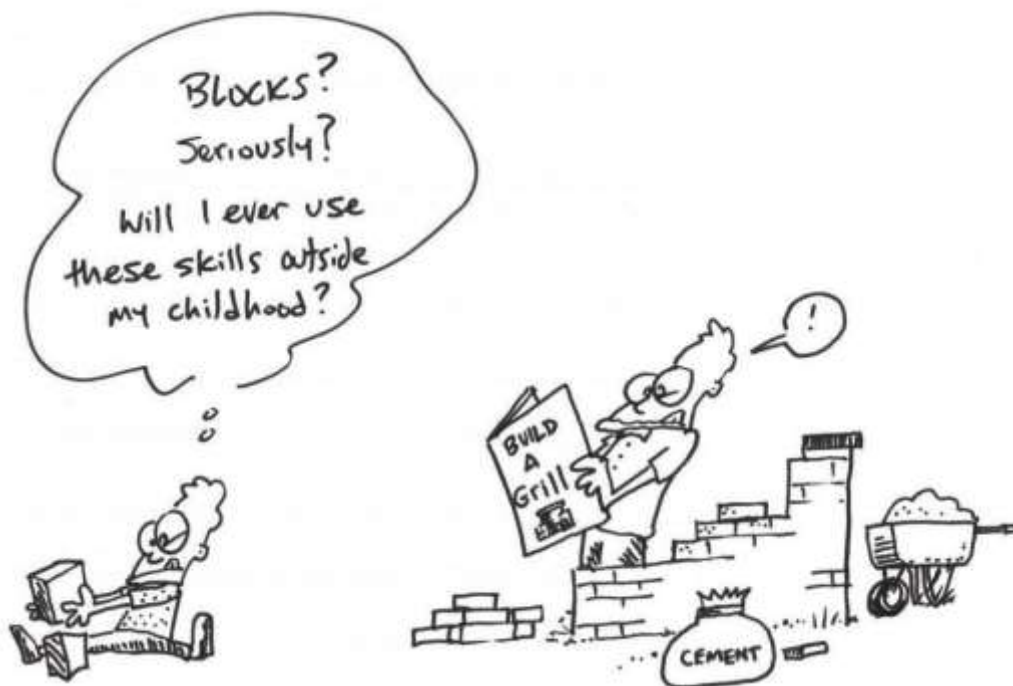# Centre for Science and Policy

Playtime: an evidence-informed scoping review on children's play with a focus on older children and middle childhood

©jackmaypole@yahoo.com

Professor Helen Roberts
3 March 2015

This background paper provides a referenced discussion of definitions of play and its importance; research on: the barriers and levers to play and freedom to play; special needs play; play therapy; adventurous play and related health and safety concerns; imaginative play; digital play and team playing. It is based largely on UK research evidence.

The paper makes no claims to 'completeness.' Play encompasses a broad area, and spans scientific and social scientific disciplines from developmental psychology (Whitebread 2012; Whitebread et al 2012) to psychopathology (Gray 2011); from ethology and biology (Bateson and Martin 2013) to anthropology, sociology and geography and beyond (Holloway and Valentine 2000). New disciplines such as sports science (Visek et al 2014) reflect on the connections between playfulness and organised sport, and no doubt there is a body of market research.

The starting point here is play not as a means to an end, but as an end in itself. Play as an end in itself may sit rather uneasily with the 'clever chaps' orientation of a good deal of policy directed work so amusingly described by Mulgan (2013). After all, even CP Snow (1975), surely one of the cleverest of clever chaps, admitted to finding his time in policy difficult when using those years to write novels would have been so much more productive (and presumably more fun).

Some social goods in relation to children in particular, including education, often seem to be valued more in terms of children's 'becoming' than their 'being' in the here and now. It was perhaps for this reason that the Home Office was ahead of the curve in its interest in randomised controlled trials of parenting and early years interventions given the compelling evidence presented from the USA in reductions in criminality among those in intervention groups.

The purpose of the paper is to initiate discussion on both the scientific subject matter and the values base for play, and with seminar participants, to identify research gaps from a policy perspective.

What counts as play?

"Play is older than culture, for culture, however inadequately defined, always presupposes human society, and animals have not waited for man to teach them their playing." (Huizinga 1949)

Among the factors that the Dutch historian and cultural theorist Johan Hiuzinga suggested as characterising play are:

- Play is free, is in fact freedom.
- Play is not 'ordinary' or 'real' life.

Dictionary definitions meanwhile tend to emphasise exercise, action and amusement whilst Play England (nd) refers to **'What children and young people do when they follow their own ideas and interests, in their own way and for their own reasons.'**

That said, a good deal of what adults, children and young people might experience (or define) as play is, in fact, 'ordinary' or 'real life.' A child or young person exploring under stones and

round corners on the way to or from school or daydreaming, may well be the stuff of everyday life, and still be play. And much play is evidently enjoyable for children even when initiated by adults following *their* ideas and interests and drawing children in. Activities such as school sports may or may not be experienced as, or incorporate, play. And some of the 'play' activities incorporated into research studies using play as a means to an end such as improving eye hand co-ordination, reducing weight, or improving parenting may not only be *presented* as play, but *experienced* as play.

What children and young people themselves might make of definitions of play could be quite different from, or surprisingly similar to, both Huizinga and Play England as the examples in Box 1 suggest.

Box 1: Definitions of play from children and young people

[Interviewer] "what do you like doing ?"
"Playing with my friends because it's fun. You can do what you like. You aren't being told what to do."
Mayall 2000:132

Try to analyse the sound of children at play … The children are clowning. They are making fun of life; and if an enquiring adult becomes too serious about words and rules, they say: "It's only a game isn't it? It's just for fun. *I* don't know what it means. It doesn't *matter*."
Opie 1994:15

What counts as evidence?

