



A world without play: A literature review



A literature review on the effects of a lack of play on children's lives

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'A world without play' – a literature review

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Much of the information in this review is drawn directly from previously published work including:

- NCB Highlight: Play and Well-being ¹
- Community Play: A literature review ²
- Children's Time to Play: A literature review ³

A library search was also conducted using the Children's Play Information Service (CPIS) to include the most up-to-date published research. Information was collated from relevant websites including that of British Toy and Hobby Association⁴. The review also draws extensively on Play for a Change, by Lester and Russell (2008), published by Play England and is informed by the research undertaken for Getting it Right for Play: The Power of play – an evidence base published by Play Scotland in January 2012.

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1 Cole-Hamilton, I. (2011) NCB Highlight: Play and Well-being. London: NCB
2 Gleave, J. (2010) Community Play: A literature review. London: Play England
3 Gleave, J. (2009) Children's Time to Play: A literature review. London: Play England
4 www.btha.co.uk

Introduction

This review is part of a wider enquiry conducted on behalf of Play England and the British Toy & Hobby Association (BTHA) for the 2011 Make Time to Play Campaign. It examines the importance of providing good-quality play opportunities to children, their families and their communities. This body of research informs a campaign around the concept of 'A World Without Play'. Play is fundamental to children's happiness and well-being, and the evidence shows that it is also influential in their health and future life chances. If children's opportunities for play are restricted there are likely to be profound effects on their life experience in general and more specifically on their physical and mental health. For example, obesity, rickets and attention deficit disorder are just some of the growing problems experienced by children, that health experts have recently linked to a lack of particular forms of play (Play England 2011).

The review gives an overview of the importance of play for children's health, well-being and development, as well as discussing the benefits of play provision to local communities. It illustrates how lack of time and spaces for play, and hostile attitudes towards children playing outdoors can have damaging implications for children's health and happiness. Drawing on a wide range of evidence, the review indicates the potential consequences of 'a world without play'; that is, a world where play is placed at the bottom of adult agendas and the value of play in children's lives is not fully acknowledged. Children will always play, but adults must provide children with opportunities, time to themselves and spaces for play if they are to get the full benefits.



Summary

This literature review provides strong evidence that playing is central to children's physical, psychological and social well-being. Whilst playing, children can experience real emotions, create their own uncertainty, experience the unexpected, respond to new situations and adapt to a wide variety of situations. Play enables children to form friendships and attachments to adults and to places, allowing for the development of familiarity and intimacy with both. It can provide opportunities for independent learning and building confidence, resilience, self-esteem and self-efficacy (Lester and Russell 2008; NICE 2010; Coalter and Taylor 2001). Whilst play can bring families closer together, strengthening parent-child relationships (Gardner and Ward 2000), playing away from adult supervision is equally important, allowing children to acquire independent mobility, explore the world on their own terms and create their own identities (Armitage 2004).

This review highlights the importance of play, particularly outdoor play, for increasing levels of physical activity, alongside other positive influences on a child's well-being, such as opportunities to understand and respect the natural world. However, children seem to be getting fewer opportunities to play. A combination of poor play environments, busy school schedules and an increase in structured activities has meant that this beneficial and basic children's right has become sidelined, often perceived as an 'unaffordable luxury' (Elkind 2008). Even self-directed play during school break times, which has been linked to improving concentration and behaviour during lesson times (Madsen and others 2011) as well as offering children a unique opportunity to advance their interacting skills, have been cut significantly in recent years (Blatchford and others 2002).

The evidence confirms that it is important to allow children every opportunity to play, as this can benefit their physical and mental health, well-being, and social and emotional development. Play is also an invaluable part of family and community life. The study also demonstrates that while we should acknowledge the benefits of play in children's lives, we must be cautious not to 'instrumentalise' play by perceiving it merely as a tool to achieve other benefits (Lester and Russell 2008). Play is a basic right for all children and is worthwhile for the enjoyment it brings to children and their families in the moment. If we view play primarily as a means to achieve long-term physical, psychological and social benefits we are in danger of losing sight of the essence of play as intrinsically motivated behaviour, something children do in their own time, following their own ideas, in their own way, for their own reasons (Cole-Hamilton 2011). However, this review gives an overview of how this fundamental and enjoyable instinct has been shown to increase children's quality of life across many areas.

Section 1: The essence of play

The definition of play is both complex and contested and has long been the subject of social and academic debate. The increase in structured 'play' sessions and emergence of technology-based play has led to further confusion over the nature and meaning of play (Lester and Russell 2008). What is clear is that play is an innate childhood instinct, that is not only enjoyable but also crucial to the processes of learning and development. Play is varied and flexible and there is no 'right' or 'wrong' way to play; encompassing an endless range of play types, which could be active or subdued, imaginative or exploratory, involve others or carried out alone. An attempt to distil the essence of play is perhaps best expressed through the Playwork Principles that underpin all good playwork practice:

'Play is a process that is freely chosen, personally directed and intrinsically motivated. That is, children and young people determine and control the content and intent of their play, by following their own instincts, ideas and interests, in their own way for their own reasons.'

'All children and young people need to play. The impulse to play is innate. Play is a biological, psychological and social necessity, and is fundamental to the healthy development and well-being of individuals and communities.'

(Playwork Principles Scrutiny Group 2005)

In other words, play involves children doing as they wish in their own time and in their own way, and it is this component of play that is key to understanding the positive outcomes of playing throughout childhood. However, whilst playing comes instinctively to all children, without the support of parents, policy makers and the wider community to make play a priority, children will be denied the freedom, spaces and time to themselves to act on their natural instincts.

The following sections of this review discuss the role for play in children's lives and why play must be understood, taken seriously and provided for in adult agendas.

Section 2: Play, happiness and well-being

The concept of well-being is multi-dimensional, encompassing physical, emotional and social well-being and focusing on children's immediate as well as their future lives (Statham and Chase 2010; Saunders and others 1997: cited in Chambers and others 2002). Other factors used to discuss children's well-being in the UK and other Western societies include the concepts of need, rights, poverty, quality of life and social exclusion (Axford 2008). Children's definition of 'happiness' is strongly associated with 'doing what you want when you want to', 'getting what you want', or 'something unexpected, out of the ordinary happening' and is therefore seen as a temporary state (Counterpoint 2008).

In 2007, a UNICEF report on the well-being of children around the world, ranked the UK at the bottom of the world's 21 richest countries. For all six parameters: material well-being, health and safety, educational well-being, family and peer relationships, behaviour and risks and subjective well-being, the UK was amongst the bottom five countries (UNICEF 2007). Since then, there has been considerable debate in the UK about ways to measure and enhance children's well-being. Traditionally, children's well-being has been measured through 'objective' indicators, examining the impact of social and economic factors on children's lives. However, more recently it has been acknowledged that children's subjective views should also be considered because they differ from adults' viewpoints, and also out of respect for their fundamental rights (Hicks and others 2011).

Following the UNICEF report, a comparative study, carried out by Nairn and IPSOS MORI (2011), compared the lives of children in UK with those in Sweden and Spain, to uncover why the UK was ranked so poorly in relation to children's well-being. Using subjective indicators, the study found that children perceived spending time with their friends and family, as well as having fun and engaging things to do, as fundamental to their well-being. The research indicates that children in the UK had fewer opportunities for fun outdoor activities compared with the other two countries and that this was a significant contributor towards poor well-being in the UK. Decisions to cut funding for local play spaces, they argue, is detrimental for children's well-being, particularly for children from low socio-economic groups, whose parents struggle to find affordable play provision on their area. The study also found that UK parents had less free time to spend with their children, due to work and other commitments, and calls for policy makers to consider how UK policies impinge on family time. The authors conclude that children must be prioritised in UK government public spending. This is persuasive evidence of the role in playing to children's overall happiness and well-being. As Foley (2008) puts it: *'It is widely understood that play is crucial to children's healthy development and quality of life'* (p 6).

Section 3: Physical benefits of play

Physical activity in childhood is important for many reasons and a variety of sources indicate a direct relationship between physical activity and children's health (Hope and others 2007). In early childhood physical exercise helps build strong bones, muscle strength and lung capacity (Lindon 2007). It may also increase cognitive function, improve academic achievement and accelerate neurocognitive processing. In addition, it appears that active children are also less likely to smoke, to abuse alcohol or take illegal drugs as they grow up (BHF 2009). There is also evidence that exercise breeds exercise, and children in the east of England who cycle to school have been found to be much more active at other times and are aerobically fitter. There is also a suggestion that across England, children in rural areas may be more active than other children (Pretty and others 2009).

Several studies have shown that playing is good for developing motor functioning, and most infants and toddlers acquire fundamental movement skills through unstructured physical activity and play. Children who lack proficient motor skills often choose not to participate in physical activities as they get older, and as games become more competitive (Graham and others 2005 cited in Low Deiner and Qiu 2007). Better motor function has also been found to lead to fewer accidents (HC Netherlands 2004).

Fun and enjoyment are the greatest motivators for physical activity and, whilst children see health reasons as important, they are more attracted by 'unhealthy' activities if they are more fun than 'healthier' activities (Hemmings 2007). Young children are innately active, but this natural tendency is easily overridden by external constraints, including adult supervision (Jebb 2007).

