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Children's Play Space and Safety Management: Rethinking the Role of Play Equipment Standards

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Abstract

The provision of stimulating and engaging play space for children and young people is increasingly recognized as an important societal goal, not the least because it provides the young with opportunities to develop and gain experience in experimenting with risk. Research in several disciplines now suggests that achievement of this goal has however been impeded in recent decades, and reasons commonly cited have included fear of injury and avoidance of litigation. International standards on play equipment have also been promulgated and justified in terms of securing young people's "safety," most usually narrowly defined as injury reduction. There appears to be a widespread presumption that measures aimed at injury prevention are necessarily beneficial overall for young people's welfare. In this article, we subject European standards for play equipment and surfacing to scrutiny. In particular, we examine underlying motives, consistency of purpose, use of evidence, philosophical leanings, scope, practicalities of application, systems of management, and legal ramifications. From this, we identify a number of fundamental issues that suggest that as a consequence of compartmentalized thinking and misunderstandings, these standards have invaded areas of decision making beyond their legitimate territory. The consequence of this is that play provision is skewed away from what are properly play provision objectives. In such circumstances, local decision makers are often disempowered, and their ability to provide optimal play spaces thereby circumscribed.

Keywords

children, management systems, play, risk, safety, standards

Introduction

This article is, at its deepest level, about the interaction between *children and young people's play* and *systems of management*. At first sight, it might well appear that no interaction should be expected between such unlikely bed fellows as these, particularly as play has been characterized as behavior that typically involves children directing their own actions, and engaging actively, flexibly, and adaptively with uncertain and unpredictable situations (Lester & Russell, 2008) and thus, apparently, the antithesis of a managed activity. However, there is growing realization, from disparate walks of life ranging, for example, from outdoor adventure activities to education, health care, and even urban arboriculture, that seemingly remote management systems can have subtle and unintended consequences on public life, which may detract from the achievement of socially desired goals (e.g., Ball & Ball-King, 2011, 2013; Graham & Wiener, 1995). A reason for this may be that modern management systems continue at times to be overly reliant on methodologies derived from *systems engineering*.

It is undeniable that systems engineering approaches, as pioneered in the United States by Bell Laboratories, have been stunningly effective in dealing with immensely complex engineering problems of the type encountered, for example, in the *National Aeronautics and Space Administration's* 1960s Apollo program (Weigel, 2000). In that case, they enabled hundreds of agencies to work together on that intricate project and then to recombine their efforts into a working whole. However, systems engineering approaches have been less successful when applied to social issues. As Checkland and Poulter (2006, p. xi) have expressed,

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> In the event, the pattern of activity found in Systems Engineering—namely, precisely define a need and then engineer a system to meet that need using various techniques—was simply not rich enough to deal with the buzzing complexity and confusion of management situations.

Similar issues, over the "richness" of management systems, have emerged yet more widely still, for example, in the finance sector over the risk management activity referred to as "internal control." As Power (2004) has put it,

> Internal control systems are also highly problematic. Not only is it difficult to define their effectiveness, but, more crucially, a growing obsession with internal control may itself be a source of risk. First, internal control systems are organizational projections of controllability which may be misplaced; such systems are only as good as the imaginations of those who designed them. Second, internal control systems are essentially inward-looking and may embody mistaken assumptions of what the public really wants reassurance about (p. 28).

In this article, we examine how a management system, whose primary interests are safety and free trade, has affected the provision of play spaces in ways that, we believe, also bear the hallmarks of the "richness" and "internal control" syndromes. Although, paradoxically, play is supposedly to be freely chosen, provision for play has in recent decades become highly managed with numerous actors having an involvement. These include equipment manufacturers, trade associations, designers, providers, procurers, standards setters, insurers, inspectors, the courts (via litigation), policy makers, play workers, parents, and the young, each with their own agenda.

We are here particularly interested in the role of equipment standards and in unintended consequences arising from them. Equipment standards are used by many of these actors for a variety of purposes, often without any questions being asked. Thus, standards may assume an overwhelming presence, essentially dictating what will eventuate. Our ability to address these issues is based on our collective immersion, over several decades, within the play sector. This includes participation in standards setting, equipment design and manufacture, play space design, play policy, litigation, and academic research.

Current Dilemmas of Play

There is an upsurge in the recognition of the value and importance of outdoor play for children and young people and on ways to give them better play opportunities (National Children's Bureau, 2013). One reason for this is the realization that, through play, humans gain some of their first exposures to risk and this is where they learn how to cope with it at the personal level. As a 2012 high level statement from the Health and Safety Executive (HSE)—the United Kingdom's safety regulator—has put it,

> Play brings the world to life for children. It provides for an exploration and understanding of their abilities; helps them to learn and develop; and exposes them to the realities of the world in which they will live, which is a world not free from risk but rather one where risk is ever present. The opportunity for play develops a child's risk awareness and prepares them for their future lives.

From our perspective, this new awareness was predictable and is welcome, for there are by now copious reports, research papers, and media statements warning that children and young people have in some societies been deprived of essential developmental experiences for several decades and that corrective action is urgently required (Bundy et al., 2009; Guldberg, 2009; Jones, 2006; Louv, 2005; Play Safety Forum, 2002; Sandseter & Kennair, 2011). Multiple explanations have been offered as to why the situation deteriorated as it did. These range over political, economic, legal, and social factors. In this article, we focus on the role and use of former British and now international playground safety standards, particularly European standards such as EN1176 and 1177 promulgated by Comité Européen de Normalisation (CEN), the European Committee for Standardization (CEN, 2008a, 2008b). These standards are very important for some of the actors involved in play provision, manufacturers obviously, but also other actors who may deploy them for reasons other than those for which they were designed, for example, avoidance of liability.

