data on ethnicity or income available or on the type of environments children live in as we don't get any sense of the lives of the children in the study or the geographic character of their lives.

Authors' response

The only information we recorded concerning the demographic characteristics of the sample of children were age, language preference, geographical location (urban or rural), and socio-economic status (low or middle income). Due to the historic and sensitive nature around ethnicity in South Africa, there has to be a strong motivation to collect data on ethnicity in the general population, and even more so for children. We therefore, did not collect data on this variable.

Comment 3

The discussion presents some really interesting information especially the second paragraph on page 12. What level of crime is there against children in South Africa?

Authors' response

We have added a section to the discussion detailing the level of crime against children in the country which clearly shows how SA has one of the highest crime rates in the world, particularly in terms of violence and sexual crimes committed against children.

Comment 4

The statement about "children have no access to safe natural spaces" and to the lack of use of the coastline is interesting. What evidence is there for these statements and what data from the study supports them?

Authors' response

These findings were detailed in a previous conducted in the context (Adams and Savahl, 2015), as well as from two articles which are currently under review.

Reviewer comment 5

The more interesting questions that would give insights into children's lives remain unanswered.

To conclude I find this paper difficult to assess as it does achieve very well its intentions to develop and test a model but the more interesting questions and information about children's environmental relationship aren't well developed.

Authors' response

The current study aimed to assess the relationship between children's environmental views (using the NEP scale) and their subjective well-being (using the SLSS and PWI-SC). While no significant relationship was found between the two, despite the large literature base showing a relationship with various well-being domains, various confounding variables are considered as well as possible reasons for this outcome.

We have also included a discussion of the item mean scores for the scales used, and what the implications of these findings are in relation to the aim of the study.

Reviewer 2

Comment 1

Give a stronger sense of how the manuscript interacts and relates with existing literature in the journal and field of children's geographies.

More detailed critical engagement with existing geographical and sociological literature on children's views of environments would also be useful in addressing this.

Authors' response

Additional literature in the field of children's geographies and children's environments.

Comment 2

I would like to see more commentary on the usefulness of such scales and measures for geographical research (therefore, again, emphasising the originality and importance of the manuscript in this context).

Authors' response

We have added a section to the introduction outlining the theoretical relation and merger between environmental psychology (assessed by children's environmental worldviews) and positive psychology (children's subjective well-being) providing a motivation for employing these measures for geographical research.

Comment 3

The authors could say more about the importance and originality of considering South African children's geographies. Relatively little has been written about this geographical context – can the authors outline, more broadly, why it is important to consider the geographies and wellbeing of children in this context?

Authors' response

We have included a motivation in the introduction for the importance of children's environmental perceptions and well-being.

Comment 4

I would like to see some more detailed discussion of the data, saying more about how the findings are important for readers. So more discussion which draws out some of the detail and richness of the data would be really valuable

Authors' response

We have included a more detailed description of the data, and what the implications of this are.

5.3. Reflections on the review process

The review process for the Children's Geographies journal required only one round of revisions, and was a smooth process. Feedback for the initial comments took only four months, and the follow-up to acceptance of the manuscript was rapid as well. The feedback from the editor and two reviewers were constructive, and contributed greatly to the final published manuscript. Article 2 is presented below.

The Relationship between Children's Perceptions of the Natural Environment and their Subjective Well-Being

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Abstract

The overarching aim of the study was to ascertain the relationship between children's perceptions of the natural environment and their subjective well-being. More specifically the study aimed to fit a structural model depicting the nature of the relationship between children's environmental views and their global, and domain specific life satisfaction. The sample included 1004 twelve-year old participants randomly selected from 15 primary schools in Cape Town, South Africa. The measuring instrument included the New Ecological Paradigm scale for children, the Students' Life Satisfaction Scale and the Personal Well-Being Index-School Children. Confirmatory factor analysis was used to test the validity of the New Ecological Paradigm scale which showed appropriate fit structure. A good fit structure was also found for the overall structural equation model. However, the overall model showed that children's environmental views were not related to their global life and domain specific life satisfaction. At a foundational level, more research is required to allow for a better understanding of how children in differing circumstances construct and assign meaning to nature, and what their perceptions of nature are before we can begin to ask them when, how or why they engage in nature.

Keywords: children's environmental perceptions; children's subjective well-being; New Ecological Paradigm Scale; Students' Life Satisfaction Scale; Personal Well-Being Index

Introduction

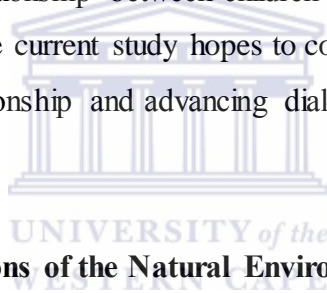
Mayer and Frantz (2012) note that while many early and seminal research efforts on environmental attitudes and sustainability were concerned with particular local environmental issues within communities, contemporary research in the field focuses more broadly on environmental worldviews and understandings. It was prominent ecologists and ecopsychologists (Orr, 1994; Roszak, 1969) who maintained that human's connection to nature is key to understanding, and changing ecological behaviours. It was this premise, coupled with the assertion that in order to enhance environmentally sustainable and protective behaviours we need to incorporate nature within our sense of self, which formed the basis of understanding that damage to nature would in turn result in damage to the self (Roszak, 1995). Researchers devoted to this wide-ranging field of study over the past two decades became acutely aware of the link between children's experiences in natural spaces, and the impact on various domains of their well-being (Adams & Savahl, 2015; Gill, 2014; Huynh et al., 2013). In this respect, Kerret et al. (2014) proposed the concept of '*environmental subjective well-being*', delineating the importance of two related concerns of prevailing societies; that of conserving the natural environment and children's well-being. Other researchers have proposed different concepts which encompass the same focus as that of Kerret et al. (2014) - *positive psychology of sustainability* (Verdugo, 2012), and *positive ecological attitudes* (Kasser, 2011).

Much of the research on children's environmental worldviews has previously focused on the reveries of childhood; the imagined and remembered spaces of childhood that adults recall. However, these accounts were scrutinised by child researchers who argued for the inclusion and exploration of children's perspectives. Although research on children's perceptions and experiences of natural space is a burgeoning field, accounts from developing countries, generally in the global South, and particularly in South Africa (SA) remains limited. Only one study has been identified which focused on children's perceptions of the natural environment in this context (see Adams & Savahl, 2015).

Myers (2012) contends that access to natural spaces is a determining factor limiting children's engagement therein. A key theme which emerged from his summation of the literature was that nature brings about both intense positive and negative emotional experiences in children. In developing countries like SA, an important consideration in understanding children's engagement with the nature is access to *safe* natural spaces. With

one of the highest rates of inequality in the world (Bosch, Roussouw, Claasens, & Du Plessis, 2010), socio-economic status has been identified as a definitive factor shaping children's everyday lives in this context. The study by Adams and Savahl (2015) point to children's restricted access to natural spaces owing to threats against their safety, particularly in low socio-economic status (SES) communities. These low SES communities are very often characterised by environments which are of poor quality, perilous natural play spaces, less natural features, poorer services, more traffic and crime, and higher levels of physical deterioration. Thus, as articulated by Hart (1994, p. 95), "children's access and mobility to outdoor environmental diversity across the world has to a large extent been curtailed due to fears of crime and traffic".

While the interest in human's connection to the natural world and their well-being is well established in the literature, particularly with regard to adults, there is limited empirical initiatives which explores the relationship between children's perceptions of nature and their subjective well-being (SWB). The current study hopes to contribute in this regard, by further unpacking the nature of this relationship and advancing dialogue within the area of children's well-being.



Measuring Children's Perceptions of the Natural Environment

The absence of validated scales to measure children's environmental views and their SWB perpetuated the development of several scales. Several scales have been proposed to assess children's environmental worldviews, such as the Children's Attitudes Toward the Environment Scale (CATES) (Musser & Malkus, 1994), Children's Environmental Attitude and Knowledge Scale (CHEAKS) (Leeming, Dwyer, & Bracken, 1995), the New Ecological Paradigm (NEP) Scale for Children (Manoli et al., 2007), the Environmental Scale (2-MEV) (Bogner & Wilhelm, 1996), General Attitude Scale about Environmental Issues (GASE) (Metin, 2010), and the Attitude Toward Environmental Issues Scale (ATEIS) (Yilmaz, Boone & Andersen, 2008).

Many of these scales have however, come under scrutiny (Johnson & Manoli, 2011). The CATES has been criticised for its bipolar response options, and poor psychometric properties; while the CHEAKS has been criticised for the deficiency of a theoretical grounding (Johnson & Manoli, 2011). The NEP Scale has been the most widely used of these scales (Stern, Dietz, & Guagnano, 1995). The original NEP scale developed by Dunlap and

van Liere (1978; Dunlap et al., 2000), for use with adults, proposed a one-dimensional scale and has been shown to display good psychometric properties in varying contexts worldwide. The scale was later revised by Manoli, Johnson, and Dunlap (2005, 2007) for use with children evincing a uni-dimensional construct. Overall scores on the scale exist on a continuum, with low scores indicating anthropocentric attitudes (valuing nature for the material and physical advances it affords humans), and high scores indicating ecocentric attitudes (valuing nature intrinsically) (Manoli et al., 2007).

Children's Subjective Well-Being: Current Trends in Measurement

With the notable increase in research on children's environmental views, primarily over the last two decades, the nascent interest in children's subjective well-being (SWB) has equally expanded exponentially. The concept of SWB, considered a component of Quality of Life, is defined as "people's affective and cognitive evaluations of their lives." (Diener, 2000, p.1). While numerous research endeavours have examined adult's SWB, there is an absence in the literature on children's subjective well-being (Casas, 2011).

Within the international literature, a number of instruments have been developed which has shown good validity across a range of cultural contexts. Among the most widely used scales are those that measure global life satisfaction (Student's Life Satisfaction Scale) and those measuring multiple dimensions (Personal Well-Being Index-School Children, the Multidimensional Student Life Satisfaction Scale, and the Brief Multidimensional Student Life Satisfaction Scale). In the current study the Student Life Satisfaction Scale (SLSS) and the Personal Well-Being Index- School Children (PWI-SC) were used.

Engaging with nature: Impact on children's well-being

A recurring conclusion emerging from the literature is that nature offers opportunities and experiences for engagement which benefit children's well-being in a myriad of ways, such as improving physical, psychological and emotional developmental outcomes (see). Studies on children's physical well-being (Bell et al., 2008; Fjørtoft, 2001) have explored how nature in the home and school contribute to children's healthy development, and how play in nature influences their motor fitness. Studies on children's psychological and emotional well-being (see Huynh et al., 2013; Kuo & Taylor, 2004; Tranter & Malone, 2004) examined the effect of nature on children's ability to cope with stress and Attention Deficit Hyperactivity Disorder (ADHD) symptoms, the impact of nature on children's cognitive functioning, and

how engaging in nature contributes to children's environmental identity, and in particular their motivations for intrinsic care for nature (Chawla, 2006).

Aim of the study

The overarching aim of the study was to ascertain the relationship between children's perceptions of the natural environment and their subjective well-being. More specifically the study aimed to fit a structural model depicting the nature of the relationship between children's environmental views and their global (SLSS) and domain-specific (PWI-SC) life satisfaction.

Method

Design

The study followed a cross-sectional survey design and forms part of the *Children's Worlds Project: International Survey on Children's Well-Being* (ISCWeB). The ISCWeB project is an international collaborative study that aims to collect information about children's perceptions of their subjective well-being, their time use, and daily activities (see isicweb.org).

Research context and sampling

Despite the central principle of equality in the South African Constitution, inequality remains pervasive in the country. Widespread social inequality is one of the most ruinous consequences of the Apartheid regime, which has resulted in privileged and disadvantaged communities. Privileged communities are characterised by high income, educational attainment and employment, and low incidence of violence; and disadvantaged communities characterised by low educational attainment and income, high rates of substance abuse, unemployment and crime and community violence.

The study was conducted in primary schools in the Western Cape Province of South Africa, one of nine provincial regions. It is a typical urban environment with an estimated population of 6 million. The study participants were 12-years old, and selected from both low and middle SES communities. The province consists of four urban Education Management District Councils (EMDC's) governed by the Western Cape Education Department (WCED). Private schools were excluded owing to access restrictions. A two-stage stratified random sampling protocol was followed, ensuring that children from various cultural, SES, and

geographical groups were selected. Firstly, schools were stratified in terms of EMDC's. Secondly, schools were stratified by SES (low or middle), and thereafter randomly selected from these strata. This resulted in a total sample of 1048 children. Once the data were cleaned, the final sample consisted of 1004 participants. Of this, 58.6 % (n = 588) were from the low SES group (from 8 schools) and 41.4% (n = 416) from the middle SES group (from 7 schools). Girls comprised 53.9% (n = 541) whilst boys comprised 46.1% (n = 463) of the sample.

Instrumentation

New Ecological Paradigm Scale for Children (Manoli et al., 2007)

The 10-item NEP Scale for Children was used to collect data. The NEP initially focused on specific, local environmental problems but has since evolved to focus on “global problems with complex, synergistic causes and unpredictable, possibly irreversible effects.” (Manoli et al., 2007, p.4). Manoli et al. (2005, 2007) addressed the gap in the literature by revising and validating the original NEP scale for use with children. The revised scale consisted of 10 items, with response options ranging from “strongly disagree” (1), to “strongly agree” (5), with items 3, 6, 7, and 9 negatively phrased. The scale has shown acceptable fit indexes amongst a sample of children between 10-12 years (Manoli et al., 2007).

Students' Life Satisfaction Scale (Huebner, 1991)

The seven-item Students' Life Satisfaction Scale (SLSS) was developed to assess children's (ages 8-18 years) global life satisfaction (Huebner, 1991; 1994). The items are domain-free and require respondents to evaluate their satisfaction on a 5-point Likert scale ranging from “*very much disagree*”(0), to “*very much agree*”(4). The scale has been shown to display acceptable internal consistency ($\alpha = 0.82$, Huebner, 1991; Huebner et al. 2004; $\alpha = 0.86$, Dew & Huebner, 1994; $\alpha = 0.89$, Marques et al 2007). The SLSS has also evinced convergent validity by correlating well with other life satisfaction measures (Dew & Huebner, 1994; Huebner, 1991) and overall life satisfaction (Casas et al., 2013). The scale has also been shown to display good criterion (Huebner, Suldo, & Valois, 2003), discriminant (Huebner & Alderman 1993), and predictive validity (Suldo & Huebner, 2004). In the current context empirical guidelines for normative scores and ‘cut-points’ have not been determined.

Personal Well-Being Index-School Children (Cummins & Lau, 2005)

The Personal Well-Being Index-School Children (PWI-SC) was developed by Cummins and Lau (2005) to assess children's SWB, and is based on the adult version of the scale (Cummins et al., 2003). This seven-item, domain-specific scale evaluates a number of life satisfaction domains, such as standard of living, health, achievement in life, personal relationships, personal safety, feeling part of the community and future security (Cummins & Lau, 2005); with two adapted items which are often used, assessing religion/spirituality and school experience. The item on school experience has been included in this study- therefore using an 8-item version (PWI-SC8). Response options for the PWI-SC are presented on an 11-point rating scale from "not satisfied at all" (0) to "completely satisfied" (10). The PWI-SC generates a composite variable which is determined by calculating the mean for the items. The PWI-SC has shown acceptable levels of reliability ($\alpha = 0.83$, Casas & Rees, 2014; $\alpha = 0.82$, Tomy & Cummins, 2011).

Data Analysis

The study uses Structural Equation Modelling (SEM) and Confirmatory Factor Analysis (CFA) to address the stated aims and objectives. Structural Equation Modelling represents a set of data analysis techniques wherein a "series of hypotheses about how the variables in the analysis are generated and related" (Hu & Bentler, 1999, p. 2). The basic tenet of SEM is that proposed models (indicating the relationships between variables) have a strong theoretical rationale. Subsequently, designation of specified models needs to be based on underlying theoretical relationships between observed and unobserved variables. Assessing the extent to which hypothesised models fit the observed data and the estimation of parameters are the key goals of SEM. Within SEM the two most popular techniques to assess model fit are Model Test Statistics and Approximate Fit Indexes (Hu & Bentler, 1999; Kline, 2010).

A Model Test Statistic, of which the Chi Square goodness-of-fit statistic is the most widely used, is an assessment of the degree to which the covariance matrix in the specified model significantly differs from the sample covariance matrix. Lower values indicate a higher degree of correspondence between the specified models and the observed data (Kline, 2010).

Approximate Fit Indexes are conceptualised as continuous measures of model-data correspondence and is not concerned with rejecting or accepting the null hypothesis (Kline, 2010). The two most common types of approximate fit indexes are absolute and incremental

fit indexes. Absolute fit indexes determine how well a hypothesised model fits the sample data in comparison to no baseline model, while incremental fit indexes attempt to fit a hypothesised model to a baseline model wherein the null hypothesis is that the variables in the model are uncorrelated (Hooper, Coughlan, & Mullen, 2008; Hu & Bentler, 1999). Examples of absolute fit indexes include the standardized root mean square residual (SRMR) and the root mean square error of approximation (RMSEA). Examples of incremental fit indexes include the comparative fit index (CFI), the Tucker-Lewis Index (TLI) and the Normed Fit Index (NFI). It is recommended that more than one fit index be used to assess model fit (Hooper et al., 2008). If a good-fitting model exists the researcher is able to validly assess the strength and nature of causal paths between variables. Following recommendations by Jackson, Gillaspay, and Purc-Stephenson (2009) and Kline (2010) the CFI, RMSEA and SRMR were used as fit indexes in the current study. These recommendations have been used in a number of studies on children's well-being by Casas (see e.g. Casas et al., 2012; 2013) using cut-scores of $>.950$ accepted for CFI and scores $<.05$ regarded as a good fit for RMSEA and SRMR.

Procedure and Ethics

Once the final sample was selected, permission was sought from the WCED and the University Higher Degrees Committee to access the schools. Schools were contacted telephonically and meetings arranged between the research team, and the school principals. Once the schools agreed to participate in the study, an information session was arranged with the prospective 12-year old participants, where the aim, the nature of their involvement, and ethics of the study were discussed. Specific ethics principles of informed consent, anonymity, privacy and the right to withdraw were highlighted. Those children who agreed to participate were required to provide signed consent, and obtain signed consent from their parents. Only those who returned the consent forms participated in the study. The questionnaires were administered following a researcher-administered protocol.

Results

Descriptive Statistics

Following recommendations by Casas et al. (2012), all cases on the measures with more than two missing values were deleted, while those with two or less missing values were substituted by regression. The skewness for the items on the NEP Scale ranged from $-.65$ to 0.27 ; $.68$ to $-.12$ for the SLSS and $-.90$ to -2.145 for the PWI-SC. Kurtosis ranged from -1.26

to -0.97 on the NEP scale; 1.12 to -.138 for the SLSS, and -.23 to 4.73 for the PWI-SC. These departures from normality were handled using bootstrapping (500 samples) as specified in AMOS (version 22). The Cronbach's Alphas for the various scales are presented in Table 1.

Table 1: Cronbach's Alpha for the NEP, SLSS and PWI-SC Scales

Scales	Cronbach's Alpha	No. of items
NEP	.86	10
SLSS	.75	7
PWI-SC	.68	8

The item mean scores for the NEP, the SLSS, and the PWI-SC are presented in Tables 2 to 4. The highest mean scores on the NEP were obtained for Item 5 (*When people mess with nature it has bad results; \bar{x} = 3.61; sd = 1.46*) and Item 4 (*People must still obey the laws of nature; \bar{x} = 3.57, sd = 1.56*). For the PWI-SC, the highest mean scores were obtained for Item 4 (*Satisfied with health; \bar{x} = 8.76, sd = 2.10*) and Item 6 (*Satisfied with things I'm good at; \bar{x} = 8.73, sd = 2.06*). Finally, for the SLSS the highest mean scores were for Item 1 (*My life is going well; \bar{x} = 3.21, sd, 0.93*) and Item 5 (*I have a good life; \bar{x} = 3.17, sd = 1.04.*)

Table 2: Item mean scores for the NEP Scale

	N	Mean	Std. Deviation
Plants and animals have as much right as people to live	1004	3.40	1.52
There are too many people on earth	1004	3.11	1.34
People are clever enough to keep from ruining the earth	1004	3.19	1.36
People must still obey the laws of nature	1004	3.57	1.56
When people mess with nature it has bad results	1004	3.61	1.46
Nature is strong enough to handle the bad effects of the way we live	1004	3.03	1.33
People are supposed to live over the rest of nature	1004	2.72	1.35
People are treating nature badly	1004	3.36	1.39
People will someday know enough about how nature works to be able to control it	1004	3.29	1.37
If things don't change, we will have a big disaster in the environment soon	1004	3.48	1.45

Table 3: Item mean scores for the PWI-SC

	N	Mean	Std. Deviation
Satisfied with things I have	1004	8.58	2.18
Satisfied with relationships in general	1004	8.17	2.36
Satisfied with school experience	1004	8.34	2.23
Satisfied with health	1004	8.76	2.10
Satisfied with safety	1004	8.39	2.38
Satisfied with things I'm good at	1004	8.73	2.06
Satisfied with things away from home	1004	6.93	3.14
Satisfied with future security	1004	7.62	2.88

Table 4: Item mean scores for the SLSS

	N	Mean	Std. Deviation
My life is going well	1004	3.21	0.93
My life is just right	1004	3.07	1.02
Like to change things in my life	1004	1.34	1.35
Wish I had a different Life	1004	2.15	1.47
I have a good life	1004	3.17	1.04
I have what I want in life	1004	2.75	1.18
My life is better than most kids	1004	2.67	1.20

Confirmatory Factor Analysis

Confirmatory factor analysis (Maximum Likelihood Estimation) was used to test the validity of the scales. The PWI-SC and the SLSS were previously tested and showed good fit structure with items 3 and 4 on the SLSS removed (see Casas & Rees, 2015). Therefore, in the current study only the validity of the NEP scale was tested.

The NEP scale was initially conceptualised as a one-factor model, which is tested in the current study. The initial model (Model 1 in Table 5) showed poor fit structure with scores for the CFI, RMSEA, and SRMR not meeting the prescribed threshold values. An analysis of the standardised regression weights indicated that item 7 (*People are supposed to rule over the rest of nature*), had a low factor loading of 0.25. When this item was deleted, the model improved substantially (Model 2 in Table 5).

Further improvement of the model fit (Model 3 in Table 5) was obtained with the application of three error co-variances (items 2 to 6; items 6 to 9 and items 8 to 10). Figure 1 below presents the model with item 7 deleted with three error co-variances.

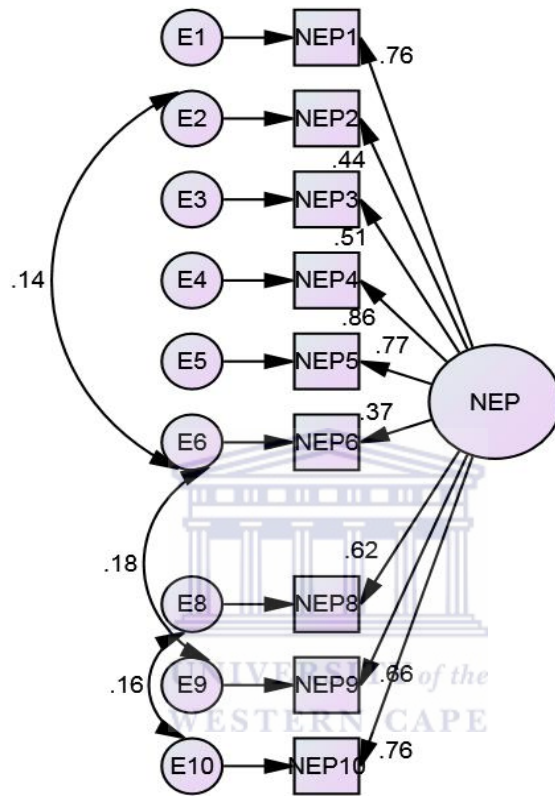


Figure 1: Overall Model for the NEP excluding item 7

Table 5: Fit statistics for the NEP Scale and the overall pooled Model

Model	χ^2	df	p-value	CFI	RMSEA	SRMR
1 NEP (Initial Model) Initial Model	272.50	35	0.00	0.94	0.08 (0.073 – 0.091)	0.052
2 Modified NEP Model (With item 7 excluded)	147.23	27	0.00	0.966	0.07 (0.056 – 0.077)	0.036
3 Modified NEP Model (Excl. item 7; with 3 error co-variances)	78.09	24	0.00	0.985	0.05 (0.036 – 0.059)	0.025
4 SEM Initial (NEP; SLSS; PWI)	1041.82	272	0.00	0.893	0.05 (0.050 – 0.057)	0.050
5 SEM Modified Model (Excl. item 7 on NEP; Excl. item 3 & 4 on SLSS; with 5 error co-variances)	401.55	201	0.00	0.97	0.03 (0.027 – 0.036)	0.032

Structural Equation Modelling

An overall model including the NEP scale, the SLSS, and the PWI-SC was tested using SEM. The results are presented in Table 5 (Model 4 & 5).



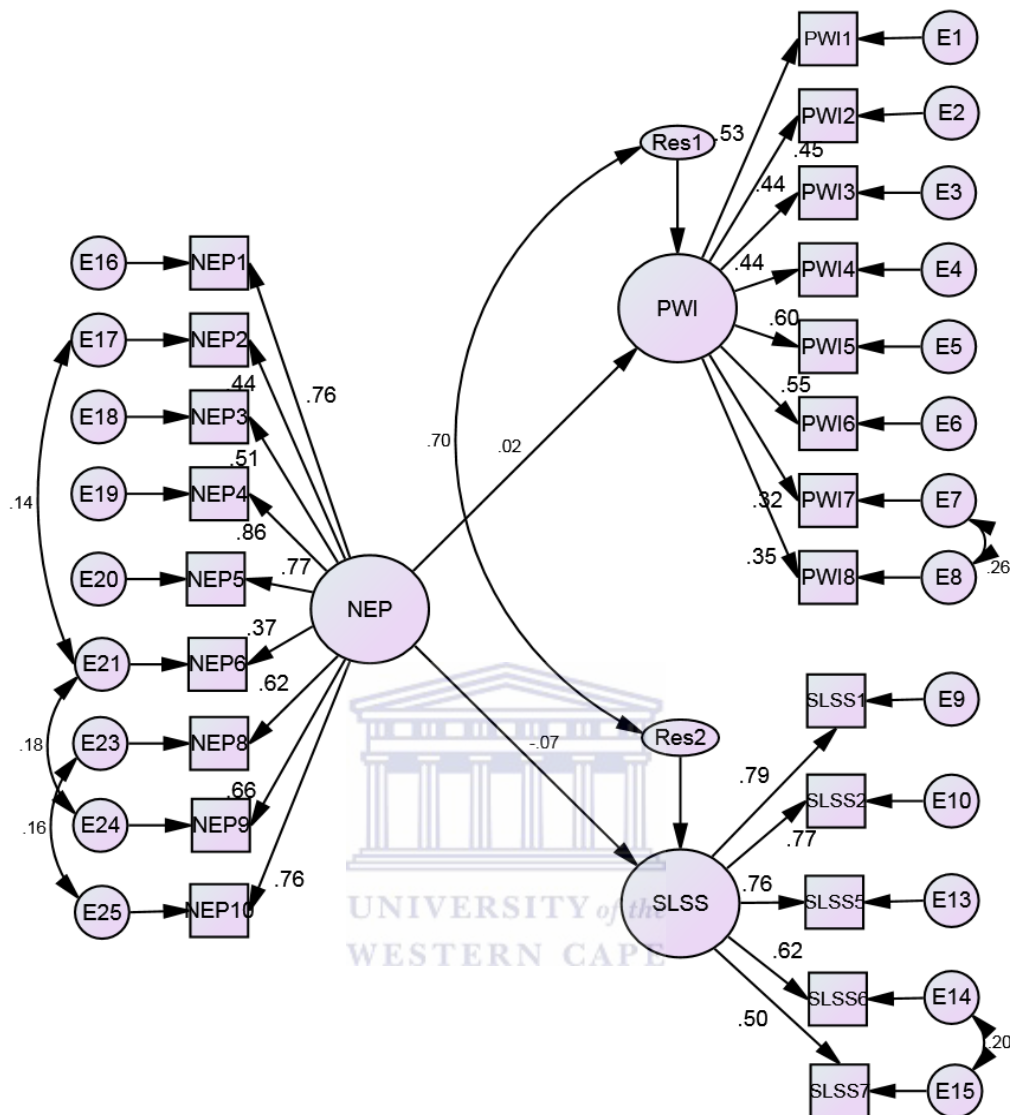


Figure 2: Structural Equation Model with 5 error co-variances

The initial SEM model showed a poor fit (Model 4 in Table 5), but improved when the model was modified with five error co-variances, with scores on all fit indexes meeting threshold criteria (Model 5 in Table 5). Figure 2 above presents the SEM depicting the extent to which the NEP loads onto domain-specific (PWI-SC) and global (SLSS) life satisfaction. The overall modified model displayed a good fit structure with adequate factor loadings of indicator variables on latent variables (Table 6). There is also evidence of adequate correlation of PWI-SC and SLSS (0.70) suggesting that these latent variables are conceptually related. A key finding of the model is the low standardised regression weights

of the NEP to the PWI-SC (0.02) and SLSS (-0.07). Essentially this indicates that there is no relationship between children’s perceptions of the natural environment and domain-specific and global life satisfaction.

Table 6: Standardised regression weights for the NEP, PWI, and SLSS

Parameter		Estimate	Lower	Upper	P
PWI	<--- NEP	.02	-.06	.10	.622
SLSS	<--- NEP	-.07	-.14	-.00	.046
SatisfiedThingsHave	<--- PWI	.53	.47	.60	.004
SatisfiedRelationshipsGeneral	<--- PWI	.45	.38	.53	.004
SatisfiedSchoolExperience	<--- PWI	.44	.35	.51	.004
SatisfiedHealth	<--- PWI	.45	.37	.53	.004
SatisfiedSafety	<--- PWI	.60	.53	.66	.004
SatisfiedThingsGoodAt	<--- PWI	.60	.49	.62	.004
SatisfiedThingsAwayFromHome	<--- PWI	.32	.25	.38	.004
SatisfiedLaterInLife	<--- PWI	.36	.29	.43	.004
LifeGoingWell	<--- SLSS	.79	.75	.83	.004
LifeJustRight	<--- SLSS	.77	.73	.82	.004
HaveGoodLife	<--- SLSS	.76	.70	.81	.004
HaveWhatWant	<--- SLSS	.62	.57	.68	.004
LifeBetterThanMost	<--- SLSS	.50	.44	.56	.004
PlantsAndAnimalsRightToLive	<--- NEP	.76	.72	.79	.004
TooManyPeopleOnEarth	<--- NEP	.44	.38	.50	.004
PeopleKeepFromRuiningEarth	<--- NEP	.51	.45	.57	.004
PeopleObeyLawsOfNature	<--- NEP	.86	.83	.89	.004
PeopleDamagingNatureBadResults	<--- NEP	.77	.73	.81	.004
NatureStrongEnoughToHandleWayWeLive	<--- NEP	.37	.30	.43	.004
PeopleTreatingNatureBadly	<--- NEP	.62	.57	.67	.004
PeopleControlNature	<--- NEP	.66	.60	.71	.004

Discussion

Despite the established relationship between children’s engagement in nature and the ensuing impact on their well-being in the literature, the findings in this study do not support this relationship. Low standardised regression weights of the NEP scale to both the PWI-SC and SLSS indicates that children’s environmental views are not related to their domain-specific, and global life satisfaction. Although this finding was unexpected given the large international literature base providing evidence for the positive outcomes of children’s engagement in nature on various domains of their well-being, it does begin to elucidate the meaning and importance children attach to nature in the current context. This finding could be attributed to a number of confounding variables.

While there was no relationship found between children's environmental worldviews and their subjective well-being, the descriptive statistics portray an interesting story. Considering the three dimensions the NEP scales assesses, that is *Rights to nature* (Item 7, 1, 4), *Eco-crisis* (10, 2, 8, 5), and *Human Exemptionalism* (3, 6, 9, 12), it was interesting to find that the *Human Exemptionalism* dimension items, all of which are negatively phrased, received high disagreement from the participants. Item 3 (*People are clever enough to keep from ruining the earth*) obtained a high level of disagreement from participants ($\bar{x} = 3.19$, $sd = 1.36$), indicating that children do not believe that people have the capability to protect nature. A possible motivation for this could be the degraded natural environments and communities which many children in this context live in, reflecting their everyday lives. This links to the broader state of children's lives in South Africa, notably that of the approximate 18 million children in the country, 11 million live in impoverished conditions. The one study which was conducted on the topic in this context showed a *repudiation of responsibility* of children's community members to pro-environmental behaviour and protection of nature (see Adams & Savahl, 2015). This may be useful in understanding the current study participant's perceptions that nature cannot handle the pressure humans put on it (Item 6: *Nature is strong enough to handle the bad effects of the way we live*: $\bar{x} = 3.03$; $sd = 1.33$), nor that humans have the ability to rule over nature (Item 9: *People will someday know enough about how nature works to be able to control it* ($\bar{x} = 3.29$; $sd = 1.37$)).

Another possible explanation for the key finding in this study is that of safety, as identified in the literature. The environment for children within their communities in the Western Cape has become one laden with risk and peril; where nature is synonymous with danger. Children's opportunities to engage in nature are therefore governed by a social milieu characterised by a high incidence of violence, crime. The pervasive nature of violence in South Africa is evident in the homicide rate of 33 per 100,000 in 2014/15, which is more than five times higher than the 2013 global average of 6.2 murders per 100,000. This translates into 49 people being killed daily, with the total number of incidents of murder increasing from 17,023 murders in 2013/2014 to 17,805 in 2014/2015 (South African Police Services, 2015). More so, 827 children were victims of homicide in South Africa between 2012/2013, with 42 822 children the victims of violent crime (South African Police Service, 2013). Most crimes committed against children were of a physical and sexual nature in their home or neighbourhood (DSD, DWCPD & UNICEF, 2012). Therefore, in this context the threat to

children's safety is real and imminent, not merely *risk anxiety* (Foy-Philips & Lloyd-Evans, 2011). Given this, nature may not be a primary concern for children in comparison to personal safety, evincing that "*Childhood has been driven from the streets and from public space into private space.*" (Jones, Williams, & Fleuriot, 2003, p.167).