There is no kite mark for 'best' research, and ideas of a hierarchy of evidence, developed largely for clinical research, have been discredited, including by the first chairman of the National Institute for Health and Care Excellence (NICE), himself an experienced triallist, who described such hierarchies as illusory tools (Rawlins 2008). The value or otherwise of a particular research method is not intrinsic to the method, but rather to the appropriateness of the method for answering, or at least addressing, a particular question (Roberts and Petticrew 2003). Table 1 offers an illustration of the different kinds of research evidence a social or public health scientist might use to address questions relating to play. If we want to know whether play activities 'work' in reducing weight or increasing mathematical skills then a randomized controlled trial - or preferably a number of trials combined into a high quality systematic review, is likely to be the most useful method. However, since most trials are carried out on relatively small populations, we also need qualitative and process data on what happens when a trial or a collection of trial interventions are rolled out at scale. The question of how much fun is involved in play as a means to an end is a matter best left to the judgement of the children and young people concerned. Cohort studies can tell us about change over time, surveys can tell us something about take-up and how things are working (or not) on the ground, and ethnographic studies can describe what happens in play spaces or spaces where children are left largely to their own devices.

Table 1: An example of a typology of evidence in relation to play in childhood

Research question	Qualitative Research	Survey	Case control studies	Cohort Studies	RCTs	Quasi-experimental studies	Non-experimental evaluations	Systematic Reviews
Effectiveness *Does play 'work' in, for instance, improving maths skills or reducing overweight and obesity? Does the evidence indicate that play-based interventions work better than doing nothing (the passage of time) or doing something different?*				+	++	+		+++
Process of effective service delivery *How does it work? If an intervention designed around play is shown to work experimentally (for instance in reducing overweight or obesity), does it work when it is implemented at scale?*	++	+					+	+++
Salience *Does play matter? Does it matter to children/parents/policy makers/industry/research councils?*	++	++						+++
Safety *Does messing around with play do more good than harm? Are there any negative consequences of, for instance, play therapy?*	+		+	+	++	+	+	+++
Acceptability *Will children/parents be willing to (or want to) take up play-related objects, facilities or places?*	++	+			+	+	+	+++
Cost effectiveness *Is it worth investing in toys (for parents) or in play services (for local authorities), or in play related interventions to improve health or skills?*					++			+++
Quality *Are users, providers and other stakeholders satisfied with the playspace/games/ intervention?*	++	++	+	+				+

To what extent is research evidence important in this area?

Do we need research evidence to tell us that education, a good diet, decent shelter and food are required for a healthy childhood, or that hitting children (even when described as 'smacking') is wrong? We do not. Those who campaigned for universal education in the UK or for an end to child labour did not do so on the basis of research evidence, but on the basis of observation and values. There is ample evidence that play is a source of enjoyment - an end in itself (White 1795; Opie and Opie 1969; Opie 1994; DCSF 2007; DCSF 2008; Prout 2005; Street 2002) - as well as a means to an end in terms of early childhood development and psychosocial health (Piaget 1963; Erikson 1963). This does not, of course, mean that researching the importance of play is futile, simply that the question 'Is play important to children?' has been sufficiently answered. Moreover, play is upheld as a right under Article 31 of the UN Convention on the Rights of the Child (Box 2).

Box 2: Article 31, UN convention on the rights of the child

1. States Parties recognize the right of the child to rest and leisure, to engage in play and recreational activities appropriate to the age of the child and to participate freely in cultural life and the arts.
2. States Parties shall respect and promote the right of the child to participate fully in cultural and artistic life and shall encourage the provision of appropriate and equal opportunities for cultural, artistic, recreational and leisure activity.

Where might the social scientific interest in play lie? One indication comes from the description of an ESRC Festival of Social Science event offering a session on games, and suggesting that these provide examples of exactly the phenomena social scientists are interested in, including co-operation, exchange, reciprocity, self-interest, fairness, inequality, status and hierarchy.

Examples of evidence from research databases

In exploring the kinds of work found in research databases, it is important to bear in mind that a good deal of what gets researched is dependent on funding streams directed towards answering particular research questions. The role of the independent scholar or scientist, able, like the child or young person who plays, to follow their own ideas and interests in pursuing research on subjects such as play, has diminished in a move towards research consortia formed to address research questions of policy interest.

The examples in Box 3 illustrate different kinds of research question which underpin work in this area, taken from two databases interrogated to describe funded research on play. The UK Clinical Trials Gateway was searched using play and synonyms for play. Initial searches inevitably returned many redundant items along the lines of 'playing a part' or 'role play.' Most of the trials including play related to families with children in the early years.

It can be seen that the trials we identified through this route are quite distant from Play England's definition of **"What children and young people do when they follow their own ideas and interests, in their own way and for their own reasons."** Instead, play is used as a means to an end, sometimes with a focus on the child, such as attaining a healthy weight, improving maths skills, social skills and literacy skills, sometimes with a focus on the parents, and intended to improve parenting skills.

> **Box 3: Examples of trials designed to look at the effectiveness of interventions**
>
> Child parents and pets exercising together: a randomized controlled trial
> http://www.controlled-trials.com/ISRCTN85939423
>
> Does teaching children how to play chess improve maths test performance? Chess in schools and community: A clustered randomised controlled trial
> http://isrctn.org/ISRCTN33648117
>
> Helping Children Achieve: parenting interventions enhance child relationships and literacy
> http://isrctn.org/ISRCTN53662728
>
> Pre-schoolers in the Playground? (PiP) - physical activity for children aged 18 months to 4 years old http://isrctn.org/ISRCTN54165860
>
> An innovative early intervention for antisocial children with callous-unemotional traits
> http://isrctn.org/ISRCTN62822052
>
> Can we enhance the social communication skills of preschool children with Autism Spectrum Conditions through play?
> http://isrctn.org/ISRCTN79413977
>
> Multisite randomized controlled trial of parenting groups for child antisocial behaviour and literacy: the SPOKES project
> http://isrctn.org/ISRCTN77566446

In order to identify social science work, the ESRC website was searched both for grants awarded and for outputs produced using the search terms 'play' and 'child' for the period from 1982 (when the catalogue began) to 2014 (when it was incorporated into the RCUK Gateway). A limitation of our search was that social science researchers tend to have a creative approach to grant and publication titles. Including the word 'play' in a project on play cannot be taken as a given.