It has also been argued that in general standards of whatever kind may bring about undesirable changes in society (MacRae, 2011). As argued by MacRae, they may promote the economic interests of particular groups, may contribute to excessive rule observance and disproportionate regulatory activity, can lead to non-optimal resource allocation, and may even encroach on civil liberties. In partial recognition, perhaps, of these difficulties, recently promulgated international standards even delve into the principles of risk management itself. Thus, the International Organization for Standardization's publication ISO 31000 (2009) refers to the importance of context, risk attitudes, and the need to align culture with policy.

As noted, our emphasis here is on European standards. However, we are aware that similar research has been reported in North America on Canadian standards for play equipment (Herrington & Nicholls, 2007). Likewise, there is also concern more widely, from continental Europe to the Antipodes, about what has been described as a narrow focus by standards on one issue, physical injury, at the apparent expense of a host of other dangers that potentially come as a result of modifying or otherwise restricting active play (Bundy et al., 2009; Christensen & Mikkelsen, 2008). The tendency, both in the text of the standards and in playground inspection reports, to treat "safety" and "injury prevention" as self-evident correlates reinforces this narrowing of view. To put it simply, standards themselves ostensibly focus on

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injury reduction and make scant reference to other issues of obvious importance, such as the health benefits of play and also opportunities to learn about risk. To deploy Checkland and Poulter's (2006) terminology, they lack richness, or Power's (2004) concept of internal control, they are too inward-looking and embody mistaken assumptions about what is needed.

In this article, we now discuss the ways in which these particular standards have been interpreted by various actors. Prior to doing this, it is necessary to examine a number of features and practical manifestations of how standards interact with the wider play community. This is achieved under the following headings: the evidence base that standards draw on, their ethos, their scope, and finally, their application during play inspections and as manifest in legal proceedings.

Examples of the Use of Scientific Evidence

Academic research ideally provides the evidence that underpins the design of interventions including those intended to increase safety. However, it is well-known that the communication and transfer of the meaning of research to end-users is a path with many potential pitfalls, even to the extent that "science communication" has become a topic of research in its own right. Thus, Herrington and Nicholls (2007) described how, in the 1970s and 1980s, lobbyists for Canadian playground standards apparently failed to take account of Canadian studies that showed that injury levels on playgrounds were not significantly high and misapplied injury data from the American Consumer Product Safety Commission. They speculated that this may have been done to fulfill primary objectives of the Canadian Standards Association (CSA; 2003), which were to "foster and promote voluntary standardization as a means of advancing the national economy" and to "facilitate domestic and international trade." Rational though of course these objectives are from a commercial perspective, they may not be synonymous with providing the best developmental opportunities for children and young people.

Some similarities with this situation, as described, can be observed in not-so-distant British play equipment standards. These earlier British standards are relevant because they went on to influence subsequent European standards. For example, British Standard BS 5696-2: 1979 and its 1986 version both claim that only limited data were available on playground accidents, thus requiring the standards Committee to "adopt a reasonable attitude in writing the recommendations for minimizing" the risks (British Standards Institution [BSI], 1979, 1986). Two points can be made about this. First, there were in fact statistics available by the early 1980s that, had the Committee looked, would have shown, as in Canada, that injury rates were low (these studies were identified in subsequent reviews; Ball, 1991; King & Ball, 1989). Second, the committee refers to "minimizing" risks. This is a particular view of injury control that is not universally shared. At the national level, risk minimization is not the normal goal and never has been, except in special circumstances. For example, the legal requirement in Britain is to do what is reasonable (or reasonably practicable) as set out in the Health and Safety at Work etc Act of 1974 (The National Archives, 2013a) and the Occupiers' Liability Acts of 1957 and 1984 (The National Archives, 2013b, 2013c), and is a fundamental principle of risk management.[1]

These early British standards also contain other indicators of thought processes along with an apparently less than rigorous approach to evidence. For example, BS 7188: 1989, which was about the use of impact absorbing surfacing (IAS) in playgrounds, states in the Foreword that "Studies of accidents have shown that the majority of the more serious cases involve head injuries caused through striking hard ground" (BSI, 1989). This bold statement is attributed in the standard to a 1975 article by Illingworth and colleagues, which had been published in the *British Medical Journal* (Illingworth, Brennan, Jay, Al-Rawi, & Collick, 1975). This is important because it was apparently on the strength of this evidence that BS 7188 went on to recommend the use of impact absorbing materials in playgrounds, a recommendation that subsequently had major implications for the design, specification, and also cost of play provision.

However, careful scrutiny of the Illingworth article reveals some disconcerting facts. First, the article is about a sample of 200 injuries caused by playground accidents. Of these, just 49% occurred on a park or similar playground as opposed to a school playground or at home, suggesting that less than 100 cases were used to justify what eventually turned out to be a billion dollar activity of fitting park playgrounds with impact absorbing surfaces. As the article itself states, "To draw meaningful conclusions about the relation of the severity of the accident to the type of play equipment greater numbers would be needed." More disturbing still is that the article in no way supports the British Standards Committee's then contention that "Studies of accidents have shown that the majority of the more serious cases involve head injuries caused through striking hard ground." The article in fact barely alludes to surfaces, and the majority of cases described were of minor injury. Of the few cases judged serious, 15 in total, most involved limb injuries and not the head, and IAS as then conceived were not designed to deal with limb injuries. Those cases, circa 6, which did involve the head, were attributed to a variety of causes including collisions with persons or objects (such as swing seats or fixed equipment), collapsing equipment, childhood behavior, or were unassigned.