Several studies have shown how the geographies and mobility's of children have shrunk over the past few decades owing to threats against children's welfare and safety (Hart, 1994; Karsten & van Vliet, 2006; MacDougall, Schiller, & Darbyshire, 2009). Studies that have been conducted with children in SA in particular (see Adams & Savahl, 2015; Isaacs & Savahl, 2013; Moses, 2005; Parkes, 2007; Savahl et al., 2014; Swart-Kruger & Chawla, 2002) reveal the extent to which safety concerns in children's immediate, and neighbourhood environments influence their lives in a significant way.

Along with trepidation around safety, the increasing use of information and communication technology (ICT) is emerging as one of the key factors contributing to the denigration of children's engagement with nature. With children allocating increasing amounts of their time using various forms of technology for leisure, spending time indoors has become the "epicentre of their social lives" (Moss, 2012, p. 6).

Ultimately, the lack of association between children's environmental views and their well-being in this study speaks to the broader issue of children's spaces, and how children find difficulty in negotiating spaces in which they can engage (see Moses, 2005). This point is particularly relevant if one takes the diversity of social contexts into consideration. In South Africa for example, the experiences of engaging with nature differ markedly across socio-economic status groups. Children from middle-income communities have opportunities and access to nature, evincing a close attachment to nature (Adams & Savahl, 2016), which acts as a buffer against life stressors and in developing resilience proficiencies (Wells & Evans, 2003). Children from low-income communities however, experienced nature as the *dangerous other*, as natural spaces are characteristically unsafe and dangerous (Adams & Savahl, 2015; 2016). In line with this, Leonard (2007, p.444) notes that

"children's geographies cannot be divorced from the societies in which they live their daily lives. This is not to suggest that children experience the societies in which they live in similar ways. Class, gender and ethnicity are likely to affect children's experiences of the immediate and wider geographical environment."

Conclusion and Recommendations

With the discipline of children's geographies and environmental psychology in its infancy in the current context, this provides researchers the opportunity to develop the field and begin to explore and understand the meanings children attribute to nature. The unexpected finding in this study evinces the need for laying the foundation for research in this area. Given the absence of research on the topic in South Africa, it would be crucial to complement this with qualitative work which considers how children make sense of nature, using participatory techniques with children to enable them to convey their understandings and narratives.

The lack of environmental education in the school curriculum in South Africa contributes to the already challenging task of fostering an ethos of intrinsic care for nature in the formative years of children's lives. At a foundational level, more research is required to allow for a better understanding of how children in differing circumstances construct and assign meaning to nature, and what their perceptions of nature are before we can begin to ask them when, how or why they engage in nature.

Acknowledgement

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**CHAPTER SIX (ARTICLE 3):
'CHILDREN'S DISCOURSES OF NATURAL SPACES: CONSIDERATIONS FOR
CHILDREN'S SUBJECTIVE WELL-BEING'**

6.1. Introduction

This chapter presents Article 3, which encompasses Phase Three, which is the first of the qualitative articles in the dissertation- the second being Chapter Seven: Article 4. Using discourse analysis, this article sought to explore children's understandings of natural spaces and the ensuing influence on children's subjective well-being. The journal review process is summarised below, as well as the reviewer comments and authors' rebuttal to reviewer comments, and the reflection on the review process. Finally, Article 3 is presented.

6.2. Journal review process

This article was submitted to *Child Indicators Research* (CIR) journal on the 17 September 2015. The journal considers how child indicators can be employed to enhance the development and well-being of children, and publishes papers on research, theory, as well as review studies across disciplines. Child Indicators Research is also the official journal of the International Society for Child Indicators (ISCI) and has an *Impact Factor of 1.162*. Feedback was received from the journal on the 25 December 2015, thus comprising a three-month review period. The comments from this review indicated that minor revisions were suggested for the manuscript prior to acceptance. The changes suggested by the reviewers were effected, and revision 1 was submitted on the 22 January 2016. Feedback for revision was then received within two weeks, on the 06 February 2016, whereby the revised manuscript was accepted for publication in the CIR journal. The published paper is presented after the reviewer comments and rebuttal for revision 1, and a reflection on the review process.

6.2.1. Revision 1

The response from the editor of Child Indicators Research journal is presented below, and details the reviewer's comments for the article and the authors' response to the reviewer comments.

Bong Joo Lee <em@editorialmanager.com>

Fri, Dec 25, 2015 at 4:58 AM

Reply-To: Bong Joo Lee <bongjee@snu.ac.kr>

To: Sabirah Adams <sabirah.adams@gmail.com>

Ref.: Ms. No. ISCI-D-15-00104

Children's discourses of natural spaces: Considerations for children's subjective well-being
Child Indicators Research

Dear Ms Adams,

Reviewers have now commented on your paper.

Based on their reviews I have decided to accept your paper for publication at CIR with some minor revisions.

I hope you are willing to undertake the work required, and revise your paper accordingly.

For your guidance, reviewers' comments are appended below.

Your revision is due by 02/07/2016. If you need more time please contact the journal office.

Please submit a list of changes or a rebuttal against each point which is being raised when you submit the revised manuscript.

Thank you for considering CIR for publishing your work!

Bong Joo Lee

Editor-in-Chief

Child Indicators Research

Reviewers' comments

Reviewer #1: *The article uses a multi-stage qualitative approach to identify and explore children's discourses regarding how they define and engage with natural spaces and 'nature', with a specific analysis of how this influences subjective well-being. The article makes a significant contribution to the literature on children's well-being and children's relationship to social and physical space and place. It is well-written, logically structured and based on a sound methodological design. The findings provide some original insights into children's understandings and experiences of 'nature' and on children's subjective well-being more generally. I therefore highly recommend publication of this article subject to a few clarifications, which really extend upon the author(s) conceptual framework. I outline these below:*

*What is meant by subjective well-being? The author(s) utilise Diener's important and influential definition of quality of life. I have no concerns with this. However the author(s) utilise a methodology that gives priority to modes of subjectivity and children's perceptions. There is some literature that suggests that epistemologically and ontologically there is a significant distinction between those traditions that focus on subjective QoL (and generally utilise standardised measure of individual's perceptions) and traditions that prioritise individual's own constructions, understandings and experiences - that is, they emphasise subjectivity. While this is not a critical injunction, it may be worth including a paragraph on this matter, given the tension within the paper (or perhaps even contradiction) between the use of a certain definition of subjective Quality of Life on the one hand and a participatory subject-oriented and discourse analytic approach on the other. This may be especially relevant to the Theme 4 findings and Discussion, as the use of subjective well-being in these sections emphasises well-being as a subjective and discursive experience. For a review of methodological approaches you may find Mason, J. and Watson, E. (2014) *Researching Children: Research on, with, and by Children in the Ben-Arieh et al. Handbook of Child Well-Being*, particularly useful.*

Natural spaces or social spaces? The local context of the areas in which field work was conducted is critical to the results. Much of the discussion of findings relates to safety and access to outdoor spaces, which could exist in urban and rural settings. This dimension of the analysis should be made clearer, as the term 'natural spaces' is often associated with rural landscapes, which becomes increasingly the construction of 'nature' relied upon within the article. (I would also suggest that the participant who states 'nature is everything to me' is referencing a discourse of the 'global environment'). However the use of the concept 'nature' is not differentiated enough in the analysis. As such it would be important to distinguish between rural spaces and urban outdoor locations in the discussion of the results. This is a point particularly emphasised in recent studies of children and place and child-centred human geographies, that utilise concepts of local space and place to discern the influence of local geographies on children's sense of well-being. I would suggest doing this by building in more ethnographic description into the text regarding Gordon's Bay, Mitchell's Plain and Stellenbosch and contextualise the results, using greater discursive commentary that links the quote to place. Such a change would then help differentiate between uses of the concept of nature that are presented in Themes 1 and 2, and the concept of nature presented in Theme 3 and which is assumed in Theme 4 -which appears to relate to appreciation of the physical,

natural environment. Consequently, a comparison of differentiated concepts of 'nature' discussed by the participants could be highlighted. For instance, such a discussion would more persuasively set up discussion regarding the relationship between access to 'outdoor physical nature' and what is described as 'superficial nature' and its relationship to subjective well-being (the focus of Theme 4).

Furthermore, that this is a study based on data collection in three provinces surrounding Cape Town has important significance to the meaning of the concepts prioritised by the children in this study. For example, experiences of safety discussed by children in this study are likely to be quite different to how children in other contexts might understand and experience 'safety'. While both groups of children might equally emphasise 'safety' in their discussions, the experience of 'safety' and what is meant by the concept of 'safety' is likely to be very different across these contexts, reflecting local conditions. This is emphasised in the comparison between the three contexts, but the broader conceptual implications of this aspect of the findings could be discussed further. That is, concepts that we take for granted, especially in indicators research, may be highly specific to local, social, economic, temporal and cultural contexts.

Does children's exposure to nature increase their well-being? The author(s) assume that exposure to natural environments increases children's subjective well-being. While several studies are cited in support of this claim, and such a claim certainly has resonance in popular discourses, there are several critical voices in this debate regarding the relationship between children's exposure to 'idyllic' forms of physical environments and subjective well-being. These approaches need to be canvassed and I believe will complement and conceptually extend the approach taken by the author(s). The work of Gill Valentine and Sandy Holloway may be particularly useful here, especially given the author(s) use of the concepts of 'discursive resources' and ideology.

Some references that may be useful for the author(s), in addition to those I have cited above, are included below. I do not expect that the author(s) will use all of these studies, but they may be useful in responding to my suggested revisions.

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There are some minor expression and spelling errors that also need correcting:

- page 2 line 24
- page 14 line 25

Reviewer #2: *The article addresses an important issue, covering an interesting and important topic; "to unpack how children make sense and assign meaning to interactions with natural spaces, and to explore children's understandings of the importance that engaging with nature has on their subjective wellbeing". The method for doing this is focus groups and discourse analysis; that is, an analysis of the conversations/discourses of the focus groups.*

Discourse analyses underline how discursive patterns construe positions and narratives, the intertextuality of the processes, and how social and symbolic processes are interwoven. From a Foucauldian perspective there is nothing outside the discourses, while others perspectives, like critical discourse analysis, studies the relationship between social positions/processes and symbolic expressions

Data is presented as something in between empirical evidence of the level of well-being and engagement with nature, and an analysis of the discursive processes. Focus groups also represent a specific group dynamics, influencing the content and style of the discourses. It has to be made clear that data from the small groups do not represent evidence of the attitudes of the child population, the focus groups are meant (as indicated in the article) to provide the material for the analysis of the discursive processes constituting children's relationship with nature. But the status of the material, as ethnographic evidence or as discursive texts, is somewhat unclear. For example, page 9 provides a series of statements concerning safety. On page 10 it's indicated that safety is not a problem for children from a community where families have higher socio-economic status, but there are no systematic comparisons of discourses from the two communities.

The article would profit from being further developed as discourse analysis, underlining the position of the data as textual/discursive basis for the analysis. This implies more extensive presentations of the conversations as well as of the group dynamics and contexts.

Discourse analysis is a general term for a number of approaches; a more extensive presentation of the vocabularies and various theories of the discourse analysis, and of the methodology and conceptual vocabulary used in the analysis, will make the analysis richer.

6.2.2. Authors' rebuttal to reviewer comments for Revision 1

Once the editor and reviewer comments were received, the recommended changes were effected. The authors' rebuttal to reviewer comments for revision 1 are presented below- the specific reviewer comments are displayed with the corresponding authors' response.

Dear Editor and Reviewers

We thank you for your useful comments which we believe substantially improved the quality of the manuscript. As depicted in the table below, we have attended to the major and minor comments as recommended by the reviewers. We trust that this meets with your favourable consideration.

Reviewer 1

Comment 1

What is meant by subjective well-being? The author(s) utilise Diener's important and influential definition of quality of life. I have no concerns with this. However the author(s) utilise a methodology that gives priority to modes of subjectivity and children's perceptions. There is some literature that suggests that epistemologically and ontologically there is a significant distinction between those traditions that focus on subjective QoL (and generally utilise standardised measure of individual's perceptions) and traditions that prioritise individual's own constructions, understandings and experiences - that is, they emphasise subjectivity. While this is not a critical injunction, it may be worth including a paragraph on this matter, given the tension within the paper (or perhaps even contradiction) between the use of a certain definition of subjective Quality of Life on the one hand and a participatory subject-oriented and discourse analytic approach on the other.

Authors' response

We completely agree with this comment and in fact excluded a paragraph that spoke to the tension between various conceptual definitions of subjective well-being. In particular, we highlighted the tension between positivistic notions of SWB and those that foreground intersubjective constructions as they emerge within specific social and historical contexts. The paragraph also highlighted the tension between eudaimonic and hedonic conceptualisations of well-being and recent commentary in the literature that highlights the importance of SWB consisting of more than life satisfaction and affect. We have thus included this paragraph which we believe captures essence of the reviewer's concern (see page 2-3).

Comment 2

Natural spaces or social spaces? The local context of the areas in which field work was conducted is critical to the results...

However the use of the concept 'nature' is not differentiated enough in the analysis. As such it would be important to distinguish between rural spaces and urban outdoor locations in the discussion of the results.

Authors' response

Agreed. In fact it is interesting to note how the children conceptualised natural spaces as being inclusive of all spaces that have elements of nature, regardless of whether it was merely designated or even artificially created outdoor spaces. We have attended to this in the opening section of the discussion of the findings (see page 10).

Comment 3

... experiences of safety discussed by children in this study are likely to be quite different to how children in other contexts might understand and experience 'safety'. While both groups of children might equally emphasise 'safety' in their discussions, the experience of 'safety' and what is meant by the concept of 'safety' is likely to be very different across these contexts, reflecting local conditions.

Authors' response

Agreed. We have attempted to bring this point across in the original submission, however, noting the reviewer's concern, we have endeavoured to demonstrate this more explicitly (see page 13-14).

Comment 4

Does children's exposure to nature increase their well-being? The author(s) assume that exposure to natural environments increases children's subjective well-being. While several studies are cited in support of this claim, and such a claim certainly has resonance in popular discourses, there are several critical voices in this debate regarding the relationship between children's exposure to 'idyllic' forms of physical environments and subjective well-being. These approaches need to be canvassed and I believe will complement and conceptually extend the approach taken by the author(s).

Authors' response

Agreed. Ironically, part of the authors' own work using large-scale quantitative data found no relationship between SWB and experiences with nature. We have brought this point across more explicitly in the literature section of the article (see page 4).

Reviewer 2

Comment 1

On page 10 it's indicated that safety is not a problem for children from a community where families have higher socio-economic status, but there are no systematic comparisons of discourses from the two communities.

Authors' response

Agreed. However, the scope of the paper was on providing an understanding of children discursively construct and assign meaning to natural spaces, the focus was not on providing systematic comparisons on the various communities. While this may be a useful endeavour, our data does not allow that level of analysis. As part of our recommendations we suggest future discursive research pursue this line of research.

Comment 2

The article would profit from being further developed as discourse analysis, underlining the position of the data as textual/discursive basis for the analysis. This implies more extensive presentations of the conversations as well as of the group dynamics and contexts.

Authors' response

Agreed. However, in a previous publication by the current authors in the journal of Child Indicators Research, the authors were asked to truncate this level of methodological detail. In this instance, the reviewers made the point that it would be more appropriate for an article that has a method focus. Similarly, as the current article has a clear content focus (nature and SWB), we felt that it would be more appropriate to provide less detail.

Comment 3

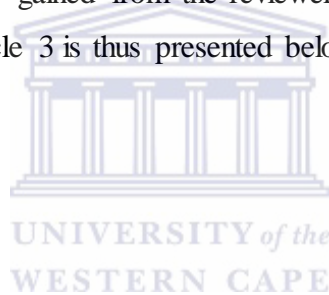
Discourse analysis is a general term for a number of approaches; a more extensive presentation of the vocabularies and various theories of the discourse analysis, and of the methodology and conceptual vocabulary used in the analysis, will make the analysis richer.

Authors' response

We have included a brief discussion of the two main strands (traditions) in discourse analysis, specifically highlighting the strand adopted in the current study (see page 8-9).

6.3. Reflections on the review process

The review process for the article submitted to Child Indicators Research was by far the most efficient. The feedback from the editor and first anonymous reviewer provided important contributions toward the improvement of the manuscript. The comments by the second reviewer, however, were not particularly expedient. These comments were all outside of the scope of the manuscript. The comments by the first reviewer on the other hand, were substantial and critical. The suggestions proposed in terms of the taken-for-granted conception of subjective well-being, as well as the nuances in the issue of safety were significant for the manuscript. Overall, in addition to the smooth review process and publication procedure, the insights gained from the reviewers' comments contributed to a vastly improved manuscript. Article 3 is thus presented below.



**Children's discourses of natural spaces:
Considerations for children's subjective well-being**

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Abstract

Based on the evidence provided in the literature, it is manifest that increased time spent in nature increases various aspects of children's subjective well-being. Using discourse analysis on focus group interviews with 28 children between the ages of 12 and 14 years old from three socio-economically diverse communities in the Western Cape of South Africa, the study aimed to explore how children construct and assign meaning to natural spaces. More specifically the study explored how children use specific discursive resources and repertoires to construct and assign meaning to their engagement with natural spaces, and the extent to which this influences their subjective well-being. Several pertinent discourses emerged from the participants' accounts within four themes of: *Safety and natural spaces*, *Appreciation for natural spaces*, *Degradation of Nature: Thinking environmentally, acting pro-environmentally*, and *Natural spaces and children's subjective well-being*. The study highlights the critical role that children's engagement in natural spaces has on their subjective well-being, and how these benefits can be harnessed to better children's overall quality of life.

Keywords: children's discursive constructions; children's subjective well-being; natural spaces and places; discourse analysis; South Africa

Introduction

A considerable body of empirical research studies and theoretical papers has specifically focused on nature as a relational space of children and young people (see Benson, 2009; Gill, 2014; Hordyk, Dulude, & Shem, 2014; Kerret, Ronen & Orkibi, 2014; King & Church, 2013; Kjørholt, 2002; Sancar & Severcan, 2010). A shared conclusion in this large body of literature is that time spent in nature enhances children's well-being both directly and indirectly (Adams & Savahl, 2015; Chawla, 2007; Evans et al., 2007; Gill, 2014; Kerret et al., 2014; Wals, 1994; Wells, 2000). However, there is a growing consensus amongst scholars that children's experiences and engagement in nature has reduced, and that their range of mobility and ability to explore nature has shrunken, and shifted closer to home (Bannerjee & Driskell, 2002; Evans, 2004; Wells, 2000).

The importance of the influence of nature experiences on children's subjective well-being in particular is emphasised in Kerret et al. (2014) "explanatory theoretical model proposes psychological mechanisms through which 'green' schools may influence not only students' learned environmental behaviour (EB) but also their subjective well-being." Subjective well-being is recognised as a component of Quality of Life, and is denoted as "people's affective and cognitive evaluations of their lives" (Diener, 2000, p.1). A seminal scholar in the field of well-being, Diener (1984), purported that subjective well-being comprises three distinct components, namely life satisfaction, positive experiences, and negative experiences. Diener, Suh, Lucas, and Smith (1999) postulate further that the advancement of the area of subjective well-being was the proclivity of society to "value" the individual, attribute significance to subjective perceptions and appraisals of life, and "the recognition that well-being necessarily includes positive elements that transcend economic prosperity" (p.276). At this juncture, however, it is critical to note the dichotomy which Fattore, Mason, and Watson (2012) have identified with regard to two distinct approaches to researching children's subjective well-being (SWB). According to Fatorre et al. (2012), these approaches differ fundamentally in relation to their epistemological frameworks, the first, and more dominant of the two is premised on objectivist notions, and often aligns to the use of standardised quantitative methods of data collection, predominantly employing Diener's (1984; 2000) definition of SWB; while the second approach is premised on the new sociology of childhood which foregrounds the "acknowledgement of children as valid informants and participants in the research process, and the subsequent shift towards soliciting their knowledge, opinions, attitudes and perceptions on matters that affect them." (Savahl et al., 2015, p. 750). Fattore et

al. (2012) caution against using the objectivist approach without critical reflection. For example, one should question the extent to which these conceptualisations allow for an understanding of how children assign meaning to their subjective experiences of life? Furthermore, to what extent do objectivist notions take adequate consideration of prevailing social and cultural contexts? (see Fattore et al., 2007; 2012; Manderson, 2005, for further discussion).

Further confounding the debate is the eudaimonic and hedonic conceptualisations of well-being- hedonic conceptualisations are aligned with life satisfaction and the pursuit of happiness, while eudaimonic conceptualisations are aligned with purposiveness, engagement, and meaning in life (see Huppert & So, 2013; Ryan & Deci, 2001). This is displayed in the dichotomy between subjective well-being and psychological well-being (see Ryff, 1989), and the recent recommendation that they be combined to form a more substantive concept of well-being (Keyes, 2002; Seligman, 2011). In the literature this has been identified as the concept of flourishing, which denotes the experience of life going well- of feeling good and functioning optimally, and is related to a high level of mental health and well-being (Huppert & So, 2013). Based on the evidence provided in the literature, it is thus comprehensible to surmise that increased time spent in nature increases both hedonic and eudaimonic aspects of children's well-being – experiences in nature provides children with purpose and meaning in life, increases life satisfaction, and positively influences their quality of life (Kerret et al., 2014).

A key theme which emerged from Myers (2012) summation of the literature was that nature brings about both intense positive and negative emotional experiences in children. In developing countries like South Africa, an important consideration for understanding children's engagement with the natural environment is access to *safe* natural spaces. Adams and Savahl (2015) point to children's restricted access to natural spaces owing to threats toward their safety, particularly in low socio-economic status (SES) communities. These low-SES communities are very often characterised by environments which are of poor quality, comprising perilous natural play spaces, less natural features, poorer services, more traffic and crime, and higher levels of physical deterioration in comparison to more affluent areas (Adams & Savahl, 2015; Bannerjee & Driskell, 2002).

It is also important to consider the extent to which nature influences children's subjective well-being, as some literature points to the absence of a relationship between the two (see Adams & Savahl, 2016). For example, in a study by Adams and Savahl (2016) which endeavoured to ascertain the relationship between children's global and domain-specific life satisfaction and their environmental worldviews, no significant relationship was found. Huynh, Craig, Janssen, and Pickett (2013) assert that nature is in fact one contextual determinant of children's emotional well-being. They further indicate that while a large literature base maintains that exposure to nature positively influences people's health and well-being, there is a dearth of empirical evidence to support this (Huynh et al., 2013). The studies which have been undertaken have primarily been conducted in controlled settings, with a growing number of studies being conducted in natural settings, such as camps and Forest (see Knight, 2009; Ridgers, Knowles, & Sayers, 2012) and Mountain School (Burgess & Mayer-Smith, 2011). This points to the need for further studies to explore the extent to which nature influences children's subjective well-being specifically.

Concerning children and the natural environment, there are two systematic reviews which aimed to provide comprehensive syntheses of studies focusing on the various aspects of children and nature interactions (Adams & Savahl, *forthcoming*; Gill, 2014). These reviews expound the point that children's experiences and engagement in nature as a space and place are multifarious. More so, that spending time in nature is a component of a "balanced diet" of childhood experiences advancing numerous developmental benefits, positive environmental attitudes, and influencing various domains of their well-being- physical, emotional, and psychological. A fundamental finding of the review by Adams & Savahl (*forthcoming*) was that although the studies provide key insights into children's perceptions of natural spaces and places, very few studies have asked children directly about what nature means to them, and what it encompasses. The authors enunciate that, "There is an urgent need for studies with children to begin to explore children's subjective understandings, perceptions, and constructions of natural spaces, especially in developing contexts. While these perceptions are context-specific, they can begin to supplement much of the research conducted with children which quantitatively attempts to answer some of the core questions about child-nature interactions and engagement." (p.21). Critical in this process is elucidating the meanings that children assign to their engagement with nature and its influence on their subjective well-being. Evidence from a substantial body of literature shows that children's engagement, as well as indirect interactions, in natural spaces enhances various domains of

their well-being. However, an absence exists in exploring the influence of nature on children's subjective well-being specifically. More so, there are few studies which qualitatively investigate children's constructions and understandings of nature (see Collado, Staats & Corraliza, 2013; Kong, 2000; Hordyk, et al., 2014; Wals, 1994).

The current study hopes to contribute in this regard. It aims to unpack how children make sense of and assign meaning to interactions with natural spaces, and to explore children's understandings of the importance that engaging with nature has on their subjective well-being.

Aim of the study

The overarching aim of the study was to explore how children construct and assign meaning to natural spaces. More specifically, the study was guided by the following objectives:

- To explore how children use specific discursive resources and repertoires to construct and assign meaning to their engagement with natural spaces
- To explore how children's constructions and assignments are manifested in their discourses
- To explore children's perceptions of the extent to which engagement with natural spaces influences their subjective well-being

Method

Design

The study employed a qualitative methodological framework to explore how children construct and make sense of natural spaces. Data were collected by means of three interrelated, sequential data collection techniques namely focus group interviews, community mapping, and photovoice. Focus group interviews constituted the primary data collection technique, whilst the community mapping and photovoice were employed as supplementary techniques. However, this study only reports on results from the focus group interviews.

Research context

The study was conducted in the Western Cape Province of South Africa. The participants were selected from three primary schools located in three socio-economically diverse (low and middle-income) communities, in both rural and urban geographical locations. There is

general acknowledgement amongst researchers that children residing in varying socio-economic backgrounds display disparate and diverse experiences of childhood, reflecting the plurality of 'childhoods' (Jenks, 2004). It is thus important to be mindful of the diversity of childhood in terms of class, gender, ethnicity and culture as well as the related construct of 'race' (Savahl, 2010). Moses (2005) contends further that it is important to remain cognisant of the existing impact of city planning owing to the Apartheid regime which is still pervasive in children's daily lives in this context.

The participants were selected from three socio-economically diverse areas in the Western Cape, namely Gordon's Bay, Mitchell's Plain, and Stellenbosch.

Gordon's Bay

Gordon's Bay is a coastal town located approximately 54km from the Cape Town City Centre. The population was estimated to be 15 786, with predominantly 'White' residents. Key indicators show that majority of the population live in formal housing with access to basic services; have completed secondary schooling or higher, with most households falling within the R12 801- R25 600 income bracket. The crime rate for 2013-2014 was substantially lower than national estimates with the majority of reported crimes consisting of common assault, burglary, and a low reported incidence of sexual crimes and murders (South African Police Services, 2014).

Mitchell's Plain

Mitchell's Plain is situated approximately 32km from the Cape Town City Centre, and has been identified as one of the most dangerous areas in South Africa with the highest incidence of reported crimes (www.crimestatssa.com). The population was estimated to be at 310 485, and the majority classified as 'Coloured' (Statistics South Africa, 2011). National estimates show that only over a third of the population have completed secondary education or higher. Thirty-eight percent of households have a monthly income of R3200 or less, with the majority living in formal housing. Although national census data shows that the vast majority have access to basic services, the suburb is characterised by a range of socio-economic problems.

Stellenbosch

The Stellenbosch Municipality is situated in the centre of the Cape Winelands, and is situated 50km from the Cape Town City Centre. The municipality has an estimated population of 155 753, with majority classified as 'Coloured'. Forty-three percent have completed secondary education or higher, while 3.1% have not completed any formal schooling. Most of the population live in formal housing and majority having households with access to basic amenities (Statistics South Africa, 2011). Nationally, Stellenbosch is ranked among the top 10 areas with the highest incidence of reported crime, evincing amongst the highest incidence of burglary, theft out of motor vehicle, commercial crime, and robbery (www.crimestatssa.com).

Sampling and participants

The total sample consisted of 28 children between the ages of 12 and 14, selected from three primary schools in low and middle income communities, situated in rural and urban geographical locations in the Western Cape of South Africa. While it was envisaged to obtain an equal sample of girls and boys from each school, due to the voluntary nature of participation this was not always possible. The motivation for selecting this age cohort was due to the identification in the literature that children of this age group are more likely to assess their own behaviour and the impact of their subsequent actions upon the environment (Wilson, 1996). The primary schools included in the study were purposively selected. The primary motivation for the final selection of the three participating schools were dependent on whether they offered access to children from different racial, cultural, language, and socio-economic backgrounds. Additional inclusion criteria included perceived reliability, enthusiasm and willingness to participate in the study.

One group consisting of 10 participants each was selected from two schools and 8 participants from the third school, resulting in a total of three groups with 28 children. Three focus group sessions were conducted with each group. Further details of the sample composition are presented in Table 1 below.

Table 1: Sample composition

Research site	Sample	Age	Grade	Socioeconomic status
Gordon's Bay (urban)	n = 10 (9 girls; 1 boy)	12	6	Medium
Mitchell's Plain (urban)	n = 10 (5 girls; 5 boys)	11-12	6	Low
Stellenbosch (rural)	n = 8 (5 girls; 3 boys)	12-14	5 - 7	Low

Attrition for the three groups was low and only occurred in two of the groups. In the sample from Mitchell's Plain, data collection spanned from the end of 2014 to early-2015. Attrition for this school was one participant who moved out of the area and therefore changed schools, thereby missing only one session. In the sample from Stellenbosch there was no attrition, however, one participant missed one session due to ill health.

Data collection

Data were collected by means of focus group interviews, characterised by a moderator facilitating and engaging a small group discussion between selected individuals regarding the proposed topic (Catterall & Maclaran, 1997). In the current study a sustained contact or prolonged engagement model was followed. This entailed a series of 9 focus group interview sessions conducted over a four month period. The advantage of the sustained contact model is that it gradually enables and facilitates greater access to children's "secrets and worlds as the social distance between adult researcher and child subject is lessened" (Punch, 2001, p.6). Consistent with the exploratory design, the focus groups followed a semi-structured interview format, with several core questions per group as presented in Table 2.

Table 2: Focus group guiding questions

Focus group 1:	Focus group 2-3
<ul style="list-style-type: none">• What does being happy mean to you?• What are the things that make you happy?• What do you do for fun? • What do you do in your free time? • What do you understand by the natural environment and natural spaces?	<ul style="list-style-type: none">• What does nature mean to you?• Tell me about how you spend your time in the natural environment?• How does spending time in the natural environment make you feel?• Do you think spending time in nature is important for children your age?• How would you feel if you were unable to engage in natural spaces?• What are your favourite places in nature? Why? What do you do there?

The focus groups were preceded by an initiation session, and followed by two sessions focusing on photo-elicitation and community mapping (reported elsewhere).

Data Analysis

The use of discourse analysis as a method of research within childhood studies has proliferated in recent years (See Aldred & Burman, 2005; Kjörholt, 2002; Savahl, 2010, Savahl et al., 2015a). In a previous edition of *Child Indicators Research*, Savahl et al. (2015) used discourse analysis to ascertain children's construction of their well-being. Contemporary thinking on discourse analysis in childhood studies has been greatly influenced by the paradigm shift initiated by Alison James and Alan Prout (1990) focusing on social constructionism as it emerged within the sociology of childhood. As a number of variations of discourse analysis exist, notwithstanding the absence of a unified approach or definition, two broad versions have generally been identified within psychology (Savahl, 2010). With its genesis in ethnomethodology and communication studies, the first version focuses on "discourse practices and how speakers draw on various forms of discursive resources to construct particular realities and to achieve certain aims in interpersonal contexts" (Savahl, 2010, p. 141; see e.g. Edwards & Potter, 1992), while the second version is often associated with the Foucauldian tradition which "focuses on the function of discourse in the constitution of subjectivity, selfhood and power relations" (Savahl, 2010, p.141).

The current study employed the version as proposed by Potter and Wetherell (1987), which is a combination of the aforementioned types- a strand of discourse analysis which has been employed to scrutinise language in a broader social context. Discourse in this sense consists

of an amalgamation of both spoken and written texts. Potter and Wetherell (1987, p.7) thus state that “*As discourse functions independently of the intentions of speakers or writers, their ideas do not merely serve to order and reflect the social world, but also to construct it*”.

The discourse analysis was preceded by thematic analysis. The emerging discourses are analysed within the emerging themes.

Procedure and Ethics

The core ethics principles were strictly adhered to throughout the study. Ethics clearance to conduct the study was obtained from the Senate Research and Ethics Committee at the university where the researchers are based. Subsequent to obtaining ethics clearance, the principals of the selected schools were contacted, and asked to participate in the study. Once permission was gained from the principals, the names of the three schools were submitted to the Western Cape Education Department (WCED) for ethics clearance. A meeting was arranged between the researchers and principals to discuss the details of the study and what the schools’ participation entailed once the WCED ethics clearance was granted. The participants who were interested in participating were recruited by the grade 6 head of department, and at one school, the school counsellor. Children were only allowed to participate if signed consent was obtained from their parent or guardian, and the child themselves. An initial session was held with the participants wherein the purpose and aim of the study, what their participation would entail, as well as the core ethics principles of informed consent, voluntary participation, confidentiality, and the right to withdraw from the study at any time without negative consequences. Participants were requested to keep the content and discussions that took place within the sessions private and confidential. The sessions were audio-recorded, with the participant’s permission, and transcribed verbatim. The transcribed texts were verified by a research psychologist external to the study. The participants were also informed that the data gathered will be used for a monograph thesis which will be publically available, as well as peer-reviewed publications and conference presentations. Focus group discussions were conducted on the school premises during administration sessions at the beginning of the school day and after school. They were conducted by the primary researcher and assisted by a co-facilitator.

Findings

The primary aim of the study was to explore how children construct and assign meaning to natural spaces. More specifically the study aimed to explore the discursive resources and repertoires children use to construct these meanings, how children's constructions and assignments are manifested in their discourses, and children's perceptions of the extent to which engagement in natural spaces influences their subjective well-being. Four key themes emerged, namely *Safety and natural spaces*, *Appreciation for natural spaces*, *Degradation of Nature: Thinking environmentally, acting pro-environmentally*, and *Natural spaces and children's subjective well-being*; with several pertinent discourses emerging in each.