Examples from the ESRC website relating to middle and later childhood/youth do, however, include studies which are more likely than the trials to see play as an end in itself than as an activity to develop a particular skill. The examples given in Box 4 are adapted/edited from the authors' own accounts.

Barriers to play
Barriers to play reported in the research literature include the exclusion of young people from public space (Woolley et al 2011); parental anxiety and child safety in relation to dangerous people and dangerous roads (Roberts et al 1995) and competing demands on parental and children's time (Gray 2006). If we are to interpret play as Play England does, as children

following their own ideas and interests, an additional barrier may be the commodification of play and play spaces (McKendrick et al 1999; Giroux 2000). Few schools now have extensive bike racks for children,and playing fields are being sold, in some cases to fund school improvements. Extended schools, or wrap around care, potentially provide the time and space for play with peers, but a case study of English and Danish provision in this respect suggests wide cultural differences in the priority given to play. Attitudes towards outdoor play in particular differed, with Danish children generally having access to more challenging outdoor facilities for as much time as they liked irrespective of the weather. Children in Denmark were able to come and go outdoors, and had access to more daring equipment such as climbing towers and activities such as building dens. English children were more likely to all have to be inside or outside as a group; outside activity time was shorter, and often dependent on an enthusiastic staff member (Ludvigsen 2006).

For children, play does not take place at a set time or in a set place. Going to school can be a playful time (even in the back of a parent's car, and certainly on the bus), but it is less likely to be independently playful when children are accompanied to school rather than allowed to make their own way (Hillman et al 1990). However, cycling to school is not risk free. A Daily Telegraph feature noted in 2010 that a south London couple who allowed their 5 and 8 year to cycle along the pavement to school were warned that they could be reported to social services unless they stopped allowing the children to cycle to school on their own, despite the mother having assessed the benefits and risks, and being 'confident that the benefits…far outweigh the potential risks from stranger danger, road traffic accidents and other factors.' In a similar vein, a local newspaper in inner city London reported in late 2014 that a primary school had sent a letter to parents warnng that is could not accommodate pupils riding scooters to school as it id 'not have anywhere on the school grounds to keep the scooters ' and 'two recent major road accidents nearby illuminated "the incredible reality of working and learning in our very busy but equally dangerous locality."'

These reports raise one kind of risk – safeguarding. Another barrier, particularly to active or adventurous play, is the perceived or actual threat of litigation, and health and safety concerns.

In fact, the Health and Safety Executive (HSE) has pointed out that references to health and safety regulations as a reason for discouraging play activities are often based on misunderstandings. A joint statement between HSE and the Play Safety Forum makes clear that "play is important for children's wellbeing and development. When planning and providing play opportunities, the goal is not to eliminate risk, but to weigh up the risks and benefits; those providing play opportunities should focus on controlling the real risks, while securing or increasing the benefits – not on the paperwork. Accidents and mistakes happen during play – but fear of litigation and prosecution has been blown out of proportion."

Notwithstanding their clarification, with local authorities and others paying compensation for injuries, and the reality of injury on the roads as a major cause of morbidity and mortality in childhood and young adulthood, parental and school caution are likely to remain.

Enablers/levers to play
Alongside barriers to play are a number of research-informed levers described in work on green space (DCLG 2006; Walker et al 2000) and the use of urban space (Christensen and

O'Brien 2003; Woolley 2006). Increased ownership and use of mobile phones may also be an enabler (Brockman et al, 2011). Other research not badged as work on play as such, but funded to explore the health and social consequences of children's free bus travel in London, reported 'play' consequences from an intervention designed primarily to reduce transport poverty and increase educational access for children and young people. Qualitative findings included the use of bus travel for socialisation and playful leisure (with apparently little adverse comment from older travellers who enjoy similar transport benefits, and who largely restricted their censure to people with prams). Free bus transport in London broadened the capacity for young people to travel without adult supervision, opening up a network of public, mobile spaces (Jones et al 2012).

School remains a key location for organized play and sports. A DfE report describes how active children in years 6, 8 and 10 reported they were in a 2009 Tellus survey (Chamberlain, 2010; DfE 2013). Twenty one per cent said they did something active everyday in the school week during lesson time, 74% said they were active some/most days, and 5% said they were never active during lesson time. During lunch and break times, 37% said they were active everyday, whilst 43% said they were active some/most days and 20% said they were never active.

Adventurous play

Traditional locations for adventurous play – the outdoors and green space – attracted attention in a Faculty of Public Health briefing paper (FPH 2012) which suggested that regular access to natural environments has positive benefits for child mental health and wellbeing, including reduced symptoms among children with ADHD (Faber Taylor et al 2002a); increased concentration and self-discipline among inner-city girls (Faber Taylor et al 2002b) and enhanced emotional and values-related development in children (Kellert 2002).

While parental concerns about safety and institutional concerns about litigation may have reduced opportunities for adventurous play, some of these may be over-estimated (Ball 2002; 2004). Risks, particularly in relation to outdoor activities, need to be better balanced against benefits (Gill nd), and children themselves may develop risk management strategies (Christensen and Mikkelsen 2008).

The National Trust (nd) and others have spoken of a child being a rare sight in the countryside and have been promoting a range of ways to encourage the re-connection of children and young people with the outdoors.

A recent review underpinning NICE guidance (NICE 2009) used evidence from four systematic reviews (Biddle et al 2005; Ferreira et al 2006; Gustafson and Rhodes 2006; Sallis et al 2000) to promote physical activity in children and young people. Boys were more active than girls, and there was a reported decline in physical activity during adolescence. Parental and social support made a positive difference to physical activity in young people. NICE pointed out in their recommendations that opportunities for moderate to vigorous physical activity include everything from competitive sport and formal exercise to active play and other physically demanding activities (such as dancing, swimming or skateboarding). Of course, activity does not need to be physical or out of doors to be adventurous.