A recent study (Brockman and others 2011a) found that children's primary motive for engaging in physically active play was for social and enjoyment reasons, to prevent boredom and because they were aware of the physical and emotional benefits of being active. They also valued the freedom from adult control and the unstructured nature of physically active play. However, children felt that their active play was restricted by poor weather conditions, fears and a lack of suitable play spaces. From these findings, the authors suggest that more encouragement should be given by schools to allow children outside at break times when it is raining, perhaps also providing them with waterproof clothing. Brockman and others believe that more safe places to play are required to reduce children's and parents' fears, which can prevent children from being active in their neighbourhoods. The study also found that children who owned mobile phones had more independence to play actively around their neighbourhood, as parents felt happier letting them play outside unsupervised if they could reach them by phone.

Opportunities for play, throughout childhood, contribute to children's life chances and development and active toddlers who grow up enjoying physically active play, especially in natural environments, may be laying the foundations for better health and a longer life than sedentary children (Pretty and others 2009). Active play is the most common type of physical activity children take part in outside of school, and outdoor and unstructured play may be one of the best forms of physical activity for children (BHF 2009). Brady and others (2008) found that physical activity in early years settings was influenced by a number of factors, including

the layout of the setting, ethos of play staff, encouragement from staff, opportunities for free flow play and access to outdoor space and suitable equipment. This not only influenced the time children spend playing actively, but also the quality of the play.

Encouraging active play and walking as a routine in the daily lives of young children may be important in preventing obesity. Children who sleep fewer hours a day are more at risk of obesity and active children tend to sleep longer (Taheri 2006 cited in Milano 2007). However, research into effective interventions for obesity is complex and although individually each factor may make only a small contribution to weight gain, the potential synergies may underestimate the overall impact of playing. For the role of physical activity in controlling a child's weight may be more complex than its contribution to energy expenditure (Jebb 2007). For older children and teenagers, the outdoors is perceived as the most important environment for physically active play (Open Space 2006), and that children who go out without adult supervision are likely to be more physically active than those who are with adults (Mackett and others 2007). As Dietz points out: *'Opportunities for spontaneous play may be the only requirement that young children need to increase their physical activity'* (Dietz 2001: 314).

Children's activity levels are related to gender, family patterns and outdoor play. Boys are more active than girls, children whose parents participate in physical activity with them are more active and children who spend more time in outdoor play spaces are more active (BHF 2009). Brockman and others (2011b) note how boys tend to play further away from home with friends, while girls tend to play closer to home, often with family members. Both genders preferred unmanaged spaces for engaging in active play, rather than structured activities. Parents also have a strong influence on their children's activity levels. If parents understand the importance of physical activity to their children's health and are involved with their children in some physical activity, this not only encourages their children to be more active but can also enhance parent-child communication and social interactions among family members (Thompson and others 2010).

Children get much of their physical exercise at school and play times can be important for this, especially during the longer breaks (Fairclough and others 2008). Although children are more active during longer breaks it has been found that the longer they played the less active they became. Children were more active when playing ball games, had free access to non-fixed equipment and where there were suitable markings on the ground. When teachers were managing or observing the playground, children's activity was reduced (Parrish and others 2009).

Guidelines set out by the Department of Health (2011) call for interventions to increase children's physical activity levels, starting from birth. Early years children should be given ample opportunities for unrestricted movement (such as crawling and water-based play) to increase their physiological development and encourage bonding with others. Drawing on robust research, the report argued that levels of physical activity required in childhood to help achieve healthy weight, bone and cardiometabolic health and psychological well-being are higher than previously estimated. Unstructured play is perceived as vital to achieving this, as young children 'need the freedom to create their own opportunities for active play, lead their own activities, direct their own play and engage in imaginary play' (DH 2011: 22). The report calls for more play spaces and parental support to help foster this.

For the benefits of play to be used to their full advantage, support must come from everyone. The NICE report on promoting physical activity for children and young people, carried out on behalf of the Department of Health, states that responsibility for increasing physical activity levels in childhood should involve a range of professional bodies (NICE 2009). This includes community and voluntary groups, government departments, local authorities, early years, play and youth service providers, the police, health service providers, the private sector, schools and colleges. It provides numerous recommendations to increase physical activity in childhood, such as a national campaign that consults with children and families about the importance of physical activities; a high-level policy and strategy to increase opportunities to be safe and active outdoors; local strategic planning that identifies children who have low exposure to physical activity; planning play spaces and facilities (such as parks, out of hours car parks and school grounds); and local transport planning that encourages active travel.

NICE (2008) also provide guidance about creating environments for physical activity. The recommendations include strategies and policies that involve the local community and prioritise children, particularly when planning and developing roads (such as providing safe routes plans and guidance), ensuring public open spaces are accessible by bike or foot and designing playgrounds to encourage high levels of active play.



Section 4: Cognitive benefits of play

The evidence base that examines the cognitive implications of playing is complex and not entirely consistent. However, there is substantial evidence overall to suggest that play is a natural way of building cognitive processes, assisting learning and can even help with more complex mental health issues. However, caution should be exercised when linking play to cognitive functioning, as this can lead to the 'instrumentalising' of play (Lester and Russell 2008). While research does indicate that play can help to foster specific skills, Lester and Russell argue that it should not be perceived simply as a tool for learning and that the role of play within a particular moment, the joy it brings and the right that children have to play regardless of the positive outcomes, should be recognised as its primary drivers. However, evidence of the long-term psychological impact of play is growing and is discussed in this section.

The notion that playing takes a central role in developing cognitive skills is by no means a new one. Piaget and Vygotsky, two of the most influential 20th century theorists of cognitive development, both emphasised the essential role of play in children's development. According to Piaget, play provides children with extensive opportunities to interact with materials in the environment and construct their own knowledge of the world, making play one of the most important elements of cognitive development (Zigler and Bishop-Josef 2009). As Elkind reflects: *'Play is our need to adapt the world to ourselves and create new learning experiences'* (Elkind 2007: 3).

Others claim that playing contributes to children's developing vocabulary, their understanding of different concepts, their ability to solve problems, their self-confidence and motivation, and an awareness of the needs of others (Zigler 2009). Constructive and imaginative play has been identified as most important for cognitive development (HC Netherlands 2004). Play involving arts, craft and design gives children the opportunity to develop the fine motor skills of hand and finger control, required for handwriting (Lindon 2007).

In early childhood it is important to support and encourage self-directed play activities even if these appear meaningless to adults. Allowing a child time and freedom to complete these activities to their own satisfaction supports the child's ability to concentrate (Elkind 2007). Elardo and others (1975 cited in BTHA 2011) found that access to a variety of toys during infancy was associated with higher IQ levels at the age of three, irrelevant of ethnicity, gender or social class. Play in school settings can allow children to connect with their surroundings and give the opportunities for interactive learning (Ginsburg 2007 cited in BTHA 2011).

Children benefit from being able to take risks and challenge themselves (Gill 2007). Some commentators argue that if children are not allowed to take risks they may grow up over-cautious in many everyday situations, or be unable to judge potentially dangerous situations, placing themselves in danger (Gleave 2008). The importance of risk-taking to children's neurological, emotional and social development has also been widely discussed (Gladwin and Collins 2008).

Aggressive behaviour has been linked to a lack of interesting and engaging environments and destructive behaviour is most common in boring spaces without trees, bushes or other natural boundaries. Bland environments such as these, mean that peer groups can feel it is

difficult to have their own space or get away from each other (Bird 2007a; Bird 2007b). Emotions can be expressed and managed through playing. Play fighting, although often discouraged by adults, has been shown as behaviour where children learn about self-control and restraint, preparing children for situations that they may have to deal with in later life (Power 2000; Galyer and Evans 2001 cited in BTHA 2011).

Certain forms of play seem to encourage different kinds of cognitive processes. Fantasy play, for example, has been perceived as almost therapeutic, allowing children to uncover and address painful feelings and conflicts with others. In the late 1960s, Smilansky (1968 cited in Marjanovic-Umek and Lesnik-Musek 2001: 56) argued that fantasy play, in the form of role play, is vital for cognitive processing and developing empathetic emotions. Smilansky contends that fantasy play aids speech and language skills as a child 'acts out' a role, often using particular symbolic objects, which allows children to construct meaningful and perfect speech.

Marjanovic-Umek and Lesnik-Musek (2001) compared children from three age groups in preschool settings to investigate the links between symbolic play and cognitive and language development. Their findings suggest that materials and context were very influential in terms of the level and complexity in which children play. It was found that children play differently in different settings and situations, with some situations encouraging higher levels of symbolic play. The authors argue that preschool teachers should provide age-appropriate play materials, and ensure that rooms are arranged in a way that will encourage symbolic play, cognitive and language skills.

In a Community Practitioner article, health expert June Thompson (2000) explains how playing with toys is pivotal to a child's physical development. For example, between the ages of three and six months a baby will start to reach, grasp and explore objects and handle suitable toys, vital to hand-eye coordination and fine motor control. From the ages of six to twelve months, young children are increasingly mobile, quickly developing 'manual dexterity' (p. 844). During the second year, playing with toys that can be pushed or pulled helps walking and balance. The article highlights the role of playing with toys for learning manipulative skills and allowing movements such as twisting, screwing, turning and opening.

Toys appear to play an important role in children's cognitive development. However, children may not use these toys in the ways that have been intended. Children use their creativity to play with toys in their own ways. Therefore, some authors argue that children should have access to as many kinds of toys as possible, as Singer (1994) states: 'Children play longer when a wide variety of toys is available. Playful children are more physically active, creative, humorous, imaginative, emotionally expressive, curious and communicative' (Singer 1994 cited in BTHA 2011b).