A key focal point throughout children's discussions was the issue of safety in natural spaces in their communities. While each research site possessed distinct characteristics and nuances in terms of objective indicators such as income per household, population, formal housing, educational attainment, and crime levels; in this study socio-economic status (SES) of the communities in which children resided played a pertinent role shaping their experiences, narratives, understandings, and meaning making. It is crucial to note that the reference to rural spaces or geographical locations in the current study are quite disparate from the usual connotations of 'rural' in the international literature from developed countries (King & Church, 2013; Matthews et al., 2000; Nairn, Panelli, & McCormack, 2003; Sancar & Severcan, 2010). While the notion of 'rural spaces' infer areas in the countryside with low population density, there is no consensus on the term, evincing its differentiated nature across countries (Braga, Remoaldo, & Fiúza, 2016). The rural area in the current study is synonymous with individuals living in poverty, and is largely characterised by impoverishment and low SES, high levels of crime and violence, and a lack of resources and basic services, which would be classified by the Organization for Economic Co-operation and Development (OECD) as *Predominantly rural close to a city* (OECD, 2011).

More so, the children from the differing SES communities evidently produced distinctive conceptualisations of nature which appeared to be influenced by the context and social milieu of their neighbourhoods, as well as their level of affordance to engage in nature. For the children from the low SES communities nature encompassed any space which possessed elements of nature, irrespective of it being designated playspaces for children, outdoor spaces, or "back alley nature" (Wals, 1994) close to home. The conceptualisations of nature for the children from the middle SES community were markedly different- these children made sense of nature as a familiar space, and pointed more to nature being synonymous with

‘wild nature’ such as the forest, the mountain, and the beach, which were all places children frequented and displayed an intrinsic care for. Findings from a study by Wals (1994) with children from two distinct contexts, the inner city and suburban areas, also pointed to how the familiarity with nature coloured children’s perceptions and experiences therein. In his study, the children who were more familiar with nature were able to identify particular ‘*challenging*’ aspects in nature, while the children who had fewer experiences due to a lack of opportunities, emphasised the ‘*danger*’ inherent in nature. However, the children’s perceptions of nature as dangerous in Wals’ (1994) study was not based on personal, first-hand negative experiences in nature, but seemed to be more consistent with parental and popular discourses around safety. Based on this, Wals (1994) notes that “The students who visit nature frequently are more familiar with it and seem comfortable enough to seek out challenges.” (p.20)

It is thus evident that gradations in children’s conceptualisation of the construct of nature exists. Aitken (2001) in fact contends that ‘nature’ is a socially constructed concept, which indorses Macnagtan and Urry’s (1999) assertion that there is not one single nature, but instead only *natures*, “And these natures are not inherent in the physical world but discursively constructed through economic, political and cultural processes” (p. 95). Similarly, Wals (1994) points to the historical delineations being indicative of ‘nature’ constituting a “dynamic mental construction” (p.5), which reflects people’s interactions with a changing world. This notion is further evident in his conjecture that “...the idiosyncrasy of experience and the contextual realms that bound experience cannot be ignored when studying people's experiences and perceptions of nature.” (1994, p.5).

Given these significant considerations, it is key to note that the themes discussed below did not emerge in the discussions neatly, but instead there was an amalgamation and mixing of themes which interflowed creating a comprehensive account of children’s constructions of nature. These themes, and related discourses, are discussed in detail below.

THEME 1: Safety and natural spaces

The inextricable connection between children’s feelings toward safety and the ability to engage in natural spaces was a key theme, which received considerable emphasis from the participants. The socio-economic standing of the community context in which children live had a direct effect on their experiences in, and the meaning they attach to natural spaces, as

well as their well-being. The concern of credible threats to safety was a recurrent theme, particularly for the learners from the rural and urban schools which were located in hotspots of criminal activity in the province. This has influenced children's subjective well-being and mobilities, as most children feel that it is safest to be "indoors" at home. Natural spaces, and very often spaces for recreation intended for children, are tantamount to spaces of danger and imminent threat. This is demonstrated in the extract below.

Facilitator: So...why are you indoors a lot?

Male Participant: It is safer inside than to be outside.

Female Participant: Because of the violence.

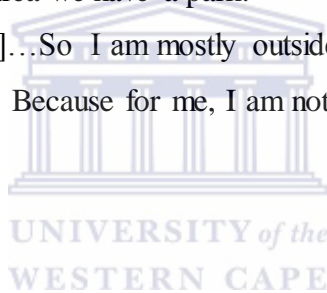
Male Participant: They shoot a lot.

Male Participant: The people are gang related there.

Male Participant: It is actually ourselves that is worried about it.

Male Participant: We – said now we are scared of dying, but it is, but me, I am, most of the time outdoors. In my area we have a park.

Male Participant: [continues]...So I am mostly outside, I am with friends, but in some areas it is not that dangerous. Because for me, I am not actually scared of dying, to be honest.



Group 1: Session 1

Extract 1

The extract above points to safety as an integral component of children's lives, particularly in relation to being outside in natural spaces. The concern with safety was pervasive in discussions with children, presenting the initial and most prominent discourse, that of *safety as a pervasive concern*. Safety and more so, threats to children's safety was made sense of in variant ways with nuances present in the participants narrative. A male participant states that "It is safer inside than to be outside", implying that home is amongst only a few spaces children consider safe. The participants further identified violence and gang related problems as some of the threats against their safety in parks and other natural spaces. The participants clearly indicated that they *themselves* were concerned as the threats they are faced with have become commonplace, with many sharing first hand experiences.

Children from the middle-SES context indicated that "*Safety is not a problem*" which contrasts to the participants accounts from the low-SES community. For these children it was 'wild' nature, and not people that pose a threat to their safety. Added to the adverse safety concerns, many children revealed that they only felt safe with friends or "When you near an

adult.” This brings to the fore the discourse of *children as vulnerable*. This vulnerability is made reference to from the participant’s themselves, constructing themselves as delicate and in need of protection. Unsafe conditions within their communities limit their mobility, thus they are rarely able to make their own special places in nature or explore their environment. For the children living in the low-SES communities, nature experiences were sporadic; with superficial understandings of nature provided. It was most often literal backyard or garden nature wherein their experiences were derived. This disparity is undoubtedly attributed to the distinctly lower crime rate in Gordon’s Bay, as well as the fact that objective indicators point to residents of this suburb having a greater sense of material well-being. It is important to take cognisance of the varied constructions of *safety* which children from the different communities put forward. Resounding findings by Wals (1994), for the children from the low SES communities in this study, their understandings and experiences revealed that safety was a pervasive concern which gained its impetus from credible, and often first-hand negative experiences in their neighbourhoods, such as being harmed, harassed, or even recalling experiences of being sexually assaulted. Nature was often cited as a hub for these types of offences against children. As indicated above, for the children from the middle SES community, the issue of safety was made sense of in an entirely dissimilar manner- for these children the topic of safety was not breached throughout the discussions. Further probing around safety resulted in children relaying adults’ or parents’ narratives of ‘stranger danger’ as the greatest concern, with none of the children having experienced threats to their personal safety to the extent that children from the low SES communities did.

Elaborating on this, Wals (1994) notes that there were great disparities in children’s discussions around safety, with the group from the suburban area not even breaching the topic *“In the suburban interviews this issue does not emerge even once. This result led to the notion of threatening nature. This type of nature is different from challenging nature in that its challenges are not part of nature itself, but posed by frightening people who are in nature. Additionally, a challenge is something to overcome and can make nature an exciting place to be, but a threat is frightening and can keep people from going to nature in the first place.”* (p.21). These nuances in the connotations and meanings children ascribe to safety are undoubtedly largely influenced by their communities, with negative experiences within childhood impacting on children’s later life trajectory into adulthood, and ultimately their quality of life (Barbarin, 2003).

Additionally, when children were asked on various occasions about their favourite times spent in nature, children from low-SES communities very often reproduced the same narratives, demonstrating the lack of their experiences in nature. For many of these children the discourse of *children as vulnerable* was closely related to the discourse of *protection*- that is the need for protection in natural spaces, and the need for protecting natural spaces, relating to issues of sustainable behaviour and acting pro-environmentally. The children who did not have safety as a pervasive concern in their community, namely from the middle-SES community, divergently presented new, in-depth narratives on their experiences in nature with each session.

What is most disconcerting and striking in this extract is a male participant's reference to fear of "dying", revealing the deleterious effect the perilous environment has on children. The entire statement of this participant is "organized within a complex linguistic structure of...contrasts" (Potter & Wetherell, 1992 p.47) and justifications. The extract above displays the participants' anxiety, low self-esteem, and emotional *desensitisation* to violence in their communities. Research has evinced an association between exposure to community violence and its effects both on internalising and externalising behaviour problems and symptomatology. The discourse of *desensitisation* is particularly present in the participant's accounts (see Savahl, 2010). However, this participant produces an *extreme case formulation* (Pomerantz, 1986) by taking this evaluative dimension of threats to safety, and espousing it to its extreme limit. This contradiction is interesting as this participant presents two dichotomous views on safety- the first an impetuous expression of the collective fear for their lives in their community; the second a considered account from the participant in which he portrays himself as disparate from the rest of the group. This also conveys a sense of compromise between the likely risk and benefits of being outdoors in nature. Furthermore, this participant affirms that he has more control over his mobility in nature than his peers employing the discursive technique of 'denial of victim' by disavowing this role of former or potential 'victim'; and in doing so sets himself apart.

What is intriguing about this narrative by this participant is that as Potter and Wetherell (1987, p.76) note "people are not inventing these accounts anew but drawing from a range of pre-existing resources." Therefore, while the participant is overtly aware of the trepidation to his safety, he still spends time outdoors. This leaves the reader with a sense of discord between what the participant says about being afraid of death owing to the unsafe context,

and the participant's reference to his actions which is to play outdoors regardless of this trepidation. However, the participant then makes sense of this discord with a disclaimer that "some areas are not that dangerous", which explains this relative dissonance. The participant is also suggesting that there are gradations of safety of outdoors areas in his community. Additionally, it relays a sense of the participant being 'street smart' and being cognisant of particular *safer* spaces for children to play. It is also significant to note here that while the participant mentions that not all outdoor areas are equally dangerous, he does *not* mention that some areas are devoid of safety concerns; indicating that safety is always a consideration for children.

Children from the low-SES communities specified that the various forms of violence and abuse against children were regular occurrences, and in particular within natural spaces, such as abductions, physical abuse and rape, murder, getting robbed if walking to the park, criminal elements who are abusing drugs, as well as being threatened. A female participant mentions that engaging in nature such as the park in the neighbourhood is often met with hostility, with these criminal elements threatening children and saying things like "get off here or I will beat you up!" (translated). The threats which children felt in natural spaces also extended to these spaces being polluted or unclean, which relates to the next theme.

THEME 2: Degradation of nature and efforts toward Sustainable development

The problem of pollution was quite prevalent in the children's discussions and linked directly to the state of their communities. These polluted natural spaces were another factor limiting children's play, and their ability to be able to explore their environments. This limitation was however, not shared across groups. Children also revealed that fellow learners at school, as well as in the community, thoughtlessly litter without consideration for the consequences thereof. The participants were also acutely aware of acting pro-environmentally, with many alluding to the benefit of sustainable development in their communities. The importance of environmental learning was also pointed out by the children, with many knowledgeable about global environmental concerns and issues around *global warming*. The following extract demonstrates these findings.

Facilitator: Do you think there are any other things that could play a role on your well-being?

Female Participant: Environment.

Interviewer:...Can you tell us a little bit more about that, what you mean?

Female Participant: It's...like it's not clean it is dirty and you can get sick.

Group 1: Session 1

Interviewer: So what kind of things are they doing by not respecting nature?

Male Participant: Polluting [All respond] dumping on the fields [All respond]

Female Participant: We do not really play in the parks as there is lots of glass and things.

Group 2: Session 2

Extract 2

The children explicitly stated that the environment has an impact on their subjective well-being. The portrayal of their communities and neighbourhoods as “dirty” had a direct impact on children health, with most avoiding nature for this reason. This fear of contamination and from polluted fields and parks was discussed often. Additionally, children displayed a preference for playing in safe natural spaces at school, as for two primary reasons. The first is that the parks are polluted with broken glass which makes it a health hazard to play there; and secondly, the allusion is again made to natural spaces as a hub for criminals and drunk people posing an even bigger threat to their physical well-being. Thus presenting the discourse of *nature as the despoiled space*. This discourse makes reference to the physically polluted state of nature as well as the characteristically unsafe space which nature represents for most children. The impetus behind some children’s narratives introduces a discourse of a ‘*repudiation of responsibility*’ (see Adams & Savahl, 2015). This repudiation and externalisation of responsibility to others to be environmentally conscious and clean up litter represents the use of a justification (Potter & Wetherell, 1987) by those who pollute.

While environmental education was not part of the school curriculum, the children indicated that environmental learning was a component of a few school subjects. A female participant points to the crucial role of school in her life, that is “*to become something in life* “. This is related to the context which she lives in which is characterised with low educational attainment, high levels of crime and violence, and with most parents in this group working as labourers on nearby farms. It also signifies the importance of hope and aspirations for this participant. The children in all groups were knowledgeable about environmental issues faced both globally and locally owing to learning about it in certain school subjects. Many children spoke about the imminent repercussions of human actions contributing to global warming and ozone depletion. Many children noted that learning about nature at school is fundamental, as it allows them to become acutely aware of their own and others actions on the environment.

The children also made reference to a number of ways to mitigate climate change, which was predominantly centred on combating pollution and environmental degradation. A key discourse which arose from nature learning in school was *thinking environmentally, acting pro-environmentally*. This discourse is explored in the extract below.

Facilitator:...do they teach you about nature at school?

Male Participant: Yes. Natural science, (All talk at once)

Female Participant: We learn about Ecosystems.

Female Participant: Deforestation.

Group 2: Session 1

Male Participant: The people dump the things in the river and then people that don't have water they come and drink the water and they get diarrhoea and then they die.

Female Participant: They also like tell you sad stories about what is happening around the, in the (All talk at once) so that makes you, gives you a wakeup call

Group 1: Session 2

Co-Facilitator:...And you think that nature is important for young people?

Female Participant: Yes.

Group 2: Session 1

Facilitator: So why do you think that the dumping is a problem?

Male Participant:...it opens the ozone barrier and then the sun comes through and it melts the snow

Facilitator: So how does it make you feel when you hear about these things that are happening in nature?

Male Participant: Sad, but then we still do it.

Group 1: Session 2

Extract 3

In this extract several aspects regarding environmental learning at school is presented by the participants. The use of the expression “gives you a wakeup call” places emphasis on the consequences of degrading nature, but more so reveals a sense of reflection from this participant- a considered response. The children were in agreement that learning about nature is vital for young people who need to take steps toward pro-environmental behaviour, presenting the discourse of *thinking environmentally, acting pro-environmentally*. While the participants were aware of the longer term health effects of global warming it was a problem ‘out there’, presenting an *eco-crisis discourse*. The participants’ narratives convey the sense that this crisis is prevalent in poorer developing countries and not in their local community;

the repetition of the word *they* in the following statement lends credence to this point “*they* come and drink the water and *they* get diarrhoea and then *they* die.” While this falls in line with the trend of contemporary research focus in the field as Mayer and Frantz (2012) note, children’s ability to have direct experiences in nature is fundamental to foster an intrinsic care for nature, and the lack thereof will result in children not appreciating and caring for nature. Even so, the discourse of *environmental value* was prominent in children’s discussions around protecting nature. A male participant states that while people have knowledge of the corollary of their behaviours they repeat the same behaviour without feeling any sense of accountability.

Following discussions of pollution and global warming, the children astutely steered the conversation toward mitigating behaviours for the protection of nature. This is revealed in the extract below.

Female Participant:... Don’t litter.

Female Participant: Keep the places clean.

Male Participant: Water the plants.

Male Participant: More gardens, more grass.

Male Participant: Less water.

Facilitator:...Do you think it is important to protect nature just for now?

Male Participant: Because there are many other generations to come.

Male Participant: We also have to teach the next generation to protect nature.

Group 1: Session 1

Extract 4

The participants suggested several ways to protect natural spaces in their communities, but also advocated for more greenspaces in their neighbourhoods. The significance of the discourse of *nature as both nurturer* and *nature as a revered space* is evident in this extract, captured in a female participant’s conjecture that nature “It’s basically everything to me”. The use of the adjective “basically” by this participant exudes a definitive sense of being matter of fact. This participant then continues that “Without nature there is basically nothing”- again matter of fact, as well as having a reflective tone, that every life process no matter how mundane comes down to relying on nature in some manner. The participants also made reference to issues of sustainable development, that is protecting nature for the “...many other generations to come”, as well as the requisite responsibility of teaching “the next generation to protect nature.” The implication of this reference is that nature should not

only be protected for current and future generations, but also for the intrinsic value and worth of nature itself, which is in line with the denotation put forward by Hart (1997). The discourse of *environmental value* is again presented here. Nature as aesthetically beautiful; to be admired and not touched.

THEME 3: Appreciation of natural spaces

While many children experienced threats to safety in natural spaces, this did not deter children's appreciation of natural spaces. It was evident from the discussions with children that nature is an important place and space to them. This theme was also linked to the related theme of *Degradation of Nature and efforts toward Sustainable development* where children discuss ways of living more sustainably. This theme is explored in more detail below.

Female Participant: Of everything that's in the outdoors like the stuff that grew by itself it didn't – it wasn't man made.

Female Participant: I think of it because I love exploring in the nature and like taking pictures of things that I don't really know much about...

Co-Facilitator: Do you guys go to the beach a lot?

Female Participant: Yes.

Female Participant: Surfing.

Female Participant: I just like laying on the grass and watch the clouds and the birds and the trees or something.

Co-Facilitator:...how does that make you feel?

Female Participant: Relaxed.

Female Participant: I also like cycling in the mountains.

Female Participant: Then you like feel away from everything you can just be like yourself... Get away from all the electronic stuff and worries...

Group 2: Session 1

Extract 5

It is evident from the extract above that nature was a special place for children. Based on children's discussions of their experiences in nature it emerged that some are more familiar with nature, having more opportunities to engage in nature. A female participant states that "I love exploring in nature...", with many indicating that they enjoy spending time in nature. Others conversely, were "excited" to be spending time in nature without electronic devices. There was consensus that nature is an escape for them, that just being in nature made them feel happy and "relaxed". A female participant points to how being in nature makes "you like

feel away from everything you can just be like yourself...” Children showed a predilection for playing with friends in natural spaces, whilst at other times just spending time by themselves - with nature having a calming effect on them.

There was also a distinction in terms of what nature meant to children. For one participant nature comprises things that grow outdoors, autonomously, hence “it wasn’t man made.” However, for a group of children from one of the low-SES communities, safe natural spaces were not only less accessible, but included built places with superficial aspects of nature. This superficial nature included the aquarium, a theme park and a games centre. These constructions of *superficial nature* may be linked to the lack of access and therefore experiences in nature of the children in these impoverished communities. Despite this limited access and engagement in natural spaces, the key experiences children take from nature are vivid memories with positive meanings. Children’s recollections of their nature experiences in low-SES communities were based on noteworthy, distinct, limited experiences in nature. When further asked about their favourite time spent in nature, children simply rehashed previously mentioned experiences, providing shallow, rudimentary accounts of engagement in nature.

Children with unrestricted access to safe natural spaces, provided several extensive and in-depth accounts of various experiences in nature which were not intermittent but regular. There was accord amongst all children that this would negatively affect their well-being if they were no longer able to engage in nature. Others utilised the following adjectives to demonstrate how this restriction from nature would make them feel: “depressed”, “heart sore”, “unhappy”, and “disappointed. Further elucidation revealed that nature is significant firstly, “Because I don’t always like sitting in front of a TV or being inside so much I will go and play around outside”, and secondly, “Because, as human beings we also need nature to survive” and “And nature needs you”. The first participant suggests that a balanced diet of being indoors and importantly spending time in nature is necessary as she does not “always like sitting in front of a TV”, as being in nature allows you to “free your mind.” Secondly, the two male participants refer to nature being central to their livelihood, which should include reciprocity between nature and people and an intrinsic care for natural spaces. Another participant makes reference to the symbiotic relationship between humans and nature- in essence referring to the discourse of *nature as nurturer*.

Moreover, some of these children's favourite natural places were located far from home, for example the "urban park" (32km away) and the waterfall at the reservoir (26km away). In spite of this trend, one male participant provided a meaningful narrative of his favourite time spent in nature: "excited when I was helping my grandfather and my grandmother growing plants and trees...". This participant then adds that the motivation for this being a memorable experience in nature was the social connection that nature afforded. This explanation is significant as it places emphasis upon the positive effect this experience in nature had on his subjective well-being and draws attention to the significance of *nature as catalyst for social connection*.

In this sense natural spaces afforded children the opportunity to spend time with friends and just enjoying being in nature.

Female Participant: Where we camped last time it was like a river and then you walk across the river and it's the sea so you could go to the river or the sea.

Group 2: Session 2

Male Participant: We actually having a social connection, because you don't have your cellphones...

Male Participant: I was so excited because we were just chatting to each other and laughing as a family, having a nice time together.

Group 1: Session 1

Facilitator: And how does it make you feel that they are fencing the gate off because...they don't want you to use it?

Male Participant: I feel like we are prisoners (All talk at once)

Male Participant: Because before this was fenced, our friends we used to sit here and talk...You could sit under the trees.

Group 1: Session 2

Extract 6

The importance of spending time in nature for children has been demonstrated in all the themes which emerged in the study. A common thread within these themes was the value of family, friends, and close relationships in children's lives, with nature playing a central role. A male participant mentions that spending time in nature enables children to have "a social connection" indicating that within others spaces such as at home or at a friend's house other activities predominate their time use. In the above extract children point out the significance of the intrinsic worth of family in both taking pleasure in and benefitting from nature. Despite

these positive experiences gained from present and past nature experiences with family and friends, for one group of children the circumstances at school were not as encouraging. These children described memorable times spent during recess time with friends on an open field within the school grounds where they would either “talk” with friends or sit under the trees and relax and enjoy nature. With the changing of school policy, the children were prohibited from using this special place in nature. Again the discourse of *nature as aesthetically beautiful, not to be damaged* by children was present. This was met with indignation by children in their tone as this restriction on their ability to engage in a revered natural space made them feel “like prisoners”. The restriction of access to one of the only safe natural spaces in the community available to them was distressing to students.

THEME 4: Nature and children’s subjective well-being

Based on children’s narratives and the meanings they attribute to their experiences in natural spaces, it was evident that this appeared to influence their subjective well-being both directly and indirectly.

Co-Facilitator: How important is nature for you to feel well and happy?

Female Participant: Very.

Female Participant: Yes, we can’t if there weren’t any trees which pollinated them we couldn’t breathe.

Male Participant: Fresh.

Male Participant: Free.

Male Participant: Happy.

Male Participant: Excited, energetic.

Male Participant: It gives you good exercise.

Group 2: Session 1

Male Participant: It makes me feel good.

Male Participant: No mother shouting with you.

Male Participant: (All talk at once) but when you are in nature; it is like heaven on earth there is nothing stopping you.

Group 1: Session 1

Extract 7

The extract above demonstrates the positive effect that engaging directly in nature has on children’s subjective well-being. When describing how nature makes them feel, children used adjectives such as “fresh”, “free”, “happy”, “excited”, and “energetic”. A female participant

also discussed how being in nature affects her emotional well-being in particular. The overall sense of children's experiences in nature improved their subjective well-being. The participants often made reference to various domains of their subjective well-being that is influenced by nature experiences such as physical, emotional, psychological, and social. The children's accounts engendered the discourse of *intrinsic care for nature*. In terms of physical well-being children discussed how playing in nature was pertinent for their health and well-being as well as providing a form of exercise. Children also emphasised the value of participating in sport activities at school which enabled them to be in open greenspace, which for children from low-SES communities provided congenial experiences. Regarding the impact of nature experiences on children's affect, while children strongly conveyed the positive emotions, negative emotions often dominated their experiences in nature. More so, this discourse of *nature as the dangerous other* appeared to be more than just a probable threat to children; this sense of fear was part of children's daily lives, with every aspect of their lives being viewed through a *safety lens* (see Adams & Savahl, 2015; Parkes, 2007). A quintessential exemplification of the critical role of nature on children's subjective well-being was a participant's conjecture that "when you are in nature it is like...heaven on earth there is nothing stopping you." The use of this simile, comparing nature to "heaven" emphasises the credence this participant places on nature, but also the satisfaction it affords them. Nature is also positioned at an elevated level, which further suggests that being in nature provides unlimited opportunities and levels of happiness.

Summary of emerging discourses

Several pertinent discourses emerged from the participants' accounts within the four themes of: *Safety and natural spaces*, *Appreciation for natural spaces*, *Degradation of Nature: Thinking environmentally, acting pro-environmentally*, and *Natural spaces and children's subjective well-being*. It is evident from the children's accounts that they use various discursive techniques to make sense of their experiences in natural spaces. A major point of note from the children's accounts was the importance that engagement with natural spaces has on their subjective well-being.

The discourse of *safety as a pervasive concern* was one of the most manifest themes, particularly for children living in low-SES conditions. The credible, ubiquitous threat facing children directly negatively impacted their well-being, with many exhibiting and describing symptoms of anxiety, trauma, hyper-vigilance, and a debilitating fear of death owing to the

high rates of crime and violence. Children from the middle-SES status community made reference to fears of '*wild nature*'- the discourse of safety as a pervasive concern was thus not evident in their accounts. Notwithstanding, all the children were acutely aware of impending threats and danger, and for many this fear and constant need for vigilance in their community was clearly incorporated into the way they make sense of the world. Their accounts were imbued with trepidation, anxiety and a sense of helplessness. The sense of fear, and the recurring discourse of *children as vulnerable* provides insights into children's meaning making. Children relied on adults to feel a sense of safety, with safety concerns fundamentally governing how children navigate their lives, restricting their mobility and narrowing their exploratory spaces. Landry (2005) notes that in decrepit environments, similar to the current context, children internalise a sense of powerlessness, *vulnerability* and fear, which in turn moulds and influences their self-identity. Further, individuals in this environment may unwittingly become perpetual recipients of this sense of fear and incorporate it into the fabric of their daily lives.

The reality of the escalating levels of crime and violence in South Africa, particularly with children as victims, has led to a society that is overly aware of their surroundings and environments. Children's narratives point to them being hyper-vigilant in their surroundings, very often with school and home being the safest places. While children were able to identify that the threat in the discourse on *nature as the dangerous other* was not nature but instead the criminal element in nature, they still synonymise nature with danger. Children's accounts of experiences in natural spaces was drawn from limited interaction therein, evident in the *superficial nature* which many referred to. Nature experiences were far and few between, and very often made sense of as an *ideal* space of childhood. In reference to Winnicott's (1960) concept of the 'good enough hold' in which positive experiences in nature are not overshadowed by the bad, and in this context the potentially unsafe. Positive emotions experienced in natural spaces are therefore fostered, internalised, and espoused.

Continual conflicting and contrasting constructions were presented as children expressed their understanding of the significance of nature, and the associated impact it has on their well-being. Nature was constructed through binaries: as familiar and as an estranged place, as a threatening and threatened space, as the dangerous other and as a special place. Apposite in children's discourses was how their most memorable experiences in nature were in natural spaces far from home, as nearby nature was unsafe. Capturing this interpretation, Zelenski

(2014) point out that engagement in natural spaces has numerous positive outcomes for children, even when their engagement is circumscribed. It was evident from children's narratives that safe natural spaces acted as a buffer against life's stressors, promoting the development of resilience competencies (Wells & Evans, 2003). This sentiment was linked to the discourse of *nature as a catalyst for social connection* in the children's accounts. The idea of nature acting as a catalyst was conceived of as an element enabling shared "sensory presence" (Hordyk et al., 2014). All three groups of children spoke about school camps they attended, and enthusiastically relayed their memories of these occasions for them. The collective exploring and learning in nature was markedly associated with their feelings of happiness; in essence "states of relaxed and heightened attunement" (Hordyk et al., 2014, 11). In a sense, nature engendered a positive emotional space.

The evidence of the social bonds and relationships was demonstrated in the group activities children described in nature, and the way in which it connected them to nature and each other. For many children whose local natural spaces are unsafe, these camps provided a safe context for expression of the self through emotions and play. For those children who had experiences and narratives of nature engagement, the camps served to further solidify their appreciation and *intrinsic care for nature*, a sentiment which was expressed by all the participants. Akin to the findings from Hordyk et al. (2014), the children in the current study also expressed a desire that their experiences in nature could continue and become more frequent given the deficiency of time spent in nature in their daily lives. Despite this deficiency, children's discourses and discussions culminated in an '*environmental identity*'. Noting the contestation and critique surrounding the conceptualisations of '*nature*' and '*identity*', Clayton and Opatow (2003) propound an '*environmental identity*' encompassing the manner in which we acquaint ourselves with nature, and significantly, that the "natural environment serves to inform people about who they are." (Clayton & Opatow, 2003, p.9). The *environmental identity* forms part of our self-concept as we associate ourselves to some type of 'non-human nature, impacting on the way we make sense of and behave (Clayton, 2003). Based on the meanings derived from children's narratives about their engagement in nature, we come to see that how children see themselves in nature is permeated with a collective socio-culturally influenced notion of what nature is and means; with many contesting the social norm of nature as unimportant in their communities and family lives. The social context then greatly influences how much time children are able to spend in nature, and the significance they attach to these natural spaces. A number of empirical studies

have shown that the more time children spend in safe natural spaces, the more they value nature and incorporate it into their sense of self and show intrinsic care for it (Hordyk et al., 2014).

The overarching sense of an *environmental identity* was closely related to children's dissatisfaction with the polluted environments in their communities. Their dissatisfaction presented a discourse of *repudiation of responsibility* of fellow community members and peers who do not consider the consequences of their degrading behaviours. Despoiled natural spaces were often the central points for crime, violence, and danger; highlighting the crucial role which children's environments has on their subjective well-being. More so, the discourse of *repudiation of responsibility* gave rise to discussions about sustainable development and behaviours to protect and conserve nature at a day-to-day level, as well as for the future. The discourse of *thinking environmentally: acting pro-environmentally* was pertinent in these deliberations.

Children were also aptly aware of the *eco-crisis*, a discourse which was significant for two reasons- firstly, it revealed children's *intrinsic care* and *reverence* for nature, and secondly, children's awareness of ecological problems in current society. However, these environmental problems were often discussed as removed from the participant; putting forward the idea of the *eco-crisis* as a distant 'other'. This was closely linked to the discursive theme of the influence of *intergenerational transmission of environmental consciousness*, knowledge, and care, of parents' and other significant close family members on children's meaning making (Chawla, 2006). It was evident from children's narratives that nature was not merely a space out there, but had become a *special place* of meaning for children which they value and have developed an attachment to - both on a personal and collective level. Children's relationship with nature has evinced a critical role on their 'future life trajectories', with nature perceived as having a significant impact on children's social and emotional well-being (Huby & Bradshaw, 2006).

Conclusion and Recommendations

A trend has emerged amongst scholars in merging theory and research on environmental psychology, sustainability, and positive psychology. This merger places emphasis on the importance that engaging with the natural environment has on children's well-being and quality of life.

While nature was not specifically mentioned in the United Nations Conventions on the Rights of the Child, Scianis (2013) notes that researchers and policy makers need to advocate including the natural environment as a sub-domain of children's subjective well-being. In South Africa children's subjective well-being is closely related to the context which children live in which is characterised by crime and violence and fear of threat. However, in this study nature is shown to be a *special place* of childhood, affording benefits to children's well-being both directly and indirectly, and serving to unify children from diverse contexts. The significance of nature then provides the impetus for developing research studies to evaluate the influence of children's engagement in nature and the related impact on their subjective well-being, and how these benefits can be harnessed to better children's overall quality of life.

Acknowledgment

The authors wish to express their gratitude to the National Research Foundation of South Africa (Grant Number: 84779), and the Children's Worlds Project (Jacobs Foundation) and the Multinational Qualitative Study on Children's Well-being for financial and institutional support. We would also like to thank the anonymous reviewers and the editor of Child Indicators Research for their valuable feedback which has substantially improved the manuscript.

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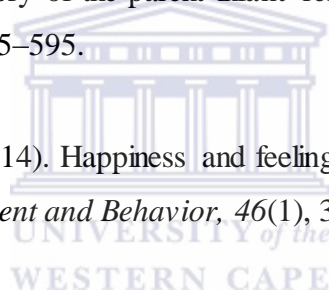
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CHAPTER SEVEN (ARTICLE 4)

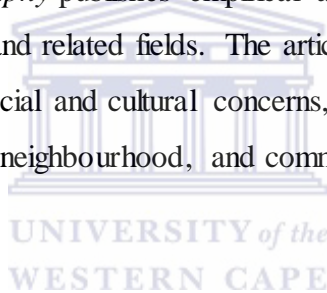
‘CHILDREN’S REPRESENTATIONS OF NATURE USING PHOTOVOICE AND COMMUNITY MAPPING: PERSPECTIVES FROM SOUTH AFRICA’

7.1. Introduction

This chapter presents the final article of the dissertation, and forms part of Phase Three, the qualitative phase of the study. The aim of this article was to explore children’s visual representations of natural spaces using community mapping and photovoice in the Western Cape of South Africa. The journal review process is presented below. Subsequent to this, Article 4 is presented.

7.2. Journal review process

This article was submitted to the journal *Social and Cultural Geography* on the 27 November 2015. *Social and Cultural Geography* publishes empirical and theoretical work which contributes to human geography and related fields. The articles are also focused on space, place and nature with regard to social and cultural concerns, as well as inequalities, poverty crime, leisure, daily life, identity, neighbourhood, and community. This journal has an Impact factor of 1.315.



Initial feedback for this article was received on the 19th April 2016 which resulted in a review period of five months. The feedback from the editor and reviewers were generally positive, with some moderate revisions suggested, and are detailed below. It was noteworthy that the editor indicated that although a round of revisions are recommended for publication, he further suggested that the *Children Geographies* journal might be a better fit for the article given its focus. The changes recommended by the reviewers for this article were effected, and are presented in the section which follows.

7.2.1. Revision 1

john.horton@northampton.ac.uk <*john.horton@northampton.ac.uk*> Tue, Apr 19, 2016
at 6:25 PM

To: *sabirah.adams@gmail.com*

19-Apr-2016

Dear Sabirah Adams:

Apologies for the time it has taken to obtain feedback on your manuscript, "Children's representations of nature using photovoice and community mapping: Perspectives from South Africa", which you submitted to Social and Cultural Geography. The manuscript has now been reviewed by two expert reviewers, whose comments are included below.

