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ABSTRACT
Despite increased interest in children's risk-taking in play, little is known of this aspect considering children under three years. Therefore, this study aimed to investigate the concept of scaffolding to potentially describe patterns in staff–child interaction in 1–3-year-olds' risky play. Empirical data were taken from an exploratory study, executed as a focused ethnography with multiple data collecting techniques, resulting in a sample of 198 instances of risky play. Findings indicate that scaffolding is a pertinent theoretical foundation for describing high-quality staff–child interaction in risky play, leading to increased opportunities for developmentally appropriate stimulation. Of the 171 instances where staff were present, staff did not interact at all in 70 of the instances (41%). Staff–child interaction, directly related to children's risky play, occurred in the remaining 101 instances. Of these 101 instances, 'Scaffolding'- and 'Non-scaffolding'-interaction were observed in 78% and 22% of the instances, respectively. Implications are discussed.

Introduction

The rapid global increase in enrolment of children under three in early childhood education and care (ECEC) (Engel, Barnett, Anders, & Taguma, 2015) entails a growing concern whether children are allowed diverse play opportunities in institutionalized settings:

> Creating and sustaining the conditions for spontaneous free play in the increasingly formalized environments in which early experience unfolds presents significant challenges for early childhood educators. (Hewes, 2014, p. 296)

Of specific interest for this study is play that involves risk and how such play is met in ECEC-institutions. It is already documented that older children's risky play is met with ambiguity, and often deterred because of concerns with safety (Brussoni, Olsen, Pike, & Sleet, 2012; Gill, 2007; Wyver et al., 2010). In the parent–child relationship, this is often described as overprotection, with the unintentional consequence of depriving children of developmental opportunities (Clarke, Cooper, & Creswell, 2013; Ungar, 2009).

Considering the increasing population of children under three in ECEC and that previous related research only includes older children (Bjørnestad et al., 2012, p. 21), the purpose of this article is to investigate the characteristics of ECEC-practitioners' interaction with children aged 1–3 years, in risky play. The aim of this article is two-fold: (1) to examine the pertinence of the concept of

scaffolding in relation to staff–child interaction and risky play and (2) to examine patterns in staff–child interaction in risky play. This article is based on an exploratory study investigating a range of aspects of risky play in the under-three age group.

Risky play

The literature identifies risk-taking as actions with a probability for undesirable results or negative consequences (Byrnes, Miller, & Schafer, 1999), and maintains that approaching and comprehending risks gradually through play enables children to understand situations, assess their own capabilities, and avoid future excessive risks (Adams, 2001; Ball, 2004; Byrnes, Miller, & Reynolds, 1999; Sandseter & Kennair, 2011).

This notion derives from several disciplines and suggests that the ability to handle dangerous or risky situations is, from infancy, a combination of instincts and learning. For example, several adaptations of the 'visual cliff experiment' show that fear of height is partly innate and that the protective function of fear is combined with learning through experience (Adolph, Kretch, & LoBue, 2014). To make a comprehensive risk assessment, one must appropriately assess both probability *and* severity of consequence, and studies show how this ability exists, albeit not yet fully developed, with infants (≤14 months) (Kretch & Adolph, 2013). Another way to view the usefulness of gradual and playful experience with risk is how play might function as 'training for the unexpected' (Spinka, Newberry, & Bekoff, 2001). For example, studies indicate that fear of novel situations is a hindrance for optimal performance, but that play experiences in childhood might dampen such fear, mainly by improving self-regulation (Pellis & Pellis, 2007; Riksen-Walraven & van Aken, 1997).

Children's risk-taking can be related to the concept of play, hence the concept *risky play*, which Sandseter (2010) describes with these characteristics: '[risky play] involves thrilling and exciting forms of physical play that involve uncertainty and a risk of physical injury' (2010, p. 22). Additionally, she identifies six categories of risky play: (1) Play with great heights (danger of injury from falling), (2) play with high speed (uncontrolled speed that can lead to collision), (3) play with dangerous tools (that can lead to injuries), (4) play near dangerous elements (such as fire, water, or heights), (5) rough-and-tumble play (where children can harm each other), and (6) play where the children can get lost. To adapt the understanding of risky play to children under three years, Kleppe, Melhuish, and Sandseter (In press) suggest that 1–3-year-olds engage in subtler forms of risky play; particularly less physical and where the objective risk of injury is not apparent. For example, the category 'playing with dangerous elements' is expanded to include a wider range of elements, focusing on the subjective risk, i.e. if the child perceives a risk in the situation, rather than an objective risk of injury. Additionally, two new categories are suggested, namely playing with impact (e.g. children throwing themselves onto mattresses or crashing bikes into walls) and vicarious risk (where children watch other children play risky, e.g. ski jump). Thus modified, 1–3-year-olds' risky play can be characterized as play that involves uncertainty and exploration – bodily, perceptual or environmental – that could lead to negative consequences.