BTHA (2011b) maintains that children who have the freedom and opportunities to play have stronger friendships, are more joyful, secure and cooperative than those who do not. Play in early childhood allows children to give voice to their experiences and to have a safe place to express confusing and painful feelings, and to find ways of overcoming emotional traumas (Hirschland 2009).

Play that involves contact with nature appears to have a positive effect on recovery from stress and attention fatigue and on mood, concentration, self-discipline and physiological stress (HC Netherlands 2004). Some preliminary research has also shown that woodland can provide a sanctuary for both rural and urban children and reduce self-reported stress.

Spending time in the natural environment is important in creating a sense of belonging and identity, which in turn improves mental health (Bird 2007b).

Research cited in the 2008 Conservative Party Childhood Review suggests that the use of drugs prescribed to children under the age of sixteen in order to control the symptom of ADHD has increased by 842 per cent since 1996 (Hansard 2007 cited in Conservative Party 2008). However, there is evidence to suggest that spending time in green spaces can be an effective means of reducing symptoms of ADHD. In fact Panksepp (2008) suggests that poor play opportunities may be responsible for the growth in ADHD. Panksepp maintains that creating exciting play opportunities for children may be the best way to tackle the problem of ADHD, although medication may have been found to be effective, little is known of the long-term implications of these drugs on children's brains.

The complex nature of play makes it central to children's developing resilience as they grow up. Lindon defines resilience as 'an outlook for children and young people characterised by the willingness to confront challenges, with a sense of confidence that it is possible to deal with setbacks. Resilience is built from a foundation of emotional security that key, familiar adults will help' (Lindon 2007: 7). The creativity required and developed in play, the use of imagination and finding one's own solutions to problems, both real and imagined, all help children to develop ways of reacting to a wide range of situations. Lester and Russell (2008) suggest that children must develop these adaptive systems so that they acquire an 'open disposition to the unexpected'.

Children's ability to cope with difficult situations and to recover from, or adapt to, adversity whilst playing, can help them to develop strategies for reacting to real situations (Lester and Russell 2008). Empathy and imaginary play allow children to learn about the feelings of others and imagine themselves in different situations. Boys with imaginary friends have been shown to have lower levels of aggression, feel happier, have more positive attitudes, and experience less fear and anxiety during later play situations and girls are less likely to be angry, fearful and sad in their play (Singer and Singer 1992 cited in Jenkinson 2005: 78).

Sandseter and others (2011) provide compelling evidence that taking risks in play is a natural coping mechanism, which helps to reduce fears and tackle phobias. In this sense, risk-taking in play mirrors many aspects of cognitive behavioural therapy; by thinking less negatively about anxieties it can help to reduce anxious behaviour. Over-protection can cause children to become more anxious and develop behaviours associated with anxiety throughout their lives. The report suggests that risk taking in play can reduce anxiety problems in children.

Section 5: Social benefits of play

Playing with other children affects the ways in which children relate to each other, form groups and feel part of a group or part of their local community. When children play they use their own language, rules and values and play helps them to develop their own identities (Casey 2010). Children who are able to play freely with their peers develop skills for seeing things through another person's point-of-view, for cooperating, helping, sharing, and solving problems (Open University 2011). Traumatized children, who lose their ability for creative play, do not have full access to their problem-solving capabilities, which can make social situations difficult for them (Lovett 2009).

The act of playing can overcome cultural and other boundaries and help children to understand others who they might consider to be different from themselves and for disabled children, who are prone to social isolation, play can be an important way of creating bonds with other children (Dunn and others 2004). Parents meet and talk to other parents when accompanying their children to play spaces, which helps to foster community relations and friendships. The many ways in which children play help the development of different types of relationships with others. Types of play that allow for physical contact, use of the imagination and social negotiation allow children to form 'highly sophisticated attachment systems' at a time in their lives when friendships are becoming important (Lester and Russell 2008: 21). Role play has been shown to help acquire a sense of belonging for many children, improve their social skills and help foster adult-child relationships (Ginsburg 2007 cited in BTHA 2011).

Power (2000 cited in BTHA 2011) argues that parents have an influential role when playing with children. When young children involve their parents in play their behaviour tends to be more complex and symbolic compared to when they play alone or with friends. He states: *'When parents play with infants and young children, the complexity of children's behaviour increases substantially both in the duration of the social interactions and in the developmental level of children's social behaviour'* (Power 2000: 362–375 cited in BTHA 2011).

Elsewhere, Grossman and others (2002 cited in BTHA 2011) provide evidence from Germany that children tend to form stronger attachments to their parents if they play regularly with their fathers. The author concludes that fathers' 'play sensitivity' gives an indication of child-parent attachment. Further evidence suggests that fathers' engagement in rough-and-tumble play encourages competitive attitudes without violent or aggressive behaviour (Paquette and others 2003 cited in BTHA 2011). Parent-child play has also been linked with improved 'conduct problems' (Gardner and others 2003 cited in BTHA 2011) and social competency skills (Lindsey and Mize 2000 cited in BTHA 2011).

Davis and others (2002) examined how intergenerational play led to positive outcomes for both older and younger generations. For children, this kind of play was perceived to have cognitive, physical, social and emotional benefits. According to this research, children who have access to play settings that offer cross-generational interactions, develop physically and psychologically as a result of this exchange. Davis and others argue that traditional toys can be important for intergenerational play and can help to reduce any animosity that exists between older and younger generations. The authors suggest that building intergenerational relationships can encourage children to perceive elderly people in a positive light.

Intergenerational play has also been linked to creativity, and combining this with play settings that are equipped for active and interactive play can contribute to children's development and well-being (Davis and others 2002). Furthermore, Neuman and Roskos (1992 cited in Davis and others 2002) argue that children's ability to read 'environmental print' is advanced by an interesting and diverse play setting, which encourages interaction with adults.

Despite the growing body of evidence indicating the social benefits of adult-child play, everyday pressures have meant that finding time to play is challenging for some families (Gleave 2009). Lester and Russell (2008) argue that, under such strict time schedules when setting time aside for play is not always possible, one solution is to be more playful in the time families to spend together; incorporating this into their routine and lifestyle.

Clearly, play involving adult-child interaction has substantial benefits for children's social skills, as well as having an important role in fostering positive relationships between adults and children. However, opportunities for children to play away from adult gaze are also vital for children. This is discussed in the following section.



Section 6: Play and the community

'In the street, particularly in the nooks and crannies of public space not under the watchful gaze of adults, children may thus begin forming a public identity and establish their own selfhood and independence'(Spilsbury 2005: 81).

The benefits of community play

For many years, research findings have demonstrated the value and importance of community play to children's well-being. This was recognised in the 1960s when Mead (1966 cited in Blakely 1994) pointed out that neighbourhoods provide vital opportunities for children to explore their environments without adult direction and learn life lessons about the 'familiar' and the 'strange'. Mathews (2003, cited in Spilsbury 2005) who investigated public space in relation to 9- to 16-year-old children suggested that public space acts as a 'liminal' or in-between setting, in the rite of passage from childhood to adulthood. In fact, evidence suggests that limiting children's freedom in the local area can restrict their opportunities to create social networks and hinder their ability to build strong trusting relationships (Groves 1997 cited in Spilsbury 2005). Elsewhere, Valentine (2004) argues that public space is vital for young people in order to escape adult supervision and define their identities. Findings presented by Irwin and others (2007) suggest that children with poor play opportunities were less likely to have friends in their community and that this had an impact upon their social well-being and sense of self (Irwin and others 2007).

It is now widely believed that play is important for children to maintain a sense of community. For adults too, children's play can help to build good social networks, as it provides them with opportunities to interact with one another at places children play. Similarly, Worpole and Knox found that public space is highly valued for socialising opportunities and developing community ties. For children specifically, public space allows them to build friendships and learn rules of social life. Public space is also cited as an important play arena, whether on the streets or in more secluded areas (Worpole and Knox 2007).

It is not only in the UK that community play has been shown to be of value to children and communities. Evidence from Australia also illustrates that involvement with the community plays an important role in children's development, and suggests that positive associations with community life can help to prevent 'conduct problems' as children grow up (Edwards and Bromfield 2009). A nationally representative survey consulting 4,983 four and five year olds across 257 neighbourhoods, illustrated 'undesirable' behaviours, such as lying, fighting and temper tantrums, can be associated with children who lack a sense of belonging in their neighbourhood. It is argued that community development initiatives should be employed to increase children's feelings of inclusion, by building on social relationships and establishing trust.

Working in Italy, Prezza and Pacilli suggest that developing relationships with adults in the local neighbourhood is vital for children and young people. The authors state that: 'autonomy and play in public areas during childhood influences more intense neighbourhood relations, a strong sense of community and less fear of crime and, in turn, these later variables consequently reduce feeling of loneliness during adolescence' (Prezza and Pacilli 2007 cited in Lester and Russell 2008: 165).

Community play can be particularly beneficial in natural settings. Free play and exposure to

nature are increasingly recognised as essential to healthy child development (Moore and Cosco 2009). Several studies have found that playing in natural environments has a positive impact on children's social play, their sense of well-being, their concentration and motor ability, and that children have a particular attraction to natural environments (Bird 2007b; Lester and Russell 2008).

A growing body of research indicates a direct connection between daily exposure to natural outdoor environments and individual health, including increased attention, improved fitness and motor functioning and lower sickness rates. Pretty and others (2009) cite a number of researchers who have demonstrated that outdoor play, especially in more natural environments, gives children a sense of freedom, healthier personal development, increased cognitive functioning, emotional resilience, and opportunities for self-discovery.