Team, solo, and digital play

Team and solo play unsurprisingly vary by other social characteristics including age, gender and disability, as does digital play.

A recent report from the Department of Education (DfE 2013) on team games and activities during PE lessons found that reasons cited by 6-11 year olds for not enjoying school sport or exercise included beliefs that their physique was not well-suited to sport, embarrassment at not being good enough and letting the team down, frustration at not understanding the rules, and boredom. On the other hand, being with friends and the sense of belonging to a team and achieving can encourage pupils to take part (Mason 1995). Figure One (DCMS 2013) describes the percentage of children at various ages doing competitive sport including being in a team.

The same report found that of the 321 disabled young people who responded to an enquiry by Whizz Kids, 46% said they took part all the time and 36% said sometimes. Only 22% of the powered wheelchair users and 27% of manual wheelchair users took part in team games and activities all the time (Whizz Kids 2011).

In terms of gender, there is a considerable body of literature in relation to play stereotyping in the early years, but we know less about how this plays out in middle childhood and among young people. A recent mixed methods study of girls aged 15-16 years in the Midlands identified a number of barriers to their participation in team sports. These included confidence, pressure, embarrassment, negative self-belief, stereotypes and the lack of female role models. The researchers also found that other hobbies or commitments resulted in a lack of time or preference for sport. Teachers whose perceived focus was on boys' teams or girls with high levels of sporting ability were described as discouraging. In terms of overcoming these barriers, the researchers put forward the need for better representation of female sports and female athletes in the media, and a need for teachers to provide more encouragement and opportunities for girls to participate, regardless of their ability (Wetton et al 2013).

Figure One: Percentage of children who did competitive sport in school, by type of participation, Oct 2011-Sept 2012

Reproduced from DCMS (2013) http://www.nationalarchives.gov.uk/doc/open-government-licence/version/2/
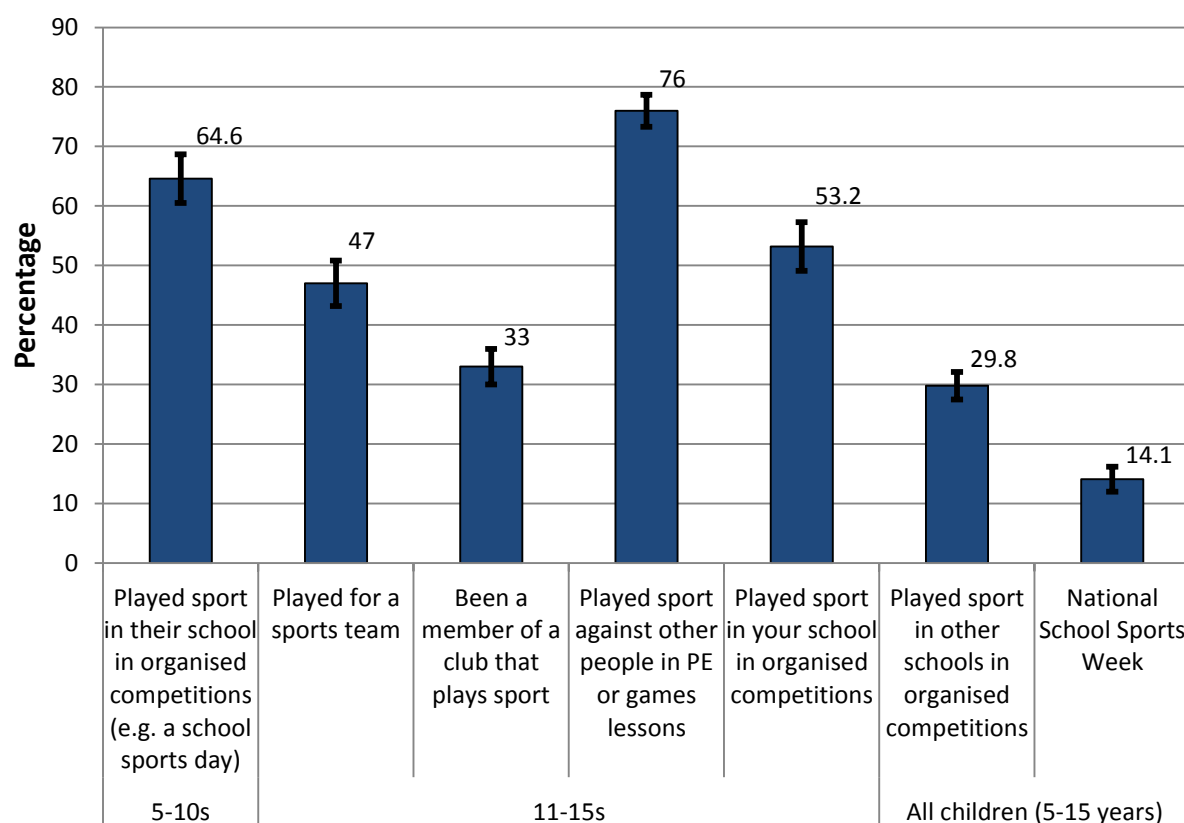
Confidence intervals range from +/- 2.1 and +/- 4.1

At a younger stage, children in middle childhood who are not part of a group and want to play (or be) alone, can find the playground a rough place (see Box 5).

Box 5: Quotation from a girl aged nine years

"*Our playground isn't where I like to be. It's not my favourite place. It's dull, crowded and UNSAFE. It is also small and mud makes it slippery. Also I don't like to be bumped into all the time.*"

Solo play can often be imaginative, and in a fine-grained qualitative study of children's imaginary friends Majors (2013) describes these imaginary companions as providing friendship, playmates and entertainment, and enabling children to overcome boredom and loneliness. She reports that these friends appeared to provide support when there were problems in children's lives. However the take home message from Lillard et al (2013) in their review of the impact of pretend play on children's development is that "the existing evidence does not support strong causal claims about the unique importance of pretend play for development … much more and better research is essential for clarifying its possible role."