You will see that both referees enjoyed the paper, and praised the clear, effective writing style. However, both referees identify a range of revision which could be undertaken to enhance the manuscript and develop its relevance for the wide, multidisciplinary readership of Social and Cultural Geography. I would particularly highlight referee 1's comments: "I do wonder whether Social and Cultural Geography is quite the right outlet for this piece. It could be argued that the manuscript says very little to anyone outside the specialist subdiscipline of childhood studies/children's geographies...If the paper is to be published in Social and Cultural Geography, the author will need to provide a much fuller argument about how these methods and findings speak to wider debates in Social and Cultural Geography".

Following the referees' guidance we are happy to give you the opportunity to undertake a round of major revisions to address their comments. If you do this, please provide a detailed letter outlining your responses to the feedback.

Alternatively, you are free to submit the manuscript elsewhere. Take some time to engage to engage with the referees' comments and let me know what you think: it may well be the case that a journal like Children's Geographies may be a more 'natural' home for this manuscript.

Your revision would need to be submitted by 18-Jul-2016.

Once again, thank you for submitting your manuscript to Social and Cultural Geography.

Sincerely,

Dr. John Horton

Editor, Social and Cultural Geography

john.horton@northampton.ac.uk

Referee(s)' Comments to Author:

Referee: 1

This is a clearly written and neatly presented manuscript. It presents a clear, well-structured account of a research project about children's perceptions of natural spaces in South Africa. As such the paper nicely exemplifies child-friendly, participatory research using community mapping and photovoice.

While I enjoyed the paper, I do wonder whether Social and Cultural Geography is quite the right outlet for this piece. It could be argued that the manuscript says very little to anyone outside the specialist subdiscipline of childhood studies/children's geographies. If the paper is to be published in Social and Cultural Geography, the author will need to provide a much fuller argument about how these methods and findings speak to wider debates in Social and Cultural Geography. I would expect to see engagement with a wider set of conceptual or methodological debates which will be of interest to a multidisciplinary community (not just Children's Geographers). Much more should be said about this in the paper's introduction and conclusion. Alternatively, the author might consider submitting to Children's Geographies, or a similar specialist journal.

More specific comments are as follows.

- I worry that the conceptualisation of 'nature' in the paper is a little uncritical. This is particularly the case for the section 'research on natural spaces' where the category of 'natural spaces' is almost entirely taken for granted. There is no engagement with critique of the normative, social constructedness of nature. In some cases it is not clear what is 'natural' about some of the spaces or materialities being described here.

- The presentation of findings is generally rather descriptive. I would expect to see a much greater degree of critical and conceptual reflection, linking the findings to existing scholarship. Again, I would also expect to see more critical engagement with wider work in Social and Cultural Geography.

- I felt that some of the innovative features of the methods, and some interesting methodological arguments, were slightly underdeveloped. I would encourage the author to

reflect and write more about the value of their combinative, participatory methods for research in communities, and for Social and Cultural geographers more widely

Referee: 2

Overall, I enjoyed this refreshing paper. The paper is clear, well-written, and interesting. However, I do have some questions/concerns that I felt could usefully be addressed in the paper:

** The description of the areas selected for the study are helpful, but I'd really like to understand why those areas and that combination of areas were selected? The authors mention urban and rural areas, but it's not clear to me how the areas selected fit these categories - based on the descriptions they seem largely peri-urban to me? One area seems significantly more affluent than the other two - do the children here still fall in a low/middle income category? I'd also really like to understand a little better the selection of the schools - "The primary motivation for the final selection of the three participating schools were dependent on whether they offered access to children from different racial, cultural, language, and socio-economic backgrounds." - how does this mesh with study objectives? Is the aim to get as diverse a group of children in each area as possible? Or children representative of that area? Or something else?*

** I find the paper strangely silent on the topic of race, and even for that matter socio-economic status, and in the South African context, I feel that this needs a little more attention. I'd really like to know a little bit more about the sample (overall and by area) in regards to race and SES. There is some discussion of how SES impacts on children's relationships to space, but I don't find much about race - I'd really like to hear about this, or alternatively if the authors didn't find this to be important, I'd like to understand why - ignoring race in the SA context seems problematic to me.*

** I struggle a little bit with the definition of "natural spaces" - as these seem to include pretty much any space that is not indoors, even ones that I wouldn't really call natural - like streets, backyards, school playgrounds, soccer fields, etc.*

** While I understand that this is a qualitative study, I think one or two tables would be very helpful. Perhaps one table summarizing key sample details and demographics, and one highlighting key themes by area?*

** Finally, the paper's findings do appear to be pretty unsurprising. My understanding though, is that the paper does present some novel findings - even if these are not surprising. Is this correct? If so, I think it would be useful to emphasize this, to highlight how the paper contributes to the literature - in addition to the current focus on action that should be taken in South Africa.*

7.2.2. Author's rebuttal to reviewer comments to revision 1

Dear Editor,

We have now addressed the comments by the editor, as well as the two referees for the manuscript entitled "Children's representations of nature using photovoice and community mapping: Perspectives from South Africa" (manuscript ID RSCG-2015-0285). The authors have taken considerable time to consider the options of either: revising and resubmitting the manuscript to Social and Cultural Geography, or to withdraw the manuscript and submit to Children's Geographies (CG). While we would have liked to submit the manuscript CG, the word count of the manuscript would not allow this, and is confounded by the images in the manuscript. The manuscript is currently 9900 words including the images. Children's Geographies would require substantial reduction to 7000 words- they also count each image as 500 words. For this reason we have decided to submit the paper to Child Indicators Research. The details of these comments and the authors' responses are presented below.

Referee 1

Comment 1

"While I enjoyed the paper, I do wonder whether Social and Cultural Geography is quite the right outlet for this piece... Alternatively, the author might consider submitting to Children's Geographies, or a similar specialist journal."

Response to comment 1

The authors have taken considerable time to consider the options of either: revising and resubmitting the manuscript to Social and Cultural Geography or to withdraw the manuscript and submit to Children's Geographies. As per the editor's suggestions we have decided to

submit the manuscript to Children's Geographies as adding literature on Social and Cultural Geography will detract from the focus and aim of the paper.

Comment 2

I worry that the conceptualisation of 'nature' in the paper is a little uncritical.

Response to comment 2

We initially had a detailed section on the contested nature of nature in the background section of the manuscript, however, we removed this to adhere to the journal page limit. We have included this section on the contested nature of the term nature in which we engage substantially with this concept, within the introduction section to address the comment by the reviewer.

Comment 3

The presentation of findings is generally rather descriptive. I would expect to see a much greater degree of critical and conceptual reflection, linking the findings to existing scholarship. Again, I would also expect to see more critical engagement with wider work in Social and Cultural Geography.

Response to comment 3

As we have decided to retract the manuscript per editor's suggestion and submit to Children's Geographies, we did not include literature on social and cultural geography as this would detract from the focus of the manuscript.

Comment 4

I felt that some of the innovative features of the methods, and some interesting methodological arguments, were slightly underdeveloped. I would encourage the author to reflect and write more about the value of their combinative, participatory methods for research in communities...

Response to comment 4

We have addressed this.

Referee 2

Comment 1

The description of the areas selected for the study are helpful, but I'd really like to understand why those areas and that combination of areas were selected? The authors

mention urban and rural areas, but it's not clear to me how the areas selected fit these categories - based on the descriptions they seem largely peri-urban to me?

Response to comment 1

It is crucial to note that the reference to rural spaces or geographical locations in the current study are quite disparate from the usual connotations of 'rural' in the international literature from developed countries (King & Church 2013; Matthews et al., 2000; Nairn et al. 2003; Sancar & Severcan 2010). While the notion of 'rural spaces' infer areas in the countryside with low population density, there is no consensus on the term, evincing its differentiated nature across countries (Braga et al. 2016). The rural area in the current study is synonymous with individuals living in poverty, and is largely characterised by impoverishment and low SES, high levels of crime and violence, and a lack of resources and basic services, which would be classified by the Organization for Economic Co-operation and Development (OECD) as 'Predominantly rural close to a city' (OECD 2011).

Comment 2

I find the paper strangely silent on the topic of race, and even for that matter socio-economic status, and in the South African context, I feel that this needs a little more attention.

Response to comment 2

This is a critical point identified by the reviewer which is especially relevant if one considers South Africa's socio-historical context. The Apartheid political system created a class system, based on race/ethnic divide, the ramifications of which are still cogent in contemporary South Africa. The outcome is a society characterised by severe social inequality which is to a large extent aligned to race/ethnic classification.

However, there is still an intense debate with regard to the use of various race categories in public discourse – largely driven by the use of previous Apartheid delineations which have derogatory connotations.

This debate extends into the research arena where including racial categories in the research design are often not well-received by Ethics Committees or Stakeholders. Usually, a strong motivation is required to include the use of racial/ethnic categories – researchers are duty bound to demonstrate how its use will contribute in an applied way to social reconstruction, community development, and intervention or policy initiatives. Indeed the collaborative study by the South African Human Rights Commission and UNICEF, South Africa's Children: A review of equity and children's rights demonstrates how the inclusion of racial categories

reveals how social inequalities are impacting on the rights and well-being of children in South Africa. In the current study, the researchers decided to focus on socio-economic status as the grouping variable and not race/ethnic categories. This decision was based on our position that the overarching aim of the study did not justify its inclusion; some of the schools Principals that were consulted specifically indicated that they do not support the use of racial categories, even for research purposes.

Comment 3

I struggle a little bit with the definition of "natural spaces" - as these seem to include pretty much any space that is not indoors...

Response to comment 3

As this has been suggested by referee 1, we have added this section.

Comment 4

While I understand that this is a qualitative study, I think one or two tables would be very helpful. Perhaps one table summarizing key sample details and demographics, and one highlighting key themes by area?

Response to comment 4

As this information is available in narrative form in the method section of the article we have not included these tables.

Comment 5

Finally, the paper's findings do appear to be pretty unsurprising. My understanding though, is that the paper does present some novel findings - even if these are not surprising. Is this correct? If so, I think it would be useful to emphasize this, to highlight how the paper contributes to the literature - in addition to the current focus on action that should be taken in South Africa.

Response to reviewer comment 5

We have added this emphasis to the discussion as suggested by the reviewer.

**Children's representations of nature using photovoice and community mapping:
Perspectives from South Africa**

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* **Article submitted to: *Social and Cultural Geography* (Accepted)**

Abstract

The aim of the study was to explore children's representations and perceptions of natural spaces using photovoice and community mapping. The sample consisted of 28 children between the ages of 12 to 14 years residing in urban and rural communities in the Western Cape, South Africa. Data were collected by means of a series of six focus groups interviews (three photovoice discussion groups and three community mapping discussion groups). For the photovoice missions, children were provided with 28-exposure disposable cameras and given a week to complete their missions. Braun and Clarke's (2006) six step thematic analysis protocol was followed to analyse the data. Three key themes emerged, namely *safe spaces in nature, unsafe spaces in nature, and children's favourite places in nature*. Socio-economic status (SES) was found to be a determining factor in how children make sense of natural spaces. Children from low SES communities indicated being more constricted in their mobility, and were unable to access to safe natural spaces in comparison to the children from the middle SES community. It is recommended that an expedient starting point would be to work towards and build environmentally and child friendly communities for children, with children as key contributors in the planning process using a child participation framework.

Keywords: children; visual representations; socio-economic status; photovoice; community mapping; Western Cape, South Africa

Introduction

The focus on participatory methodologies with children to explore their environments has gained substantial momentum in recent years (see Amsden & VanWynsberghe, 2005). This focus has been greatly influenced by the global drive amongst states parties which have ratified the United Nations Convention on the Rights of the Child (UNCRC) to advocate for, and employ participatory techniques which empower children. Amongst an array of participatory techniques, photovoice and community mapping have been used extensively in empirical studies with children, emphasising children's subjective perceptions and evaluations of their lives and neighbourhoods (see for e.g. MacDougall et al., 2009; Sancar & Severcan, 2010). Photovoice, previously termed photo novella, (see Wang & Burris, 1994, 1997), has, in particular, been used to explore children's engagement with natural places (see for e.g. Castonguay & Jutras, 2009; Rasmussen, 2004). The significance of photovoice is captured in the conjecture by Wang and Redwood-Jones (2001, p.560) that, "*Photovoice is a powerful photographic technique that enables people to assess the strengths and concerns of their community and communicate their views to policymakers*".

Children's perceptions of and engagement in nature has been researched in a variety of contexts across the world. Studies have explored the relationship between adolescents' environmental worldviews and their personality (Boeve-de Pauw et al., 2011), the relation between children's sense of connectedness with nature and their cognitive styles (Leong et al., 2014), and the association between children's environmental attitudes and behaviour and their contact with nature (Collado et al., 2015). Furthermore, a recent trend in the literature has highlighted the relationship between children's engagement with nature and the influence on their subjective well-being (see Adams & Savahl, 2015; Bell et al., 2008; Huynh, Craig, Janssen & Pickett, 2013). Cross-country comparative studies have also been employed to explore children's environmental attitudes (see Evans et al., 2007; Van Petegem & Blicck, 2006), and children's perceptions of the environmental implications of household consumption (Kopnina, 2011a). Fewer studies have endeavoured to understand children's conceptions of nature, and their relationship with nature using qualitative methods (see Aaron & Witt, 2011; Adams & Savahl, 2015; Dai, 2011).

The opacity as to whether nature includes humans is a long-standing debate with an historical focus, indicative that established social and cultural politics are entrenched in these delineations (Macnaughten, 1993). Crist (2004), critiques the postmodern constructionist

view of nature, contending that the social construction of nature is “narrow and politically unpalatable” (p. 6). She maintains that whilst constructionists endeavour to unearth the sociocultural genesis, they do not deconstruct their own rhetoric. It is thus critical to note that ‘nature’ is not a unitary concept; Adams and Savahl (2016, p.11) thus assert that:

“It is thus evident that gradations in children’s conceptualisation of the construct of nature exists. Aitken (2001) in fact contends that ‘nature’ is a socially constructed concept, which indorses Macnagtan and Urry’s (1999) assertion that there is not one single nature, but instead only natures, “And these natures are not inherent in the physical world but discursively constructed through economic, political and cultural processes (p.95).”

A systematic review investigating how children make sense of, assign meaning to, experience, and perceive natural spaces (see Adams & Savahl, *forthcoming*) found that amongst studies employing a qualitative methodological framework, the most commonly used data collection techniques were drawings and mapping techniques (primarily with children between the ages of 5-7 years (see Kopnina, 2011; Malone & Tranter, 2003); observations (with children aged 7-18 years, see Malone & Tranter, 2003 & Palmberg & Kuru, 2000); and interviews, both in-depth and focus groups (with children between the ages of 5-12 years, see Adams & Savahl, 2015; Hordyk et al., 2014; Kong, 2000). Photo-elicitation techniques, in particular photovoice, were also utilised in the majority of these studies (see Burke, 2005; Rasmussen, 2004) and was highly regarded as a participatory technique as it allowed children to be active participants in the research process. Through this participatory research method, children as collaborators were seen to possess agency, and were given a voice and a platform to present photo journeys to discover neighbourhood experiences and their perceptions of natural spaces. Delgado (2015) notes that it is significant to emphasise the distinctions between photo elicitation and photovoice, as the former is a research method which may form part of “a wide variety of methodologies” (p.7); while photovoice draws on participatory principles and is housed in methodology akin to community-based action research. With photographs being intricate, and interpretable in a number of ways (Radley, 2010), the use of photovoice in this study provides the opportunity to explore the potential meanings behind children’s representations from them directly.

Children’s special places: Nature as children’s place

The 20th century has seen a growing body of scholarly research on children's space and place. With its genesis in the work of philosophers (Aristotle, 1896; Descartes, 1970; Ptolemy as cited in Berggren & Jones, 2000; Ponty, 2005; Plato, 1953) and human geographers (Buttimer, 1976; Relph, 1976; 1981; Tuan, 1974), understandings of children's spaces and sense of place has become foregrounded in child research and childhood studies. Whilst various terms are used to describe children's space and place; researchers and theorists explicate distinct, yet interrelated denotations. While it is evident in the literature that conceptions of place and space vary across academic disciplines, general features of space and place have been established over the years by theorists such as Buttimer (1976), Relph (1976), and Tuan (1977). While space refers more broadly to types of settings for interaction (Philo, 2000; Relph, 1976, Shaw, 1987), place is denoted as a specific site of meaning, which children most often do not convey as 'children's place', but instead they physically reveal these places; *a more specific, discernible part of space*. Tuan (1977) similarly accentuated that space is more abstract than place; that what commences in experience as an indistinct space, develops into a place as a child experiences a setting, and becomes familiar with it through lived experiences and by assigning particular meanings to it (Tuan, 1977). Low and Altman (1992) note that this affective component and bond which connects an individual to a particular place embodies place attachment. Ensuing theorisations and research on space and place has resulted in a burgeoning field of research (Kyle & Chick, 2007; Rasmussen, 2004) concerned with defining and understanding these terms in general, but more specifically gaining a greater understanding of children's sense of space and place.

Kjorholt (2003, p.265) contends that "Children's special places have been connected to place identity and attachment to place, to creativity, to the need for children to find a place of peace and 'refuge' from the adult world, to closeness to nature, and as places for ecstatic experiences and more". Chawla (2000) speaks of 'places of conviviality', which refer to busy public or commercial place; 'places of solidarity', which demonstrate that others acknowledge one's existence and confirm one's rights and needs; and finally 'places of possibility', which indicates that children's special places do not only exist in the present; they may also exist in the imagination as prospects for the future (Chawla, 2000). A number of studies show that children often identify natural spaces as their special or favourite places (Adams & Savahl, 2015; Chawla, 2006; Sancar & Severcan, 2010).

Another view is put forward by Abbott-Chapman and Robertson (2009) who assert that 'children's special places' are in fact cultural constructs which may alter with time, what Haraway (1991, as cited in Instone, 2004) refers to as 'situated knowledges'. She maintains that these 'knowledges' are always historical, located, political and partial as the world is at all times articulated from a particular point of view. Children's favourite places are idealised constructs of places enjoyed and revered- places which aid in regulating negative feelings and coping with perceived stress (Korpela & Ylen, 2007). Commenting from the architectural studies perspective, Najafi and Shariff (2011) indicate that place refers to a strong affective bond between a person and a specific setting. They further maintain that 'Place Attachment', 'Place Identity' and 'Sense of Place' are amongst concepts which are employed to describe the quality of people's relationships with a place. Semken and Freeman (2008) theorise further that place attachment and place identity are subsumed within the broader concept of sense of place.

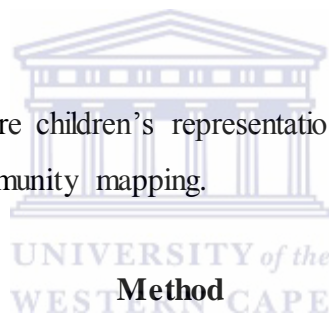
The child's freedom to construct places of their own presupposes a *safe* centre to depart from (Chawla, 2000; Sancar and Severcan, 2010). Sancar and Severcan (2010) elaborate further that a well-developed and fostered sense of place is critical for children's well-being. Tuan (1977) hypothesised that when children observe their treasured places being degraded or polluted, this can damage their life worlds. The probable negative outcomes of this tainting of a child's special place may result in dissonance, loneliness, heightened sense of fear, unhappiness, and behavioural disorders (Brown & Perkins, 1992, as cited in Sancar & Severcan, 2010). Hay (1998) goes as far to argue that sense of place is not developed in children whose mobility is constrained.

A prominent factor which has limited children's play in natural space and place is the pervading amount of social hazards in children's neighbourhoods and communities, both in developed and developing countries (MacDougall, Schiller & Darbyshire, 2009; Malone & Hasluck, 2002; Swart-Kruger & Chawla, 2002; Wals, 1994). Due to these hazards which are present in children's lives, they are not able to exercise their right to play safely within nature. The social hazards most frequently mentioned by children are traffic, 'stranger danger', limits to mobility and accessibility, and issues around safety. The case of South Africa, with its unique history of Apartheid has resulted in a society which is characterised by high levels of crime and violence, presenting particular threats against children's safety. Inherently safe natural spaces for children to build memories and care for special places is

especially challenging in impoverished communities (see Adams & Savahl, 2015; Parkes, 2007). Previous participatory studies with children conducted in South Africa have identified safety as a paramount concern in children's lives (see Adams & Savahl, 2015; Isaacs & Savahl, 2014; Parkes, 2007; Savahl et al, 2014). Furthermore, these local studies (see Adams & Savahl, 2015; Parkes, 2007; Savahl et al, 2014) show that negative outcomes are exacerbated when children experience violence and threats to safety first-hand in natural spaces. Credible threats to children's safety is evident in the high rates of reported incidents of abuse, sexual violence, kidnapping, and murder enacted against children in the country (see the South African Child Gauge, 2014). It is therefore crucial to consult and include children in research which seeks to understand and explore their subjective perceptions of the spaces which are allocated or meant for children in their communities to ascertain what these spaces mean to them, and how they use them.

Aim of the study

The aim of the study was to explore children's representations and perceptions of natural spaces using photovoice and community mapping.



Method

Research design

This study is located within a larger project which aims to determine how children construct and assign meaning to natural spaces, and the influence on their subjective well-being. Data were collected by means of three interrelated sequential data collection techniques, namely focus group interviews, photovoice, and community mapping. The current study, however, reports only on the results from the photovoice and community mapping with children, which employed a qualitative methodological framework to understand children's representations and how they make sense of natural spaces using photovoice and community mapping.

Research context

Gordon's Bay

Gordon's Bay is a coastal town located approximately 54km from the Cape Town City Centre. The population was estimated to be 15 786, with predominantly 'White' residents. Key indicators show that majority of the population live in formal housing with access to basic services; have completed secondary schooling or higher, with most households falling

within the R12 801- R25 600 income bracket. The crime rate for 2013-2014 was substantially lower than national estimates with the majority of reported crimes consisting of common assault, burglary, and a low reported incidence of sexual crimes and murders (South African Police Services, 2014).

Mitchell's Plain

Mitchell's Plain is situated approximately 32km from the Cape Town City Centre, and has been identified as one of the most dangerous areas in South Africa with the highest incidence of reported crimes, (www.crimestatssa.com). The population was estimated to be at 310 485, and the majority classified as 'Coloured' (Statistics South Africa, 2011). National estimates show that only over a third of the population have completed secondary education or higher. Thirty-eight percent of households have a monthly income of R3200 or less, with the majority living in formal housing. Although national census data shows that the vast majority have access to basic services, the suburb is characterised by a range of socio-economic problems.

Stellenbosch

The Stellenbosch Municipality is situated in the centre of the Cape Winelands, and is situated 50km from the Cape Town City Centre. The municipality has an estimated population of 155 753, with majority classified as 'Coloured'. Forty-three percent have completed secondary education or higher, while 3.1% have not completed any formal schooling. Most of the population live in formal housing and majority having households with access to basic amenities (Statistics South Africa, 2011). Nationally, Stellenbosch is ranked among the top 10 areas with the highest incidence of reported crime, evincing amongst the highest incidence of burglary, theft out of motor vehicle, commercial crime, and robbery (www.crimestatssa.com).

Participants and sampling

The total sample consisted of 28 children between the ages of 12 and 14 years purposively selected from three primary schools in low and middle income communities, situated in rural and urban geographical locations in the Western Cape of South Africa. Three groups were selected from the three schools: two of the groups consisted of 10 participants each (One group from Seaview- 5 girls and 5 boys; and one group from Gordon's Bay- 9 girls and 1 boy), with the third group consisting of 8 participants (Stellenbosch- 5 girls and 3 boys).

While it was envisaged to obtain an equal gender sample of girls and boys from each school, due to the voluntary nature of participation this was not always possible. The motivation for selecting this age cohort was due to the identification in the literature that children of this age group are more likely to assess their own behaviour and the impact of their subsequent actions upon the environment (Wilson, 1996). The primary motivation for the final selection of the three participating schools were dependent on whether they offered access to children from different racial, cultural, language, and socio-economic backgrounds. Additional inclusion criteria for participants included perceived reliability, enthusiasm and willingness to participate in the study.

Data collection

Data were collected using two participatory techniques, namely photovoice and community mapping. A total of six discussion groups were held with the participants.

Photovoice

“Photovoice enables people to identify, represent, and enhance their community through a specific photographic technique” (Wang, 1999, p. 185). In the current study one photovoice training session was held, and one photovoice feedback session where participants discussed their printed photographs with the research team. Children were asked to take photographs of the places that make them happy and unhappy, as well as their favourite places in nature. They were provided with a 24 exposure disposable cameras and given a period of seven days to conduct their photovoice missions. Before carrying out their photovoice missions, group discussions were held with the participants which focused on the natural spaces they engage in. Potential research questions were then collaboratively formulated with the participants. The participants were also trained in basic camera and photography techniques, and familiarised with the ethical employment of community photography such as the use of cameras, power, and the responsibility and authority conferred on participants with cameras (Wang & Redwood-Jones, 2001). The following photovoice ethics guidelines were followed to ensure the participants’ (see Wang and Redwood-Jones, 2001). The participants were made aware of respect for privacy law against four distinct types of invasion: *Intrusion Into One’s Private Space*; *Disclosure of Embarrassing Facts About Individuals*; *Being Placed in a False Light by Images* and *Protection Against the Use of a Person’s Likeness for Commercial Benefit* (Wang & Redwood Jones, 2001). In addressing the *Intrusion into One’s Private Space*, two written consent forms were administered to the participants- the first addressed general ethics protocols of the authors university institutional review boards, and detailed the

particulars of the study. The second consent form required the participants to obtain permission, thus a signature, from the individual being photographed prior to taking any photographs. A third consent form was administered once photographs were printed in which the participants gave permission for their photographs to be published and used in the study. Wang and Redwood Jones (2001) further discuss that the safety of the participants must be the fundamental consideration.

The photovoice mission session was carried out by the children independently after school where they were either accompanied by an older sibling or parent. As proposed by Wang and Burris (1994), the group discussions were facilitated by the following questions: What do you see here? What is really happening here? How does this relate to our lives? Why does this problem or strength exist? What can we do about it? An ensuing group discussion was conducted whereby the participant provided narratives explicating the significance and the meanings their pictures hold for them, which was followed by group views of what the photograph represents.

Community mapping

Community mapping was employed as a visual data collection technique which provided a unique representations of children's worlds in this study. Amsden and VanWynsberghe (2005) note that community mapping may be utilised to not only document geographically significant spaces and places, but also additional varieties of abstract data. This abstract data and intricacies in children's maps are made sense of when children provide in-depth narratives for the detail therein. Widely considered as an empowerment and child-centred technique, community mapping is foregrounded on "validating the knowledge and experiences of participants" (Amsden & VanWynsberghe, 2005, p.361). Additionally, given the participatory nature of this technique, it is considered to address the issue of power dynamics and inequities present in the research-participant relationship. This data collection technique was complemented by photovoice, and focus group interviews (reported elsewhere).

Data analysis

The discussion groups with children about their photographs and maps were analysed using thematic analysis. More specifically, Braun and Clarke's (2006) six-phase guide to undertaking a theoretical thematic analysis was employed. Theoretical thematic analysis is

closely related to the researcher's theoretical proclivities and is usually coded to align with the study's research aims. *Phase one*, familiarising oneself with the data, involved an immersion in the data which was characterised by repeated readings of the transcripts. In *Phase two*, the initial codes were generated, followed by *Phase three*, which focused on the identification of the themes based on the initial codes. In *Phase four*, the themes were reviewed and refined, with *Phase five* entailing defining and the final naming of the themes. *Phase six* focused on the production of the study findings based on the first five phases of analysis.

Procedure and Ethics

Ethics clearance to conduct the study was obtained from the Senate Research and Ethics Committee at the university where the researchers are based. Once permission was gained from the principals of the respective schools, ethics clearance was then sought from the Western Cape Education Department (WCED). The participants who were interested in participating were recruited by the grade 6 head of department, and at one school, the school counsellor. Children were only able to participate if signed consent was obtained from their parent or guardian, and the children themselves. An initial session was held with the participants wherein the purpose and aim of the study, what their participation would entail, as well as the core ethics principles of informed consent, voluntary participation, confidentiality, and the right to withdraw from the study at any time without negative consequences. The participants were requested to keep the content and discussions that took place within the discussion sessions confidential. The sessions were audio-recorded, with the participant's permission, and transcribed verbatim. The transcribed texts were verified by a research psychologist external to the study. The participants were also informed that the data gathered will be used for a monograph thesis which will be publically available, as well as peer-reviewed publications and conference presentations. Focus group discussions were conducted on the school premises during administration sessions at the beginning of the school day and after school. They were conducted by the primary researchers and assisted by a co-facilitator.

Findings

The study aimed to explore children's representations and perceptions of natural spaces, using photovoice and community mapping. These two participatory techniques were employed to capture participant's reflections on significant spaces and places, and photo

journeys and mapping to explore neighbourhood experiences and perceptions of natural spaces. The study was conducted in three socio-economically diverse communities in the Western Cape of South Africa, with children's understandings and experiences evincing a diversity of 'childhoods'. Three key themes emerged from children's discussions about their photographs and mapping using thematic analysis namely *Safe spaces in nature*, *Unsafe space in nature*, and *Children's favourite places in nature*. Socio-economic status was found to be a determining factor in children's identification of safe and unsafe spaces in their communities, as well as their favourite places in nature. These themes are discussed in detail below.

Safe spaces in nature

There were large disparities in children's perceptions and experiences of safe spaces to engage in within the three communities of Mitchell's Plain, Stellenbosch, and Gordon's Bay. The socio-economic standing of the community in which children resided played a key role in how they made sense of, assigned meaning to, and experienced natural spaces; which was expressed through their use of photovoice and community mapping and subsequent discussion groups. For the mapping exercise children made use of two stickers in their maps where the red stickers showed unhappy and unsafe spaces, and the gold stars showed safe and favourite places. For Gordon's Bay, none of the maps had red stickers indicating unsafe spaces, while children maps from Mitchell's Plain and Stellenbosch were populated with red stickers indicative of unhappy and unsafe spaces. Children's appraisal of their community showed that they had mixed emotions about the different environments in their community- with safe spaces synonymous with positive emotions, and unsafe spaces synonymous with negative emotions. Children mentioned that the safest spaces for them which enabled safe play in natural spaces were at home (in gardens and backyards), at school, the soccer field, and the beach (this was mentioned only by the children from Gordon's Bay, and was only possible if accompanied by an adult). The library and places of worship were also mentioned as safe spaces. For many children the safe places they referred to such as particular parks or fields were not safe all the time- these places were seen to be unsafe either at a certain time of the day or week. One of the participants articulated that the soccer field photographed in his area is especially safe, stating that "the adults watch over us". Further discussion about this photograph indicated that children's safety in this natural space was contingent on adult supervision. Even so, there were instances when they had to leave the soccer field, such as for example when known gangsters walked pass forcing them to go home.

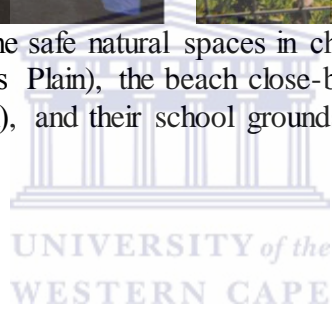
The concern for safety was more prominent in children's understandings from the low socio-economic communities. Very often children's photographs and maps from the low socio-economic status (Mitchell's Plain) and rural community (Stellenbosch), showed the safest natural places to be close to home, such as their own backyard, an open field across from their home, as well as their school playground. Notwithstanding the perilous neighbourhoods most of the children live in, their intricate knowledge of their communities enabled them to navigate their way safely through their communities. This however, was not achieved without a sense of trepidation and anxiety. Most of the children from Gordon's Bay however, were in a position to negotiate their mobility, evinced in their photographs and maps; with many of them able to explore their environments, and nature independently. These children's photographs and maps showed the diverse natural spaces that they are able to navigate, with their favourite places in nature further from home, away from adult supervision. In comparison, children from Stellenbosch and Mitchell's plain were more restricted, especially girls. Aside of school being a safe space for many children, most made mention of only one other safe space for them in their community, with most of their discussions centring around first-hand experiences of abuse or violence.

There was consensus amongst all the children that school was a safe space, offering safe natural spaces for children. The sense of attachment to school varied. Children from the rural school in Stellenbosch indicated that they are especially happy at school, as their home environments posed numerous threats against them. For many of them this threat was within their own home. While the children from Mitchell's Plain also considered school a safe space, they were unhappy that they were no longer allowed to play on the open field or in the garden at their school, which was recently gated-off from students. While many of their pictures were taken at the vegetable garden at school, this was done after school when teachers would not deny them entry. It was for this reason, coupled with children's limited mobility in their unsafe communities, which lead them to assert that "school is like a prison", captured in the photograph in Figure 1 (bottom right). While school was considered a safe space for children, the commute to school was not always safe. Some children discussed having to cross a park to get to school, with a male participant commenting that "you just don't know when they gonna start shooting"; again highlighting the importance of safety in children's lives. More so, it accentuates the impact the dangerous spaces in their communities has on children's daily living, and their subjective well-being.

Many children across the three communities spoke about the garden at home to be a safe natural space where they enjoyed spending time. A male participant expressed his predilection for this activity in mentioning that he “talks to the plant” to foster growth. Other children spoke about how they also spend leisure time in their backyards amongst the trees and plants which made them feel “calm” while doing their homework in nature. Consequently, one of the main reasons children gave for staying indoors was the workload at school, and having to complete homework. A female participant’s discontent with being indoors at home was evident in her statement that “When I’m inside I dunno why but I’m moody”. In comparison to many of the male participants who preferred staying indoors and playing console or computer games, the female participant’s preferred being outdoors but did not often have the opportunity to do so. An interesting finding from the photovoice session was the photographs taken by one participant which was in fact taken in a plant nursery as this participant had limited safe, greenspace to utilise and engage in. Additionally, while children from Gordon’s Bay had an abundance of safe natural spaces at home and in their community, a female participant took photos of a lifestyle living complex which boasted a dam. While these safe natural spaces formed the basis of children’s play spaces, the lack of mobility and ability to explore other natural spaces in their neighbourhood influenced children in profound ways. In relation to her dissatisfaction with the experience of being house-bound due to the unsafe neighbourhood, a female participant articulates that “At home you feel crowded by houses”, expressing the need to be in nature; to be free, and independent. A different perspective provided by a female participant from Gordon’s Bay was that “It’s always so nice to be outside in the fresh air”, thereby expressing her frequent engagement and direct experiences in nature reflected in the word “always”. It is discernible from children’s understandings that the natural places which they engage and spent time in had an effect on their quality of life, which in turn reflects the quality of their environments.