Children who play outside more, learn to navigate their immediate environments and build their self-confidence (Open University 2011). Children who do not play outside can have fewer social networks, can be less confident and be less involved in their local community (Gleave 2010). When young children play freely in natural environments they are more likely to enjoy nature as they grow up (Pretty and others 2009; HC Netherlands 2004).

Beunderman (2010) found evidence of children acquiring life skills through playing outside in their communities, such as sharing, looking out for one another and asking for help. It is argued that such skills can provide them with a more positive outlook on the neighbourhood through gaining trust, feeling welcome and knowing others in the community. It seems that having a place to go, where children are listened to and respected gives them a positive perception of their local area. Through their engagement in the local environment and with others in the community, children not only had better relations with adults, but had more respect for the public arena allowing them to make a positive contribution to their local neighbourhood.

Decline in community play

Despite evidence documenting the value of neighbourhood play, children's presence in public space seems to have declined dramatically in recent decades. Spilsbury (2005) argues that public space in the USA has come to be recognised as adult space, an argument mirrored in the UK. According to Spilsbury, high profile cases about child abduction or 'out of control' young people have led to 'moral panic', responded to by keeping children away from the public realm. Spilsbury blames the media's sensationalism of rare murder and abduction cases, which distract attention away from realistic threats, such as poverty.

Supporting the findings of previous research (Prezza and Pacilli 2007 cited in Lester and Russell 2008; Hillman, Adams and Whitelegg 1990), the Living Streets study (2009) suggests that street play has decreased dramatically over time. Only 12 per cent of people over 65 never played out as children, whereas almost half of today's children never play out. The 2007 Playday opinion poll (ICM and Playday 2007) also documented a decline in street play showing that, while 71 per cent of adults reportedly played outside every day as children, only 21 per cent of today's children claim to do so. Parents no longer believe that playing outdoors is safe for their children. In fact, according to the 2006 Children's Society research, 43 per cent of adults felt that children should not be allowed out unsupervised under the age of 14, and 22 per cent thought children should not venture out alone until they are 16 years old (cited in Living Streets 2009).

Concerns about children in public space have contributed to the decline of community play in the USA as well as in the UK. A number of studies in the USA have found that parents adopt a variety of strategies to protect their children from the perceived danger of violence in the neighbourhood. This includes enforcing curfews, accompanying children around the neighbourhood or restricting their free play and mobility in the local area. A study from the USA shows that of 482 parents from disadvantaged communities, nearly half reported that they kept their children in as much as possible (Fursterberg and others 1999 cited in Spilsbury 2005). Similarly, Outley and Floyd (2002 cited in Spilsbury 2005) note that 10 and 11 year olds living in a socially isolated area in Houston, USA have restrictions imposed on them and found that this constrained children's participation and exploration of the local play and leisure facilities.

In a study in Canada, Irwin and others (2007) found that the majority of parents characterised their neighbourhood as unsafe and felt that their local neighbours could not be trusted to look after their children. This lack of trust drove children away from the community spaces because adults chose indoor activities for their children rather than outdoor play. These views were mirrored in the children's perspectives, many of them expressing their anxiety about their safety in the local neighbourhood, particularly in relation to 'stranger danger', and this prevented them from playing outside.

Valentine (2004) conducted a two-year study examining parental views of children's use of public space. Her research showed that child abduction was the major concern for most parents. Nearly two-thirds of parents (63 per cent) believed that abductions were more likely to be carried out by a stranger. In reality, the number of child abduction cases remains low and children are far more likely to be harmed by a trusted adult in the private realm, than by a stranger in their local community (Gill 2007; Valentine 2004).

Coupled with the concern for children's welfare in public space, is the idea that children themselves can be the cause of concern in the community. Play England's findings from the Playday 2007 research found that 51 per cent of children had been told, by adults, to stop playing in the streets or area near their home. Crawford's findings (2009) show that despite perceptions of children as a threat when they congregate in groups, to the children themselves this gives them a sense of security. Eighty-two per cent of children stated that gathering in groups made them feel safer. Crawford is critical of the lack of distinction in the minds of adults between young people socialising in public space and anti-social behaviour.

Negative attitudes towards children have led to the banning of activities that appeal to younger people, such as ball games and skateboarding in community space (Worpole and Knox 2007). Worpole and Knox argue that children must have opportunities for outdoor play that stretch beyond fixed playground equipment in order for them to participate fully in the community and develop a sense of belonging.

Living Streets (2009) provide evidence that the decline in use of the street and public space has led to poor neighbourhood relations. Their 2009 study found that 72 per cent of respondents aged 65 and over stated that, when they had a young family, they knew at least five of their neighbours well enough to engage in conversation. Of today's parents, more than a quarter knew fewer than two of their neighbours.

Addressing children's absence in their communities

The Demos publication, *Seen and Heard*, argues that children must be valued in public space and that they must be allowed to have safe, informal areas where they can hang out

without adult supervision. Demos promote 'the importance of the everyday public realm as a legitimate site for children and young people's informal recreation, and a dimension of wellbeing' (Beunderman and others 2007: 113). This should stretch across all aspects of public space, beyond playgrounds and include all community members, regardless of age. They advocate traffic calming measures to help open up public space to children.

Elsewhere, Elsley (2004) contends that three issues must be addressed in order to increase the contribution of young people in public space. Firstly, methods must be used to ensure children's active participation in everyday practice (including participatory activities by seeking and providing information to engage in formal structures or organisations); this should be monitored by national agencies as an indication of good community participation. Secondly, more consideration should be put into planning and development policy aimed at improving the public realm for young people, by noting how children wish to use public space. This should take into consideration children's age-related needs and the diversity of children's experiences. Finally, policy makers should ensure that public policy is influenced by children's perceptions, so it accurately represents children's views, rather than making assumptions about these.

Beunderman (2010) illustrates the importance of staffed play provision as offering safe opportunities for free play. While public space can offer a hostile environment for children, staffed provision allows children to 'roam free' and socialise with peers without the overriding concerns of unsupervised play. Beunderman is careful not to belittle the importance of unsupervised play within the community, but suggests that staffed provision can provide a unique and important contribution to local play opportunities. It is important not to confuse staffed play provision with structured activities, as only within the former do children have the opportunity to direct their own play and create their own boundaries. Staffed play provision can help nurture adult-child relationships and establish a sense of trust that is often absent in the current social context.

In Beunderman's study parents, like children and playworkers, were able to articulate their experiences of how play provision had benefited them and transformed the local community. Through this, parents had created social bonds with their neighbours and established support networks. This was particularly valuable for parents living in deprived areas where there may be more feelings of isolation. In fact, some parents noted that good-quality play provision was an important factor in deciding which community they chose to live in. Parents also claimed that the presence of staffed play provision had contributed to a greater sense of community by uniting different social groups and bringing neighbours together, and it also offered a vital setting for community involvement.

Play provision needs to offer opportunities for cooperative play, modelling behaviour, conflict resolution and turn-taking as well as more obvious motor skills. Playground features should allow children to develop their own ideas and activities at their own pace (Gummer 2010). Modifying the play features in a playground has been shown to increase physically active play (Hughes 2007). To be active, children need sufficient space and age-appropriate equipment, and features to allow them to move around fast and slowly, change direction and manipulate their environment (Thigpen 2007).

Section 7: Time to play

Undervaluing time to play

The previous sections have provided compelling evidence that play is a vital part of children's development and is fundamental for every child (Ginsburg 2006 cited in BTHA 2011). It was widely acknowledged that, not only is play a fundamental children's right but it is also central to childhood, offering children choice, autonomy and control, and frequent enjoyable experiences they want to repeat and develop. Playing has also been linked to overcoming fears in everyday situations, decision making, discovering interests, brain development and enhancing academic learning (Lester and Russell 2008; Jenkinson 2001). We have also examined how playing in local communities and in natural environments is particularly beneficial, but how unwelcoming attitudes towards children, coupled with fears of the public realm have restricted community play. As Shier puts it: 'Play is not a public service, much less a commodity. Play is a natural and universal human impulse ... adults never have to make children play, and only rarely do we have to help children play. Adults have to let children play' (Shier 2010: 19).

Another issue that appears to restrict children's opportunities for playing is the replacement of free, self-directed play, with structured or educational activities (Hofferth and Sandberg 2000). American writer David Elkind claims the role of free play in physical and psychological well-being has been 'overlooked' in many areas. He states: 'School administrators and teachers – often backed by goal-orientated politicians and parents – broadcast the not-so-suitable message that these days play seems superfluous, that at bottom play is for slackers, that if kids must play, they should at least learn something while they are doing it' (Elkind 2008: 1).

He claims that because of this, play has become an 'unaffordable luxury' in modern society, pushed aside to make way for organised activities that are seen as more educational, or television and gaming technology that has taken over from more traditional forms of play. He points to research from the USA in 2007 suggesting that young children of preschool age are watching around two hours of television a day (Elkind 2008).

Although evidence suggests that extracurricular activities can enhance academic achievement, play experts have expressed concern that children's free time has become associated only with learning, rather than enjoyment of play itself. This is by no means a new concept, as Elkind stated in the 1980s: '*Our traditional conception of play was that of free, spontaneous, and self-initiated activity that reflected the abundant energy of healthy child development. Today, however, that conception of play has been relegated to the early childhood years. For school aged children, play is now identified with learning and with the preparation for adult life*' (Elkind, unpublished cited in Lego Learning Institute 2002: 6).