If we accept these notions, it becomes important for ECEC-staff to allow children to experience new situations, involving a range of emotions (including fear) and facilitating the development of risk assessment skills. Naturally, such practises are influenced by a complex set of personal and contextual factors (Hughes, 2010; Little, Wyver, & Gibson, 2011; van Rooijen & Newstead, 2016). It should therefore be noted that this study is executed in Norway and that previous studies indicate a relatively high tolerance by Norwegian practitioners for such play (Borge, Nordhagen, & Lie, 2003; Little, Sandseter, & Wyver, 2012; New, Mardell, & Robinson, 2005). Whether this challenges the transferability of potential findings in this study will be discussed.

Ultimately, regardless of developmental outcome, play is a natural part of children's experience and children do not play consciously for learning purposes, rather, from the child's perspective, the experience of play has intrinsic value (Hewes, 2014; Lillemyr, 2009; Sutton-Smith, 2009). Therefore,

in this study, children's play is interpreted as both an activity that is valuable in its own right and as an activity with potential benefits for development and/or learning.

Theoretical concepts of interaction in ECEC

It is widely acknowledged that staff–child interaction represents the core aspect of process quality in any ECEC context (Dalli et al., 2011; Helmerhorst, Riksen-Walraven, Vermeer, Fukkink, & Tavecchio, 2014; Lamb, 2009; NICHD, 1996). ECEC-practitioners have a key role in establishing a sense of security, and promoting well-being and development. Consequently, there is a growing base of research, theoretical concepts and observational tools to assess and interpret staff–child interaction. Despite the growing interest, there is limited research looking into interaction with children under three, and none in relation to risky play. Therefore, the first aim of this article is to investigate the relevance of existing theoretical concepts and the potential adaptation of observational methods.

Historically, ECEC-research builds largely on two approaches to adult–child interaction. One emphasizes caregiving aspects from the perspective of attachment theory (Ainsworth, Blehar, Waters, & Wall, 2014; Bowlby, 1982); and another emphasizes educational purposes (Fröbel & Hailmann, 2005; Piaget, 1954; Vygotsky, 1978). Notably, attachment theory provides an excellent metaphor for interaction in risky play, namely 'a secure base from which to explore' (Dalli et al., 2011, p. 70). This also captures two main aspects of so-called holistic pedagogy in ECEC, i.e. a combination of both the caregiving aspect (a secure base) and the educational aspect (exploration). However, attachment theory, and later developments, are criticized for not including contextual factors (De Wolff & van Ijzendoorn, 1997), and tend to focus on socio-emotional aspects, with little attention to other aspects of development (Waters & Cummings, 2000).

A recent wave of research in ECEC, influenced by both above-mentioned theoretical strands, takes a so-called bottom-up approach, i.e. emphasizes the child's perspective in interaction (Bae, 2012; Hallam, Fouts, Bargreen, & Caudle, 2009). In this vein, there are several instruments assessing process quality from the child's perspective, e.g. the Observational Record of the Care Giving Environment (ORCE/M-ORCE) (Kryzer, Kovan, Phillips, Domagall, & Gunnar, 2007; NICHD, 1996), the Caregiver Interaction Profile (CIP) (Helmerhorst et al., 2014), the Classroom Assessment Scoring System (CLASS) (Jamison, Cabell, LoCasale-Crouch, Hamre, & Pianta, 2014; La Paro, Hamre, & Pianta, 2009), or the Parenting Interactions with Children: Checklist of Observations Linked to Outcomes (PICCOLO) (Norman & Christiansen, 2013). Such instruments have shown strong associations between scores on the respective instruments and children's well-being and development (La Paro, Williamson, & Hatfield, 2014; NICHD, 2001). Inevitably, several of these instruments were considered for this study, but, since they typically assess interaction in a broad perspective using established ideas, they were found not appropriate for exploring 'new' phenomena such as risky play[1]. In general, however, the (often) coinciding detailed descriptions of high-quality care extracted from these instruments, specifically the caregiver's *warmth, sensitivity and responsiveness*, have influenced this article's interpretations and analysis.