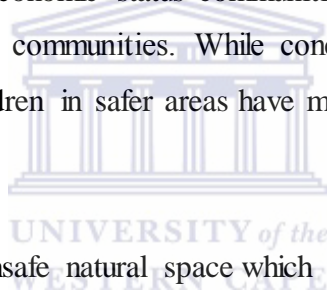


Figure 1: These pictures depict the safe natural spaces in children's communities, such as school gardens (top left, Mitchell's Plain), the beach close-by (top right, Gordon's Bay), the park (bottom left, Mitchell's Plain), and their school grounds (bottom left, Stellenbosch).



that almost all natural spaces in their communities are unsafe, such as open fields of greenspace, parks, rivers, beaches, picnic areas, and ‘wild’ nature. One of the examples of ‘wild’ nature was the presence of baboons in the mountainous areas close to where the children from Gordon’s Bay live. According to these children, these animals can become violent if they feel threatened or become provoked, with one participant mentioning that in his encounter the baboons threw stones at them.

Children’s understandings of these unsafe spaces was intricately linked to their characteristically unsafe neighbourhoods. The communities of Mitchell’s Plain and Stellenbosch have among the top 10 highest crime rates in the Western Cape, which was clearly demonstrated in children’s discussions from these communities. The difference in socio-economic status of the children’s communities resulted in stark variances in children’s photographs and maps, evident in Figures 1 and 3. Ultimately, what emerged from children’s perspectives from the low socio-economic status communities was that there are no safe natural spaces for children in their communities. While concerns for children’s safety is prevalent in all communities, children in safer areas have more opportunities to explore their natural surroundings.



Beaches were another common unsafe natural space which children identified. Two of the schools, Gordon’s Bay and Mitchell’s Plain, were located within walking distance of a pristine coastline; however, owing to the danger of this space children from Mitchell’s Plain, did not have a single photo of the beach present in their photovoice mission. In addition to beaches being unsafe, even when children are accompanied it is still unsafe as one participant notes that you have to “Be your own life guard”. The children’s maps had two types of stickers: red stickers signified unhappy and unsafe spaces in their community, while gold stars signified safe and favourite places. When perusing the children’s maps in Figure 4 and 5 we see that there are countless unsafe spaces which children identified. Children’s narratives accompanying their photographs demonstrated that while they feel that they “have no freedom”, and that they are unhappy about the circumstances of their lives, they show a resilience to cope with the stressors and threats they are faced with. Their limited range of mobility was expressed as frustrating for children, “go to school safe, go home safe”; thus reflecting the essence of a strict regimen, with little opportunity for fun and enjoyment. While discussing her map showing many unsafe spaces in nature in her community, a female participant declares that her lack of ability to engage in nature “makes me sad...makes me

want to cry...it's not enough for me". Children's exploratory ranges are close to home, affecting their ability to connect with nature and receive benefits of engaging in nature. The role of media reports of violence in the news was another factor which children mentioned as affecting their mobility "because the news says this place and this place is dangerous", resulting in parents worrying and becoming more paranoid and protective of children's movements. What the children alluded to was an allegorical checklist, with pre-set conditions to ensure their safety outside their home; a lack of doing so might have severe consequences for their safety and well-being.

Other natural spaces such as the parks close to home were also categorised as unsafe by children as it is a place where criminals, such as drug dealers and gangsters, gather. As one female participant expressed "the drug dealers sit on the swings with guns". In reference to her photographs, a female participant remarks that the "park there by us is very dangerous", its where "people are high", she goes further to note that "Like Mandela said...it's a long walk to freedom, to nature". This statement was quite powerful as the participant used a revered political icon to bring across her feelings of being vexed by the inability to engage in nature due to the troubling and precarious nature of her community. Walking home from school, or walking to the tuckshop close to home, was particularly unsafe for girls, as they discussed incidents of being harassed and taunted by older boys and gangsters.

The critical concern of pollution was also evident in children's photographs, with much discussion focusing on how unsafe natural spaces are often littered with waste, rubbish, broken glass, with people burning tyres and other pollutants. Unsafe spaces, with nature perceived as the dangerous 'other', was often conflated with degraded, polluted spaces. Children's photographs showed littered fields and beaches, making these already inaccessible childhood spaces even more unreachable to children. Some children spoke about how they have to clean litter from their school grounds as they are seniors. More so, they asserted that adults in their community advocate for keeping their community clean but they do the opposite: "They always say you must lead by example, but they don't do it." Another participant added that the pollution: "doesn't bother the others because they not outside; it bothers us kids because we're outside".

Two extremities became manifest from children's perceptions in reference to adults intrinsic need to safeguard children; the first was children's acknowledgement that "They [adults] try

to protect you”, to the second rejoinder that “It’s over-protective”. More broadly these discordant views feed into issues of children’s social participation, circumvented mobilities, and the ability to explore their environments. Resonating with findings by Sancar and Severcan (2010), the findings in this study showed photographs of an absence of children in children’s places- empty parks, empty sport fields, and degraded natural spaces in children’s communities forcing them to remain in the confines of their home. These places were considered children’s places as these were the natural places which children sought out, but were not always able to make use of.

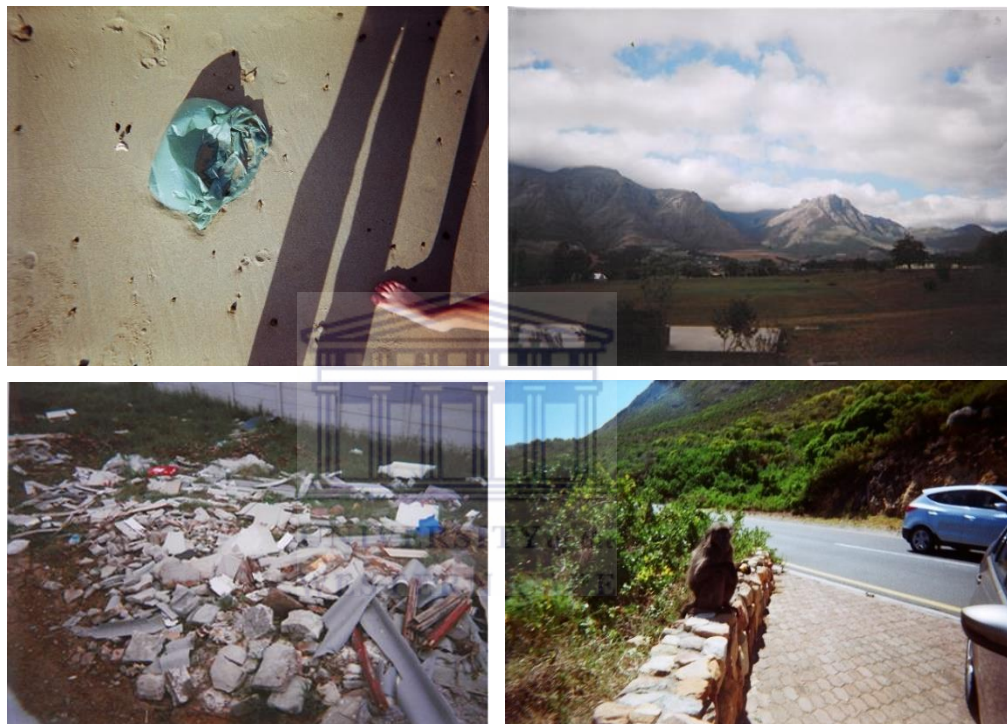


Figure 3: The photographs above show the unsafe spaces in children’s communities. In particular we see a littered field (where the potential of children being assaulted or kidnapped is high), open greenspace which children are unable to access, as well as ‘wild’ nature (evident in the picture with the baboon).

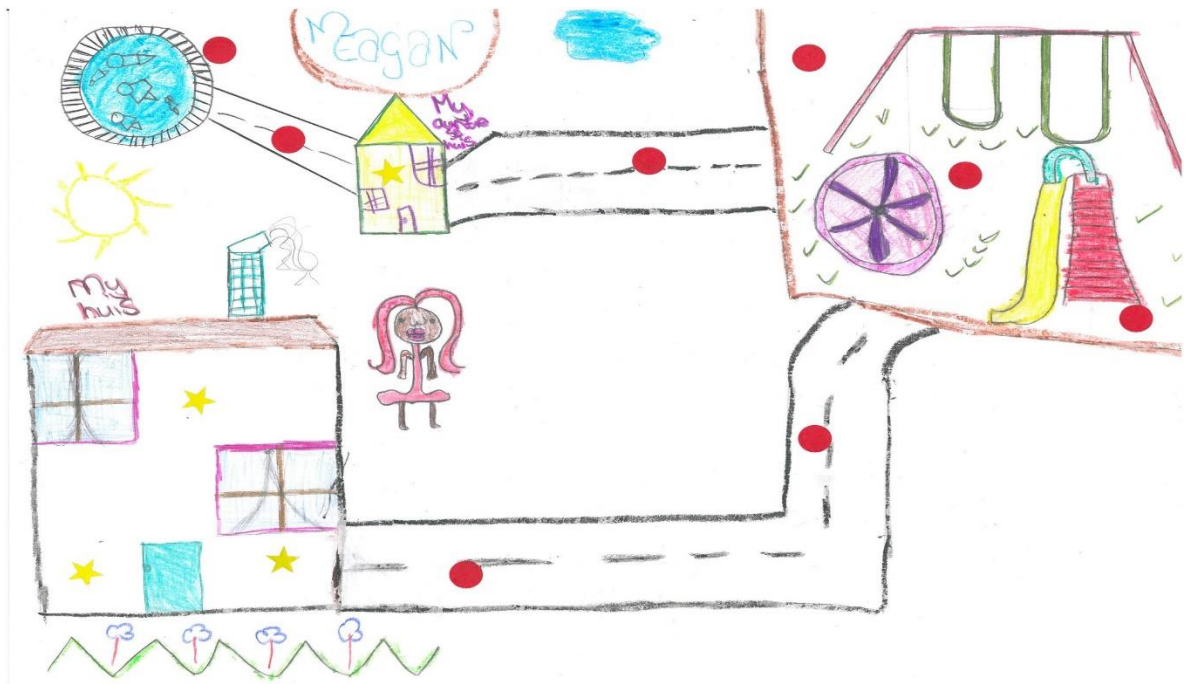


Figure 4: In Map 3 above we can see that there are only two safe spaces for this participant-her house and her friend's house (demonstrated by the gold star). It is also evident that the parks, the roads, and the beach which are all spaces surrounding and close to home, are all unsafe (indicated by the red dots).

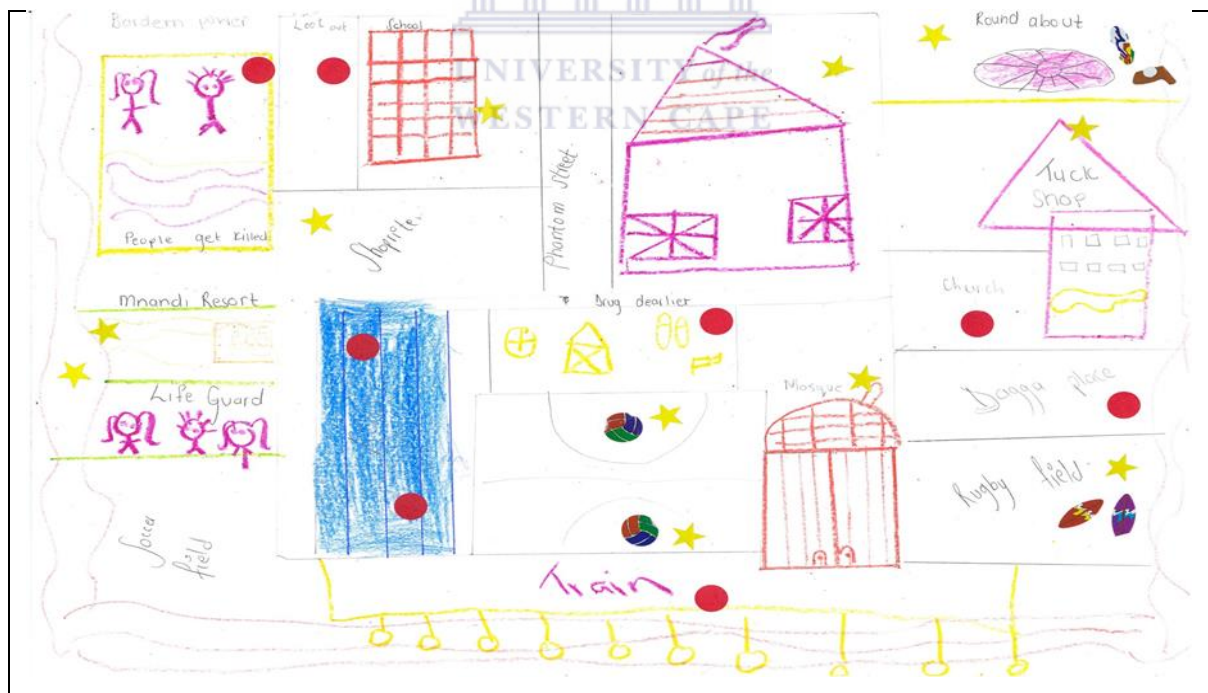


Figure 5: Map 4 shows a predominance of unsafe spaces for this participant, including known drug houses, the beach, the field close to home, and outside the church. Similar to the other maps, the school, soccer field and mosque were identified as safe.

Children's favourite places in nature

Children's favourite places were more than just safe spaces which children enjoyed engaging in, as Abbott-Chapman and Robertson (2009, p.419-420) aptly note, "*favourite places are idealised constructs of places enjoyed and remembered which assist in regulating negative feelings and coping with perceived stress, whose emotional benefits are enjoyed irrespective of the frequency of visits*". The last point which these authors make was crucial for this study; that is the affective component and children's attachment to special places. Particularly, that children's special place can be revered without an abundance of experiences therein. For most children in the current study, discussions about their favourite places bared a number of accompanying positive emotions- it made them happy, feel free, feel calm, feel like yourself, and provided them the opportunity to spend time by themselves, or enjoy social connections with friends. Children's favourite places were not always places they frequented. Many children mentioned cherished natural spaces which they visited on a family or school outing which made a lasting impression on them. Nature as children's favourite place was evident in their photographs, and maps, with many interesting findings emerging from children's discussions.

Socio-economic status played a significant role in children's identification with and engagement in natural spaces, with children from the middle socio-economic status community sharing several of their favourite places, while children from the lower socio-economic status communities indicating far fewer. Children from Mitchell's Plain and Stellenbosch often described ideal natural spaces, or natural spaces which were not always safe, or which they visited infrequently, and were often far from home. They mentioned their favourite places to be the parks, sports fields, an open field, gardens at home and school, the dam, and a burial park. Some children mentioned that they were happiest at school and at home, as these were the only opportunities they had to engage in some form of nature. School was cited by other children as a favourite place as they enjoyed sitting under the trees with their friends during recess. As most low-income schools in Cape Town have small grounds, and are under-resourced with many parents unable to pay a low rate of school fees, the play spaces for children in these school are often asphalt play surfaces with a traditional playground. While traditional playgrounds are amenable to younger children's play, for adolescents this is not appropriate. Adolescents, and younger children, need natural spaces at school where they can explore and learn about nature using 'loose parts' (see Nicholson, 1971). Children from Gordon's Bay were not faced the same restrictions that children from

the two other locations were faced with. Children at this school had big school grounds, and a large and well-kept sports field which children had access to before and after school as well as during their recess. There were apparent divergences in boys and girls favourite places- boys enjoyed surfing and playing in the sports field, most preferred staying indoors and playing console or computer game; while girls preferred being outside and due to the risky neighbourhood were not always able to. Recollecting one of her favourite places, a female participant mentions that “What makes me happiest is walking to the Steenbras dam and talking to my friend”.

Children’s environmental learning in these characteristically unsafe communities was stunted. This however, did not mean that children did not appreciate nature, or have an affinity toward nature. A favourite activity in nature which was prominent in all children’s discussions was that of school camps which they engaged in. The impact of these camps on children’s environmental worldviews, and the resulting impact on their well-being was well-established from children’s experiences. A female participant providing her recollection of the camp asserted that “Since we come from the camp, before the camp I wasn’t interested in nature.”, whereas after the camp the participant was extremely intrigued by nature and what it offers, “It feels like it’s interesting”, and more so how it made her feel, captured in her expression, “You want to relive that moment, over and over”. This participant’s experience highlights the point that children cherish a singular, capricious experience in nature.

Children’s experience of a camp may have had a lasting effect on them as they were in a safe natural space, with the supervision of adults, and had the ability to learn about nature directly and explore this otherwise unfamiliar space. Further discussions about how nature made them feel lead a participant to declare that her experience in nature made her feel that “Nothing was in your way”. This sense of freedom within nature was evident in many children’s photographs of open greenspace and beautiful natural scenery in their communities. The essence of nothing being in children’s way had both literal and figurative undertones. In a literal sense large open space provided children with the opportunity to explore and roam freely, and literally it was a safe natural space with no strangers or criminals impeding children’s mobility.

Children from Gordon’s Bay had much more varied favourite natural spaces. The beach was often deemed a favourite place, especially in summer when children could surf, and body board in the waves and playing with starfish; or just spend a family day or spend time with

friends. The photographs from these children were not merely of open fields or gardens, children discussed spending quite a bit of time exploring nature to find the perfect picture to capture their experience in it. Some of the photographs showed different types of reptiles and insects, which the photographers were very proud of taking. One participant also mentioned how she sometimes enjoys chasing birds on the field close to her home, one of her favourite places, which she also photographed. A male participant mentioned that one of his favourite places was his friend's house which is close to a farm. One of his photographs was of him feeding the horses apples on one of his visits to his friend. When asked whether he was afraid of the horse, he mentioned that he was not, and that he enjoyed spending time with animals, and was not afraid of 'wild nature'. Children also mentioned that they enjoy hiking in the mountains, which is good exercise as well, but is sometimes dangerous due to the presence of baboons. Hiking also allowed them to uncover and explore a cave in the area, among their favourite places. For children who had the opportunity to engage in natural spaces and the ability to explore nature in their community, these children were evidently environmentally knowledgeable, and conscious. These children spoke about various species of birds, dogs, sea animals to name a few, with many advocating for environmentally protective behaviours. The presence of pollution such as litter on beaches and in neighbourhood parks was flagged as a deep concern from children's perspectives as it threatens the Earth, as well as humans and sea animals if the litter blows into the water.

Children were aware of issues around climate change, and discussed how all children and schools should become involved in environmentally friendly behaviour in their communities, with the help of its residents. A female participant discussed how in her family "We're quite environmental freaky!", which was manifest in her map and photographs which paid attention to natural detail in her favourite places, as well as the environmental knowledge that she has. While she revealed that some of this knowledge was acquired in a few school subjects, her interest and intrinsic care for nature was predominantly gained and assimilated from her mother as she states that "My mom she really likes the environment and plants". And more so, in discussing a photograph referred to "the solar powered fairy lights" that her mother uses in the garden. This reference to the various ways of incorporating environmental concern, speaks to a discursive theme of the influence of the *intergenerational transmission of environmental consciousness*, of parents' and other significant close family members on children's meaning making (Chawla, 2006). This theme was also present in children's discussions from the other communities. Children spoke about how the garden at home was

one of their favourite places, as they liked to plant things and maintain them. A male participant spoke about how one of his favourite times spent in nature was when he visited his grandparents and they spent all day gardening and learning about flora.



Figure 6: From the photographs above we can see that a picturesque river with bridge, and being close to fauna (starfish, feeding horses, and chameleon- bottom) are among children's favourite places in nature.

Discussion

Sancar and Severcan (2010) note that notwithstanding socio-cultural and contextual nuances in children's spaces, their favourite places are inextricably linked to the memories and feelings these place have on them. In this study, three themes emerged from children's discussions about their special places in nature, namely: *Safe spaces in nature*, *Unsafe spaces in nature*, and *Children's favourite places in nature*. The socio-economic status of the communities which children live in was the determining factor shaping children's childhoods. For the children from the low socio-economic status communities, the places they mostly inhabited were the safe places and spaces which they photographed and included in their maps, while the children from the middle socio-economic status community frequented their favourite places more often. The crucial difference between children's lives in these two contexts was the pertinent issue of safety. Children from the two low socio-economic status communities, characterised by high levels of crime and violence (among the highest in the region), revealed feeling uneasy and unsafe when they were outdoors in their neighbourhoods.

The significance of context was apparent in children's sense-making and discussions about their favourite places. Children's understandings indicated that most areas in their community are unsafe, exemplifying the high levels of crime and violence in low socio-economic status communities in this context. Despite their perilous environments, the children in this study displayed a resilience to cope with unsafe and risky spaces. What was striking in children's photographs and particularly their maps, was their motivations for walking a particular route to school, or to a friend's house which enabled them to circumvent a 'dangerous place'. Thus, coping with risk by evading unsafe and dangerous spaces. This resonates with Leonard's (2007) contention that "Risks were avoided, confronted, negotiated and renegotiated" (p. 443). Children's sense of worth appeared to be augmented when they reached a destination safely and were able to navigate their way through their neighbourhoods. Many of the children spoke about first-hand experiences of being bullied or harassed by gangsters in natural spaces, accompanied by feelings of anxiety. Garbarino, Dubrow, Kostelny, and Pardo (1992) note that in these perilous communities danger, threat, and a sense of fear become the norm. Nonetheless, children were still able to enjoy leisure time with friends, at parks or sports fields which were monitored by adults. The gender differences which emerged from this study were contrary to a number of international studies, indicating that girls preferred to be outdoors and boys preferred to be indoors. Children from these communities were reliant

on adults to ensure their safety, and were unable to explore close-by natural spaces such as beaches, dams, rivers, parks, and nature reserves. These safe and unsafe places portrayed in children's maps and photographs serve as a representation of the 'everyday worlds of childhood' (Leonard, 2007).

Children's narratives about their favourite natural places gave them an opportunity to reminisce and re-experiences the feelings from that place. These special places provided children with a place of solace. Children from Gordon's Bay, having access to safe natural spaces in their community, displayed an environmental knowledge akin to being familiar with nature, which was not apparent from children from the other communities. This knowledge was also evident in children's photographs which captured 'hidden' nature, and special natural spaces. In contrast, children's photographs from the low socio-economic status communities depicted nature which they did not frequent, such as the park, and the field, what Sancar and Severcan (2010) refer to as 'spectator spaces'; while others took pictures of superficial nature such as a plant nursery. Findings from a local study conducted in low socio-economic status communities exploring children's perceptions of their neighbourhood environments, revealed that while children attributed importance to nature (Swart-Kruger, 2000; Swart-Kruger & Chawla, 2002), many were unable to access safe natural spaces to socialise and play. Additionally, both boys and girls faced the challenge of restrictions on their mobility due to an array of threats in their neighbourhoods (see Chawla, 2000; Swart-Kruger, 2000; Swart-Kruger & Chawla, 2002). Several years after the project was implemented, with an evaluation study showing the positive impact the project had on the participants lives (Griesel, Swart-Kruger & Chawla, 2002), there has not been much progress made in the field of child friendlier cities and communities in this country.

With South Africa as a signatory to the United Nations Convention on the Rights of the Child (UNCRC), it is obligatory upon government to take a more pronounced stance and action in bettering children's lives. While the UNCRC speaks to a safe social environment for children (*Article 19 and Article 27*), it does not directly mention the natural environment. The only article which speaks to the natural environment is *Article 29* which states that a key goal of child education should be to enable them to protect the environment. Given the numerous benefits of children engaging in natural spaces for their psychological well-being and overall quality of life (see Huynh et al., 2013), Myers (2012) critically notes, and advocates that children's access to nature should in fact be regarded as a fundamental right of children. As

children's subjective well-being has been shown to directly associate with their engagement and experiences in nature, it is crucial to increase children's access to safe natural spaces in their neighbourhoods (see Kerret et al., 2014).

Conclusion and recommendations

This study explored visual representations of children's lives, providing a different lens through which to understand children's sense-making and attachment to favourite places. With natural spaces specified as children's favourite places in this study, and the manifest advantages of children's engagement therein, it becomes crucial to harness children's access to natural spaces in their communities. High levels of crime and violence in children's communities, and the accompanying concerns for safety has limited children's mobility and ability to explore natural spaces. Although significant progress has been made in terms of legislation advocating and protecting children's rights in this context, this has not culminated in children's facing less threat to personal safety in their daily lives. An expedient starting point would be to work towards and build environmentally and child friendly communities for children, with children as key contributors in the planning process using a child participation framework. Nature should thus be a part of children's everyday life so they can reap its benefits, and in turn acquire environmental knowledge by becoming environmentally conscious, and develop an environmental ethic which encourages sustainable development. The intention of environmental awareness should be to enhance care for natural environments, on the basis of one's own health and the well-being of other, as well as nature itself.

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CHAPTER EIGHT: DISCUSSION

8.1. Introduction

The aim of this chapter is to synthesise the findings from the four articles in the dissertation, and to make sense of the key findings through the theoretical considerations presented in Chapter Three. Furthermore, the chapter takes into account the core focus of the study in attempting to merge children's environmental perceptions, children's place preferences and attachment, and ultimately how this influences children's subjective well-being. It is significant in this regard to review the aim and specific objectives of the study which exemplifies the mixed methods approach which was followed. Each of the objectives below represent an article (Article 1 [Chapter 4]; Article 2 [Chapter 5]; Article 3 [Chapter 6]; Article 4 [Chapter 7]), and correspondingly served to elucidate children's understandings of natural spaces.

The overall aim of the study was to explore how children construct and assign meaning to natural spaces. Within this process the study aimed to explore the extent to which children's engagement with natural spaces influences their subjective well-being (SWB). The objectives of the study are:

1. To systematically review and synthesise the findings regarding children's understandings and engagement with nature as a space (*Article 1*)
2. To explore the relationship between children's environmental perceptions and their subjective well-being (*Article 2*)
3. To explore how children discursively construct natural spaces and the influence on their subjective well-being, using specific discursive resources and repertoires to construct and assign meaning to their engagement with natural space, and how their constructions and assignments are manifested in their discourses (*Article 3*)
4. To explore children's representations and perceptions of natural spaces using photovoice and community mapping (*Article 4*)

8.2. Discussion of findings

Article 1 was a systematic review which sought to determine how children subjectively assign meaning to, make sense of, experience, and perceive natural spaces (Objective 1). Article 2 aimed to ascertain the relationship between children's perceptions of nature and their subjective well-being, and in so doing fit a structural model depicting the nature of the

relationship between children's environmental views and their global, and domain-specific life satisfaction (Objective 2). Article 3 focused on exploring how children construct and assign meaning to natural spaces using focus group interviews and employing discourse analysis (Objective 3). Finally, Article 4 explored children's representations and perceptions of natural spaces using photovoice and community mapping (4). The following four sections will focus on the article-specific findings. The findings are then synthesised into a broader discussion to reflect the implications for children's engagement in natural spaces and the influence on their SWB, with reference to the various theories of nature, place, and SWB.

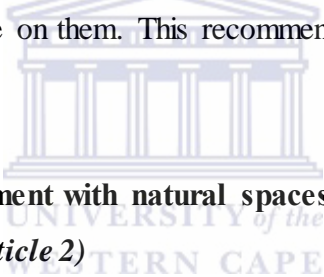
8.2.1. Exploring children's subjectively assigned meanings, sense of, experiences in, and perceptions of natural spaces (*Article 1*)

The first article, Article 1, employed a systematic review of the literature to ascertain how children make sense of natural spaces. At the time when this study was embarked upon, there was an absence of a systematic account of how children perceive, and experience nature. This was the main impetus for this article. Although the literature is replete with literature reviews on the topic (see Aziz & Said, 2011; Chawla, 2006; 2009; Chawla & Cushing, 2007; Bird, 2007; Kellert, 2005; Malone, 2004; Moore & Marcus, 2008; Ponds, & Schuster, 2011; Yatiman & Said, 2011), providing various insights into the status of children's environmental views, the lack of a systematic account resulted in a particular gap. While the current systematic review was under review with the *Journal of Environmental Education*, Gill (2014) published the first systematic review on the topic. The focus of his review was on the benefits of spending time in natural environments for children younger than 12-years old. As Gill (2014) notes, empirical initiatives vary by theoretical focus, context, and quality which makes summarising the literature an arduous task. This makes a systematic review advantageous as it affords a methodologically rigorous opportunity to appraise the state of research on children's engagement with natural spaces (Abalos, Carroli, Mackey, & Bergel, 2001). While Gill's (2014) review can be considered seminal in the field, it focused exclusively on children younger than 12-years of age, which thus excluded the focal cohort for this study which was on adolescents. Despite the focus of the current study on adolescents between the ages of 12 to 14, this systematic review was not limited to this age group. Instead, it was of interest to review how children, employing the denotation in keeping with the UNCRC of individuals aged 0 to 18 years, make sense of, understand, and experience natural spaces to gain a holistic overview of empirical initiatives which have been undertaken.

Based on the specific inclusion criteria for the review, as well as the noted keywords (see Chapter Two: Method), a final total of 74 articles were included in the review, with a fairly equal spread across studies employing quantitative and qualitative methodological frameworks. The synthesis technique of *Textual Narrative Synthesis* (Lucas et al., 2007) allowed for a depth exploration of the study's findings delineated in terms of type of research, scope and focus of research, context, quality (content and method), theory, and findings. The appraisal tool (an adapted version of the Evaluation of Quantitative and Qualitative Studies, Long et al., 2002; 2004), along with the synthesis technique, and data extraction tool, allowed for a comprehensive account of the reviewed studies.

One of the key findings which emerged from the review was the considerable variation in how children make sense of natural spaces, which was categorised into four main themes, *Children and outdoor activity spaces; Environmental education (EE) and promoting active care for nature; Direct experiences and effects of natural spaces and places; and Children's perceptions of natural spaces and places*. There was, however, consensus that nature offers copious benefits for children, and in particular, impacts various domains of their well-being such as their physical, psychological, social, and emotional development. However, it was identified that what appears to be absent from the literature is how engagement in nature influences children's subjective well-being - a key motivator for Article 2 (employing a quantitative methodology) of this dissertation which explored the relationship between children's environmental worldviews and their SWB. Article 3 (employing a qualitative methodology) which explored children's discursive constructions of nature and how this influences their SWB was also important in this regard. While children appeared to display intrinsic care for nature in the studies, this was not measured directly in any of the studies and is thus difficult to conclude whether it was genuine, or superficial. Very often there were binary opposites demonstrated in the studies in terms of how children made sense of nature; nature was a place of solitude and sanctuary, and also the 'dangerous other', a threatened place (in terms of environmental degradation and pollution), and also perceived as a threatening place (such as 'wild nature'). While several studies showed the significance of formal EE programmes, there is the need to more comprehensively understand the value of these programmes in children's lives. This would require further longitudinal research with the same group of children to determine the impact of EE programmes, and with larger samples. Mountain (see Burgess & Mayer-Smith, 2011) and Forest School educational programmes (see Knight, 2009; Ridgers, Knowles, & Sayers, 2012) are good exemplars.

A noteworthy finding was that while the reviewed studies employed qualitative, quantitative, and mixed-methods approaches, only three studies qualitatively explored children's perceptions of nature (see Adams & Savahl, 2015; Hordyk et al., 2014; Kong, 2000). These studies focused particularly on adolescents, which aptly portrays Wilson's (1996) assertion that at this developmental age children are more likely to assess their own behaviour as well as the ensuing effect of their actions on the environment. A point shared across studies was the significant role which children's contexts played in how they made sense of nature. With most studies conducted in developed countries in urban contexts, there is a dearth of research on children's accounts from developing contexts, particularly from the African continent. While a large proportion of international studies show that children living in rural contexts have more access to nature than children in more urbanised areas, research from the current contexts shows the opposite (Article 3 and 4). Given the emphasis on children's rights across the world, transcending disciplines, it necessitates the need for more studies to employ participatory methodologies with children to understand how they make sense of nature, and the influence of engaging in nature on them. This recommendation was the basis for Articles 2-4.



8.2.2. Children's engagement with natural spaces and the influence on their subjective well-being (Article 2)

Based on the findings from the systematic review (Article 1), Article 2 sought to ascertain the nature of the relationship between children's environmental worldviews, measured using the New Ecological Paradigm (NEP) Scale for children (Manoli et al., 2007), and their subjective well-being (SWB) measured with the Students' Life Satisfaction Scale (SLSS) (Huebner et al., 1991) which assessed global life satisfaction and the Personal Well-Being Index- School Children (PWI-SC) (Cummins & Lau, 2005) which assessed domain-specific satisfaction. The strategic aim of the study was to fit a structural model portraying the nature of this relationship. The data collection for this study formed part of the Children's Worlds Project: International Survey on Children's Well-Being, an international collaborative study which aims to collect information about children's perceptions of their subjective well-being, their time use, and daily activities (see isciweb.org). The final sample included 1004 primary school children aged 12-years old from both low and middle socio-economic status (SES) communities in the Western Cape of South Africa (SA), one of nine provincial regions. The sample was randomly selected using a two-stage stratified sampling protocol- in the first stage schools were stratified according to the Education Management District, and in the

second stage schools were stratified according to SES, that is low or middle. Owing to the historical backdrop of Apartheid in the country, low and middle SES communities possess distinct characteristics (see Savahl et al., 2015b). Low SES communities are characterised by low income, high levels of crime and violence, low levels of educational attainment, high levels of substance abuse, poor infrastructure and services, and less natural features. Middle SES communities on the other hand are characterised by high income, low levels of crime and violence, high levels of educational attainment, low levels of substance abuse, superior infrastructure and services, and safer and accessible natural spaces.

With researchers have become increasingly aware of the link between children's engagement in nature and the ensuing impact on various domains of their well-being, the current study determined to explore whether nature engagement influenced children's SWB, and at the same time addressed a particular gap in the literature.