Oksnes (2008) reflects on her own research in Norway, analysing children's perceptions of play in relation to a 'spare time programme', which provides provision for children before and after school. She conducted focus groups with children aged seven and eight years old and observed children's play in the programme over a three-week period. From the data collected, it became clear that the children's definition of play and leisure time was relatively ambiguous, and there was ultimately no agreement over what was meant by it. There was a general consensus that leisure time is associated with playing, freedom and the ability to do as they

wish under their own direction, rather than an activity that is compulsory or under adult control. For this reason (and despite children's high regard for the programme), the children viewed neither school time nor the spare time programme as 'leisure time'. Rather, the programme provided a safe alternative for children to go to while their parents worked full-time. This evidence suggests that although children can enjoy organised activities, children do not necessarily view it as 'leisure time' or 'free time'. This evidence suggests that making time for free, unstructured play is important, even if children have access to more formal recreational activities.

More recently, Oksnes draws on theoretical work to discuss the role of play in children's lives. Play and leisure time have been described as 'instrumentalised' (Oksnes 2008) in the sense that it is simply viewed as a means of learning, rather than something to be enjoyed. This, it is argued, caused the development of 'good' or 'correct' forms of play that contribute towards children's academia or prepares them with life skills, rather than merely playing for enjoyment's sake. Mayall uses the term the 'scholarisation of childhood' to describe the idea that academic learning has crossed into all aspects of children's lives (Mayall 2000).

Elsewhere, Thomas and Hocking (2003 cited in Lester and Russell 2008) argue that the replacement of self-directed play with organised leisure activities undermines the very nature of 'play' because it reduces the control children exercise over their free time. This is backed by research from Italy that shows that the essence of 'play' is the ability to 'lose' sense of time through one's own experience of the world as a place of 'mystery, risk and adventure' (Tonucci 2005 cited in Lester and Russell 2008). Structured activity, Tonucci argues, reduces the element of independence to make way for more adult control.

When children do have free time away from school and unstructured activities, other commitments, such as homework, mean that children can rarely use this time for free play. A recent survey (Gill 2011) found that 55 per cent of children felt that their time to play was restricted by homework. The same study found that 36 per cent of children played with their friends, outside of school, once every two weeks or less. This is a sharp contrast to their parents, of which 80 per cent reported that they saw their friends at least a few times a week when they were children. When asked what they played, children most commonly referred to computer games consoles, despite also stating that they would prefer to spend more time engaging in more traditional active play, such as riding bikes or skateboards.

Zeihner believes that while places specifically designed for play can be attractive to children and important for their social life, they can also limit children to certain activities, often doing the same things each day. For this reason 'the children see no necessity to overcome these restrictions by exploring new activities or going elsewhere to pursue them' (Zeihner 2003). However, Zeihner contends that children do exercise control over their free time through choosing whether to visit the play areas.

Research carried out by Armitage (2004 cited in Lester and Russell 2008), found that children value time spent away from adults and actively seek public areas that can offer this. However, a number of commentators believe that children are spending less of their time in public spaces away from adults (Mayall 2000). Armitage (2004 cited in Lester and Russell 2008) has argued that more resources should be allocated to children's free play, but that they are instead channelled towards more supervised forms of activities.

Over-scheduling children's time could have implications for their health. Research from the late 1990s indicates that hectic schedules disrupt sleeping patterns and that pressure of

homework and household chores have led to increased stress levels in adolescents (Melman and others 2007). Rosenfeld used the term 'hyper-parenting' to describe an apparent phenomenon whereby parents aim for perfection from their children, encouraging extracurricular activities at the expense of the imagination and creativity that is brought about by free-play (Rosenfeld and Wise 2001).

Time to play in schools

In the 1990s, research carried out by Blatchford found that while school days were getting longer, break times, including lunchtime, had been significantly shortened. His research shows that children valued break times during school because it offers a level of freedom from the rules and regulations of the rest of the school day. Confirming previous research, he argued that playtime is often regarded as problematic, and had been cut down to make more time for the National Curriculum. This means the positive experience that most of the children had during breaks was often being overlooked. He suggested that changing the arrangements of break times, including altering the length of the breaks, should take children's high regard for this time into account.

The reduction in school playtimes may be a result of negative attitudes towards giving children time to play in school. Pellegrini (2008) argues that playtime is perceived as a waste of time that could be spent on academic forms of learning (Pellegrini and Holmes in Singer and others 2006). However, according to Pellegrini and Holmes, eliminating or reducing break times is counterproductive as this may be the only opportunity children have to let off steam and socialise with their peers. Therefore, break times at school are both important and educational. In fact Pellegrini has argued that 'playful' breaks from learning, that is, unstructured breaks, actually improve, rather than hinder, cognitive performance (Pellegrini 2008).

Reducing playtime at school, some writers have argued, can also have implications for children's physical health. According to research carried out in north-west England, children accomplish around a third of their recommended daily amount of physical activity during school break times. The researchers conclude: *'These data indicate that recess provided a salient opportunity for children to take part in physical activity of different intensities and provide them with a context to achieve minimum daily physical activity guidelines'* (Ridgers and others 2005: 105).

Similarly, Mackett (2004 cited in Blatchford and Baines 2006) argues that school break times are the primary opportunity for children to exercise and so physical activity will decrease if school break times are reduced. He argues that the replacement of unstructured play with structured activities outside of school hours will not balance this, as children are frequently driven to and from these activities meaning that less physical activity is carried out. Furthermore, break times seem to offer children a unique opportunity for peer interaction, Blatchford and others (2002) found that playground games act as a 'scaffold' for building and supporting social relationships. Elsewhere, Blatchford and Baines (2010) highlight the importance of break time games for forming group identities.

The empirical evidence presented here illustrating the positive implications of break times, not only for academic achievement but also in terms of social skills and physical development, provides a strong argument that break times should be an important aspect of the school day. Pellegrini argues that it is in children's interests to extend the length of school break times. Physical education classes, he argues, would not provide the same benefits, as the children are under instruction without the kind of peer interaction and self-direction that can only be achieved through play (Pellegrini 2008).

Conclusion

The evidence in this review underlines what many of us know both instinctively and through our own life experiences that a world without play would be a much poorer place for everyone. Play is not only important for children's physical, psychological and social well-being and development but also for the wider community and society. The review highlights the importance of children having access to play spaces in their local communities, and the importance of adults having positive attitudes towards children playing freely outside, to a wider sense of well-being. The report also illustrates the competing demands on children's time and how time to play freely is limited. This has serious consequences for children's health and well-being.

Proving a direct causal relationship between play, health, cognition and well-being is not easy as there are many overlapping variables including genetic or environmental conditions. However, there is a strong and growing body of evidence illustrating a link between these factors, and play evidently has a beneficial role in children's lives. The benefits of play are both immediate and long term, and contribute to all aspects of children's health and development including their physical and mental well-being, their educational development, brain development, and opportunities for language development, spatial and mathematical learning, creativity, and identity formation (Coalter and Taylor 2001). It provides a place to 'experiment with the acquisition of new skills, the complexity of relationships, taking risks, and thinking about complicated ideas' (Hubbuck 2009: 128). Giving children the time and space for play must be taken seriously. While the importance of education in childhood is widely recognised, what is less acknowledged is that free play may be the most natural and effective form of learning and is also vital for children's happiness.

If children's health and well-being is to be safeguarded through the provision of high quality spaces and facilities for play, local authorities, voluntary organisations and their partners must be careful not to lose or dispose of local outdoor facilities, and there should be greater emphasis in planning and housing redevelopment on the preservation of good-quality public space, where children feel safe and where they can congregate and play without being considered a nuisance by neighbours and other users. If social barriers, such as fear, embarrassment or discriminatory attitudes, as well as physical barriers, are addressed, then accessible play spaces can be created for both disabled and non-disabled children (Dunn 2004).

Play is a fundamental human right for all children, regardless of age, gender, culture, social class or disability. This must be reflected in a range of play environments that offer children, who are otherwise disadvantaged, with experiences that help improve their quality of life. Free staffed provision offers children a range of play experiences and relationships, and gives parents the confidence to know that their children are safe and enjoying themselves. The Marmot Review (2011) aims to minimise health inequalities by reducing the link between low socio-economic groups and poor health. The report argues that intervention must start in early years and continue throughout childhood. This involves high investment into early-years settings and improving links between schools, families and communities, such as extended school activities. Policy and practice should adopt a holistic approach to children's well-being, teaching them broader life skills and supporting them across all aspects of their lives.

However, the literature suggests that it is not enough to merely provide excellent play opportunities for children. Adults must adopt a culture of tolerance towards children playing, and children must be given the time they need to engage in free play. By understanding play only as a tool for achieving other outcomes, such as learning or fitness, we are in danger of losing sight of the essence of play itself, with the result that 'play' becomes transformed into structured activities with clear goals and aims rather than something that is self-directed, enjoyable and instinctive. It is only by following their own rules, in their own time, can children fully reap the benefits of playing. As Lester and Russell conclude:

'We must exercise caution and not make it too much an object of adult gaze. Children's play belongs to children; adults should tread lightly when considering their responsibilities in this regard, being careful not to colonise or destroy children's own places for play through insensitive planning or the pursuit of other adult agendas, or through creating places and programmes that segregate children and their play.'