Subsequent to the recommendations of BS 7188 on IAS, further research has been reported seeking retrospective justification for these products as well as for the more rigorous imposition of standards. Some of this has been reviewed elsewhere up to 2002 (Ball, 2002), and more material has

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been published since then by authors such as Norton, Nixon, and Sibert (2004) and Norton, Rolfe, et al. (2004). However, missing links persist in the chain from academic research on interventions aimed at fostering safety from injury, to their actual net benefit in the real world of children's play. For example, has the massive expenditure on IAS passed the test of resources well used? What have been the subtle consequences of placing children and young people in artificial environments when, arguably, they need to gain experience of the real world? What have been the consequences for the overall design of play environments? These basic questions continue to receive little more than superficial attention in much research on injury prevention.

Ethos and Perspective

Another fundamental issue regarding standards revolves around their ethos. In general terms, standards are primarily made for economic reasons. Despite, in some cases, setting safety requirements, they are the vehicles for ensuring free movement of goods between states. CEN's own guide to the process states that, "European Standardization's objective is to agree on common specifications to respond to the needs of industry, meet consumer expectations and contribute to the consolidation of the European Single Market" (CEN and CENELEC [European Committee for Electrotechnical Standardization], 2010, 2012).

The technical committees that draft standards at a European level are made up of delegations from national standards bodies that, by virtue of the above and the fact that delegates are self-financing, are industry dominated. In our experience, among their motivations are, first, removal of barriers to trade, and second, ensuring the resulting standard is as near as possible to each delegation's national standard, thus avoiding the expense of changes for home manufacturers.

The process is essentially one of harmonization, and it would be a mistake to assume it necessarily addresses the specific issues that might be of relevance to a user. Its intent is more to bring dissimilar national standards together to iron out differences. In this way, harmonization is defined by CEN as, "prevention or elimination of differences in the technical content of (national) standards having the same scope, particularly those differences that may cause hindrances to trade" (CEN and CENELEC, 2010, 2012).

In terms of matters specific to the play equipment and surfacing standards, we draw attention to the fact that in the 1998 version of BS EN1176-1, it says in the section headed Scope that "It is not the purpose of this standard to encompass the play value." Were this statement true, it would imply that the committee was concerned with risk minimization without reference to the benefits or "play value" of play provision. If so, this could well explain in some degree the emasculation of children and young people's play experiences over several decades. Intriguingly, this position has been adjusted in the Introduction to the latest version of BS EN1176-1 that opens with the statement that "It is not the purpose of the requirements of this standard to lessen the contribution that playground equipment makes to child development and/or play, which is meaningful from an educational point of view" (BSI, 2008). It then goes on to state that "Play provision should aim at managing the balance between the need to offer risk and the need to keep children safe from serious harm." Although this is radically different from the former position—which allegedly does not encompass play value or recognize the benefits of risk exposure—the standard itself has changed rather little in content. This is surprising with such an apparent shift in philosophy.

What is also missing is any acknowledgment of the source of this sea change. In fact, this is almost certainly attributable to the work of the United Kingdom's Play Safety Forum (PSF), in particular its 2002 Position Statement which observed that there was growing concern about how safety was being addressed in play provision and that a focus on injury risk minimization had prevented children and young people from enjoying healthy play opportunities with potentially damaging consequences for their development.

It could be argued, of course, that the PSF is just another interest group with different goals. However, the PSF's membership—which takes in four national agencies involved in promoting play,[2] a body involved in playwork training, a leading inclusive play provider, and several accident prevention charities, as well as representatives from play equipment manufacturers and standard-setting bodies—arguably brings in a broader and more balanced set of perspectives than, for instance, the EN Standards Committee. Moreover, the PSF's position is backed by substantial research, the volume of which increases year by year. Included in this would be a 2002 review commissioned and published by the HSE (Ball, 2002).

More recently, multiple authors from around the world have published on the benefits of play and the need for risk-taking experiences by children and young people. In particular, there has been a sharp growth in research from a psycho-social perspective. This avenue of investigation contrasts with that of the engineering-cum-medical approach that appears to conform with the model followed by the Standards Committee. First, it takes on board behavioral factors in the causation of playground injuries. This is important because it remains the case that most playground accidents are behavior-related and hence difficult to solve through environmental (engineering) strategies alone (Ball, 2002). Second, these approaches open the door to the overt consideration of the benefits of play and of risk taking, something frequently lacking in the engineering-cum-medical way of thinking which is more narrowly focused on injury reduction.