Digital play and television have frequently been seen as key factors behind childhood overweight and obesity, but research studies report positive as well as negative features. Although digital games are often played by a lone child or young person (which may be seen as a problem or a potential asset), there are opportunities for online collaboration. This in turn may be a source of positive interaction, or a source of concern in relation to predatory behaviour by adults or bullying by peers. A recent study of children at the cusp of middle

childhood (Parkes et al 2013) reported that previous studies have linked high screen time with behavioural and emotional problems in children, although findings had been inconsistent (Pagani et al 2010; Cain and Gradisar 2010; Zimmerman and Christakis 2005). The Parkes study, based on the UK Millenium cohort and looking at children followed up at three, five and seven years, found that TV but not electronic games screen time predicted a small increase in conduct problems. Screen time did not predict other aspects of psychosocial adjustment.

Inclusive play and play therapy

Much, though not all, of the research and practice work on inclusive play for children and young people with disabilities has been in relation to early years services (Petrie et al 2003; Woolley et al 2006; Woolley 2012), encouraged in part by dedicated funding. For those in middle childhood and young adulthood, there is less by way of research literature, but a number of imaginative initiatives, often propelled by local authorities or the third sector. A local authority resource (see Box 6), provides elements described in the research literature as key to inclusion – shared space where everyone can play together, listening to children and parents' views in relation to their needs, and a balance struck between protecting children from risk and the benefits of having fun (Lenehan et al 2004).

Box 6: Hull Aiming High Cycling Scheme

East Park, in Hull, is 140 acres of green space offering an animal and education centre, youth zone and water play areas. There are mobility scooters available for people who have problems getting around. The park has a Sustrans route and an inner road for cycling. The cycling scheme has created opportunities for disabled children and young people to be able to cycle with their mum, dad, brother, sister, friends and carers. The children and young people who access the scheme have a wide range of disabilities including learning disabilities, physical disabilities, autism, and complex health needs. All the special schools in Hull have become members of the scheme and use the cycling as part of their curriculum and activity programme.

The plan for the cycling scheme was endorsed by the Aiming High Board and the Hull Children's Trust Board and agreed through the Hull Parents Forum, a group of parents and carers of disabled children who for the first time jointly commissioned, with the local authority and health service, all of the short break programmes under the scheme. Four young people joined representatives from Hull City Council and others on a Steering Group.

Two part time city council administration staff were relocated to the park, allowing rangers more time to be involved in the cycling scheme. The Youth Service offered to fund a full time worker. The intention of the scheme was always to embed it within the park's own facilities and to ensure that the scheme was sustainable once the project had been completed.

http://www.c4eo.org.uk/media/7762/386_hull_aiming_high_cycling_scheme_phase_two.pdf

---

Less positively, a problem for children with disabilities identified in the *On the Buses* study of free bus transport for children and young people referred to above (Jones et al 2012) was that although buses were a place for play and socialisation for many pupils taking advantage of the scheme, pupils in wheelchairs were unable to access the valued upper deck, and on the lower

deck, only one wheelchair could normally be accommodated. Moreover while London buses are now accessible, not all bus stops are (Green et al 2014).

Play and play therapy

Although not falling within the definition of play as an end in itself, play in hospitals and play therapy are areas where there is a good case for the development of a strong evidence base. Play therapy may be used therapeutically for children who are experiencing difficulties of all kinds, whilst play in hospitals can prepare children and young people for clinical procedures, and help them afterwards.

Box 7: Play workers and play specialists

In children's hospitals, play workers are key team members providing support for children/young people and their families to adjust to the hospital environment, preparing them for procedures, and helping them to cope with hospital admission and treatment. They can also support and provide advice to parents/carers on appropriate play for sick or injured children/young people, and help children gain skills lost through regression or effects of illness and hospitalisation.

Play specialists offer distraction, relaxation and de-sensitisation techniques for children undergoing medical procedures. These techniques are underpinned by general play so the patients relate and engage with the techniques, which is why the two roles appear so similar. Play specialists support parents with coping strategies for children undergoing physical, behavioural or personality changes.

Adapted from the website of Great Ormond Street Hospital for Children
http://www.gosh.nhs.uk/parents-and-visitors/clinical-support-services/play/services-we-provide/

Play therapy has not attracted the same kind of scrutiny in relation to its effectiveness as pharmaceutical therapies, but increasing research interest in this area has resulted in meta-analyses (eg Bratton et al 2005) which suggest good outcomes from non-directive play, and in particular, for preparation for clinical procedures through play.

Commodification, austerity and imagination

Any adult who has seen a child find pleasure in a discarded box, a newly-found pebble, or a repetitive rhyme knows that the answer to what a child needs in order to play is 'not very much.' Even living in cramped conditions, the diarist Anne Frank could follow her own ideas and interests in a way which might meet Play England's definition, writing: "When I write I can shake off all my cares".

Children and young people can create their own play – which is potentially good news for parents in austere times. Imaginative play is cheap or free (so no friend to the toy industry) but not all play is child's play: the toy industry is a major industrial player, well-captured by the work of Henry Giroux (Giroux 1999; 2000). Despite an apparent downturn in 2013, as reported in the Daily Telegraph (2014), in which the overall market shrank by one per cent in 2013, to £2.9 billion, and the number of toys sold fell by five per cent, to 364 million, the play industry is thriving.

Meanwhile, the commodification of both urban and rural spaces (Smith and Barker 2001), while frequently valued by parents for providing the after school and holiday care enabling them to enter or remain in the labour market, can take children away from the 'natural' play environments of their neighbourhood streets and homes.