The current study employed the NEP scale for children, revised by Manoli et al., (2007) from the original NEP scale (Dunlap & van Liere, 1978) which was developed for adults. Higher scores on the scale reflect ecocentric attitudes, in this case that children value nature intrinsically, while lower scores indicate anthropocentric attitudes, that is valuing nature for its material and physical benefits only. To assess children's SWB, two widely used psychometrically sound scales were employed which focused on domain-specific SWB using the Personal Well-Being Index-School (PWI-SC, Cummins & Lau, 2005), and global life satisfaction using the Student Life Satisfaction Scale (SLSS, Huebner et al., 1991). Although these scales have been used in numerous studies in the literature on children's well-being, only one study has been identified where both these scales have been validated in the South African context, namely Savahl et al. (2015).

Using Structural Equation Modelling (SEM) and Confirmatory Factor Analysis, the key findings of the study showed that there is no significant relationship between children's environmental worldviews and their SWB. This was demonstrated by the low standardised regression weights of the NEP to both the PWI-SC (0.02), and the SLSS (-0.07). This key finding was surprising given the large literature base providing evidence for the positive outcomes on children's well-being owing to their engagement in nature.

Based on the findings which emerged from this study, it was recommended that the fields of children's SWB and environmental psychology should be built upon given the absence of research on the topic in South Africa, and more so the significance of this work given local and global environmental problems. Owing to the quantitative nature of this study, it was not possible to explore children's constructions or motivations for their engagement with nature, and the ensuing influence this has on their SWB. For this reason, as well as the lack of research in the study's context, the ensuing article, Article 3, explored children's discursive constructions of natural spaces and the influence on their SWB.

8.2.3. Children's discursive constructions of natural spaces, and the influence on their subjective well-being (*Article 3*)

Article 3, informed by *Article 1* (Systematic review on children's perceptions of natural spaces) and *Article 2* (Exploring the relationship between children's environmental perceptions and their SWB), explored how children construct and assign meaning to natural spaces. Within this process, the study aimed to explore how children use particular discursive resources and repertoires to construct and assign meaning to their engagement with natural spaces, and the extent to which this influences their subjective well-being (SWB). A large body of literature demonstrates the positive effects of children's engagement with nature on their well-being, with particular emphasis on their physical and emotional well-being (Bell et al., 2008; Chawla, 2006; Fjørtoft, 2001; Huynh, Craig, Janssen, & Pickett, 2013; Kuo & Taylor, 2004; Tranter & Malone, 2004). No identified studies have, however, considered the impact of nature experiences on children's SWB in particular. While quantitatively it was found that no significant relationship exists between children's environmental worldviews and their SWB (*Article 2*), it was important to further complement this with a qualitatively-oriented study to explore and understand how children make sense of nature.

The study employed a qualitative methodological framework to address the aim of the study. While data for this dissertation focused on three sequential data collection techniques for Phase Three that is, focus group interviews, community mapping, and photovoice, the current study (*Article 3*) reports only on the focus group interviews. The community mapping and photovoice are explored in *Article 4*. Data were collected in three socio-economically diverse communities in the Western Cape of South Africa- one rural (Stellenbosch- low SES), and two urban communities (Gordon's Bay- middle to high SES; Mitchell's Plain- low SES). The total sample comprised 28 children between the ages of 12 and 14 years. In line with the

exploratory design of the study, a semi-structured interview format was adopted. To make sense of children's discourses, discourse analysis (DA) proposed by Potter and Wetherell (1987) was followed.

The key themes which emerged from the study were *Safety and natural spaces*, *Appreciation for natural spaces*, *Degradation of Nature: Thinking environmentally, acting pro-environmentally*, and *Natural spaces and children's subjective well-being*. Several discourses emerged from the participants narratives, which are located in the aforementioned themes. The most prominent discourse to emerge was that of *Safety as a pervasive concern*, especially for children from the low-SES communities. Children indicated that this looming concern of threats to their safety negatively influenced their well-being, with many describing post-traumatic stress disorder symptoms such as anxiety, hyper-vigilance, and ultimately the fear of death. The fears which children indicated were apparent in their community as well as home environments, largely due to high rates of crime and violence in their community.

For many of the children from the low SES communities, nature was synonymous with danger as natural spaces were made sense of as open public spaces which was a breeding ground for all forms of illicit activity. On the other hand, the children from the middle SES community portrayed entirely contrasting narratives of their experiences of daily life, as well as their engagement with nature. These children instead made reference to fears of '*wild nature*' owing to the area in which they live such as being attacked by baboons, and spiders and insects.

The key recommendations which were presented in this study was the need for indicators of children's subjective well-being to include nature engagement and experiences as a domain. Additionally, both the local and international literature would benefit from merging environmental and positive psychology in an effort to explore and understand how natural spaces influence children's well-being and quality of life. Again, further research studies are needed in this context to explore the concerns at hand with children across South Africa taking into consideration the diverse cultures, languages, and whether religious orientation plays a role.

8.2.4. Children's representations of natural spaces (Article 4)

The final article, Article 4, sought to further unpack children's perceptions and experiences in natural spaces by exploring children's representations using photovoice and community mapping. The emphasis, and growing interest in participatory research with children has gained substantial momentum since the adoption of the UNCRC across the world. Photovoice and community mapping are amongst the participatory techniques used most extensively with children, which was evident in the findings from the systematic review (Article 1) of the current broader study. The significance behind employing a qualitative methodological framework using participatory techniques of photovoice and community mapping in this study was that it allowed children the space to delineate their favourite places in their community, as well as allowing children to interpret their maps and photographs themselves.

The study was conducted in three socio-economically diverse communities in the Western Cape of South Africa, the same contexts in which Article 2 and 3 were conducted with the same group of children, namely Mitchell's Plain, Stellenbosch, and Gordon's Bay.

Data were collected by means of photovoice and community mapping. Prior to the photovoice 'mission session', children were involved in a photography session with the researcher as facilitator where it was demonstrated how to use the cameras, discussed the broad research question, as well as the ethics of photography. Children were asked to photograph the places in their community which are their favourite, as well as the unsafe spaces. Importantly, the ethics of photography were discussed with the children, with three consent forms being used. The data were analysed using Braun and Clarke's six-phase thematic analysis.

The central findings which emerged from this study were made sense of in three key themes *Safe spaces in nature*, *Unsafe spaces in nature*, and *Children's favourite places in nature*. Analogous to the findings from Article 3, SES proved to be a determining factor moulding children's accounts, understandings, and representations of natural places and spaces. The children from the low-SES communities most often depicted and photographed safe places close to home with a smaller range in mobility, while children from the middle SES community frequented their favourite natural places more often, which was evident in their representations. Children's photographic representations starkly reflected the influence of SES on their understandings and the meanings they attach to not only natural spaces but other public spaces. The children from the low SES communities predominantly photographed

parks close to home which were unsafe for them and younger children, as well as polluted spaces in their community. This resulted in many children from the low SES communities opting to photograph *superficial nature*, such as a plant nursery and burial park, while children from the middle SES community photographed serene and diverse representations of nature such as outings to the beach, the mountain, and pictures of ‘wild nature’. Solidifying the characteristically unsafe demeanour of their neighbourhoods, the children from the low SES communities depicted a majority of unsafe spaces on their maps. While this sense of danger was not explicitly mentioned by children from the middle SES community, the undertones of safety concerns were evident when these children mentioned that they were accompanied by a parent or adult to take their photographs. However, most often it was ‘wild’ components of nature which these children referred to.

The fundamental point being made here, with evidence accruing from Articles 1 to 3 is that access to natural spaces and places should be a basic right of children, given that nature was found to be a special place of children. The socio-economic status of children’s communities should not determine children’s access or mobility within their communities, as they should have the opportunity to explore and navigate their way through nature without the impending fear of threat by a criminal element. More so, this should be reflected in the UNCRC which currently speaks only to children’s social environments (Article 19 and Article 21), with only Article 29 referring to a key goal of education enabling children with knowledge to protect the environment. The key recommendations from this study is to use participatory methods with children as co-researchers employing a child participation model to work towards building environmentally and child friendlier communities.

8.3. Discussion

One of the core findings of the current study was that nature is a special place of childhood. The four articles provided a comprehensive understanding of children’s perceptions of, and experiences with natural spaces and the ensuing influence on their subjective well-being (SWB). The final section of this chapter synthesises the implications of the study’s findings for the current context, as well as for the disciplines of environmental psychology and positive psychology. The implications of the study are further made sense of using the theories of nature, place attachment, and children’s subjective well-being (SWB) as they serve to complement one another, and further understandings of the topic at hand.

8.3.1. Children's mobility in natural spaces: The role of socio-economic status (SES) and threats to children's safety

One of the overarching findings in this study was that socio-economic status (SES) was a determining factor of how children make sense of nature and the accompanying influence this had on their well-being. This evinced the nuances in children's understandings of natural spaces owing to their distinctive neighbourhood geographies. Children's neighbourhoods, the 'dominant locality' of their daily lives, are imbued with numerous concerns around their personal safety- these concerns were heightened for children from the low SES communities as they faced pervasive threats. Although the low SES neighbourhoods in this study are deemed amongst the most dangerous in the country, other local studies conducted in various contexts have identified safety as a ubiquitous concern for children across South Africa (see Adams & Savahl, 2015; Isaacs & Savahl, 2013; Parkes, 2007; Savahl et al., 2015; Swart-Kruger & Chawla, 2002). A key consideration for this study resonates with McKendrick's (2014) contention that "where children live interfaces with other factors to shape children's well-being." (p.279). While he contends that where children live does not determine their well-being, it is crucial to note that in the context of South Africa, children's residential geographies plays a key role in how children made sense of their lives. This was clearly a result of the dangers which they are confronted with on a daily basis which affects their well-being in turn influenced how they made sense of natural spaces. The socio-economic standing of children's communities exists in a type of reciprocal determinism (Bandura, 1994) between SES, safety, children's mobility, and children's access to nature- a vicious cycle which children and community members were not able to regulate. There appeared to be an inescapable link between the inherent characteristics of children's neighbourhoods, especially in terms of the string of negative factors associated with the low SES communities.

The divergent characteristics and social context of children's environments can be considered in terms of Thomson and Philo's (2004) notion of 'classed spaces'. The idea of 'classed spaces' in a sense aptly captures the limits on children's mobility in their neighbourhoods, and how this has numerous impacts on their daily lives, and how they make sense of their experiences in private and public spaces. The term 'class' is employed to indicate the diverse social status, income, resources and quality of life which children experience as a result of the area in which they live (Thomson & Philo, 2004). It further delineates the distinct constructions of nature and subjective well-being which children from the two SES communities presented. Children's communities constructed as 'classed spaces' brings with it

several implications for children in terms of mobility, and access to safe public and natural spaces; this was further confounded by the lens of safety through which children negotiated their lives. The children from the middle SES community experienced a somewhat more independent mobility and access to nature. For these children, nature was made sense of not merely as the park or the garden at home, but instead included those natural spaces which they had access to and frequented such as the beach, the forest, hiking in the mountains, and the general exploration of natural spaces in their communities. Conversely, for children from the lower SES communities, their restricted mobility and access to nature shaped their understandings of nature, to the extent that these children often referred to ‘superficial nature’ such as the plant nursery or the ice rink. This also reflected children’s level of familiarity and attachment to nature. Children’s mobility and access to nature was directly linked to the SES standing of their communities, which was in turn related to crime and violence present in their communities.

Thomson and Philo (2004) maintain that children from poorer areas were more familiar with their local neighbourhoods, while children from middle-class communities have a more encompassing spatial range (Thomson & Philo, 2004). However, it was found that children from the middle SES community in this study were both more familiar with nature and their local neighbourhoods given their frequent engagement therein, but also had a more comprehensive knowledge of their neighbourhoods. Boys had greater opportunities to play with friends on a close-by field or in the road, while girls spent more time at home as it was perceived by their parents as less safe for girls. Interestingly, boys indicated spending more time indoors, while girls expressed the need to be outside. This contention was particularly found amongst the children from the low SES communities. Evidently, children from the low and middle SES communities made sense of restrictions on their mobilities in different ways- as McKendrick (2014) notes, where children live plays a key role in the childhood experience. McKendrick’s (2014) tool which provides a spectrum, from damaging to transforming, for ‘the impact of places on the children’s well-being’ is significant in this regard as it aims to delineate what places offer to increase children’s well-being. The effect of children’s neighbourhood on their well-being from the low SES community would be categorised as *impairing* - denoting the adverse influences children experience (reflecting one of the two ‘bad’ rungs). This notion of the *impairing* effect of place on children evinces the poorly designed neighbourhoods in which these children reside, which restricts their mobility, access to resources, are provided with less opportunities which influences their

subjective evaluations of their lives. This is further exacerbated by high levels of crime, violence, and substance abuse which put children in harm's way. In a disparate fashion, children from the middle SES community could be considered to reside in a neighbourhood which is deemed *reinforcing*, thereby enabling adequate opportunities as well as resources (McKendrick, 2014). This rung is however, considered indifferent to children's well-being, and aligns to the current findings in the sense that while these children perceived minimal to no threat in their neighbourhoods, and indicated their ability to explore natural spaces, the design of their neighbourhood were not optimal for a child friendly neighbourhood.

While the issue of children's mobility and designated playspaces are important considerations in relation to the affordances a neighbourhood offers children, children should also have affordances in terms of adaptability of the environment, safe places that are conducive for leisure and reflection, ability to engage with and access friends, and natural environments which are manipulable (McKendrick, 2014). If we consider the *Biophilia Hypothesis*, the argument is made that children are innately affiliated and close to nature, and exhibit a predilection for it. What this theory does not take into consideration is the context of the communities or neighbourhoods in which individual's grow up. An interesting comparison which Stedman and Ingalls (2014) make is that of 'biophilia' as divergent from 'topophilia', that is innate vs constructed, and is expounded in the assertion that "The attachment framework of topophilia stands, in contrast, as strongly experiential and 'constructed' rather than innate." (p.132). In the current context, SES directly influenced children's perceptions and experiences of nature, and more so their future life trajectory and well-being. Children's access to natural spaces, and opportunities for engagement were not the only factors impinged upon by these low SES communities being characteristically unsafe. Adding to the dialogue on how SES, in terms of being privileged or disadvantaged, Dorling (2007) comments that the growing divide between the two results in social disintegration, and acts one of the factors which serve to detach children from experiencing a sense of place in their neighbourhood, which is exacerbated by the extreme levels of crime and community violence in their communities. Given the realities which children face in their everyday lives, it reflects the conjecture that:

"This reflects the increasing disparity between the rich and poor in South Africa, and the array of violent masculinities as a result of the vicious past. While there is an indication of changing masculinities in post-apartheid South Africa, change has come

about disproportionately, whereby the increasing economic disparities contribute to impeding change, and aggravating violence and crime.” (Adams, 2012, p.67)

While these findings paint very bleak prospects for children growing up in challenging contexts, children were able to identify the positive aspects of certain natural spaces and how this had a positive impact on their well-being- they showed a resiliency for growing up in a problem neighbourhood. The context of South Africa embodies the notion that the greater the levels of inequality the worse the plight of children (Pickett & Wilkinson, 2007).

Nordström’s (2010) conjecture effectively sums this concern up in that: “The safety and security dimension therefore can be said to reflect an emotional quality, of prime psychological importance for children’s wellbeing.” (p.525).

Children’s narratives from the low SES communities were imbued with not only trepidation around safety, but also displayed symptoms of PTSD, with community violence being a norm. When considering the Person-Environment Fit theory (Horelli, 2007) and the concept of congruence, when analysing children’s accounts it was evident that there is immense incongruence between children and their environment, particularly for children from the low SES communities. Similarly, Higgins (1987) contends that negative emotions occur when incongruities are present between an individual’s ‘ideal self’ and ‘ought self’, which in this study was influenced by children’s social contexts and their struggle to engage in safe outdoor places, especially natural spaces. Commenting further on the P-E fit theory, Horelli (2007) notes that when the fit between the person and environment is poor, this may result may be children experiencing their environment as stressful and demanding, which was apparent in children’s narratives in this study. Similarly, in terms of affordances (see Gibson 1979), the community in which children resided played a pertinent role in how children were able to explore their environments, and negotiate their mobility away from home and importantly, their ability to engage in natural spaces. The study further found differences in how engagement in nature influences children’s subjective well-being. This is considered as the next crucial point.

8.3.2. Nature as children’s space and the influences on their subjective well-being

While the literature abounds with empirical and theoretical indications that children’s environmental perceptions are linked to their well-being, one of the key, and unexpected findings in this study was the contrary. Children’s environmental views were not found to

relate to their SWB. Although this is an under-researched area in the literature, this unanticipated finding was significant as it served as the impetus to further understand children's understandings which may elucidate potential motivations behind this. Through Phase Three, the qualitative phase, it was possible to explore the potentialities behind the non-significant finding in Chapter Five (Article 2), in particular the pervasive concern of safety identified in previous studies in the South African context (Adams, 2012; Adams & Savahl, 2015; Parkes, 2007; Savahl, 2010; Savahl et al., 2014; 2015; Swart-Kruger & Chawla, 2002), and the meaning children attach to their lives, and their engagement in nature and their SWB.

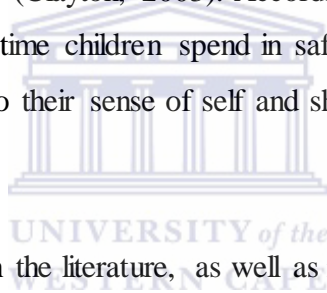
Despite the hazards present in natural spaces, children still made sense of how positive experiences in nature overshadowed the negative and risky; consonant with the concept of the 'good enough hold' (Winnicott, 1960). The participants often made reference to various domains of their subjective well-being that is influenced by nature experiences such as physical, emotional, psychological, and social. Huynh et al. (2013) assert that nature is in fact one contextual determinant of children's emotional well-being. They further indicate that while a large literature base maintains that exposure to nature positively influences people's health and well-being, there is a dearth of empirical evidence to support this (Huynh et al., 2013). The studies which have been undertaken have primarily been conducted in controlled settings, with a growing number of studies being conducted in natural settings, such as camps and Forest (see Knight, 2009; Ridgers, Knowles, & Sayers, 2012) and Mountain School (Burgess & Mayer-Smith, 2011).

These special places provided children with a place of solace. Children from the middle SES community, having access to safe natural spaces in their community, displayed an environmental knowledge akin to being familiar with nature, which was not apparent from children from the other communities. This knowledge was also evident in children's photographs which captured 'hidden' nature, and special natural places. In contrast, children's photographs from the low socio-economic status communities depicted nature which they did not frequent, such as the park, and the field, what Sancar and Severcan (2010) refer to as 'spectator spaces'; while others took pictures of 'superficial nature'. Children's favourite places were more than just safe spaces which children enjoyed engaging in, as Abbott-Chapman and Robertson (2009, p.419-420) aptly note, "*favourite places are idealised constructs of places enjoyed and remembered which assist in regulating negative feelings and*

coping with perceived stress, whose emotional benefits are enjoyed irrespective of the frequency of visits". The last point which these authors make was crucial for this study; that is the affective component and children's attachment to special places. Particularly, that children's special places can be revered without an abundance of experiences therein. For most of the children in this study, discussions about their favourite places bore a number of accompanying positive emotions- it made them happy, feel free, feel calm, feel like yourself, and provided them the opportunity to spend time by themselves, or enjoy social connections with friends.

It was the essence of being in and experiencing safe natural spaces which was accompanied by positive emotions by the children. The Tripartite Organizing Framework (Scannell & Gifford, 2010) is significant in this sense, as it comprises three components of place attachment, namely person, psychological, and process. The person component is imperative as it points not only to individual but also collective place attachment, especially when a community evinces 'social capital', evincing the importance of social ties and social relationships which is also evident in Minkkinen's (2013) SMCW. This also relates to the contention by Diener et al. (2010) that 'social capital' is a reciprocal process, whereby people, and especially children, need support from others, and in turn need to contribute by helping better their community, and assisting others. This echoes children's narratives around the eco-crisis, and the need for themselves, and community members to not only think, but behave in environmentally responsible ways- which has undertones of significance for current and future generations. Barthel, Parker, Folke, and Colding (2014) refer to 'pockets' of social-ecological memory in reference to community gardening fostering awareness for ecosystems and environmental stewardship. Children's suggestions for pro-environmental behaviour in this study were undoubtedly linked to their *intrinsic care* for nature which precipitated the emotional affiliation for nature as a favourite place. This reflects an amalgamation of one's memories, beliefs, meaning making, and knowledge which together contribute to the significance of a place- evincing the affective aspect of the psychological component of Scannell and Gifford's (2010) Tripartite framework. Given the significance of nature as a special place of childhood, it would be valuable to explore place happiness, or *place subjective well-being* as a domain of well-being. Furthermore, with natural spaces specified as children's favourite places in this study, and the manifest advantages of children's engagement therein, it becomes crucial to harness children's access to natural spaces in their communities.

This consideration for ‘youthful being’ was explicitly evident not only from children’s accounts of their experiences and perceptions of natural spaces, and their favourite places, but was also demonstrated in their maps and photographs. The children’s narratives in this study revealed how children made sense of nature as catalyst for social connection. Safe natural spaces acted as a buffer against life’s stressors, promoting the development of resilience competencies (Wells & Evans, 2003). Notwithstanding the deficiency of nature experiences for most children, their discourses and discussions culminated in an ‘environmental identity’, which is evident in both environmental psychology and place attachment. Noting the contestation and critique surrounding the conceptualisations of ‘nature’ and ‘identity’, Clayton and Opatow (2003) put forward an ‘environmental identity’ which makes reference to the way in which people familiarise themselves with nature, and how nature forms part of our sense of self (Clayton & Opatow, 2003). The environmental identity forms part of our self-concept as we associate ourselves to some type of non-human nature, impacting on the way we make sense of and behave (Clayton, 2003). Accordingly, a number of empirical studies have shown that the more time children spend in safe natural spaces, the more they value nature and incorporate it into their sense of self and show intrinsic care for it (Hordyk et al., 2014).



Based on the evidence provided in the literature, as well as in this study, it is thus comprehensible to surmise that increased time spent in nature increases both hedonic and eudaimonic aspects of children’s well-being - experiences in nature provide children with purpose and meaning in life, increases life satisfaction, and positively influences their quality of life (Kerret et al., 2014). The *Two Source theory* (Raghavan and Alexandrova (2014), along with Ryan and Deci’s (2001; 2008a; 2008b) *Self-determination Theory (SDT)* represent eudaimonic theories of well-being which incorporate both considerations of people’s happiness, and a future-orientation, or wellness which points to an individual’s vital functioning. The SDT is significant in relation to children’s environmental worldviews, as well as their ecological behaviours as the focal age cohort of this study are capable of abstract thinking whereby they are able to assess the impact of their own and other’s behaviours on natural spaces. More so, the fulfilment of the three key psychological needs of competence, relatedness, and autonomy (Ryan and Deci, 2000) is associated with ‘happiness, enjoyment and vitality’ (Wang & Wang, 2016). Weinstein and Ryan (2010) assert further that when children feel competent, autonomous, and socially accepted, they are more inclined to develop self-regulation skills and to be motivated intrinsically, as opposed to extrinsically,

toward positive behaviour. This accordingly, is likely to bring about feelings of well-being and satisfaction in children.

Consideration of these goals is especially relevant in the current context where although children's rights are espoused, they still face pervasive threats to safety in their communities. In particular, in terms of threats, many children in this study identified their lack of mobility and ability to explore their environments and to play with friends, which hindered their basic need for autonomy (Ryan & Deci, 2000), and right to participation. Thomson and Philo (2004) highlight that the literature points to how children inhabit a local geography which is exceedingly discerned regarding 'permissions and sanctions', which has resulted in children being acutely aware of their 'spatial ranges' and 'territorial limits'- particularly when engaging in places which are outside the bounds of home. With their research similarly conducted across three diverse communities, affording perspectives into the influence of social class on the 'social geographies of children's play', Thomson and Philo (2004) delineate between 'disordered spaces' and 'idle spaces' wherein play was made sense of more of a 'state of *being*' than an activity- which was especially evident in the narratives from girls in this study. They assert that (Thomson & Philo, 2004):

“Children and young people probably want spaces suitable less for doing and more for being- for socialising, chatting, hanging out- and as such they may always reject formal, adult designed sites of play in favour of carving out their own informal and disorganised spaces from the adult world around them.” (p.124)

Nature experiences and interactions therefore had a positive influence on children's well-being and served to maintain social connections with friends. While many children faced restriction in terms of access to natural spaces owing to safety concerns along SES lines, it was clear that it was the quality and lasting positive impact which nature had on children and not merely the frequency of contact. On this point Coulton and Spilsbury (2014, p.1308) assert that:

“...macrostructural forces, such as racial segregation and exclusionary zoning, constrain residential choices and limit the ability of disadvantaged groups to situate themselves in places that foster child well-being.”

It further leads us to deduce that children's well-being in their neighbourhood places is impacted upon by objective circumstances and the subjective experiences of that place. This

in essence points to the importance of a place-based understanding of children's well-being. It should be putative then that the result of the array of place-based disparities and concerns which children and communities endure is not under local control and entails a national and universal focus.

8.3.3. Children's rights and access to safe natural spaces

The threats against children in their communities and the disparate levels of mobility and well-being owing to this at a broader level concerns the issue of children's rights. With South Africa as a signatory, and having ratified the UNCRC, the endeavour is to better all children's lives, and not in terms of a hierarchy of SES. Appended to this, is the reality of South Africa having one of the highest levels of inequality in the world (Bosch, Roussouw, Claasens, & Du Plessis, 2010). While children's rights has been a pertinent issue on the agenda at a national level, with several legislations implemented to counter the violence and abuse against children (such as the Children's Act (No. 38 of 2005), the Children's Amendment Act (No.41 of 2007), the Child Justice Act(2008), the inclusion of children in Section 28 of the Bill of Rights of the Constitution, and the ratification of the African Charter on the Rights and Welfare of the Child (2000) (see Savahl et al., 2015; September & Dinbabo, 2008; September & Savahl, 2009), there is still widespread violence against children. The South African government has thus given precedence to children's well-being as a key development goal (September & Dinbabo, 2008). As Savahl et al. (2015) indicate, these progressions in legislation *should* translate into children being protected from abuse and exploitation, and advancing children's socio-economic rights, this is far from being met, and is clearly evident in the increasing levels of crimes against children each year.

Notwithstanding the explicit reference to non-discrimination (Article 2) in the UNCRC, the findings in this study show how the SES of children's communities to a great extent prejudices children. While children are not treated divergently based on their SES, the communities into which they are born by and large determine the lifestyle children may inevitably live in adulthood, thereby perpetuating the numerous inequalities and challenges children face in their childhood; what De Lannoy, Leibbrandt, and Frame (2015) term the 'intergenerational transmission of poverty'. Of particular relevance to the current context is Article 19 of the UNCRC which enforces that children are protected from all forms of violence and sexual exploitation (Article 34), which are pertinent, and have not seen success in upholding these articles. This high level of violence, considered the highest in the world,

has undoubtedly been influenced by the Apartheid regime whereby ‘Coloured’ and ‘Black’ individuals were systematically oppressed, disenfranchised, and denied access to resources. However, 22 years into democracy, South Africa faces even worse conditions, which is especially demanding for children who require protection and assistance from adults. This inherent vulnerability of children is unequivocally addressed by Stainton Rogers (2009) who argues that the United Nations Declaration of Children’s Rights, the precursor to the UNCRC gives rise to a ‘children’s needs’ discourse which is often exploited by adults. He contrasts this to the foundation of the ‘new sociology of childhood’ which espouses children’s rights to autonomy, and assumes children’s competence, which the UNCRC does not do, and essentially points to the socially constructed nature of childhood. That is childhood is

“...socioculturally variable, being generated by particular forms of social organisation and culture, rather than simply resulting from universal biological or psychological processes. And, more than this, it is insisted that the subordination of children to adults, and the restricted role currently assigned to them, is open to change, and should be changed.” (Stainton-Rogers, 2009, p. 573)

Hammersley (2014) notes, however, that assuming the notion of the ‘social construction of childhood’ has its own challenges. The first concern is that adopting constructionism would result in the refutation of childhood being biologically determined. Secondly, constructionism destabilises the idea of children’s well-being and the protections of their rights in the denial of childhood comprising distinctive stages, and also challenges children rights to participation. These critiques against the UNCRC are equally important to note, as some argue that the convention was based on Western liberalism and as such undermines cultural diversity. While the UNCRC has been criticised for demonstrating more Western perspectives than others, it nonetheless affords a good starting point for conceptualising child well-being and understanding the role of engagement in nature on children (Nieuwenhuys, 1998). Presenting a normative framework for understanding children’s rights and well-being, the UNCRC is often regarded as the genesis of the child indicator movement, and along with the theoretical and methodological assertions of the ‘new sociology of childhood’ have been significant in driving the notion that children are valid social actors and constructors of knowledge, propagating for child centred research and the need for child specific data. Within the child indicator movement, what followed was the trend toward participatory techniques, a focus on children as the unit of analysis and investigating subjective well-being (Ben-Arieh, 2008). This resonates with the Structural Model of Child Well-Being proposed

by Minkkinen (2013) which is premised on the ‘new sociology of childhood’, which along with the disciplines of environmental and positive psychology espouse the WHO’s (1946) denotation of health. Casas, Bello, Gonzalez and Aligué (2013), with reference to the International Survey on Children’s Well-being (ISCWeB), motivate for the focus on children’s subjective perceptions which they believe is critical in assessing and contributing to overall well-being and quality of life.

While the UNCRC speaks to a safe social environment for children (*Article 19 and Article 27*), it does not directly mention the natural environment. The only article which speaks to the natural environment is *Article 29* which states that a key goal of child education should be to enable them to protect the environment. Given the numerous benefits of children engaging in natural spaces for their psychological well-being and overall quality of life (see Huynh et al., 2013), Myers (2012) critically notes, and maintains that children’s access to nature should in fact be regarded as a fundamental right of children. Scianis (2013) notes that researchers and policy makers need to advocate for the inclusion of natural environment as a sub-domain of children’s SWB- an environmental dimension of children’s well-being. As children’s well-being has been shown to directly associate with their engagement and experiences in nature, albeit it may be few studies (see Bell et al., 2008; Kuo & Faber Taylor, 2004; Fjørtoft, 2001; Huynh et al, 2013; Tranter & Malone, 2004), it is crucial to increase children’s access to safe natural spaces in their neighbourhoods, especially in the current context (see Kerret et al., 2014).

Ultimately, it appeared that children’s concerns around their safety played a regulatory role not only on children’s mobilities, but their lives as well. It also points to the transactional nature of the relationship between children and their environments Kytä (2003). Although some children faced with limitations in their ability to engage with nature, this did not deter from the importance and *functional significance* (Heft, 1988) of natural spaces to children. Yet, children’s natural environments differed in the particular quality of affordances they accessible to children. More so, we can potentially categorise children’s place variants in terms of Kytä’s (2004) classification, namely as a ‘*cell*’ where children’s mobility is heavily constrained, and are thus not able to explore their environments, and as ‘*glasshouses*’, which entails that while children perceive the world as full of opportunities for activities and engaging, they do not have access to these places. These two classifications were predominantly evident in children from the low SES communities, and a few children from

the middle SES communities. The place type known as the ‘Bullerby’ was more applicable for children from the middle SES, and comprises children having the ability to freely move around their environment, with the environment positively influencing them.

8.3.4. Researching children’s environmental views and their subjective well-being in South Africa

The study findings contribute greatly to the otherwise unexplored understandings of children’s subjective perceptions of their lives, and the role of natural spaces they are able and unable to engage with. The weight and priority given to local and global environmental problems have further spurred, or attempted to spur, environmental consciousness amongst the global community. By focusing on children’s environmental perceptions, the hope is to foster an environmental ethic and intrinsic care for nature to mitigate current environmental consequences of climate change and global warming. And more so, to encourage the intergenerational transmission of environmental knowledge and learning across both formal and informal platforms which children are part of, in both inter-personal and intra-personal contexts such as schools, children in care, at home, and part of both structured and unstructured leisure activities. For many children in the current study, and similarly across South Africa, children’s well-being in their communities is detracted from owing to burdens of social circumstance. Children’s perceptions of their neighbourhood environments, and the natural spaces therein, can therefore not be considered without being mindful of the impact of the unequal character underpinning the South African society. This was clearly demonstrated in the nuances in children’s constructions and understandings, and level of threat children are confronted with.

The mixed methods approach employed in the study was especially significant in this regard as there is a dearth of research on both children’s perceptions of natural spaces and children’s SWB, and thus allowed for further probing and depth exploration on the topic. The current study is the first identified to explore the subject, and amongst a select few studies which have attempted to understand the topic at hand by merging the disciplines of environmental psychology and positive psychology (see Kerret et al., 2014; McKendrick, 2014; Venhoeven, Bolderdijk, & Steg, 2013; Verdugo, 2012; Wells, 2014; Wang & Wang, 2016). This evinces the contemporary trend which has emerged amongst scholars in assimilating theory and research on environmental psychology (and sustainability), and positive psychology. This merger places emphasis on the importance that engaging with the natural environment has on

children's well-being and quality of life. The goals of these two research traditions are consonant; that is to enhance individual's well-being and quality of life, as well as their environmental quality- pointing to how these traditions are theoretically related. Wells (2014) notes that a paradigm shift has ensued across disciplines since the WHO's (1946) definition of health focusing on salutogenesis, thus on the basis of health as opposed to pathogenesis. Paramount to these two fields is the 'future orientation' focus, to not only enhance feelings of well-being and happiness in terms of the interplay between the person and environment, but to strive toward aspirations, flourishing, and gain a sense of meaning in life thus assimilating eudaimonia. This attention to 'future orientation' in turn feeds into discussions around positive behaviours, such as sustainability and the current influences which mould future environmentally protective behaviours. Given the above discussion, Wells (2014, p.96) poignantly remarks that "despite the seemingly convergent foci of research on human resilience and studies of nature and well-being, relatively little attention has been given explicitly to the connection between the two literatures". Yet, the evidence from contemporary research in merging these two traditions shows promise in further ascertaining how children's engagement in nature influences their subjective well-being in particular, and further to develop an encompassing theory on *environmental subjective well-being*.