In particular, a suite of articles by Morrongiello and colleagues explores the psychology of childhood risk taking. One motivation for this inquiry is,

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> Many injury-prevention specialists believe that playground safety can best be realized by advocating for changes in environmental design and product safety standards. The simplicity of this approach is appealing. However, to the extent that children's behaviours also create risk, environmental modifications to playgrounds are not likely to be sufficient to prevent injury. (Morrongiello & Matheis, 2007, p. 827)

And another is,

> . . . use of safety gear may result in mis-perceptions of injury risk and this can produce unwanted effects. Specifically, individuals may assume that safety gear *completely* protects against all injury, and therefore the need to be cautious no longer exists, resulting in greater risk taking or increased tolerance for risk taking. (Morrongiello, Walpole, & Lassenby, 2007, p. 619)

This phenomenon, commonly referred to as *risk compensation*, has been a bone of contention for decades within public safety in general. This is not because of any lack of evidence for its existence—it can be seen in many pursuits, from cycling (Adams & Hillman, 2001) to mountaineering (Tejada-Flores, 1967). It is a controversial idea perhaps because it poses difficult questions for those who are committed to pursuing risk reduction by environmental means. However, it could still have been argued that risk compensation was an adult phenomenon and that it did not apply to children, but not anymore. Morrongiello, Walpole, and Lasenby (2007) have provided clear evidence that children (7-12 years of age) do increase their propensity to take risks when in situations that appear safer. Furthermore, this behavior arises because children see themselves as invulnerable from serious injury in apparently protective settings (Morrongiello, Lassenby, & Walpole, 2007), and because parents themselves become more relaxed about childhood risk taking (Morrongiello & Major, 2002). There is in fact a long history of such adult behavior with regard to children in their care in wider social settings (Viscusi, 1992). From this, it would appear that harboring the belief that safety can be achieved by environmental modifications alone is a false philosophy.

Christensen and Mikkelsen (2008, p. 113), writing about risk in play from a sociological perspective, further reinforced doubts about the wholesale application of the environmental approach to reducing risk. Like Morrongiello, they believe that the application of risk management as a "professional-technical function" is problematic in the context of everyday public life. They also go beyond this to challenge the concept of risk elimination, quoting Malaby (2002):

> Any view that begins with the assumption that risk is dangerous (and should be minimized/avoided) must be questioned . . . it is through the engagement of indeterminacies, rather than their minimization or resolution . . . that one may socially demonstrate one's place vis-à-vis chance, and, by extension, one's place in relation to others in the world.

Why, in the case of children and young people, might this be pertinent? As Christensen and Mikkelsen (2008, p. 113) said, again drawing on Malaby (2002), it can be posited that everyday life is characterized by uncertainty (risk), of which one may discern three basic kinds:

- performance indeterminacy, that is, in attempting to do something you may fail
- social indeterminacy, that is, interacting with others may lead to misunderstanding
- cosmological indeterminacy, that is, dealing with unanticipated events

These are uncertainties that children experience every day through immersion in the world. Being in this world enables them to learn how to deal with uncertainty and is in fact the only practical way in which they can learn many coping mechanisms. Consequently, attempting to engineer a risk-free world pushes children (and parents) into a Disneyesque situation in which uncertainty is supposed not to occur. Not only is this a deception, for none of the measures is totally protective, but as Greening et al. say, it results in children having a lack of experience and being desensitized to potential health risks (Greening, Stoppelbein, Chandler, & Elkin, 2005).

There is a long-standing view that children need to encounter risks to develop and participate actively in society (Roberts, Smith, & Bryce, 1995). Indeed, children are by no means careless risk takers but engage with risks deliberately, at least some of the time, as a means of exploring and understanding themselves and the world. Christensen and Mikkelsen's (2008) research shows that they are in fact practicing their own sophisticated form of risk management, an activity that is frequently invisible to adults. To attempt to isolate young people from such opportunities excludes them from many social relationships, emotional excitement, and involvement with other children. Furthermore, accidents are important events for children from which they learn many things. Thus, it can be argued that adults would be well-advised not to pursue the fallacy of risk elimination but instead create environments that will engage and extend children's risk assessment (RA) and management skills in a way that they will understand the nature of the world and so enhance their resilience (Gill, 2007, 2010).

Thus, the movement to reduce the injury toll on children's playgrounds may have been detrimental overall, in that it has deprived children of life experiences (fun *and* sorrow) and challenge (Herrington & Nicholls, 2007), subverted the evolutionary process of learning from one's mistakes (Christensen & Mikkelsen, 2008), may have led to an increase in psychopathology and neuroticism (Sandseter & Kennair, 2011), and has cast aside opportunities to foster citizenship and community (Peterson, 2011). It has also diverted a large percentage of the play budget away from its primary goals without clear evidence of net benefit (Ball, 2004).

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Scope

The arguments above lead us to question the scope of standards as currently conceived. Standards are often presented as being technical documents whose content and coverage are matters of objective truth and science. We reject this view, arguing instead that they are saturated with value judgments, a position reminiscent of that described by Collins (2009) in his analysis of the contemporary debate over the standing of scientific knowledge, and by Seedhouse (1997) in his discussion of the political bases of health care. Furthermore, it is the failure to recognize this paradox that leads to many of the confusions around standards and their application.

We think that the metaphor of "territory" is a useful way of characterizing the sort of issues that need to be addressed. Currently, we argue, play equipment standards occupy too large a territory. They trespass on, or colonize, areas where they have no right to be. There are arguments to be had as to where precisely the line of the new border between technical facts and value-based judgments should be drawn. However, before that discussion can take place, there first needs to be an acceptance of our premise: that is, that the territory currently occupied by play equipment standards is too extensive.

To be clear, our position is not that playground equipment standards are unnecessary, but that they have been allowed to influence areas beyond the scope of their competence. We draw a distinction between aspects of playground equipment standards that legitimately fall within the scope of engineering-cum-medical expertise and those that do not. That latter region, where engineering-cum-medical expertise should hold no sway, is the area where the emphasis should be on locally based value judgments. It lies squarely in the "richness" domain of Checkland and Poulter (2006).