Evaluations of play initiatives

A further form of evidence on play is the evaluation of initiatives at a local or national level. Many costly initiatives are introduced with the best of intentions but poor follow-through. Barnardo's worked in partnership with the Children's Play Council to deliver Better Play, a four year £10.8m initiative funded by proceeds from the National Lottery. Following a review of projects at the end of the second round of funding where it was found that very few of them supported disabled and non-disabled children playing together, it was agreed that the final round of funding should redress the balance, and that by the end of the funded year, more disabled and non-disabled children would be playing together. Many evaluations read as justifications (particularly for continued funding) rather than evaluations of what worked and what did not. The evaluation of this initiative (Ludvigsen et al 2005) described problems as well as successes. Although the funded initiative did increase the number of disabled children accessing play services and services which included both disabled and non-disabled children, structural barriers included access and transport, and the difficulty of recruiting skilled staff. Among other findings were that staff training during the funding period tended to be for statutory matters such as child protection rather than play skills or facilitating children's participation.

More recently, in Camden, the Camden Active Spaces project is evaluating a play initiative in the borough where seven school playgrounds (5 primary and 2 secondary) are being re-designed with a view to increasing activity. The designs include astroturf games pitches, climbing frames, trampolines, monkey bars and outdoor gyms based on themes such as ancient ruins, volcanoes and clouds emerging from qualitative work with children and teachers in each school. The researchers are using a longitudinal quasi-experimental design to test their hypothesis that the new playgrounds will increase young people's time spent in light and moderate to vigorous physical activity and reduce sedentary behaviour during break time, improving levels of general fitness (eg, grip and leg strength, peak flow and adiposity). The results will be known in 2016.

Gaps in the research evidence

Perceived gaps in research evidence will differ according to disciplinary and policy perspectives. In a climate of level funding for public health, cuts to leisure budgets, and pressures on parental time and incomes, costs will be more than usually important to local authorities. Some of the suggestions below are adapted from gaps identified in reviews of the research evidence for the NICE guidance on physical activity (2009). Some of these are salient for play overall, and in particular adventurous play. Other gaps will no doubt be identified by those attending the seminar.

- How can the social determinants (the causes of the causes) of insufficient play opportunities for children and young people be most effectively addressed?

- What is the social distribution of childhood and youth play opportunities including cultural, ethnic and gender differences ? Is the gap between the most and the least disadvantaged children narrowing or widening?
- The lack of detail in intervention descriptions in the trial literature means that it is often unclear what the barriers or facilitators to using play or changing the environment in particular ways might be.
- Few studies have investigated the relationship between children's and parents' outdoor activity over time.
- There is little evidence about what encourages families to be physically active (either together or in adult/child groups), or how families manage competing priorities when planning such activities.
- Much of the evidence comes from urban settings and its relevance to children from rural areas needs to be considered.
- Evidence is scarce on how to encourage groups of children and young people who are least likely to be physically active, including those with disabilities (or from families where someone else is disabled) and those with special educational needs.
- There is virtually no evidence on the cost-effectiveness of interventions to increase children and young people's physical activity levels.
- What are the consequences – positive and negative – in the boroughs which have adopted 20mph speed limits for traffic?
- What are the consequences, positive and negative, of open streets?
- How can the work of those who develop play for children be valued and supported?
- What role can mayors play in developing and sustaining play initiatives?

Conclusion

Play is important to children and young people. It is universal, it doesn't require huge resources, and there is plenty of evidence that as well as being enjoyable, it has important benefits in terms of child development and long-term health. However, play is changing. A combination of parental and institutional safety concerns and the increasingly sedentary nature of children's lives presents a new set of risks to children in terms of overweight and obesity, and the health risks related to these.

Political will is required for policy change but so is political conviction. This presents a dilemma for policy advocacy. If the advocacy is conducted by a group of affected or concerned citizens – parents, patients, children – their argument depends on both the evidence at their disposal and their persistence and articulacy in using it. If evidence is being presented by researchers, they may be constrained from presenting it too vigorously lest they be dismissed as partisan and unscientific. On the other hand if they take no stand at all on evidence which calls into question what is currently not being done, or what is being done that is harmful, they may appear to give scientific legitimacy to bad (or no) policies. It is a dilemma which potentially faces every researcher who hopes that policy will be shaped around the evidence, rather than the evidence tailored to fit the policy. Nutley et al (2007) describe the potential for social research to be part of 'respectful dialogue' between stakeholders in public services. They suggest that models of research use that engage with context, that admit to types of knowledge in addition to research knowledge, and that go beyond studies of individual behaviour are more likely to help introduce research into policy and practice.

Play opportunities, like almost every other good, are unequally socially distributed. Children who may need play opportunities the most are likely to have least access to green space and adventurous play. The most efficient way to bring about change at a population level, argue Rose and Day (1990), is to shift the mean. Although their argument was applied to overweight and high blood pressure, it is salient too for changing societal attitudes, and children's access to play. The causes of the causes need to be addressed. Active travel, green cities, safe streets and local initiatives to increase play spaces and activity give cause for cautious optimism.

References

Bateson P and Martin P (2013) *Play, playfulness, creativity and imagination*, Cambridge: Cambridge University Press.

Ball David J (2002) *Playground safety: risks, benefits and choices*, London: HSE. Available at: http://eprints.mdx.ac.uk/4990/1/crr02426.pdf

Biddle SJH, Whitehead SH, O'Donovan TM & Nevill ME (2005) Correlates of participation in physical activity for adolescent girls: A systematic review of recent literature. *Journal of Physical Activity and Health*; 2: 423-434.

Bratton S, Ray D, Rhine T, & Jones L (2005). The efficacy of play therapy with children: A meta-analytic review of treatment outcomes. *Professional Psychology: Research and Practice*; 36(4): 376-390.

Brockman R, Jango R & Fox K (2011) Children's active play self-reported motivators, barriers and facilitators. *BMC Public Health;* 11: 461.

Cain N & Gradisar M (2010) Electronic media use and sleep in school-aged children and adolescents: A review. *Sleep Med;* 11:735–42.

Chamberlain T, George N, Golden S, Walker F & Benton T (2010). *Tellus4 National Report (DCSF Research Report 218)*. London: DCSF.