Considering the lack of research on the SWB in developing countries in general, and the current context in particular, it is important to note the initiatives and work which are currently being undertaken to address this gap. Amongst these are the *Children's Worlds: International Survey of Children's Well-Being* (ISCWeB) and the *Multinational Survey of Children's Well-Being*. Both these international collaborative studies were developed given the impetus in the literature around children's agency and participation, and promoting child-centred perspectives with children aged 8-12 years. The *Multinational Qualitative Study of Children's Well-Being* aims to understand children's perceptions of well-being and their daily lives using a qualitative perspective, and was conceptualised as the qualitative counterpart to the Children's Worlds project.

These projects are significant to mention as the current study formed part of the South African component of these larger projects- Phase Two incorporated data from the *Children's Worlds* project, and employed a quantitative methodological framework; while Phase Three, incorporated data from the *Multinational Qualitative Study of Children's Well-Being* and employed a qualitative methodological framework. More so, it is significant to emphasise

how place, particularly in terms of SES and geographical locations served to be a definitive component of children's well-being in this study. In this regard, it is important to note the dichotomy which Fattore, Mason, and Watson (2012) have identified with regard to two distinct approaches to researching children's subjective well-being (SWB). According to Fattore et al. (2012), these approaches differ fundamentally in relation to their epistemological frameworks, the first, and more dominant of the two is premised on objectivist notions, and often aligns to the use of standardised quantitative methods of data collection, predominantly employing Diener's (1984; 2000) definition of SWB; while the second approach is premised on the new sociology of childhood which foregrounds the "acknowledgement of children as valid informants and participants in the research process, and the subsequent shift towards soliciting their knowledge, opinions, attitudes and perceptions on matters that affect them." (Savahl et al., 2015, p. 750). Fattore et al. (2012) caution against using the objectivist approach without critical reflection; and assert that despite the divergences in the two approaches, they are consonant in terms of their aim which is ultimately to encompass children in research, as active participants. They also specify that:

"In viewing this dichotomy it is important not to confuse 'objectivist' and 'new sociology of childhood' approaches to research as different representations of method. It is important not to read each approach down as correspondingly 'quantitative' and 'qualitative'. The distinction that we present is not about the method employed or technique, but more fundamentally about the value position regarding knowledge acquisition."

Further confounding the debate are eudaimonic and hedonic conceptualisations of well-being- hedonic conceptualisations are aligned with life satisfaction and the pursuit of happiness, while eudaimonic conceptualisations are aligned with purposiveness, engagement, and meaning in life (see Huppert & So, 2013; Ryan & Deci, 2001). This is displayed in the dichotomy between SWB and psychological well-being (see Ryff, 1989), and the recent recommendation that they be combined to form a more substantive concept of well-being (Keyes, 2002; Seligman, 2011). In the literature this has been identified as the concept of flourishing, which denotes the experience of life going well- of feeling good and functioning optimally, and is related to a high level of mental health and well-being (Huppert & So, 2013). In line with this is the consideration as to what constitutes a 'good place' for children which holds significance for children's current and future well-being. Places are considered to be 'good' when children are not burdened by household income or poor housing, as well as

where they are given the opportunity to attain positive outcomes in both health and education, and importantly where risk, negative behaviours and deficient relationships are obviated (McKendrick, 2014). If we are to use this conception of a 'good place' for children then it should be noted that the vast majority of areas in this context are in effect the opposite- that is 'bad places'. This is demonstrated in the 11 of 18 million children who live in impoverished and unsafe conditions. Additionally, this holds significance as the threats which children referred to in this study are not borne by children alone; it in fact points to safety concerns which every individual, regardless of SES or class are faced with. It so happens that areas with a higher SES have less social disarray and disorganisation, and face far fewer social problems which would make these places accordingly better places for children. McKendrick (2014) therefore duly critiques whether the notion of 'good places for children' "are merely aggregations of children with already positive outcomes or, more fundamentally, are places which are positively enriching children's lives."

Notwithstanding the legislation enactments which are in place to protect children, as well as numerous community-specific initiatives in addition to policing, the exceeding levels of inequality coupled with one of the highest crime rates in the world does not bode well for children in this context. An overarching consideration then is how key stakeholders can begin to address the challenges children face, to move toward and create better spaces for children, which is essentially captured in the notion of Child Friendly Communities and cities (CFC). The aim of 'good places for children' should be inclusive of both structured and unstructured natural spaces which has been shown to positively influence children's subjective well-being, and more holistically to advocate for children's *environmental subjective well-being* (ESWB). The significance of children's ESWB amalgamates the three main tensions and disciplines in this study, that of environmental psychology, place attachment, and their subjective well-being. While children's environmental views was not statistically related to their SWB (see Chapter 5, Article 2), further in-depth discussions showed that children expound nature as a special place. Moreover, the espousing of the ESWB of children takes account of the environment not merely as the physical localities which children occupy, but more so the social conditions of these environments, and how children's broader community and local neighbourhood influences their SWB. This alludes to the importance of considerations of the place dimension of SWB. The ESWB of children is complemented by considerations of the environmental child rights, which foremost advocates for safe environments for all children. At the crux of children's rights which are espoused the world

over attributable to the UNCRC is the fundamental mandate of an environment which enables children's positive development and the ability to flourish (see Schubert, 2012).

Although a fostering and healthy environment for children is a precondition for their well-being, this right is unfulfilled for the majority of children in the South African context. The ability to develop in a safe environment which enhances children's well-being is "unjustly distributed" amongst the rich and poor. In South Africa, children's subjective well-being is closely related to the context in which children; with some children disproportionately affected by neighbourhoods which are characterised by crime and violence and fear of threat. It thus points to the contention that resonates very closely with the current unequal society in that "*Without a realignment of political, legal and economic conditions this situation will not fundamentally change.*" A crucial consideration then, particularly in relation to the nuances present in children's conceptualisations of nature and SWB, is whether children's ability to access and engage in safe natural spaces and environments is deemed a right or a privilege or childhood. While only two articles in the UNCRC speak specifically to aspects of the natural environment, the overtones of the convention necessitate that all children have access to optimal living and environmental conditions. As children's narratives and discourses reveal that natural spaces has positive affective influences, and proffers a space for both 'doing' and 'being' it becomes crucial to provide every child with the opportunity to engage in safe natural spaces which in turn affords children innumerable developmental benefits. In order for children's places and neighbourhoods to be augment children's well-being it should advance *inclusivity* (providing equal opportunities and experiences to all children); *participation* (affording children agency and to be key role-players and decision-makers in influencing and utilising their environments); *environments of opportunity* ("providing children with spaces and facilities that enable to enhances their well-being", p.294); and *be resourced* (having the basic and vital services which promote quality of life for the present and future) (McKendrick, 2014). These essential components of a 'good place' for children's well-being should also be thought of in terms of access to and experiences in natural spaces, that is in terms of being inclusive, participative, provide environments of opportunity, and be resourced. McKendrick (2014) affirms that this taxonomy indorses a standard to which all neighbourhoods and communities ought to endeavour.

8.4. Conclusion

This chapter elucidated the notable contentions which arose from the study concerning children's environmental perceptions and the influence on their SWB. Despite the non-significant relationship, this provided the impetus to further qualitatively probe, in Phase Three, children's constructions of natural spaces which provided key insights into children's lives. What emerged from children's narratives and sense-making was that nature is a place which they revere. One of the most significant points of departure was that socio-economic status was shown to be a determinate of children's well-being. This was evident in the nuances in children's understandings about natural spaces and how they negotiate their lives in the low and middle SES communities. Children from the low SES communities were disproportionately affected by and confronted with credible and pervasive threats to safety which was less in the middle SES communities. The findings from this study are akin to the contention that where children live matters for their well-being (see Coulton & Spilsbury, 2014; McKendrick, 2014). It was van Andel (1990) who noted that "In order to get a complete picture of the special places for children, it is also important to learn about the places that children dislike and even fear." as "These places are a realistic part of the children's worlds" (p.24). The unsafe and crime ridden contexts in which these children live directly influenced how they made sense of their lives, but was also physically manifested in the restrictions which were imposed on children by parents and adults, but also children themselves. While children grow up in these communities plagued by social disarray and violence, it is noteworthy to consider Diener et al.'s (2006) assertion that "It is not just who we are that matters to happiness, but how we think about our lives." (p. 67).

The relevance of fundamental theories in the disciplines of environmental psychology, positive psychology, and place attachment further showed how merging these literatures is significant when considering the outcomes for children. The essence of these findings point to the significance in espousing children's *environmental subjective well-being* which takes both the socio-economic circumstances of the child's environments, but also encompasses the impact of natural spaces on children and how engagement in nature is critical for positive developmental outcomes for children. More so, it addresses issues around environmental conservation and sustainability and the importance of formal environmental education. The final chapter, **Chapter Nine**, highlights the reflexive considerations of the research process, and provides recommendations for further avenues of research on the topic.

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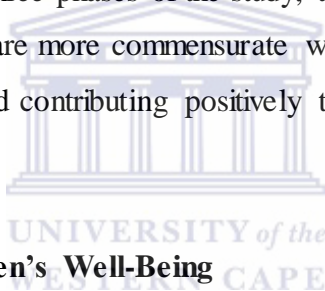
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CHAPTER NINE: CONCLUSION AND RECOMMENDATIONS

9.1. Introduction

The current study endeavoured to contribute to the international dialogue and literature concerning children's engagement with natural spaces and the accruing impact on their subjective well-being (SWB). The context of the study, and the specific geographical locations in which the study was conducted provided new insights, and reinforced previously identified concerns around children's well-being in South Africa (see Adams & Savahl, 2015; DSD, DWCPD & UNICEF, 2012; Isaacs & Savahl, 2013; Parkes, 2007; Savahl, 2010; Savahl et al., 2015a; 2015b). The purpose of this chapter is to provide concluding remarks in terms of the study findings, as well as the methodological and theoretical considerations. More so, this chapter serves as the reflexive channel to portray the researcher's (author's) experiences in navigating this study. The chapter further provides recommendations based on insights from the findings of the three phases of the study, to enable access to safer environments for children which are more commensurate with their needs and preferences- ultimately enriching their lives and contributing positively to their Environmental Subjective Well-Being (ESWB).



9.2. The Golden Thread: Children's Well-Being

Children's well-being combines objective and subjective dimensions of children's experiences in an all-inclusive, "contextual and longitudinal framework" (Grigoras, Bălătescu, & Roth, 2012, p. 148), which makes the concept a crucial one in the field of children's studies (Camfield, & Tafere, 2009; Grigoras et al, 2012). Casas and Rees (2015) note that the recent upsurge in terms of interest and research in the field of children's SWB is the potential to determine the quality of life of populations, and in so doing, use this data to make cross-national comparisons. They note that "Such comparisons have huge potential to highlight differences in quality of life, and the underlying factors associated with those differences, which will be valuable to national and international policy makers." (Casas & Rees, 2015, p.50). South Africa, however, lags behind most developed countries and some developing African countries (such as Algeria, see Tiliouine, Cummins & Davern, 2006; and Ethiopia, see Mekonen, 2009, 2010) in collecting consistent, national data, to track children's SWB. The field is still in its infancy in this context, yet the research which has been conducted shows some interesting results (see Savahl et al., 2015a; 2015b).

It is accepted that children's well-being is influenced by their environment, as well as their position, and resources. Children's environments are not static but variable, as it is "but a set of dynamic factors, producing different outcomes for different groups of children." (Ben-Arieh & Frønes, 2007, p. 250). This consideration is particularly significant in relation to the social inequality in South Africa, and how these differing conditions impact children's realities, and how they make sense of their lives. The concept of well-being was the *golden thread* which wove together the main impetus for this study, and further the amalgamation of the disciplines and theories of positive psychology with that of environmental psychology. The shared aims of these disciplines in promoting well-being and quality of life provided an interesting avenue to understand children's connections to nature, and their neighbourhood environments. Although there is a growing proclivity in terms of theoretical contributions to this emerging field (see Kerret et al., 2014; McKendrick, 2014; Venhoeven, Bolderdijk, & Steg, 2013; Verdugo, 2012; Wells, 2014; Wang & Wang, 2016); few studies have delved into this arena particularly with children (see Scianis, 2013), thereby advancing the encompassing concept of children's environmental subjective well-being (ESWB) (see also Kerret et al., 2013). The focus on children's constructions of nature and place attachment were imbued with the considerations of children's well-being in this study. Children's well-being in a sense served as a broad framework of understanding within which the concerns and main aims of the study were located.

Children's narratives and discourses about natural spaces represented the characteristics and daily challenges which children are faced with, which reflected the various components of their well-being, such as material, economic, social, ecological, environmental, and safety and security. These dimensions align with previous findings in the context by Savahl et al. (2015a), and engenders a transient glimpse into children's lifeworlds. The studies by Savahl et al. (2015a; b) are regarded as seminal in the local literature given the previous absence of research on children's SWB in the South African context. In addition to the legislative endeavours to protect children, many organisations and initiatives have been established in the country to promote children's well-being. Amongst the most renowned publications reporting on children's well-being (in terms of objective measures) is the South African Child Gauge (see De Lannoy, Swartz, Lake & Smith, 2015) (compiled by the Children's Institute of the University of Cape Town), as well as sporadic publications from the United Nations Children's Fund, and collaborating partners such as the Department of Social Development and the former Department of Women, Children, and People with Disabilities. The stark

disparity between the results of objective and subjective indicators of children's well-being in this context evinces the struggle which theorists have encountered in attempting to reconcile these two fields since Easterlin's (1974) work on income and happiness. Kahneman and Deaton (2010) note that the focus on whether 'money buys happiness' has been addressed extensively in research and is largely inconclusive. They show how the Gallup-Healthways Well-Being Index (GHWBI) affords a detailed foundation of information on well-being which was previously unavailable- this data unfortunately focuses on adults. And that previously, uncertainty around the impact of income on well-being has been due to incorrect analysis (often when people's life evaluation is plotted against raw income which could be avoided using the logarithm of income [a basic tenet of Weber's Law and represents a percentage change] (Kahneman & Deaton, 2010). The correlation between income and SWB is lesser when "a measure of experienced happiness is employed" as opposed to a global measure (p. 1908). That is, when people contemplate how a particular factor influences their well-being and not solely income, there is a tendency to overemphasise the significance thereof, which is referred to as the "focusing illusion" (Kahneman & Deaton, 2010, p. 1908). This trend was evident in the findings by Savahl et al. (2015b) in relation to children's SWB in South Africa- where children's global life satisfaction scores assessed by the SLSS which is domain-free (Huebner, 1991) were substantially lower than their scores on the PWI-SC (Cummins & Lau, 2005) which is domain-specific. A possible motivation behind this is that 'false intuitions' arise owing to the lack of acknowledgement that individuals do not constantly think about their given circumstances, regardless of whether they are positive or negative. The essence of this concern is captured in the assertion by Schkade and Kahneman (1998) who note that: "Nothing in life is quite as important as you think it is while you are thinking about it" (as cited in Kahneman, Krueger, Schkade, Schwarz, & Stone, 2006, p. 1909).

Consistent with this line of thought, the concept of a 'satisfaction paradox' (Zapf, 1984, as cited in Olsen & Schober, 1993) appears befitting, and entails people being satisfied with their lives despite "objectively unsatisfactory living conditions" (Savahl et al., 2015b). Research on SWB has also shown that akin to results with adults, children have a propensity toward an 'optimistic bias' (Casas 2011; Gilman & Huebner 2003; Savahl et al., 2015b), whereby they assess their lives positively; and seems to be particularly manifest until the age of 12-13 years (Casas et al., 2012). In terms of the trend of an optimistic bias in children's SWB, Casas (2016, p.12) argues that "When the tendency to give positive answers becomes

“constant” for many participants, as is the case with many items in children’s samples, we face a serious methodological problem: extreme answers distort the mean and decrease the variance, raising problems for statistical calculations and interpretations.” While some recommend deleting these cases from the dataset (International Wellbeing Group, 2006), Casas (2016) indicates that an alternative is to deem these extreme positive scores as valid. He therefore suggests that “Children giving extreme positive answers to all satisfaction items have been deleted and those only giving extreme positive answers on psychometric scales have not, because they are considered reliable enough” (Casas, 2016, p. 12). A consequential, pertinent point is made by Casas (2016, p. 17) who asserts that:

“However, if children are so extremely optimistic and therefore tend to score so high in overall life satisfaction, does it make sense to have macro-social data? Is there any political decision or intervention programme that makes sense in order to improve their situation? The million-dollar question is probably this: can the constant decreasing tendency of SWB between 10 and 16 years of age be changed? Our answer is surprisingly YES, it does make a lot of sense. We have many subgroups of children and adolescents whose overall life satisfaction is far below the mean. Some of them have already been pointed out in different studies, but much more research is needed in more countries in order to identify such groups and suggest appropriate actions to overcome these situations”.

These contentions are especially relevant when contemplating the findings of this study, and was the process followed in Phase Two. The quantitative findings (Chapter Six: Article 2) showed that across low and middle socio-economic status (SES) groups, children seemed to be happy with their lives, except with regard to ‘safety’ and ‘doing things away from their homes’; which in essence speaks to children’s limited spatial mobility. While children’s environmental views were not found to be statistically related to their SWB, children’s discourses flowed with the undeniable connection between SWB and natural spaces. Of particular note in this regard were credible, pervasive threats to children’s personal safety, which has been a common findings in local studies around children’s perceptions about their lives (Savahl et al., 2015a; 2015b; Parkes, 2007).

This brings to the fore how deliberations around how children’s well-being cannot be complete without remaining cognisant of the violent society of South Africa, as well as the high rates of crime and violence against children which serve as the locale for understanding

how children make sense of their lives. McKendrick (2014) and others (Barnes, Katz, Korbin, & O'Brien, 2006; Brooks-Gunn et al. 1997; Coulton et al. 1995; Coulton et al. 1996; Coulton & Korbin, 2007) note that the places where children live, their neighbourhood, is one of the key sites of meaning which plays a role in their well-being, and influences their emotional attachment to a place. Commenting on the particular focus of neighbourhoods, Coulton and Korbin (2007, p. 350) maintain that “considering neighborhood indicators of child well-being is that adverse child outcomes tend to be concentrated in neighborhoods with constellations of adverse conditions and risk factors”; which is ultimately the case in South Africa, with children’s neighbourhoods negatively affecting their well-being in a myriad of ways. It is often the case that families who are financially burdened and facing challenges live in, or move to, neighbourhoods which are inherently troubled (see Coulton & Korbin, 2007). The study showed that children’s social and physical environments are not equal across an array of dimensions, and strongly alludes to, and advances the notion that children’s well-being varies significantly as a result of place of residence- a point which Coulton and Korbin (2007) proposed almost a decade ago, which has been revived by McKendrick (2014) and captured in the ‘geographies of children’s well-being’ construct.

9.3. A mixed methods approach: A note on synthesis

The mixed methods approach embarked upon in this study was an important point of departure to contribute to the international literature on children’s lives from a developing context. The ratification of the UNCRC across the world brought with it the exigency to give voice to the unheard, and often disregarded perceptions of children. While some disciplines have explored children’s lives across an array of topics using proxies, others have maintained the import of children’s subjective perceptions from their perspectives. The fields of children’s geographies and children’s well-being has expanded exponentially in the international arena, yet, in developing countries such as South Africa in particular, the growth has been slow to non-existent. Noted legislative progressions have not resulted in a dramatic enhancement in the well-being of children. Given the unequal SES conditions which plays a key role in children’s lives in this context, it was important to understand how children make sense of this. The main impetus behind this was to understand children’s sense making in relation to natural spaces. Given the lack of research on the topic, it was essential to consider previous research in the context which considered children’s welfare, well-being, and understandings of safety or spaces; and by and large draw on international findings and comparatively analyse similarities, differences, and nuances. The mixed-methods approach

enabled a depth exploration of the topic which would not have been possible by focusing on one methodological approach alone. As Barata and Yoshikawa (2014, p. 3880) note: *“the combination of quantitative and qualitative modes of inquiry can often enrich our understanding of human development substantially beyond what either mode offers alone.”*

The three phases of the study were complementary. The systematic review (Phase One, Chapter Four: Article 1) showed that while there is a preponderance of research focusing on the broad topic of children’s environmental perceptions, the focus on adolescents was in short supply. The results from Phase Two (Chapter Five: Article 2) which indicated that children’s environmental perceptions was not related to their SWB was unexpected. One of the key lines of explanations for this was due to concerns around children’s safety in their characteristically crime-filled neighbourhoods which restricted their mobility. It also called for the need to incorporate formal environmental education (EE) in the school curriculum, as children’s daily challenges deter them from engaging in nature and fostering intrinsic care thereof. It was in Phase Three (Chapter Six and Seven: Article 3 and 4), which employed a qualitative methodology that it was possible to explore the non-significant finding of Chapter Five (Article 2) using focus group interviews, photovoice, and community mapping. Although it was initially conceptualised in the proposal of the study to additionally employ ‘walking interviews’ with children to explore their perceptions of natural spaces while therein, it was later decided against by the author and supervisor owing to the characteristically unsafe environments in which two of the groups of children lived. At the time at which data was being collected in the low SES communities, there was an upsurge in gang violence, through which learners at schools close-by were caught in the crossfire, which presented threats against the children’s safety as well as for the author and co-facilitators. One consideration which would be important for studies focusing on the topic going forward is to publish a mixed methods article. While it was envisaged to do this in this study, the depth of information which emerged from the qualitative phase did not make this possible, and was further confounded by journal specifications around article length. For this reason, it was decided to synthesise and integrate the data at the interpretation or discussion level (see Hossler & Vesper, 1993). Creswell, Plano Clark, Gutmann, & Hanson (2003) note that integration at the interpretation level of analysis is the most frequently chosen point of integration in mixed methods studies. This is verified by Chaumba (2013), reporting on a systematic review of mixed methods studies, who found that this type of integration occurred in 62% of articles. Creswell et al. (2003) note further that a mixed methods approach

enhances the validity of the study findings; in particular that the qualitative data can be used to evaluate the validity of the quantitative findings. While the quantitative findings were found to be disparate to the qualitative findings in this study, this was not due to the scales used in the quantitative phase not working well in this context- and it allowed for depth exploration in the qualitative phase.

Although it is noted that “Validity is enhanced when comparisons of results obtained across the quantitative and qualitative methods and data support each other” (Greene, Caracelli, & Graham, 1989), the study still yielded crucial insights into the topic.

9.4. Children’s discursive constructions of nature: Considerations for well-being, resiliency, and disclosure

The participatory nature of the study enabled the unfolding of layers of intricacy in how children make sense of natural spaces, how this fed into their constructions of their lives and future life prospects, and at a broader level how this contributes to their well-being and well-becoming (Ben-Arieh, 2008). In recent years, the social study of childhood has begun to emphasise the ‘geographies of childhood’, to address the significance of the diverse places, natural spaces, and landscapes which children inhabit and engage in (Philo, 2000). The use of discourse analysis as a method of research within childhood studies has also proliferated in recent years (See Aldred & Burman, 2005; Kjørholt, 2002; Savahl, 2010, 2015a). The study hoped to contribute in this regard by putting forward a unique perspective from a developing country where the field is in its early stages. An important consideration within the frame of research, is that participation has been the least recognised of the three ‘Ps’ as declared in the UNCRC, the other ‘Ps’ being provision and protection. In line with the above contentions, Chawla (1997) argues that impediments to children’s participation, which contributes to the marginalisation of children, is increasing across the world. The individuals who are the objects of this marginalisation are termed “environmental stepchildren”. For most of the children who participated in this study, this was their only platform to be heard, and for value to be attached to their voices. The sustained contact with the children, where the researcher worked with them for three months at each school, served to build a good rapport, with each ensuing session encompassing greater depth of accounts. As Barata and Yoshikawa (2014) assert:

“Some have highlighted that, despite the time commitment, oftentimes a qualitative interview offers a personal relationship with a researcher who is willing to listen to the

participants' stories, a degree of rapport that often does not occur through survey data collection. That personal relationship can result in better quality data, particular for constructs that are difficult to measure using survey measures alone..." (p. 2888)

While the significance of the quantitative phase of the study (Chapter Four: Article 2) is not to be downplayed, the findings from this study resonate with the contention by Padgett (2009) concerning mixed methods in that, "Perhaps the most daunting challenge is integrating findings from the two 'sides', especially, when the findings conflict" (p. 104). The qualitative phase, which focused on children's discursive constructions laid the foundation to explore a pathway affording a glimpse into their childhood experiences. The children from low SES communities shared more personal narratives owing to the circumstances of their environments where many were estranged from or did not have a close relationship with parents or caregivers, and most often their 'family' was outside the confines of the 'usual' nuclear family. The discussion groups acted as a vessel and outlet for many children. The concern around children's participation was one which was tackled by all children. Along with this, appended to the sustained contact employed in the study, children felt that the discussion groups were a safe social space, as all gave written and verbal consent that the discussions were to be kept private and within the confines of the discussion groups. With this, it then became necessary for the author and co-facilitators to navigate the sensitive matters which arose, as well as disclosure from the participants about traumatic personal experiences (these children were referred to the school counsellor- with many having existing contact with the counsellor). In terms of the research, this seemed to reinforce the vulnerability which children are faced with, and their need for protection. It also further highlights the importance of the *vulnerability discourse* which was identified in Chapter Six (Article 3). One of the features of conducting a discourse analysis is that it allows that researcher to identify variations and contradictions in people's talk. Variations and contradictory narratives and discourse were found both within and between the three groups of children. While concerns around safety was one of the central discourses in Chapter Six (discourse of safety as a pervasive concern) for the children from the low SES communities, it was interesting to find that although the middle SES group mentioned that there are no or minimal threats in their communities, the other participatory techniques of community mapping and photovoice revealed another facet to children's constructions- of intermittent concerns to their safety. This links to Kjørholt's (2004) conjecture that "*The discursive construction of childhood and children highlight to a certain extent both universality, due to*

the connection with international rights discourses, and particularity, revealing specific cultural notions of children and childhood...” (p. 226). As Potter and Wetherell (1987, p. 7) note, the use of discourse analysis from a social psychological perspective aims to “...gain a better understanding of social life and social interaction from our study of social texts.”, and further that “...it is clear that a large part of our activities are performed *through* language; or talk and writing do not live in some purely conceptual realm, but are mediums for action.”

The analysis of children’s constructions of natural spaces provided critical insights into their ideas of well-being as well. Children’s understandings were intertwined with the aspects of their lives which contribute to their SWB, and those things that hinder it. The significance of considering children’s discursive *constructions* are noteworthy for several reasons. Firstly, that accounts of experiences are based on ‘pre-existing linguistic resources’. Secondly, the notion of construction is indicative of ‘active selection, where particular resources are incorporated while others are omitted (Potter & Wetherell, 1987). And finally, the concept of *construction* underscores the “potent, consequential nature of accounts” (Potter & Wetherell, 1987, p.34) - with accounts constructing reality. At this point it is important to note the considerations which Savahl (2010) makes with regard to six analytic shortcomings (Antaki, Billig, Edwards, & Potter, 2003) which are deficient as discourse analysis. These are: *under-analysis through summary* (summarising participants’ responses and themes arising which does not provide a synthesis of the discourse); *under-analysis through taking sides* (which is when the supplementary analysis which presents the analysts “personal, political or moral stance towards the responses.” (Savahl, 2010, p. 273); *under-analysis through over-quotation or through isolated quotation* (the excessive presentation of direct quotes devoid of evincing the analysis of discourse); *the circular discovery of discourses and mental constructs* (when discourses are suitably identified but are not supported); *false survey* (predisposition to “implicitly extrapolate findings from study to the broader society” [Savahl et al., 2010, p. 273]); *under-analysis through spotting* (simple “identification of rhetorical features and discursive procedures” which “does in itself, not constitute analysis.” [Savahl et al., 2010, p. 274]). These points were important to consider through the process of analysis, from the initial thematic analysis which preceded the discourse analysis and the write up for Article 3 (Chapter Six).

9.5. Environmental Subjective Well-Being: Conceptual and Theoretical implications

One of the unique aspects of the study was the merging of the disciplines of environmental psychology, positive psychology, and place attachment. While these disciplines are distinct, the aims of the disciplines served to dovetail. The key contentions and contributions by seminal authors in the field made it possible to synthesise the findings and understand the implications of the natural place dimension of well-being. The essence of ESWB then requires the amalgamation of these disciplines at a theoretical level. The advancement of the concept of ESWB incorporates considerations of place as espoused in the environmental aspect, as well as the significance of natural spaces. One of the limitations in the discipline of place attachment, was the lack of a unifying theory, and owing to this the various contentions in defining the concepts of space and place. Thus, the concept of ESWB is crucial as it attempts to promote children's engagement in nature as this serves to influence children's well-being in place. It was therefore significant to note the juxtaposition which was evident in children's accounts in terms of what nature presented in reality, and their emotional affiliations to nature. Firstly, being in nature makes them happy and positively influences their well-being, while on the other hand, their unsafe neighbourhood environments invited anxiety and trepidation. While the study provided a unique perspective and contributed to literature from a developing context, it had to draw from literature from developed contexts given the absence of research on the topic.

In the author's previous work (see Adams, 2012; Adams & Savahl, 2015) it was identified that studies which have considered nature in the local context have focused on children's knowledge of tree planting in relation to National Arbour week activities (Parkin, Shackleton & Schudel, 2006), children's cultural environmental narratives (Alexander, 2011), and the advancement of child friendly cities (CFC's) (Chawla, 2000; Griesel, Swart-Kruger & Chawla, 2002; Swart-Kruger, 2000; Swart-Kruger & Chawla, 2002). However, only the studies which focused on CFC's incorporated a participatory framework in working with children. The outcome of these studies point to the concern around the lack of environmental education (EE) at the school level as well as the lack of EE programmes in children's communities to provide them with environmental knowledge and foster an intrinsic care for nature. Essentially, the dearth of work on the topic is disconcerting given that "Children are disproportionately vulnerable to the impacts of climate change." (United Nations Children's Fund, 2011). While all children in this study appeared to be acutely aware of environmental concerns and the 'eco-crisis', it was the children from the middle SES community who were

more knowledgeable about ways to combat these negative effects with pro-environmental behaviours. This was directly linked to the intergenerational transmission of environmental knowledge which children attributed to parents and grandparents (see Chawla, 2007).

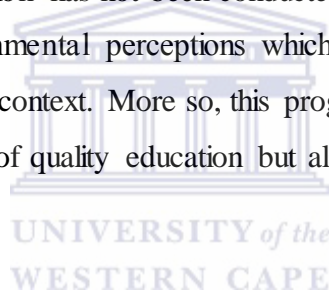
It is also important to note that a number of developing countries, such as South Africa, are encountering high levels of urban development owing to poverty and limited job prospects within rural areas and informal settlements. This development takes place at the border of the city, and is referred to as peri-urbanisation (Graham, Corella-Barud & Avitia-Diaz, 2004). For the duration of the process of peri-urbanisation, natural landscapes and vegetation, in and about cities, are severely devastated as land masses are cleared and prepared for new housing and infrastructure. As a result, trees and tree products, for instance fuel wood, wild fruits, and medicinal products, are eradicated by the escalating urban population (Cilliers, Müller & Drewes, 2004; Berry, Robertson & Campbell, 2005). Deforestation and the removal of natural vegetation has several damaging environmental impacts, such as the loss of biodiversity and genetic resources, soil erosion, the exhaustion of water resources, the disruption of microclimates, and the disturbance of the carbon cycle which are important factors to consider (Bewket, 2003, as cited in Parkin et al., 2006). Therefore, the prospect of enhancing conditions of natural spaces is possible by affording communities, and more importantly children, with the necessary knowledge of the possible positive influence they may have on the urban and natural environments. In line with this, UNICEF (2011, p.3) assert that:

“In the case of South Africa, the impacts of climate change on children need to be considered in relation to wider development pressures affecting the country.

Challenges such as international economic shocks and stresses, high levels of poverty and inequality, population changes, effects of HIV and AIDS, management of scarce natural resources and rapid urbanisation will each interact with climate change.”

While the study did not specifically focus on climate change, the children in the study did raise these concerns and how it affects their well-being and that of future generations; and at a broader level speaks to the need for efforts from all key stakeholders “as well as good coordination across multiple levels of governance, from household and community, through municipal and provincial, to national and international levels.” (UNICEF, 2011). At the school level in South Africa, the Ecoschools initiative (an international programme of the Foundation for Environmental Education) was introduced to promote environmental learning

in the classroom in both primary and secondary levels. The Ecoschools programme was introduced in South Africa in 2003 by the Wildlife and Environmental Society of South Africa (WESSA) in partnership with World Wide Federation-SA, and boasts participation from 10 229 schools. While Rosenberg (2008) notes that sustainable development and the advocacy for equal access to natural spaces and resources is contained in policies, such as the National Environmental Management Act (NEMA) (RSA, 1998a), the National Water Act (RSA, 1998b), and the National Curriculum Statements (RSA, 2002, 2003), the implementation thereof is lacking. Her study on the Ecoschools programme showed that while it appears to be promising, it has highlighted great concerns in the schooling system. Chiefly amongst this is the poor state of schooling in the country, what Taylor (2007) refers to as 'inefficient', and a 'quality crisis' (Rosenberg, 2008). This more holistically links to inequalities, poverty, unemployment, and the nuances and disparities in people's and children's environmental knowledge and how this affects their well-being. Although this initiative is significant, an evaluation has not been conducted as to whether the programme has an effect on children's environmental perceptions which would have contributed greatly to awareness and literature in the context. More so, this programme also brought to light not only the concern around the lack of quality education but also the issue of teacher competence and adequate skill.



If we consider the theories and studies which show the positive impact that nature has on children's lives, it becomes imperative to begin efficient implementation of education for the environment, which advances awareness, knowledge, and intrinsic care for nature by children. While primary schools were an expedient access point to recruit children to the study, it is important to remember that school-based studies may overlook and neglect those children not in formal schooling (Green & Hogan, 2005; Dinisman, Montserrat, & Casas, 2012), such as children in care, disabled and orphaned children, and those children who live on the street. More studies which employ theories to make sense of children's engagement and experiences in nature, and the related effect on their SWB amongst all children, with an inclusionary and participatory nature are in need. Commenting on participatory research methods with children, Morrow (2008, p.49) notes that "These methods have been useful for shedding light on children's experiences in ways that would not have been possible using adult-centred 'mainstream' social research techniques, such as formal questionnaires or in-depth interviews." Although there is merit in Morrow's (2008) assertion, we would not diminish the importance of employing 'mainstream social research techniques', as these hold

significance for answering particular research questions, with participatory techniques providing another avenue to children's understandings, as was found in this study.