Adults should be aware of the importance of play and take action to promote and protect the conditions that support it. The guiding principle is that any intervention to promote play acknowledges its characteristics and allows sufficient flexibility, unpredictability and security for children to play freely.'

(Lester and Russell 2010: 46)

A world that understands and supports children's play is a world that is likely to be healthier, more vital, more alive and happier than a world without play.

References

- Armitage, M (2004) 'Hide and Seek: Where do children spend their time after school?' A paper for the Child in the City Conference, London, in Lester, S. and Russell, W. (2008) *Play for a Change: Play, Policy and Practice: A review of contemporary perspectives*. London: Play England.
- Axford, N (2008) *Exploring Concepts of Child Well-being: Implications for children's services*. Bristol: Policy Press.
- Beunderman, J (2010) *People Make Play: The impact of staffed play provision on children, families and communities*. London: Play England.
- Beunderman, J, Hannon, C and Bradwell, P (2007) *Seen and Heard: Reclaiming the public realm with children and young people*. London: Play England.
- Bird, W (2007a) 'Nature's way', *Leisure Management*, 5, 40–42.
- Bird, W (2007b) *Natural Thinking: Investigating the links between the Natural Environment, Biodiversity and Mental Health*, Sandy, RSPB.
- Blakely, KS (1994) 'Parents' Conceptions of Social Danger to Children in the Urban Environment', *Children's Environment*, 1, 1, 16–25.
- Blatchford, P and Baines, E. (2010) 'Peer relations in school', in Littleton, K., Wood, C. and Kleine Staarman, J (eds), *Elsevier Handbook of Educational Psychology: New Perspectives on Learning and Teaching*. Bingley, UK: Emerald.
- Blatchford, P and Baines, E (2006) *A Follow Up National Survey of Breaktimes in Primary and Secondary Schools: Reported to Nuffield Foundation*. Available online from: <http://www.breaktime.org.uk/NuffieldBreakTimeReport-WEBVersion.pdf> (Accessed Nov. 2011).
- Blatchford, P, Pellegrini, T, Baines, E and Kentaro, K (2002) *Playground Games: their social context in elementary/junior school*. Final report to the Spencer Foundation 2002. Available online at: <http://www.breaktime.org.uk/SpencerFinalReport02.pdf> (Accessed Nov. 2011).
- Brady, L M, Gibb, J, Henshall, A and Lewis, J (2008) *Play and Exercise in Early Years: Physically active play in early childhood provision*. London: NCB. Available online at: <http://www.culture.gov.uk/images/research/Playresearch2008.pdf> (Accessed Nov. 2011).
- British Heart Foundation (2009) *Couch Kids: The nation's future*. London: BHF.
- British Toy and Hobby Association (2011a) *Active Play and Healthy Development*. Available online at: <http://www.btha.co.uk/consumers/template.php?id=169> (Accessed Nov. 2011).
- British Toy and Hobby Association (2011b) *Play and Physical Health*. Available online at: <http://www.btha.co.uk/consumers/playandphysicalhealth.php> (Accessed Nov. 2011).

- Brockman, R, Jago, R and Fox, KR (2011a) 'Children's active play: self-reported motivators, barriers and facilitators', *BMC Public Health*, 11, 7. Available online at: <http://www.biomedcentral.com/1471-2458/11/461> (Accessed November 2011).
- Brockman, R, Fox, KR and Russell, J (2011b) 'What is the meaning and nature of active play for today's children in the UK?', *International Journal of Behavioral Nutrition and Physical Activity*, 8, 15, 1–7. Available online at: <http://www.ijbnpa.org/content/pdf/1479-5868-8-15.pdf> (Accessed Nov. 2011).
- Burrell, A and Riley, J (eds) (2005) *Promoting Children's Well-Being in the Primary Years: The Right from the Start Handbook*. Stafford: Network Educational Press.
- Casey, T (2010) *Inclusive Play: Practical strategies for children from birth to eight*. London: Sage.
- Chambers, H, Howell, S, Madge, N and Olle, H (2002) *Healthy Care: Building an evidence base for promoting the health and well-being of looked after children and young people*. London: NCB.
- Children's Society (2006) *Good Childhood: A question of our times?* London: The Children's Society, in Living Streets (2009) *No Ball Games Here (or Shopping or Talking to their Neighbours): How UK streets have become no-go areas for our communities*. London: Living Streets.
- Coalter, F and Taylor, J (2001) *Realising the Potential of Cultural Services: The case for play*. London: Local Government Association.
- Cole-Hamilton, I (2011) *NCB Highlight: Play and Well-being*. London: NCB. Available at Children's Play Information Services.
- Collins, J and Foley, P (eds) (2008) *Promoting Children's Wellbeing: Policy and practice*. Bristol: Policy Press.
- Conservative Party (2008) *More Ball Games: The childhood review*. London: Conservative Party.
- Counterpoint Research (2008) *Childhood Wellbeing: Qualitative research study*. London: Department for Children, Schools and Families.
- Crawford, A (2009) 'Criminalizing Sociability through Anti-Social Behaviour Legislation: Dispersal powers, young people and the police', *Youth Justice: An international journal*, 9, 1, 5–26.
- Davis, L, Larkin, E and Graves, S (2002) 'Intergenerational learning through play', *International Journal of Early Childhood*, 34, 2, 42–49.
- Department for Health (2011) Start Active, Stay Active. Available online at: http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH_128209 (Accessed Nov. 2011).
- Dietz, W (2001) 'The obesity epidemic in young children', *British Medical Journal*, 322, 7282, 313–314.

- Dunn, K, Moore, M and Murray, P (2004) *Developing Accessible Play Space: Final research report*. London: Department for Communities and Local Government.
- Egerton, M and Gershuny, J (2004) 'Utility of time use data: Report to the Department for Education and Skills', University of Essex, quoted in DCSF (2007) *Children and young people today: evidence to support the development of the Children's Plan*, in Conservative Party (2008) *More Ball Games: The childhood review*. London: Conservative Party.
- Edwards, B and Bromfield, L M (2009) 'Neighbourhood Influences on Young Children's Conduct Problems and Pro-Social Behaviour: Evidence from an Australian national sample', *Children and Youth Service Review*, 31, 317–324.
- Elardo, R, Bradley, R and Caldwell, BM (1975) 'The relation of infants' home environments to mental test performance from 6 to 36 months: A longitudinal analysis', *Child Development*, 46, 71–76.
- Elder, J L and Pederson, D R (1978) 'Preschool children's use of objects in symbolic play', *Child Development*, 49, 500–504.
- Elkind, D (2007) *The Power of Play: How spontaneous, imaginative activities lead to happier, healthier children*. Cambridge, MA: Da Capo Press.
- Elkind, D (2008) 'The power of play: Learning what comes naturally', *American Journal of Play*, 1, 1, Summer, 1–6.
- Elkind, unpublished, in Lego Learning Institute (2002) *Time for Playful Learning?: A cross-cultural study of parental values and attitudes towards children's time for play*. Billund: The Institute.
- Elsley, S (2004) 'Children's Experience of Public Space', *Children and Society*, 18, 2, 155–164.
- Fairclough, SJ, Butchers, Z H and Stratton, G (2008) 'Primary school children's health enhancing physical activity patterns: The school as a significant environment?', *Education* 3–13, 36, 4, 371–381.
- Foley, P (2008) 'Introduction', in Collins, J and Foley, P (eds) *Promoting Children's Wellbeing: Policy and practice*. Bristol: Policy Press.
- Fursterberg, FF, Cook, TD, Eccles, J, Elder, GH and Sameroff, A (1999) *Managing to Make It*. Chicago, IL: University of Chicago Press, in Spilsbury, J C (2005) 'We Don't Really Get to Go Out in the Front Yard': Children's home range and neighbourhood violence', *Children's Geographies*, 3, 1, 79–99.
- Galyer, KT and Evans, IM (2001) 'Pretend play and the development of emotion regulation in preschool children', *Early Child Development and Care*, 166, 93–108, in British Toy and Hobby Association (2011) *Active Play and Healthy Development*. Available online at: <http://www.btha.co.uk/consumers/template.php?id=169> [Accessed Nov. 2011].
- Gardner, F and Ward, S (2000) 'Parent child interaction and children's well-being: Reducing conduct problems and promoting conscience development', in Buchanan, A and Hudson, B (eds) *Promoting Children's Emotional Well-being*. Oxford: Oxford University Press.

Gardner, F, Ward, S, Burton, J and Wilson, C (2003) 'The role of mother-child joint play in the early development of children's conduct problems: A longitudinal observational study', *Social Development*, 12, 361–378 in BTHA (2011) *Active Play and Healthy Development*. Available online at: <http://www.btha.co.uk/consumers/template.php?id=169> (Accessed Nov. 2011).

Gill, T (2011) *Free Range Kids: Why children need simple pleasures and everyday freedom, and what we can do about it*. Cheltenham: Dairylea. Available online at: <http://www.dairyleasimplefunreport.co.uk/pdf/Dairylea%20Simple%20Fun%20Report%20-%20FINAL.pdf> (Accessed Nov. 2011).

Gill, T (2007) *No Fear: Growing up in a risk society*. London: Calouste Gulbenkian Foundation.

Ginsburg, K (2006) The Importance of Play in Promoting Healthy Child Development and Maintaining Strong Parent–Child Bonds. USA: American Academy of Paediatrics, in BTHA (2011) *Active Play and Healthy Development*. Available online at: <http://www.btha.co.uk/consumers/template.php?id=169> (Accessed Nov. 2011).