Christensen P & O'Brien M (eds.) *(2003)* Children in the City: home, neighbourhood and community. London: Routledge Falmer.

Christensen P & Mikkelsen MR *(2008)* Jumping off and being careful: children's strategies of risk management in everyday life. *Sociol Health Illn*; 30.1: 112-130.

Daily Telegraph (2014). *Toy industry suffers as parents become resistant to pester power*. Available at: http://www.telegraph.co.uk/finance/newsbysector/retailandconsumer/10587566/Toy-industry-suffers-as-parents-become-resistant-to-pester-power.html. Accessed: February 2015.

DfE (2013) *Evidence on Physical Education and Sport in Schools*. London: Department for Education.

DCLG (2006) *Green and public space research, mapping and priorities*. London: Department for Communities and Local Government.

DCMS (2013) *Taking Part October 2011 to September 2012 Supplementary Child Report*. (Statistical Release, April 2013). London: Department for Culture, Media and Sport.

DCSF (2007) *The Children's Plan*. London: Department for Children, Schools and Families.

DCSF (2008) *The Play Strategy*. London: Department for Children, Schools and Families.

Doubleday R and Wilsdon J (eds) (2013) *Future Directions for Scientific Advice in Whitehall,* Cambridge: University of Cambridge's Centre for Science and Policy; Science Policy Research Unit (SPRU) and ESRC STEPS Centre at the University of Sussex; Alliance for Useful Evidence; Institute for Government; and Sciencewise.

Erkison E (1965) *Childhood and Society*. London: The Hogarth Press.

ESRC (2015) *Games people play: social science in games*. Available at: http://www.esrc.ac.uk/news-and-events/events/festival/events-archive/general-2013/games-people-play.aspx. Accessed on: February 2015.

Faber Taylor A, Kuo FE & Sullivan WC (2002a) Coping with ADD: the surprising connection to green play settings. *Environment Behav*; 33: 54-77.

Faber Taylor A, Kuo FE & Sullivan WC (2002b) Views of nature and self-discipline: evidence from inner city children. *Journal of Environmental Psychology*; 22:49-64.

Faculty of Public Health (2010) *Great Outdoors: How our natural health service uses green space to improve well-being.* London: Faculty of Public Health.

Ferreira I, van der Horst K, Wendel-Vos W, Kremers S, van Lenthe FJ & Brug J (2006) Environmental correlates of physical activity in youth: a review and updates. *Obesity Reviews*; 8:129-154n.

Frank A (1989) *The Diary of Anne Frank, The Critical Edition*. Netherlands State Institute for War Documentation. New York: Doubleday.

Gill T (nd) *Nothing ventured: Balancing risk and benefits in the outdoors,* English Outdoor Council.

Gill T (2014) The Benefits of Children's Engagement with Nature: a Systematic Literature Review. *Children, Youth & Environments;* 24(2).

Giroux H (1999) *The Mouse that Roared: Disney and the End of Innocence.* Lanham, MD: Rowman & Littlefield Publishers.

Giroux H (2000) *Stealing Innocence: Corporate Culture's War on Children.* London: Palgrave Macmillan.

Gray A (2006) The Time Economy of Parenting. *Sociological Research Online*; 11(3).

Gray P (2011) The decline of play and the rise of psychopathology. *American Journal of Play*; 3(4): 443-463.

Green J, Steinbach R, Jones A, Edwards P, Kelly C, Nellthorp J, Goodman A, Roberts H, Petticrew M & Wilkinson P (2014) On the Buses: Evaluating the impact of free bus travel for young people on the public health*, NIHR Journals Library - Public Health Research*; 2(1).

Gustafson SL & Rhodes RE (2006) Parental correlates of physical activity in children and adolescents. *Sports Medicine*; 36: 79-97

Health and Safety Executive (2012). *Children's play and leisure: promoting a balanced approach*. Available at: http://www.hse.gov.uk/entertainment/childrens-play-july-2012.pdf Accessed: September 2012

Hillman M, Adams J & Whitelegg J. (1990) *One False Move.* London: Policy Studies Institute.

Holloway S & Valentine G (eds.) (2000*) Children's Geographies: Living, Playing, Learning. London: Routledge.*

Huizinga J (1949) *Homo Ludens.* London: Routledge and Kegan Paul.

Jones A, Green J, Steinbach R, Roberts H, & Goodman A (2012) Rethinking passive transport: Bus fare exemptions and young people's wellbeing. *Health and Place; 18(3)*: 605-612.

Kellert SR (2002) Experiencing nature: affective, cognitive and evaluative development in children, in Kahn P & Kellert SR (eds.) *Children and nature, psychological, socio-cultural and evolutionary investigations*. Boston: MIT Press.

Lenehan C, Morrison J & Stanley J (2004) *The Dignity of Risk: A practical guide for professionals working with disabled children and their families.* London: NCB

Lillard AS, Lerner MD, Hopkins E J, Dore RA, Smith ED, & Palmquist CM (2013) The impact of pretend play on children's development: A review of the evidence. *Psychological Bulletin*; *139*: 1–34.

Ludvigsen A, Creegan C and Mills H (2005) *Let's Play Together: Play and Inclusion, Evaluation of Better Play Round 3*. London, Barnardos.Available at: http://www.barnardos.org.uk/lets_play_together_report.pdf.

Ludvigsen A (2006) *More school less play? The role of play in extended school in Denmark and England*. Barkingside: Barnardos.

Luckin R, Connolly D, Plowman L & Airey S (2003) Children's interactions with interactive toy technology. *J. Comp. Assisted Learning*; 19: 165-176.

Majors K (2013) Children's perceptions of their imaginary companions and the purposes they serve: An exploratory study in the United Kingdom, *Childhood*; 20(4): 550-565.

Mason V (1995) *Young people and sport in England, 1994: the views of teachers and children. A report on in-depth interviews carried out by Social Survey Division of OPCS.* London: The Sports Council.

Mayall B (2000) Conversations with children in Christensen P & James A (eds.) *Research with children, Perspectives and practices.* London: Falmer Press.