9.6. Validity in a mixed methods study

Issues concerning validity and reliability are distinct in qualitative and quantitative research. When researchers clearly delineate their mixed methods design and the related principal aim, the prospective value of amalgamating qualitative and quantitative methods is reflected in addition to improving the rigour and quality of a study (Creswell & Plano Clark, 2011). Moreover, the use of triangulation is advocated by Creswell et al. (2011) noting that "triangulation strengthens a study by combining methods. This can mean using several kinds of methods or data, including using both quantitative and qualitative approaches" (p. 247). Considerations of validity and reliability in mixed methods studies have been critiqued for being overly "methods-centric" in terms of the disparity of design elements (Hesse-Biber, 2010, p. 86). What should instead be considered is whether the research findings are valid, and more significantly, whether the research problem aligns with the method- that is, is there a suitable 'goodness of fit' (Hesse-Biber, 2010). Symonds and Gorard (2010), in discussing the 'death of mixed methods' maintain that

"Perhaps the core elements of each type of validity check are simpler and more applicable than we currently imagine. Therefore it is redundant to argue that mixed methods should have a distinct set of validity descriptors, as these will refer simply to 'problem' areas that are fundamentally common within all types of research."

Symonds and Gorard (2010) are therefore arguing that there is no value in developing a unique set of guidelines to assess the validity in mixed methods studies. Instead, the quality of the research process as a whole must be considered. This in essence is the purpose of this chapter, to synthesise these key findings and key methodological and ethics considerations of the study. It has also been noted by Symonds and Gorard (2010) as to what is not regarded as mixed methods research- where some studies do not meet the criteria for mixed methods, while others meet all the criteria but challenge strict classification. Firstly, *Some studies that use two types of methods but are not mixed*, as this solely entails two separate approaches to studying the same phenomenon in one population and study. Thus no actual 'mixing' takes place in these types of studies. Yet the significance of triangulation should not be ignored in these studies. Secondly, *Studies that transform data instead of mix it*, wherein data is transformed, yet where the mixing occurs is uncertain. The final classification is *Studies that*

meet mixed methods criteria yet operate outside of these (Symonds & Gorard, 2010).

Building on the initial point by Symonds and Gorard (2010), Creswell and Plano-Clark (2007) assert further that:

“The intentional collection of both quantitative and qualitative data... The investigators know the reasons that both types of data are needed, and they state these reasons. Also, rigor is added when the authors report detailed quantitative and qualitative procedures and used mixed methods terms to describe their study” (163-164).

At this juncture, it is then significant to provide credence for the verification strategies used for the qualitative component (Phase Three) of the study. While the contested nature of the concept of validity in qualitative research is acknowledged, and elaborated on in Chapter Two, it is nonetheless essential to demonstrate that the study is credible (Creswell & Miller, 2000). Altheide and Johnson (1994) in fact refer to this as “validity-as-reflexive-accounting” (p.489) in which the researcher, topic, and the process of sense-making interact (Creswell & Miller, 2000). While the findings from the quantitative (Phase Two) and qualitative (Phase Three) phases were disparate, the triangulation of qualitative methods in particular (focus group interviews, community mapping, and photovoice) which corroborated the findings in this phase added to the trustworthiness of the study. *Member checks* were conducted after each discussion session, and also once the process of data collection was complete to identify any discrepancies in the researcher’s interpretations and the meanings of the participants. The scope of the study, and the mixed methods approach enabled *prolonged engagement in the field*. For the entire research process, approximately 8 months was spent in engagement with the participants at the three research locations. Particularly for the qualitative phase, this allowed the researcher to clarify any questions in a previous session. More so, “During repeated observation, the researchers build trust with participants, find gatekeepers to allow access to people and sites, establish rapport so that participants are comfortable disclosing information, and reciprocate by giving back to people being studied.” (Creswell & Miller, 2000, p. 128). Additionally, *audit trails* were used where a researcher external to the research study audited the findings to examine the narrative accounts and conclusions reached (Creswell & Miller, 2000). *Thick, rich description* is another verification strategy, wherein the researcher provides as much detail of the context, participants, and the qualitative themes identified. Credibility is therefore established when the viewpoint of the readers of the narrative accounts are transferred into a particular context. This was strived

toward during the discourse analysis and thematic analysis conducted in Chapter Six and Seven respectively. *Memos*, an additional technique where “documentation of the thoughts and processes during the stages of the study, were recorded. This included the documentation of reflexive moments during the entire study.” (Savahl, 2010, p.156). On this point Savahl (2010) further notes that “This essentially means that my use of detailed memos, critical reference groups, member checking and participant validation was not so much about securing validity but more about conducting ethically appropriate research with children and youth.” These memos were a constant reference point during the data collection process, as well as in the analysis and interpretation phase. And finally, *peer debriefing* added to the validity of the qualitative findings, and is described as the review of the study by a researcher familiar with the research or topic under investigation.

Creswell and Miller (2000) reveal that particular strategies are easier to use than others, specifically those that are inherent in the design of the study such as the triangulation of methods, prolonged engagement in the field, and the employment of thick, rich description.

9.7. Implications of a dissertation completed by publications

Amongst the advantages of conducting a dissertation study by publication is that the author’s work is disseminated soon after it has been collected which allows for important contributions to the field of study. However, with the study being multidisciplinary in nature by incorporating the fields of environmental psychology, positive psychology, and place attachment, this presented additional challenges. The journals which were selected to submit the articles to (Chapters Four-Seven) were more inclined toward either one of the three main fields of study, and it was therefore not always possible to anticipate what the editor or reviewers would have to comment. In addition to this, each journal had divergent turnover times to report reviewer comments to the author, which resulted in some journals taking shorter times (around two months), while others took far longer (around 12 months for the first reviewer comments). The aim was to have all articles published by the time the dissertation was submitted for examination as this would contribute to the quality of the final work. While these challenges were encountered in the dissertation, there were particular benefits as well. One of these was that when the article was finally accepted for publication in the respective journal, it had been through three rounds of peer review- by the editor, as well as by the two anonymous reviewers. More so, the articles were critically reviewed by experts in the field who provided vital feedback to improve the articles. And finally, completing the

dissertation by publication fostered international collaboration with key scholars, most notably in the field of children's SWB. Completing the dissertation in this manner was not solely focused on the publications gained, but it was more poignantly about dissemination. Chapter Six: Article 3, was thus presented at the 5th International Society for Child Indicators Conference (ISCI) 2015 in Cape Town, which enabled the author to disseminate and share findings to international researchers focusing more broadly on the field of children's well-being. While the merger of positive psychology with environmental psychology is an emerging field, the study was well-received, and leads to debate and consideration of nature as an important influence on children's well-being.

9.8. 'Good places; for children in South Africa: The role of policy and the necessity for environmental education and environmental sustainability

The main rationale for the study was the absence of work on the topic in the South African context, and the need to explore children's environmental perceptions and the ensuing influence on their subjective well-being. The shifting of emphasis to advocate for children's welfare and well-being, as well as the growing concern around environmental concerns the world over, promotes McKendrick's (2014) notion that it is significant for all stakeholders to enhance children's environmental subjective well-being (ESWB) in the places they live. This links to the broader state of children's lives in South Africa, notably that of the 18 million children in the country, 11 million live in impoverished conditions (see South African Child Gauge 2015); thereby highlighting the import of place in children's everyday lives.

Appended to the localities of impoverishment in which the majority of children in the country reside, is the high levels of crime and violence which cannot be ignored as it plays a crucial role in the interaction between children's SWB, place attachment, and their intrinsic care for natural spaces. The one study which was conducted on the topic in this context showed a *repudiation of responsibility* of children's community members to pro-environmental behaviour and protection of nature (see Adams & Savahl, 2015). In McKendrick's (2009) oeuvre, *Localities: a holistic frame of reference for appraising social justice in children's lives*, it is contended that the place children live is a crucial aspect of their experience of childhood. This chapter further focused on children's neighbourhoods, the dominant locality, and the reality of children's daily experiences. One of the main premises was that place should be considered as vital in children's lives. What is particularly relevant to this context is the distinction he makes between neighbourhood problems, and problem neighbourhoods and how this shapes children's lives. Furthermore, McKendrick's (2009) "critical reflection

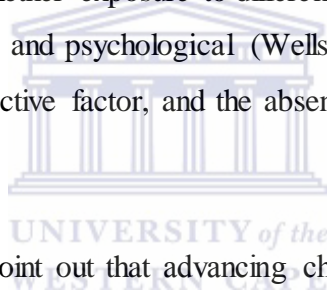
on localities as a political project in the shape of attempts to promote child-friendly neighborhoods, inadvertently provided much relevant insight for understanding the geography of children's well-being." (p.279) is an imperative consideration for the current context.

Essentially what emerged from the study was that SES was one of the key defining components to understanding how children made sense of their experiences in nature and how this impacted their well-being. While these problematic neighbourhoods on the whole negatively impact children's development and well-being, it should be noted that evidence which reveals that some children may attain an acceptable level of well-being notwithstanding the impoverished and under-resourced neighbourhoods with an "unsupportive family" context, should not be used as a motivation to discount the exigency of addressing the deficits in this context (McKendrick, 2014). Children's neighbourhoods should therefore be reshaped to function to address children's interests and concerns which would at the same time address many of the neighbourhood problems (McKendrick, 2014) - it also highlights the significance of the 'geographies of children's well-being'. Given children's perilous environments, the response should not be to remove children from these neighbourhoods, but instead to better children's neighbourhoods which would in turn result in positive developmental outcomes for children. In particular, the crucial role of nature in children's lives portrayed an account of how natural space became a site of meaning for children, and how this translates into nature being a relational space for children. These spaces are however, institutionalised, with children born into them and having no input on the nature and design of these spaces. The range of contextual factors within the case of South Africa must also be considered, such as the 'cultural', the 'social' and the 'historical' (Savahl, 2010). The pursuit then to improve children's well-being should not be limited to children in private households, but should take into account the "quality and availability of institutional settings" across space. McKendrick (2014, p. 1307) notes that:

"Yet even though place-based disparities in child well-being are well documented and of significant public policy concern, the complex dynamics that connect individuals and neighborhoods have made it challenging to fully understand the important processes or to formulate effective action to improve the community context for child well-being."

Wells (2014) chapter, *The Role of Nature in Children's Resilience: Cognitive and Social Processes*, considers the restorative effects of nature on children particularly living in post-

conflict or war zones. While her recommendations speak specifically to these contexts, they do resonate with children living in South Africa who live in risky environments which threaten children's livelihoods and well-being. The aim of interventions, Wells (2014, p.106) contends, should be to "enhance the capacity of millions of youth to not merely survive, but potentially, to thrive, despite their perilous and hostile surroundings." These interventions should, as McKendrick (2014) conjectures, include the family unit as the primary institution for maintaining children's well-being. However, when the family unit cannot see to children's well-being, such as when parents/guardians are unemployed, abuse children, or abuse substances, more rigorous and direct support is then necessitated (McKendrick, 2014). Children's communities should also be involved in this process in order to foster a holistic sense of neighbourhood well-being. This should be incorporated into policy strategies to enhance children's well-being. In addition, it would be significant to ascertain whether particular thresholds exist with regard to the capacity of nature to augment children's functioning and resilience, and whether exposure to different forms of nature afford divergent benefits, such as social, cognitive, and psychological (Wells, 2014). The presence of nature should thus be explored as a protective factor, and the absence thereof as a vulnerability factor (Wells, 2014).



Driskell (2002) and Hart (1997) point out that advancing children's well-being cannot be attained with the participation of children alone. Instead key stakeholders in the community, municipality, and government should be involved, while committing to making cities safer and greener for children, with the collaboration of children. It is thus important that children's neighbourhoods, a key contributor to their well-being, proffer children with opportunities and resources, and enable the participation of all children. The relationship between children's neighbourhood quality and children's well-being takes into consideration the natural spaces in these communities, and whether these are inherent safety or unsafety- and can be classified according to a model of 'poor neighbourhood quality and related outcomes for children's well-being', 'no stars', to optimal neighbourhood quality and related outcomes for children's well-being, 'four stars' (see McKendrick, 2014). This model encompasses four components, resources, opportunities, license (participation), and inclusion. The children from the low SES communities in this study, more broadly reflective of the large proportion of children in this context, would be classified according to this model as 'poor neighbourhood quality and related outcomes for children's well-being', receiving 'no stars'. This classification reveals the condition of children's lives, which is reflective of the inequality evident in this society.

More so, that all children do not have adequate opportunities (resources, opportunities, license [participation], and inclusion), and those opportunities that are available are not open to all- therefore it is not inclusive; with the majority of children not having required and basic resources or the ability to participate. This reiterates the significance of children's access to nature as a basic right of childhood, with safety as an inherent, immutable aspect. It also alludes to the importance of children's *environmental SWB* (ESWB) which considers children's well-being in their daily lives in their neighbourhoods, communities, and societies; but at a broader level espouses children's rights for the present as well as the future.

9.9. Conclusion

This chapter aimed to synthesise the study in terms of the implications of the findings and its relation to the broader literature in the field, as well as to the local context. The essence of the study points to the environmental and contextual influences on children's lives; as well how the social and historical have shaped children's current lifeworlds. Children's experiences in nature was shown to be related to their well-being when explored qualitatively, but not quantitatively, however, this did not deter from the crucial insights which were gained from the quantitative component of the study. The mixed methods approach of the study was invaluable in this regard, and served to evince the nuances in children's understandings using participatory methods. The study points to the need for environmental education in the formal and informal spaces which children inhabit, to foster an intrinsic care for nature which would in turn enhance their quality of life. Moreover, there is a need for further studies to explicitly consider children's SWB, both qualitatively and quantitatively, in relation to their engagement in nature in this context, as well as internationally. The absence of research on the topic in South Africa is concerning, especially considering contemporary environmental concerns. Schubert (2012) argues that environmental problems (climate change; incessant pollutants, and exploitation of resources) are a consequence of the 'global development model' which is founded on economic development, and supplants other social and environmental concerns. The notion of 'good places' for children should therefore give preference to children's safety in their neighbourhoods, as well as affording children opportunities for engagement in natural spaces which enhances their SWB and life satisfaction- encompassed in the concept of *environmental subjective well-being* (ESWB). It is anticipated that the marriage between the disciplines reflected in ESWB is not only advanced in future research, but that this filters down to children's daily lives.

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APPENDIX A:

Adapted Appraisal Tool For Qualitative and Quantitative Studies

Review Area	Key Question	Yes/ No
1. STUDY OVERVIEW		
Details	Author, title, source, year	
Purpose	Aim/s of study mentioned?	
Key findings	Are key findings mentioned?	
Evaluative summary	Are strengths and weaknesses of study mentioned?	
2. STUDY, SETTING, SAMPLE AND ETHICS		
Type of study	Type of study mentioned?	
Study setting	Setting mentioned?	
Sample	Sample and population specified?	
	Is the sample appropriate for the study aim/s?	
3. ETHICS		
	Was ethics committee approval obtained?	
	Was informed consent obtained?	
	Have ethics issues been appropriately addressed?	
4. DATA COLLECTION		
Appropriateness of data collection method	Was data collection method appropriate for study aim/s?	
Data collection process	Is data collection process adequately described (range of questions, length of interview or administration of questionnaire)?	
Reflexivity/ validity	Is reflexivity/ validity discussed/ addressed?	
5. DATA ANALYSIS		
	Data analysis mentioned and adequately described?	
	Data analysis technique is appropriate for study aim/s?	
	Is adequate evidence provided to support results/findings? (raw data, iterative analysis)	
6. POLICY AND PRACTICE IMPLICATIONS		
	Findings interpreted within context of other studies and theory?	
	Are conclusions justified given context of study?	
	Are implications for policy and practice discussed?	
	Are recommendations given for future research/ intervention?	
DECISION (INCLUDE/EXCLUDE)		

Source: Long et al. (2002; 2004)

APPENDIX B:

Data Extraction Table Template

Author	Focus of research	Age cohort	Sample composition	Area/ context	Method	Framework



APPENDIX C:

Instruments

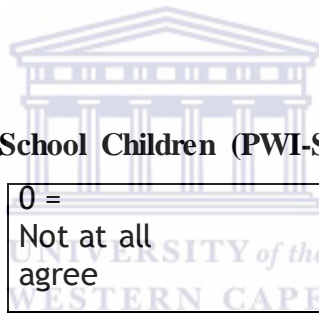
NEP Scale (Manoli et al., 2007)

Please tell us how much you agree or disagree with the following sentences	Very much agree	Agree	Not sure	Dis-agree	Very much disagree
▪ Plants and animals have as much right as people to live.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
▪ There are too many (or almost too many) people on earth.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
▪ * People are clever enough to keep from ruining the earth.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
▪ People must still obey the laws of nature.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
▪ When people mess with nature it has bad results.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
▪ * Nature is strong enough to handle the bad effects of the way we live.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
▪ * People are supposed to rule over the rest of nature.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
▪ People are treating nature badly.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
▪ *People will someday know enough about how nature works to be able to control it.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
▪ If things don't change, we will have a big disaster in the environment soon.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

*Reverse coded items

Students' Life Satisfaction Scale (SLSS) (Huebner, 1991)

30. Please tell us how much you agree or disagree with each of the following sentences	Very much disagree	Disagree	Neither disagree nor agree	Agree	Very much agree
▪ My life is going well	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
▪ My life is just right	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
▪ I would like to change many things in my life	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
▪ I wish I had a different kind of life	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
▪ I have a good life	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
▪ I have what I want in life	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
▪ My life is better than most young people my age	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>



Personal Well-Being Index-School Children (PWI-SC) (Cummins & Lau, 2005)

How satisfied are you with each of the following things in your life?

	0 = Not at all agree											10 = Very much Agree										
	0	1	2	3	4	5	6	7	8	9	10	0	1	2	3	4	5	6	7	8	9	10
▪ All the things you have?	0	1	2	3	4	5	6	7	8	9	10	0	1	2	3	4	5	6	7	8	9	10
▪ Your health?	0	1	2	3	4	5	6	7	8	9	10	0	1	2	3	4	5	6	7	8	9	10
▪ The things you want to be good at?	0	1	2	3	4	5	6	7	8	9	10	0	1	2	3	4	5	6	7	8	9	10
▪ Your relationships with people in general?	0	1	2	3	4	5	6	7	8	9	10	0	1	2	3	4	5	6	7	8	9	10
▪ How safe you feel?	0	1	2	3	4	5	6	7	8	9	10	0	1	2	3	4	5	6	7	8	9	10
▪ Doing things away from your home?	0	1	2	3	4	5	6	7	8	9	10	0	1	2	3	4	5	6	7	8	9	10
▪ What may happen to you later in your life?	0	1	2	3	4	5	6	7	8	9	10	0	1	2	3	4	5	6	7	8	9	10
▪ How you use your time?	0	1	2	3	4	5	6	7	8	9	10	0	1	2	3	4	5	6	7	8	9	10
▪ Your life as a student?	0	1	2	3	4	5	6	7	8	9	10	0	1	2	3	4	5	6	7	8	9	10

APPENDIX D:

Information Sheet: Learner/Child



UNIVERSITY OF THE WESTERN CAPE

Private Bag X 17, Bellville 7535, South Africa

Tel: +27 21-959 2283, Fax: 27 21-959 3515

E-mail: ssavahl@uwc.ac.za

INFORMATION SHEET

Learner/ Child

Project title: Nature as children's space: Considerations for children's subjective well-being

What is this study about?

This is a research project being conducted by Sabirah Adams, a PhD Candidate in the Department of Psychology at the University of the Western Cape. The study is entitled '*Nature as children's space: Considerations for children's subjective well-being*'

What will I be asked to do if I agree to participate in the study?

If you agree to participate, you will be asked to participate in two focus groups, one walking interview and one Photovoice sessions. In the focus groups you will be asked questions about the natural spaces you engage in. The focus groups will be approximately one hour long. In the walking interview you will be asked to take the researcher through a walk of the natural spaces which you make use of in your neighbourhood. Finally, the Photovoice sessions will be conducted within the walking interview and you will be given a camera and asked to capture images which best convey these natural spaces you have indicated.

What is Photovoice and will I be entitled to do?

Photovoice is a method in which photography is used to identify, express, and share your experiences. In participating in the Photovoice mission session you will be trained to utilise a camera and given directives about what to capture in your photographs. You will then be given a disposable camera to utilise for your Photovoice mission.

How many sessions, and how long will the Photovoice mission session be?

You will be asked to participate in one Photovoice mission session. You will carry out your Photovoice mission session by going into your community and taking photographs of natural spaces in which you engage and spaces which you feel can be utilised better to make your community more child friendly.

What will the photographs be used for?

The photographs from the Photovoice mission sessions will be used for a research project exploring young people's understandings of natural spaces. The photographs will also be used for conference presentations and published manuscripts.

Where will we get cameras to use for the Photovoice mission session?

You will be provided with disposable cameras by the study co-ordinator.

Are there any risks associated with the Photovoice mission session?

There are no known risks associated with participating in the Photovoice mission session. The research team will accompany participants on the Photovoice mission session. The researchers cannot be held liable for any physical injury which could occur in the process.

Would my participation in this study be kept confidential?

Your identity will remain confidential throughout the research process. Your name will not be used in the write-up of the study. Only the primary researchers will have access to the information collected which will be kept in a secure location. You may withdraw from the study at any time without negative consequence. The ethics principles as stipulated by the University of the Western Cape and the Western Cape Education Department and will be adhered to at all times.

What are the benefits of this research?

This research is not designed to help you personally, but the results may help the researcher learn more about children's understandings of natural spaces. This study aims to explore how children construct and assign meaning to natural spaces. Within this process this study aims to explore the extent to which children's engagement with natural spaces influences their subjective well-being. Additionally the study strategically aims to explore the implications of these constructions on creating child-friendly natural spaces.

What are the risks of this research?

There are no known risks associated with participating in this research project

Do I have to be in this research and may I stop participating at any time?

Your participation in this research is completely voluntary; therefore you can stop participating at any time. If you decide to withdraw from the study you will not be looked upon unfavourably.

Is any assistance available if I am negatively affected by participating in this study?

If the questionnaire or any part of this process results in any emotional discomfort, counselling will be arranged by the researcher without cost.

What if I have questions?

Should you have any further queries regarding this study or wish to report any problems you have experienced related to the study, please feel free to contact the study co-ordinator, **Sabirah Adams**, on **073 127 3376**. Should you have any questions regarding this study and your rights as a research participant or if you wish to report any problems you have experienced related to the study, please contact:

Head of Department: Dr. M. Andipatin (mandipatin@uwc.ac.za, 021 959 2283)

Dean of the Faculty of Community and Health Sciences: Prof. J. Frantz (jfrantz@uwc.ac.za, 021 959 2163)

University of the Western Cape
Private Bag X17
Bellville 7535

Information Sheet: Parent/Guardian



UNIVERSITY OF THE WESTERN CAPE

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Tel: +27 21-959 2283, Fax: 27 21-959 3515

E-mail: ssavahl@uwc.ac.za

INFORMATION SHEET

Parent/Guardian

Project title: Nature as children's space: Considerations for children's subjective well-being

What is this study about?

This is a research project being conducted by Sabirah Adams, a PhD Candidate in the Department of Psychology at the University of the Western Cape. The study is entitled '*Nature as children's space: Considerations for children's subjective well-being*'

What will my I be asked to do if I agree to participate in the study?

If you agree to allow your child to participate, they will be asked to participate in two focus groups, one walking interview and one Photovoice sessions. In the focus groups you will be asked questions about the natural spaces you engage in. The focus groups will be approximately one hour long. In the walking interview you will be asked to take the researcher through a walk of the natural spaces which you make use of in your neighbourhood. Finally, the Photovoice sessions will be conducted within the walking interview and you will be given a camera and asked to capture images which best convey these natural spaces you have indicated.

What is Photovoice and will my child be entailed to do?

Photovoice is a method in which photography is used to identify, express, and share your experiences. In participating in the Photovoice mission session your child will be trained to utilise a camera and given directives about what to capture in their photographs. Your child will then be given a disposable camera to utilise for their Photovoice mission session.

How many, and how long, will the Photovoice mission session be?

You will be asked to participate in one Photovoice mission session. You will carry out your Photovoice mission session by going into your community and taking photographs of natural spaces in which you engage and spaces which you feel can be utilised better to make your community more child friendly.

What will the photographs be used for?

The photographs from the Photovoice mission sessions will be used for a research project exploring young people's understandings of natural spaces. The photographs will also be used for conference presentations and published manuscripts.

Where will my child a get camera from for the Photovoice mission session?

Your child will be provided with disposable cameras by the study co-ordinator.

Are there any risks associated with the Photovoice mission session?

There are no known risks associated with your child participating in the Photovoice mission session. The research team will accompany participants on the Photovoice mission session.

The researchers cannot be held liable for any physical injury which could occur in the process.

Would my child's participation in this study be kept confidential?

Your child's identity will remain confidential throughout the research process. Your child's name will not be used in the write-up of the study. Only the primary researchers will have access to the information collected which will be kept in a secure location. Your child may withdraw from the study at any time without negative consequence. The ethics principles as stipulated by the University of the Western Cape and the Western Cape Education Department will be adhered to at all times.

What are the benefits of this research?

This research is not designed to help your child personally, but the results may help the researcher learn more about children's understandings of natural spaces. This study aims to explore how children construct and assign meaning to natural spaces. Within this process this study aims to explore the extent to which children's engagement with natural spaces influences their subjective well-being. Additionally the study strategically aims to explore the implications of these constructions on creating child-friendly natural spaces.

What are the risks of this research?

There are no known risks associated with participating in this research project

Does my child have to be in this research and may they stop participating at any time?

Your child's participation in this research is completely voluntary; therefore they can stop participating at any time. If your child decides to withdraw from the study, they will not be looked upon unfavourably.

Is any assistance available if my child is negatively affected by participating in this study?

If the questionnaire or any part of this process results in any emotional discomfort for your child, counselling will be arranged by the researcher without cost.

What if I have questions?

Should you have any further queries regarding this study or wish to report any problems you have experienced related to the study, please feel free to contact the study co-ordinator, **Sabirah Adams**, on **073 127 3376**. Should you have any questions regarding this study and your rights as a research participant or if you wish to report any problems you have experienced related to the study, please contact:

Head of Department: Dr. M. Andipatin (mandipatin@uwc.ac.za, 021 959 2283)

Dean of the Faculty of Community and Health Sciences: Prof. J. Frantz (jfrantz@uwc.ac.za, 021 959 2163)

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Bellville 7535

APPENDIX E:

Consent Form: Learner/Child



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E-mail: ssavahl@uwc.ac.za

CONSENT FORM

Learner/Child

Project Title: Nature as children's space: Considerations for children's subjective well-being

The study has been described to me in language that I understand and I freely and voluntarily agree to participate. My questions about the study have been answered. I understand that my identity will not be disclosed and that I may withdraw from the study without giving a reason at any time and this will not negatively affect me in any way.

- I agree to participate in the focus group interviews, Photovoice mission session and discussion group, and the walking interview
- I agree to have the focus group interviews and Photovoice discussion group audio-recorded
- I agree to not disclose any information that was discussed during data collection.
- I agree to the findings of the study being disseminated (shared/ publicised) in the following formats: Conference presentations and Published manuscripts

Participant's signature _____

Witness _____

Date _____

Should you have any questions regarding this study or wish to report any problems you have experienced related to the study, please contact the study coordinator:

Study Coordinator: Sabirah Adams
University of the Western Cape
Private Bag X17, Belville 7535
Telephone: (021) 959-2283

Consent Form: Parent/Guardian



UNIVERSITY OF THE WESTERN CAPE

Private Bag X 17, Bellville 7535, South Africa

Tel: +27 21-959 2283, Fax: 27 21-959 3515

E-mail: ssavahl@uwc.ac.za

**CONSENT FORM
Parent/Guardian**

Project Title: Nature as children's space: Considerations for children's subjective well-being

The study has been described to me in language that I understand and I freely and voluntarily agree for my child to participate. My questions about the study have been answered. I understand that my child's identity will not be disclosed and that they may withdraw from the study without giving a reason at any time, and this will not negatively affect me in any way.

- I agree to the focus group interviews and Photovoice discussion group in which my child participates to be audio-recorded
- I agree to the findings of the study being disseminated (shared/ published) in the following formats: Conference presentation and Published manuscripts.

Parent/Guardians signature _____

Witness _____

Date _____

Should you have any questions regarding this study or wish to report any problems you have experienced related to the study, please contact the study coordinator:

Study Coordinator: Sabirah Adams
University of the Western Cape
Private Bag X17, Belville 7535
Telephone: (021) 959-2283

APPENDIX F:

Focus Group Confidentiality Binding Form



UNIVERSITY OF THE WESTERN CAPE

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E-mail: ssavahl@uwc.ac.za

FOCUS GROUP CONFIDENTIALITY BINDING FORM

Title of Research Project: Nature as children's space: Considerations for children's subjective well-being

The study has been described to me in a language that I understand and I freely and voluntarily agree to participate. My questions about the study have been answered. I understand that my identity will not be disclosed and that I may withdraw from the study without giving a reason at any time and this will not negatively affect me in any way. I agree to be audio-taped during my participation in the study. I also agree not to disclose any information that was discussed during the group discussion.

Participant's signature _____

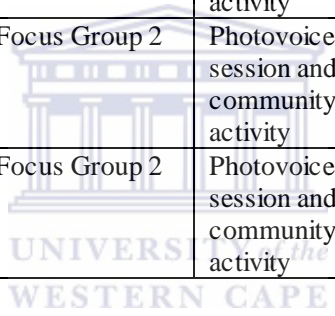
Witness's signature _____

Date _____

APPENDIX G:

Phase Two data collection protocol

	Session 2	Session 3	Session 4	Session 6
Group 1	Focus Group 1	Focus Group 2	Photovoice training session and community mapping activity	Photovoice discussion session and dissolution
Group 2	Focus Group 1	Focus Group 2	Photovoice training session and community mapping activity	Photovoice discussion session and dissolution
Group 3	Focus Group 1	Focus Group 2	Photovoice training session and community mapping activity	Photovoice discussion session and dissolution
Group 4	Focus Group 1	Focus Group 2	Photovoice training session and community mapping activity	Photovoice discussion session and dissolution
Group 5	Focus Group 1	Focus Group 2	Photovoice training session and community mapping activity	Photovoice discussion session and dissolution
Group 6	Focus Group 1	Focus Group 2	Photovoice training session and community mapping activity	Photovoice discussion session and dissolution



APPENDIX H:

Acknowledgment and Release: Photovoice Consent form

Research Project: Nature as children's space: Considerations for children's subjective well-being

Permission to utilise images:

I, _____ give Sabirah Adams and Shazly Savahl, the study co-ordinators for the research project entitled *Nature as children's space: Considerations for children's subjective well-being*, the right to utilise the photographs/ images I have taken for their research project.

I have read and understood the above.

Signature of person in photograph _____

Signature of photographer _____



Date _____

APPENDIX I:

Photograph release: Photovoice Consent Form

I, _____ (Photographer's name) give Sabirah Adams and Shazly Savahl, the study co-ordinators for *Nature as children's space: Considerations for children's subjective well-being*, the right to utilise photographs/ images, which I have taken during data collection for their research project, in the write-up of the study, as well as in linked conference presentations and published manuscripts.

Photographer/ participant's signature _____

Date _____



APPENDIX J:

UWC Research Ethics clearance

DEPARTMENT OF RESEARCH DEVELOPMENT



**UNIVERSITY of the
WESTERN CAPE**

09 March 2016

To Whom It May Concern

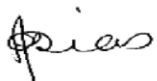
I hereby certify that the Senate Research Committee of the University of the Western Cape, at its meeting held on 29 November 2013 approved the methodology and ethics of the following research project by: Ms S Adams (Psychology)

Research Project: Nature as children's space: Making sense of natural spaces and implications for creating child friendly natural spaces

Registration no: 13/10/28

Any amendments, extension or other modifications to the protocol must be submitted to the Ethics Committee for approval.

The Committee must be informed of any serious adverse event and/or termination of the study.



*Ms Patricia Josias
Research Ethics Committee Officer*

University of the Western Cape

Private Bag X17, Bellville 7535, South Africa
T: +27 21 959 2988/2948 . F: +27 21 959 3170
E: pjosias@uwc.ac.za
www.uwc.ac.za

APPENDIX K:

Western Cape Education Department Ethics Clearance letter



Directorate: Research

Audrey.wyngaard@westerncape.gov.za

tel: +27 021 467 9272

Fax: 0865902282

Private Bag x9114, Cape Town, 8000

wced.wcape.gov.za

REFERENCE: 20140903-35867

ENQUIRIES: Dr A T Wyngaard

Ms Sabirah Adams
Robert Sobukwe Road
Bellville

Dear Ms Sabirah Adams

RESEARCH PROPOSAL: NATURE AS CHILDREN'S SPACE: MAKING SENSE OF NATURAL SPACES AND IMPLICATIONS OF CREATING CHILD FRIENDLY NATURAL SPACES

Your application to conduct the above-mentioned research in schools in the Western Cape has been approved subject to the following conditions:

1. Principals, educators and learners are under no obligation to assist you in your investigation.
2. Principals, educators, learners and schools should not be identifiable in any way from the results of the investigation.
3. You make all the arrangements concerning your investigation.
4. Educators' programmes are not to be interrupted.
5. The Study is to be conducted from **01 September 2014 till 30 September 2014**
6. No research can be conducted during the fourth term as schools are preparing and finalizing syllabi for examinations (October to December).
7. Should you wish to extend the period of your survey, please contact Dr A.T Wyngaard at the contact numbers above quoting the reference number?
8. A photocopy of this letter is submitted to the principal where the intended research is to be conducted.
9. Your research will be limited to the list of schools as forwarded to the Western Cape Education Department.
10. A brief summary of the content, findings and recommendations is provided to the Director: Research Services.
11. The Department receives a copy of the completed report/dissertation/thesis addressed to:

**The Director: Research Services
Western Cape Education Department
Private Bag X9114
CAPE TOWN
8000**

We wish you success in your research.

Kind regards.

Signed: Dr Audrey T Wyngaard

Directorate: Research

DATE: 04 September 2014