Ginsburg, K (2007) 'The importance of play in promoting healthy child development and maintaining strong parent-child bonds', *Paediatrics*, 119, 182–191, in BTHA (2011) *Active Play and Healthy Development*. Available online at: <http://www.btha.co.uk/consumers/template.php?id=169> (Accessed Nov. 2011).

Gladwin, M and Collins, J (2008) 'Anxieties and risks', in Collins, J. and Foley, P. (eds) (2008) *Promoting children's wellbeing: policy and practice*. Bristol: Policy Press.

Gleave, J (2008) *Risk and Play: A literature review*. London: Play England. Available online at: <http://www.playday.org.uk/PDF/Risk-and-play-a-literature-review.pdf> (Accessed Nov. 2011).

Gleave, J (2009) *Children's Time to Play: A literature review*. London: Play England. Available online at: <http://www.playday.org.uk/pdf/Childrens-time-to-play-a-literature-review.pdf> (Accessed Nov. 2011).

Gleave, J (2010) *Community Play: A literature review*. London: Play England. Available online at: <http://www.playday.org.uk/PDF/Community-play-a-literature-review.pdf> (Accessed Nov. 2011).

Graham, G, Holt-Hale, S A and Parker, M (2005) *Children moving: a reflective approach to teaching physical education* (7th edn). New York: McGraw-Hill, in Low Deiner, P. and Qiu, W. (2007) 'Embedding physical activity and nutrition in early care and education programmes', *Zero to Three*, 28, 13–18.

Grossmann, K Grossmann, KE, Fremmer-Bombik, E, Kindler, H, Scheuerer-Englisch, H and Zimmermann P (2002) 'The uniqueness of the child-father attachment relationship: Fathers' sensitive and challenging play as a pivotal variable in a 16-year longitudinal study', *Social Development*, 11, 301–337, in BTHA (2011) *Active Play and Healthy Development*. Available online at: <http://www.btha.co.uk/consumers/template.php?id=169> (Accessed Nov. 2011).

Groves, BM (1997) 'Growing up in a violent world: The impact of family and community violence on young children and their families', *Topics in Early Childhood Special Education*, 17, 1, 74–102, in Spilsbury, J C (2005) 'We Don't Really Get to Go Out in the Front Yard': Children's home range and neighbourhood violence', *Children's Geographies*, 3, 1, 79–99.

- Gummer, A (2010) 'The role of modern playgrounds in child development', *iP-D!P*, 15, 4–26.
- Hansard, 19th July 2007, c.537W–538W, in Conservative Party (2008) *More Ball Games: The childhood review*. London: Conservative Party.
- Health Council of the Netherlands (2004) *Nature and Health: The influence of nature on social, psychological and physical well-being: Part 1 of a two-part study: Review of the current level of knowledge*. Available online from: <http://www.forhealth.fi/pmwiki/docs/dutch-health-council-review.pdf> (Accessed Dec. 2010).
- Hemmings, P (2007) 'Renegotiating the primary school: Children's emotional geographies of sport, exercise and active play', *Children's Geographies*, 5, 353–371.
- Hicks, S, Newton, J, Haynes, J and Evans, J (2011) *Measuring Children's and Young People's Well-being*. <http://www.ons.gov.uk/ons/guide-method/user-guidance/well-being/wellbeing-knowledge-bank/understanding-wellbeing/understanding-well-being.html> (Accessed Nov. 2011).
- Hillman, M, Adams, J, Whitelegg, J (1990) *One False Move: A study of children's independent mobility*. Policy Studies Institute: London
- Hirschland, D (2009) 'Addressing social, emotional, and behavioural challenges through play', *Zero to Three*, 30, 1, 12–17.
- Hofferth, S L and Sandberg, J F (2000) *Changes in American Children's Time: 1981–1997*. Available online from: <http://ceel.psc.isr.umich.edu/pubs/papers/ceel013-00.pdf> (Accessed Mar. 2009).
- Hope, G, Austin, R, Dismore, H, Hammond, S and Whyte, T (2007) 'Wild woods or urban jungle: playing it safe or freedom to roam', *Education 3–13*, 35, 4, 321–332.
- Hubbuck, C (2009) *Play for Sick Children: Play specialists in hospitals and beyond*. London: Jessica Kingsley.
- Hughes, B (2007) 'Does adventure playground modification affect the intensity of the play that takes place there?', *Playrights Magazine*, 2.
- ICM and Playday Opinion Poll (2007) *Our Streets Too!* London: Play England. Available online: www.playday.org.uk/playday_campaigns/2007_our_streets_too/2007_research.aspx (Accessed Nov. 2011).
- Irwin, LG, Johnson, JL, Henderson, A, Dahinten, VS and Hertzman, C (2007) 'Examining How Context Shapes Young Children's Perceptions of Health', *Child: Care, health and development*, 33, 4, 353–359.
- Jebb, S, Steer, T and Holmes, C (2007) *The 'Healthy Living' Social Marketing Initiative: A review of the evidence*. London: COI for the Department of Health.
- Jenkinson, S (2005) 'Teaching the heart: the emotional value of play' in Burrell, A. and Riley, J. (eds) *Promoting Children's Well-Being in the Primary Years: The Right from the Start Handbook*. Stafford: Network Educational Press.

- Jenkinson, S (2001) *The Genius of Play: Celebrating the spirit of childhood*. UK: The Bath Press.
- Lego Learning Institute (2002) *Time for Playful Learning?: A cross-cultural study of parental values and attitudes towards children's time for play*. Billund: The Institute.
- Lester, S and Russell, W (2008) *Play for a Change: Play, Policy and Practice: A review of contemporary perspectives*. London: Play England.
- Lester, S and Russell, W (2010) *Children's right to play: An examination of the importance of play in the lives of children worldwide. Working Paper No. 57*, The Hague, The Netherland: Bernard van Leer Foundation.
- Lindon, J (2007) *Understanding Children and Young People: Development from 5–18 years*. London: Hodder Arnold.
- Lindsey, E and Mize, J (2000) Parent-child physical and pretence play: Links to children's social competence. *Merrill-Palmer Quarterly*, 46, 565–591, in BTHA (2011) *Active Play and Healthy Development*. Available online at: <http://www.btha.co.uk/consumers/template.php?id=169> (Accessed Nov. 2011).
- Living Streets (2009) *No Ball Games Here (or Shopping or Talking to their Neighbours): How UK streets have become no-go areas for our communities*. London: Living Streets.
- Lovett, J (2009) 'A behavioral paediatrician's perspective on helping children recover from traumatic medical experiences', in Ebb, N (ed.) *Helping children and adolescents with chronic and serious medical conditions: a strengths based approach*. Chichester: Wiley.
- Low Deiner, P and Qiu, W (2007) 'Embedding physical activity and nutrition in early care and education programmes', *Zero to Three*, 28, 13–18.
- Mackett, R (2004) *Making Children's Lives More Active*. Centre for Transport Studies: Memorandum, submitted to Education and Skills select committee. Available online at: <http://www.publications.parliament.uk/pa/cm200304/cmselect/cmeduski/509/509we19.htm>, in Blatchford, P and Baines, E (2006) *A Follow Up National Survey of Breaktimes in Primary and Secondary Schools: Reported to Nuffield Foundation*. Available online at: <http://www.breaktime.org.uk/NuffieldBreakTimeReport-WEBVersion.pdf> (Accessed Nov. 2011).
- Mackett, R, Brown, B, Gong, Y, Kitazawa, K and Paskins, J (2007) 'Children's independent movement in the local environment', *Built Environment*, 33, 4, 454–468.
- Madsen, K A., Hicks, K and Thompson, H (2011) 'Physical activity and positive youth development: Impact of a school-based program', *Journal of School Health*, 81, 8, 462–470.
- Marjanovic-Umek, L and Lesnik-Musek, P (2001) 'Symbolic Play: Opportunities for cognitive and language development in preschool settings', *Early Years*, 21, 1, 55–64.
- Marjanovic-Umek, L and Lesnik-Musek, P (2001) 'Symbolic Play: Opportunities for cognitive and language development in preschool settings', *Early Years*, 21, 1, 55–64.
- Marmot, M, Allen, J, Goldblatt, P, Boyce, T, McNeish, D, Grady, M and Geddes, I (2011) *Fair Society, Healthy Lives: The Marmot Review*. Available online at: <http://www.marmotreview.org/AssetLibrary/pdfs/Reports/FairSocietyHealthyLives.pdf> (Accessed Nov. 2011).