McKendrick J, Fielder A & Bradford M (1999) Privatisation of Collective Playspaces in the UK, *Built Environment*; 25(1): 44-57.

Mulgan G (2013) Experts and experimental government in Doubleday and Wilsdon (op cit).

National Trust (nd). *What we're doing to reconnect children with nature*. Available at: http://www.nationaltrust.org.uk/article-1355846567128/ Accessed: February 2015

NICE (2009) *Promoting Physical Activity for Children, Public Health Guidance 17.* London: NICE. Available at: http://www.nice.org.uk/guidance/ph17.

NICE (2009) *Promoting Physical Activity for Children, Public Health Guidance 17, Review no 8, Active Play*. London: NICE.

Nutley S, Walter I & Davies H (2007) *Using evidence: How research can inform public services.* Bristol: Policy Press.

Opie I & Opie P (1969) *Children's games in street and playground, Volume 1.* Oxford: Oxford University Press.

Opie I (1994) *The People in the playground.* Oxford*:* Oxford University Press.

Pagani LS, Fitzpatrick C, Barnett TA & Dubow E (2010) Prospective associations between early childhood television exposure and academic, psychosocial, and physical well-being by middle childhood. *Arch Pediatr Adolesc Med*; 164: 425–31.

Parkes A, Sweeting H, Wight D & Henderson M (2013) Do television and electronic games predict children's psychosocial adjustment? Longitudinal research using the UK Millennium Cohort Study. *Archives of Disease in Childhood;* 98: 341-348.

Petrie P, Storey P & Candappa M (2003) *Inclusive play: supporting provision for disabled children*. London: Institute of Education.

Petticrew M, & Roberts H (2003) Evidence, hierarchies and typologies: Horses for courses. *Journal of Epidemiology and Community Health;* 57: 527-529.

Piaget J (1963) *Play, dreams, and imitation in childhood*. New York: W.W. Norton & Co.

Play England (nd) *Glossary of terms*. Available at: http://www.playengland.org.uk/about-us/glossary-of-terms.aspx Accessed: February 2015.

Prout A (2005) *The Future of Childhood*. London: Routledge.

Rawlins M (2008) *De Testimonio* on the evidence for decisions about the use of therapeutic interventions. *The Lancet;* 372(9596): 2152-61.

Roberts H, Smith SJ & Bryce C (1995) *Children at risk? Safety as a social value.* Buckingham: Open University Press.

Sallis JF, Prochaska JJ & Taylor WC (2000) A review of correlates of physical activity of children and adolescents. *Medicine and Science in Sports and Exercise*. 32: 963-975.

Smith, FMB & Barker J (2001) Commodifying the countryside: The impact of out-of-school care on rural landscapes of children's play, *Area;* 33(2): 169-176.

Smith L, Kipps C, Aggio D, Fox P et al (2014) Camden active spaces: Does the construction of active school playgrounds influence children's physical activity levels? A longitudinal quasi experiment protocol. BMJ Open; 4: e005729.

Snow, CP (1975) *Desert Island Discs - 4th August 1975*. Available at: http://www.bbc.co.uk/programmes/p009n6dn. Accessed: February 2015.

Street C (2002) *Making the case for play: gathering the evidence*. London: NCB.

Valentine G (1997) 'Oh yes I can.' 'Oh no you can't.' : Children and parents' understandings of kids' competence to negotiate public space safely. *Antipode;* 29(1): 65-89.

Valentine G & McKendrick J (1997) Children's outdoor play: exploring contemporary parental concerns about children's safety and the changing nature of childhood. *Geoforum*; 28: 1-17.

Visek AJ, Achrati SM, Manning H, McDonnell K, et al. (2014) The Fun Integration Theory: Towards Sustaining Children and Adolescents Sport Participation. *Journal of Physical Activity & Health;* DOI: 10.1123/jpah.2013-0180 [Epub ahead of print].

Walker P, Lewis J, Lingayah S & Sommer F (2000) *Prove it! Measuring the effect of neighbourhood renewal on local people*. London: New Economics Foundation.

Wetton A, Radley R, Jones A & Pearce M (2013) What Are the Barriers Which Discourage 15-16 Year-Old Girls from Participating in Team Sports and How Can We Overcome Them? *BioMed Research International;* , vol. 2013, Article ID 738705.

Whitebread D (2012) Developmental Psychology & Early Childhood Education. London: Sage.

Whitebread D, Basilio M, Kuvalja M & Verma M (2012) *The importance of play: a report on the value of children's play with a series of policy recommendations.* Brussels, Belgium: Toys Industries for Europe.

White G (1795) *A Naturalist's Calendar, with observations in various branches of natural history, extracted from the papers of the late Rev. Gilbert White of Selborne, Hampshire, Senior Fellow of Oriel College, Oxford. Never before published*. London: printed for B. and J. White, Horace's Head, Fleet Street.

Whizz-Kidz (2011) *A report of the experiences of disabled children and young people in schools.* Whizz-Kidz Kidz Board (reported in DfE 2013).

Woolley H (2012) Now Being Social: the barrier of designing outdoor public play spaces for disabled children. *Children and Society*; 27(6): 448-458.

Woolley H, Hazelwood T and Simkins I (2011) Don't Skate Here: exclusion of skateboarders from civic spaces in three northern cities in England. *Journal of Urban Design*; 16(4): 471-487.

Woolley H, Armitage M, Bishop J, Curtis M and Ginsborg J (2006) Going Outside Together: Good Practice with Respect to the Inclusion of Disabled Children in Primary School Playgrounds, *Children's Geographies;* 4(3): 303-318.

Woolley H (2006) Freedom of the city: Contemporary issues and policy influences on children and young people's use of public open space in England, *Children's Geographies*; 4(01): 45-49.

Zimmerman FJ & Christakis DA (2005) Children's television viewing and cognitive outcomes—a longitudinal analysis of national data. *Arch Pediatr Adolesc*