Examples of where the standards should rightly hold sway include requirements for the structural integrity of play equipment platforms; specifying how deep the foundations should be for individual pieces of equipment; determining the appropriate length and strength of an unsupported cross beam. These are areas where the objective facts of the matter have legitimate authority. This is quite distinct from the wider, more complex, nuanced, and value-saturated considerations that need to be taken into account when determining what, in any particular case, constitutes "an acceptable level of risk."

We recognize that there are some gray areas where it is open to argument as to which side of our proposed border a particular aspect of play provision lies. One example might be in the matter of fall heights and undersurfacing. Should there be a standard, and if so, should it be in its present form, and how can the associated subjectivities and value judgments of any such standard be recognized? We do not here answer this question, but we recognize that it is a legitimate and important one to ask.

Currently, standards and the process of standard-making make no distinction between objective, engineering-cum-medical considerations, and value-based judgments. Instead, the two distinct territories are treated as one unified field of knowledge and decision making. This has had a deadening effect on the decision-making capacity of play providers, undermining their confidence and capacity to make informed value-based judgments about what is good for children and young people. Play providers have in effect ceded their authority to make value-based decisions to forms of technical expertise that should remain silent in the matter.

Judgments about what constitutes an "acceptable level of risk" in any particular situation do not admit of one objective and certain answer. Answers will emerge from the interplay between individual, community, and societal values, understandings, and beliefs. The sort of considerations that come into play here include views about children and young people's competence; the potential utility or otherwise of experiencing some injuries; the benefits, or otherwise, of risk taking. More prosaic local factors such as the age range and interests of users, and the degree, style, and intensity of adult supervision or oversight may also be relevant. The judgments made here are mediated through, and find life in, accumulated practical experience, which is the only way of dealing with "the buzzing complexity and confusion" of such management situations (Checkland & Poulter, 2006).

This value-saturated, accumulated practical experience might be one useful, although by no means comprehensive, way of characterizing "common sense." It is experience-based knowledge that is drawn from, feeds into, and is tested in everyday life. Two aspects of this knowledge base have particular salience. One is our capacity to observe what children and young people actually do and how they judge, negotiate, and respond to the different situations that they find or put themselves in. The other aspect is that every adult has, by definition, intimate, personal experience of being a child and knows—from the inside—something about the capabilities, interests, likes, and dislikes of children and young people. In other words, the types of knowledge highlighted here encompass what we might call a "lived-in" behavioral, psycho-social perspective.

"Common sense" judgments are not unassailable; they are open to challenge, and one person's common sense is often not the same as another's. This poses no in-principle problem. Attitudes to children, young people, their play, indeed to wider questions about the meaning and status of childhood and adolescence, are proper subjects of debate and contention within society. What counts here is that these types of question matter sufficiently to be the focus of our attention. At base, this is the stuff of politics and ethics, outside the purview of engineering-cum-medical stipulations and certainly beyond the scope of any standard. The sort of knowledge outlined here is simply ill-disposed to standardization.

Play Equipment Inspections

Problems with the structure and content of standards are mirrored in the custom and practice associated with play

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equipment inspections that, nowadays, constitute a major function in the provision of play. Playground inspections, as currently undertaken, are typically inspections in relation to standards. This is made clear in the following two edited and typical extracts from two anonymized play inspection companies' reports:

> Reference is made in this report to the European standard which is the appropriate safety standard for the site and equipment. The requirements and recommendations set out in that standard are not mandatory but provide the best information upon which risk assessments should be based.

> The inspections are carried out to assess the ongoing safety, stability and operation following the relevant European (EN) or British (BS) Standard . . . All inspections are non-dismantling and do not include testing that requires specialist equipment e.g. structural and impact attenuation testing or the use of a ladder . . . A professional 5x5 risk assessment focusing on items of equipment is provided . . . to assist the operator in determining the level of hazard found.

The references to standards, non-dismantling of equipment, RA, hazards, and safety are made in most inspection reports we have seen.

As we indicated earlier, when discussing the scope of standards, there are some issues covered by standards that are entirely legitimate and fall within the purview of what we have characterized as engineering-cum-medical territory. These include things such as the strength and structural integrity of crossbars and foundations, and the sag of cableways. Paradoxically, these areas of legitimacy, undeniably important from a safety perspective, are rarely addressed in playground inspections, because the requisite test equipment is expensive, require the presence of more than one inspector, or are beyond the competence of an inspector to assess. Given that inspections are in the main "non-dismantling," as the above extract makes clear, the inspection's claim that they "assess the ongoing safety, stability and operation . . . " of equipment is open to question. Related to this, there are parallel questions to be asked as to the degree of utility of post-installation or annual inspections provide, given that key elements of the equipment are left unchecked.

If the current standard encompasses stipulations beyond its competence, then any inspection that is based on the standard is likely to replicate the error. This has been experienced by those attempting to create more natural play environments, whether in designated play areas or as "playable space." Here, we find that boulders and fallen trees, for example, often become subject to inspection against the letter of the play equipment standards, with no room for judgment as to their relevance or applicability in more naturalistic contexts. In one example, play inspectors considering a raised log trail through mature woodland specified that the ground cover around the logs should be kept free from all loose materials and debris. Yet the "natural" world, even when contrived by the human hand, is essentially knobbly and irregular and not susceptible to standardization. Adherence to equipment-based inspection leads to inspection regimes effectively scuppering play providers' service objectives so far as creating more natural play settings is concerned.

Another problem is that inspections can obscure the difference between RA judgments and compliance or non-compliance with equipment or surfacing standards. It is not unusual to find inspections that "fail" equipment or surfaces for what common sense would judge are but minor deviations from the standard.