- Matthews, M.H. (2003) The street as a luminal space, in: Christensen, P., and O'Brien, M (eds) *Children in the City*. London: RoutledgeFalmer, 101-117, in Spilsbury, J C (2005) 'We Don't Really Get to Go Out in the Front Yard': Children's home range and neighbourhood violence', *Children's Geographies*, 3, 1, 79–99.
- Mayall, B (2000) 'The sociology of childhood in relation to children's rights', *The International Journal of Children's Rights*, 8, 3, 243–259.
- Mead, M (1966) 'Neighbourhood and human needs', *Ekistics*, 21, 124–126, in Blakely, K S (1994) 'Parents' Conceptions of Social Danger to Children in the Urban Environment', *Children's Environment*, 1, 1, 16–25.
- Melman, S, Little, S and Akin-Little, K (2007) 'Adolescent Overscheduling: The relationship between levels of participation in scheduled activities and self-reported clinical symptomology', *The High School Journal*, Feb./Mar. 2007, 18–30.
- Milano, K (2007) 'Prevention: The first line of defence against childhood obesity', *Zero to Three*, 28, 1, 6–11.
- Moore, R and Cosco, N (2009) 'The re-emerging importance of outdoor play in nature', *Playrights Magazine*, 1, 4–6.
- Nairn, A and IPSOS MORI (2011) *Child well-being in UK, Sweden and Spain: The role of inequality and materialism*. Available online at: http://www.unicef.org.uk/Documents/Publications/UNICEFIpsosMori_childwellbeing_reportsummary.pdf (Accessed Nov. 2011).
- Neuman, S and Roskos, K (1992) 'Literacy Objects as Cultural Tools: Effects on Children's Literacy Behaviors in Play', *Reading Research Quarterly*, 27, 3, 202–225, in Davis, L, Larkin, E and Graves, S (2002) 'Intergenerational learning through play', *International Journal of Early Childhood*, 34, 2, 42–49.
- NICE (2008) *Physical Activity and the Environment*. London: National Institute for Health and Clinical Excellence. Available online at: <http://guidance.nice.org.uk/PH8> (Accessed Nov. 2011).
- NICE (2009) *Promoting Physical Activity for Children and Young People*. London: National Institute for Health and Clinical Excellence. Available online at: <http://www.nice.org.uk/PH17> (Accessed Nov. 2011).
- NICE (2010) *Preventing Unintentional Injuries Among Under 15s: Outdoor play and leisure consultation draft 2010*. London: NICE.
- Oksnes, M (2008) 'The carnival goes on and on! Children's perceptions of their leisure time and play in SFO', *Leisure Studies*, 27, 2, 149–164.
- Open Space (2006) *The Role of Wild Adventure Space in Young People's Lives*. Edinburgh: Open Space.
- Open University (2011) *Play, learning and the brain*. Available online at: <http://openlearn.open.ac.uk/mod/oucontent/view.php?id=397465&printable=1> (Accessed Nov. 2011).

Outley, C W and Floyd, M F (2002) 'The home they live in: Inner-city children's views on the influence of parenting strategies on their leisure behaviour', *Leisure Science*, 24, 2, 161–179, in Spilsbury, J C (2005) 'We Don't Really Get to Go Out in the Front Yard': Children's home range and neighbourhood violence', *Children's Geographies*, 3, 1: 79–99.

Panksepp, J (2008) 'Play, ADHD, and the construction of the social brain: should the first class each day be recess?', *American Journal of Play*, 1, 1, 55–79.

Paquette, D, Carbonneau, R, Dubeau, D, Bigres, M and Tremblay, R, E (2003) 'Prevalence of father-child rough-and-tumble play and physical aggression in preschool children', *European Journal of Psychology of Education*, 18, 171–189, in BTHA (2011) *Active Play and Healthy Development*. Available online at: <http://www.btha.co.uk/consumers/template.php?id=169> (Accessed Nov. 2011).

Parrish, AM, Russell, K, Yeatman, H and Irverson, D (2009) 'What factors influence children's activity?', *British Journal of School Nursing*, 4, 6–10.

Pellegrini, A (2008) 'The recess debate: A disjunction between educational policy and scientific research', *American Journal of Play*, 1, 2, 181–191.

Pellegrini, AD and Galda, L (1982) 'The effects of thematic-fantasy play training on the development of children's story comprehension', *American Educational Research Journal*, 19, 443–452.

Pellegrini, AD. and Holmes, RM (2006) 'The role of recess in primary school', in Singer, D. G, Golinkoff, RM and Hirsh-Pasek, K (eds) (2006) *Play = Learning: How play motivates and enhances children's cognitive and social-emotional growth*. Oxford: Oxford University Press.

Play England (2011) *Save Children's Play*. Available online at: <http://www.playengland.org.uk/savechildrensplay> (Accessed Nov. 2011).

Playwork Principles Scrutiny Group (2005) *Playwork Principles*. Play Wales, Cardiff. Available online at: <http://www.skillsactive.com/playwork/principles> (Accessed Nov. 2011).

Power, T G (2000) *Play and Exploration in Children and Animals*, London: Lawrence Erlbaum Associates, in British Toy and Hobby Association (2011) *Active Play and Healthy Development*. Available online at: <http://www.btha.co.uk/consumers/template.php?id=169> (Accessed Nov. 2011).

Pretty, J, Angus, C, Bain, M, Barton, J, Gladwell, V, Hine, R, Pilgrim, S, Sandercock, G and Sellens, M (2009) *Nature: Childhood, health and life pathways*. Colchester: University of Essex.

Prezza, M and Pacilli, G (2007) 'Current Fear of Crime, Sense of Community and Loneliness in Italian Adolescents: The role of autonomous mobility and play during childhood', *Journal of Community Psychology*, 35, 2, 151–170, in Lester, S and Russell, W (2008) *Play for a Change: Play, Policy and Practice: A review of contemporary perspectives*. London: Play England.

Ridgers, ND, Stratton, G and Fairclough, SJ (2005) 'Assessing physical activity during recess using accelerometer', *Preventive Medicine*, 41, 2, 102–107.

Rosenfeld, A and Wise, N (2001) 'What really matters', *Playrights*, XXIII, 3 (Sep.), 9–11.

- Sandseter, EBH and Kennair, LEO (2011) 'Children's risky play from an evolutionary perspective: the anti-phobic effects of thrilling experiences', *Evolutionary Psychology*, 9,2, 257–284.
- Saunders, L and Broad, B (1997) *The Health Needs of Young People Leaving Care*. Leicester: De Montfort University, in Chambers, H, Howell, S, Madge, N and Olle, H (2002) *Healthy Care: Building an evidence base for promoting the health and well-being of looked after children and young people*. London: NCB.
- Shier, H (2010) *IPA Global Consultations on Children's Right to Play: Summary report*. Available online at: <http://article31.ipaworld.org/wp-content/uploads/2010/10/GlobalReportSUMMARY-201010.pdf> (Accessed Nov. 2011).
- Singer, DG and Singer, JL (1992) *The House of Make-Believe*. Harvard University Press: London, in Jenkinson, S (2005) 'Teaching the heart: the emotional value of play' in Burrell, A and Riley, J (eds) (2005) *Promoting Children's Well-Being in the Primary Years: The Right from the Start Handbook*. Stafford: Network Educational Press.
- Singer, DG, Golinkoff, RM and Hirsh-Pasek, K (eds) (2006) *Play = Learning: How play motivates and enhances children's cognitive and social-emotional growth*, Oxford: Oxford University Press.
- Singer, J (1994) 'Imaginative play and adaptive development', in British Toy and Hobby Association (2011b) *Play and Physical Health*. Available online at: <http://www.btha.co.uk/consumers/playandphysicalhealth.php> (Accessed Nov. 2011).
- Smilansky, S (1968) *The Effects of Sociodramatic Play on Disadvantaged Preschool Children*. New York: Wiley, in Marjanovic-Umek, L and Lesnik-Musek, P (2001) 'Symbolic Play: Opportunities for cognitive and language development in preschool settings', *Early Years*, 21, 1, 55–64.
- Spilsbury, JC (2005) 'We Don't Really Get to Go Out in the Front Yard': Children's home range and neighbourhood violence', *Children's Geographies*, 3, 1, 79–99.
- Statham, J and Chase, E (2010) *Childhood Wellbeing: A brief overview*. Loughborough: Childhood Wellbeing Research Centre.
- Taheri, F (2006) 'The link between short sleep duration and obesity: we should recommend more sleep to prevent obesity', *Archives of Disease in Childhood*, 91, 11, 881–884, in Milano, K (2007) 'Prevention: The first line of defence against childhood obesity', *Zero to Three*, 28, 1, 6–11.
- Thigpen, B (2007) 'Outdoor play: combating sedentary lifestyles', *Zero to Three*, 28,1, 19–23.
- Thomas, G and Hocking, G (2003) *Learning and Me: Good childhood evidence summaries*. London: The Children's Society, in Lester, S and Russell, W (2008) *Play for a Change: Play, Policy and Practice: A review of contemporary perspectives*. London: Play England.
- Thompson, J (2000) 'Playing with a purpose', *Community Practitioner*, 73, 11, 843–844.
- Thompson, JL, Jago, R, Brockman, R, Cartwright, K, Page, AS and Fox, KR (2010) 'Physically active families – debunking the myth? A qualitative study of family participation in physical activity', *Child: Care, Health and Development*, 36, 2, 265–274.

Tonucci, F (2005) 'Citizen Child: Play as welfare parameter for urban life', *Topoi*, 24, 183–195, in Lester, S and Russell, W (2008) *Play for a Change: Play, Policy and Practice: A review of contemporary perspectives*. London: Play England.

UNICEF (2007) *Child Poverty in Perspective: An overview of child well-being in rich countries*. Florence: UNICEF.

Valentine, G (2004) *Public Space and the Culture of Childhood*. Aldershot: Ashgate.

Worpole, K and Knox, K (2007) *The Social Value of Public Spaces*. York: Joseph Rowntree Foundation.

Zeiher, H 'Shaping daily lives in urban environments', in Christensen, P. and O'Brien, M. (eds) (2003) *Children in the City*. London: Routledge Falmer.

Zigler, E and Bishop-Josef, S J (2009) 'Play under siege: A historical perspective', *Zero to Three*, 30, 1, 4–11.