The wider question to be addressed here is as follows: What is the relationship between equipment standards and RA and management? Does a deviation from the standard automatically move the deviant equipment or surface toward creating an unacceptable level of risk? The answer is that it does not. And the reason for this is that there is no necessary relationship between equipment and surface standards, and judgments about what might constitute an acceptable level of risk. By way of example, it does not automatically follow that a fall height of more than 1 m with no IAS represents in practice a heightened level of risk, still less that it could be deemed to constitute an unacceptable level of risk. Standards are not a proxy for RA or management. This is in fact accepted by the standard itself, if only implicitly, although seemingly not always by inspectors, in that allowance is made within the standard for variation in interpretation in different jurisdictions.

Underlying this is the fundamental, in principle, problem of play equipment inspectors undertaking risk (benefit) assessments (RBAs)[3] at all. RBA, by its very nature, is a holistic process, each assessment focusing on the particularities of each individual site and its context. This includes, on one hand, the duty holder's play policy and provision objectives; and on the other, knowledge of each particular provision, how it is used in practice, how that use may or may not change over time and by different segments of the user population. Hence, monitoring of the provision yields some of the information required to make an informed risk-benefit judgment (Department for Children, Families and Schools, 2008; National Children's Bureau, 2013).

Play equipment inspectors, then, whose formal qualification may be restricted to knowledge of the equipment standards, are not in a position to make risk-benefit judgments on behalf of the duty holder, for three key reasons:

- standards cannot stand proxy for judgments about what constitute acceptable levels of risk. One cannot "read-off" a risk rating simply by referring to compliance or non-compliance with a standard;
- RBAs are value saturated, and those values must be those of the duty holder's, not the inspectors. In addition, the information required to form judgments about what constitutes an acceptable level of risk includes actual knowledge of how the provision is

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used over time—a "snapshot," one-off visit, often at a time when no children are using the provision, forms no basis for informed judgment;
- in law, making the risk (benefit) judgment is the responsibility of the duty holder; it cannot usually be outposted to external inspectors. Thus, any advice given to the duty holder, once accepted, typically becomes the duty holder's responsibility.

It needs to be stressed that in many countries, play equipment inspections, as with the standards themselves, are not mandatory. Conducting an RA or RBA is a legal requirement (in the United Kingdom at least). As with standards, so too with inspections, play providers have ceded their responsibility to determine whether in any particular case an external inspection is required and, if so, the criteria by which play provision is assessed.

Play Standards and the Courts

Turning now to the actual status of a European standard, once agreed (and this is by consensus in the Technical Committee and eventually by weighted voting of member states), it has to be implemented as a national standard in all 31 of the CEN's member states. In the United Kingdom, standards remain voluntary but are often cited in legal proceedings, thus giving them what appears to be and is conveniently assumed to be, a legal status. In European general safety legislation (European Parliament, 2002), however, it is perfectly acceptable to produce goods independently certified as safe but without compliance to the EN. Even so, it is important to remain aware that compliance with the standard does not of itself confer immunity from legal obligations, as BS EN 1176 itself states (BSI, 2008).

Nonetheless, recent history has found playground accidents to be an area of keen public interest in the United Kingdom, one that has on occasion led to legal proceedings. Doubtless, there are numerous reasons for this, one being the existence of the false belief that playgrounds can and should be totally safe, such that any accident is an automatic sign of someone's culpability. In addition, however, standards themselves have become entrained in this legal interest because they can be interpreted as providing a simple and easily applied recipe for determining whether a play space was of an officially approved quality and "safe." This tendency has been noted in particular in courts of the first instance (lower courts) that place heavy reliance on compliance with published standards and advice (Ball, Maggs, & Barrett, 2009). In contrast, appeal courts have shown themselves to be far more concerned with basic principles and the intent of the originating lawmakers, for example, whether what was done was reasonable in the circumstances. However, taking a case to an appeal court is a daunting proposition for anyone.

The problem for play providers, and society, is that the provision of good play opportunities may be supplanted by an interest in minimizing the risk of legal penalties, thereby restricting the provider's scope for decision making, a phenomenon that has, as we noted earlier, been termed "secondary risk management" (Power, 2004). There appear to be three substantive issues. The first is that standards are over-interpreted and focus on one form of harm, physical injury compounded with the fact that for the most part, they are based on questionable assumptions as to what might constitute a reasonable level of safety. Second, they cannot cater for local circumstances that, for whatever reason, might demand a more or less risky option. And third, the extent to which they factor in the benefits of play is obscure.

Conclusion

The rightness of the proposition that play involves self-directed, flexible responses to uncertainty (Lester & Russell, 2008) is now being substantiated by a growing body of research in social science. The rightness of it is attributable to the developmental needs of the young, and the net payoffs for society of the young going through that process and—it is important to remember—young people's enjoyment of their childhood in the here and now. The paradox is that we live in an era of management systems, many of which come with elements derived from systems engineering approaches, and which are less adept at supporting that highly variable, complex, and unpredictable form of personal and social expression, play.

This article examines issues that have troubled play providers for some decades, in particular, the diversion of play away from what play experts regard as its true goals. No doubt there are a number of reasons for this having happened, but in this article, our focus has been the impacts of European standards, including former British standards, on the safety of play equipment on play provision and the iron hand that this has placed on provision through the complex management system that has grown up around it.

The outcome is a picture of play equipment standards as facing a range of challenges. We examined their evidence base, ethos, scope, and application, and found problems in each area. Our critique has ranged across a number of disciplines, including science, management, philosophy, psychology, public policy, law, and practical experience in use. Although we have focused on European standards, we believe that our analysis may well apply to standards from other parts of the world as reported, for example, by Herrington and Nicholls (2007).

Our aim is not to question the actions of individuals or institutions who are often well-meaning. It is to suggest how management systems, processes, and ways of thinking have led to a situation whereby a tool that apparently aims to reduce the levels of injury and suffering experienced by children and young people has inadvertently created significant barriers to their health and well-being. As noted in the

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Introduction, unintentional "risk transfer" problems of this kind are not new and have been identified in many walks of life (e.g., Graham & Wiener, 1995).

As should be clear, we take seriously the goal of giving children the opportunity for healthy, enjoyable, and developmentally stimulating play experiences. Moreover, we welcome the greater attention and effort being given to children and young people's outdoor play in many countries around the world.

What can be done about this situation? The normal response to calls for research on children's play is for further investigation of measures to reduce risk, for example, there is an ongoing debate on the need for improved safety surfacing. However, we think that research of a different kind is needed that would focus on

- measuring the benefits of play provision;
- understanding more about how children and young people learn about risk;
- reexamining and debating how standards can best contribute to this process;
- identifying the historical, cultural, and economic factors leading to the pre-eminence of technical standards when dealing with complex social and personal phenomena;
- the use of evidence in the revision of standards;
- and "common sense," non-formal forms of decision making.

Notes

1. Although it is sometimes argued by those intent on risk minimization that the legal requirement should be seen as a minimum standard, this is illogical because it would imply that one should do more than is reasonable, itself an unreasonable proposition.
2. The four agencies are Play England, PlayBoard Northern Ireland, Play Scotland, and Play Wales.
3. We prefer the term *risk benefit assessment* (RBA) over *risk assessment* (RA). RBA explicitly acknowledges the benefits of play, including exposure to some risk, whereas the term *risk assessment* does not. However, the comments in the text apply equally to RBA and RA.

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References

Adams, J., & Hillman, M. (2001). The risk compensation theory and bicycle helmets. *Injury Prevention*, *7*, 89-91.

Ball, D. J. (1991). Playground injuries: A scientific appraisal of popular concerns. *Journal of the Royal Society of Health*, *111*, 134-137.

Ball, D. J. (2002). *Playgrounds: Risks, benefits and choices*. Sudbury, Ontario, Canada: HSE Books.

Ball, D. J. (2004). Policy issues and risk-benefit trade-offs of "safer surfacing" for children's playgrounds. *Accident Analysis & Prevention*, *36*, 661-670.

Ball, D. J., & Ball-King, L. N. (2011). *Public safety and risk assessment*. London, England: Routledge.

Ball, D. J., & Ball-King, L. N. (2013). Safety management and public spaces. *Risk Analysis*, *33*, 763-771.

Ball, D. J., Maggs, D., & Barrett, M. (2009). *Judges, courts, the legal profession and public risk*. London, England: Risk and Regulation Advisory Council.

British Standards Institution. (1979). *Play equipment intended for permanent installation outdoors: Part 2, Recommendations for minimizing hazards in equipment* (BS 5696). London, England: Author.

British Standards Institution. (1986). *Play equipment intended for permanent installation outdoors: Part 2, Specification for construction and performance* (BS 5696). London, England: Author.

British Standards Institution. (1989). *British Standard methods of test for impact absorbing playground surfaces* (BS 7188). London, England: Author.

British Standards Institution. (1998). *Playground equipment: Part 1, General safety requirements and test methods* (BS EN 1176–1, p. 4). London, England: Author.

British Standards Institution. (2008). *Playground equipment: Part 1, General safety requirements and test methods* (BS EN 1176–1, p. 6). London, England: Author.

Bundy, A. C., Luckett, T., Tranter, P. J., Naughton, G. A., Wyver, S. R., Ragen, J., & Spies, G. (2009). The risk is that there is "no risk": A simple, innovative intervention to increase children's activity levels. *International Journal of Early Years Education*, *17*, 33-45.

Canadian Standards Association. (2003). *CAN/CSA-Z614: Children's playspaces and equipment standard*. Toronto, Ontario, Canada: Author.

Comité Européen de Normalisation. (2008a). *EN 1176: Playground equipment and surfacing*. Brussels, Belgium: Author.

Comité Européen de Normalisation. (2008b). *EN 1177: Impact attenuating playground surfacing: Determination of critical fall height*. Brussels: Author.

CEN and CENELEC [European Committee for Electrotechnical Standardization]. (2010). *Making European standards*. Retrieved from http://www.cencenelec.eu/news/publications/Publications/MakingEuropeanStandards.pdf

CEN and CENELEC. (2012). *Internal regulations part 2, Common rules for standardization work*. Retrieved from ftp://ftp.cen.eu/BOSS/Reference_Documents/IR/CEN_CLC/IR2_E_AD.pdf

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Checkland, P., & Poulter, J. (2006). *Learning for action: A short definitive account of soft systems methodology*. Chichester, UK: Wiley.

Christensen, P., & Mikkelsen, M. R. (2008). Jumping off and being careful: Children's strategies of risk management in everyday life. *Sociology of Health & Illness*, *30*, 112-130.

Collins, H. (2009). We cannot live by scepticism alone. *Nature*, *485*(5), 30-31.

Department for Children, Families and Schools. (2008). *Design for play: A guide to creating successful play spaces*. London, England: National Children's Bureau.

European Parliament. (2002). General product safety directive, 2001/95/EEC. *Official Journal*, *L11*, 4.

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

Gill, T. (2010). *Nothing ventured: Balancing risks and benefits in the outdoors*. Nottingham, UK: English Outdoor Council.

Graham, J. D., & Wiener, J. B. (1995). *Risk versus risk: Tradeoffs in protecting health and the environment*. Cambridge, MA: Harvard University Press.

Greening, L., Stoppelbein, L., Chandler, C. C., & Elkin, T. D. (2005). Predictors of children's and adolescents' risk perception. *Journal of Pediatric Psychology*, *30*(5), 425-435.

Guldberg, H. (2009). *Reclaiming childhood: Freedom and play in an age of fear*. London, England: Routledge.

Health and Safety Executive. (2012). *Children's play and leisure: Promoting a balanced approach*. Retrieved from http://www.hse.gov.uk/entertainment/childs-play-statement.htm

Herrington, S., & Nicholls, J. (2007). Outdoor play spaces in Canada: The safety dance of standards as policy. *Critical Social Policy*, *27*, 128-138.

Illingworth, C., Brennan, P., Jay, A., Al-Rawi, F., & Collick, M. (1975). 200 injuries caused by playground equipment. *British Medical Journal*, *4*, 332-334.

International Standards Organisation. (2009). *Risk management: Principles and guidelines*. Geneva, Switzerland: Author.

Jones, D. (2006). *Cotton wool kids* (Issues Paper 7). Coventry, UK: Heads Teachers and Industry.

King, K. L., & Ball, D. J. (1989). *A holistic approach to accident and injury prevention in children's playgrounds*. London, England: London Scientific Services.

Lester, S., & Russell, W. (2008). *Play for a change: play, policy and practice: A review of contemporary perspectives*. London: Play England.

Louv, R. (2005). *Last child in the woods: Saving our children from nature-deficit disorder*. Chapel Hill, NC: Algonquin Books.

MacRae, D. (2011). Standards for risk assessment of standards: How the international community is starting to address the risk of the wrong standards. *Journal of Risk Research*, *14*, 933-942.

Malaby, T. M. (2002). Odds and ends: Risk, mortality and the politics of contingency. *Culture, Medicine and Psychiatry*, *26*, 283-312.

Morrongiello, B. A., Lassenby, J., & Walpole, B. (2007). Risk compensation in children: Why do children show it in reaction to wearing safety gear? *Journal of Applied Developmental Psychology*, *28*, 56-63.

Morrongiello, B. A., & Major, K. (2002). Influence of safety gear on parental perceptions of injury risk and tolerance for risk taking. *Injury Prevention*, *8*, 27-31.

Morrongiello, B. A., & Matheis, S. (2007). Addressing the issue of falls off playground equipment: An empirically-based intervention to reduce fall-risk behaviours on playgrounds. *Journal of Pediatric Psychology*, *32*, 819-830.

Morrongiello, B. A., Walpole, B., & Lassenby, J. (2007). Understanding children's injury-risk behaviour: Wearing safety gear can lead to increased risk taking. *Accident Analysis and Prevention*, *39*, 618-623.

The National Archives. (2013a). *The Health and Safety at Work etc. Act 1974*. London, England: Author. Retrieved from http://www.legislation.gov.uk/ukpga/1974/37

The National Archives. (2013b). *The occupiers liability acts 1957*. London, England: Author. Retrieved from http://www.legislation.gov.uk/ukpga/Eliz2/5-6/31/contents

The National Archives. (2013c). *The occupiers liability acts 1984*. London, England: Author. Retrieved from http://www.legislation.gov.uk/ukpga/1984/3

National Children's Bureau. (2013). *Managing risk in play provision: Implementation guide*. London, England: Author.

Norton, C., Nixon, J., & Sibert, J. R. (2004). Playground injuries to children. *Archives of Disease in Childhood*, *89*, 103-108.

Norton, C., Rolfe, K., Morris, S., Evans, R., James, R., Jones, M. D., . . . Sibert, J. (2004). Head injury and limb fracture in modern playgrounds. *Archives of Disease in Childhood*, *89*, 152-153.

Peterson, G. T. (2011). Playgrounds which would never happen now, because they'd be far too dangerous: Risk, childhood development and radical sites of theatre practice. *Journal of Applied Theatre and Performance*, *16*, 385-402.

Play Safety Forum. (2002). *Managing risk in play provision: A position statement*. London, England: National Children's Bureau.

Power, M. (2004). *The risk management of everything: Rethinking the politics of uncertainty*. London, England: DEMOS.

Roberts, H., Smith, J. S., & Bryce, C. (1995). *Children at risk? Safety as a social value*. Milton Keynes, UK: Open University Press.

Sandseter, E., & Kennair, L. (2011). Children's risky play from an evolutionary perspective: The anti-phobic effects of thrilling experiences. *Evolutionary Psychology*, *9*, 257-284.

Seedhouse, D. (1997). *Health promotion: Philosophy, prejudice and practice*. Chichester, UK: Wiley.

Tejada-Flores, L. (1967). The climbers game. *Ascent*, *1*, 23-25.

Viscusi, K. W. (1992). *Fatal tradeoffs: Public and private responsibilities for risk*. New York, NY: Oxford University Press.

Weigel, A. L. (2000). *An overview of the systems engineering knowledge domain*. Boston, MA: MIT. Retrieved from http://www.yumpu.com/en/document/view/4081955/an-overview-of-the-systems-engineering-knowledge-domain-mit.

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