Interaction as scaffolding children's play

As suggested by Kleppe et al. (In press), the Zone of Proximal Development (ZPD) is a theoretical concept suited to understand risky play. The ZPD is what lies just beyond the learners' current knowledge or experience. In risky play this zone is related to the level of risk and can be observed as three basic choices: increase, decrease, or maintain the risk (e.g. climb higher in the tree, climb lower, or stay where you are). The crucial assessment the ECEC-practitioner must make is to determine how much guidance the child needs at any given moment in play. That is, regarding the risk, how to support the increase, decrease, or status quo. In this way a response from the practitioner can be observed and interpreted as either a good or a poor fit in response to the child's play needs

(Trawick-Smith & Dziurgot, 2011). Several maintain that a good way to describe a good fit response is with a set of skills referred to as *scaffolding*:

> The concept of pedagogy as providing a scaffolding for learning has been important for informing instruction in the early years. Scaffolding derives from Vygotsky's notion of the 'zone of proximal development', a zone that includes everything that is achievable with assistance, which would otherwise lay beyond individual capability. This zone varies with culture, society, and experience but it must be fostered in joint activity that creates a context for child and expert interaction within a social context. (Siraj-Blatchford, Muttock, Sylva, Gilden, & Bell, 2002, p. 34)

Although broadly applied in ECEC-research, scholars more or less agree on three central aspects of scaffolding. First, *intersubjectivity* refers to the establishment of a shared understanding between the actors, specifically defined by Wertsch (1998) as '[…] the degree to which interlocutors in a communicative situation share a perspective' (p. 112). Intersubjectivity is therefore seen as a prerequisite for – and a fundamental aspect of – interaction between caregiver and infant (Stern, 1986; Trevarthen & Aitken, 2001). In this line, Dalli et al. (2011) suggest intersubjectivity as the core pedagogical strategy in ECEC for infant/toddlers and is closely linked to descriptions such as *warmth, sensitivity, and responsiveness.* These terms operationalize how intersubjectivity is made possible and is presented as optimal behaviour in detail in standardized tools (see for example Helmerhorst et al., 2014; Norman & Christiansen, 2013). Consequently, intersubjectivity can be seen as a prerequisite for successful scaffolding.

Next, *joint problem solving* addresses concrete learning as a focus for intersubjectivity: What is the child's interest and how should the child be supported (Trawick-Smith & Dziurgot, 2011)? Most researchers agree that optimal learning takes place when the adult/more-experienced peer and the learner together explicitly define the problem and work towards a common goal (Berk & Winsler, 1995; Siraj-Blatchford et al., 2002). Trawick-Smith and Dziurgot (2011) outline specific categories of problem-solving in order to determine the appropriate adult response to child's play, of which *Task completion/performance* (for example 'Actively seeking help in performing or completing a task') and *Thinking/constructing knowledge* (for example 'Requesting help in problem solving' or 'Failing to notice or attend to important aspects of a problem') are relevant for risk-taking in play.

Last, the concept of *self-regulation* addresses a crucial aspect of the learning process. Notably, some theories focus on self-regulation in terms of *social adjustment in relation to others,* to the extent that a more appropriate term would be 'other-regulation' (Bodrova, 2008; Schunk & Zimmerman, 1994). In contrast, this article focuses on self-regulation as self-adjustments in relation *to own feelings and capabilities,* inspired by conceptualizations such as Byrnes' Self-Regulation Model (SRM) (Miller & Byrnes, 1997). Summarized, five self-regulatory tendencies are seen asessential for risk takers to succeed in a given situation: (1) knowledge of diverse strategies, (2) the ability to coordinate multiple goals, (3) being capable of handling uncertainty, (4) self-correcting strategies when doing mistakes (assess tendencies, biases, and limitations), and (5) a tendency to learn from experience. In this view, both climbing higher up in the tree or climbing down can be interpreted as self-regulation, i.e. the child regulates its actions according to his/her perception and knowledge of self in relation to both emotions (exhilaration/fear) and capabilities (able/unable).

To externally support such processes, the ECEC-practitioner is required to relinquish control as soon as the child can work independently. Paradoxically, the practitioner must make an active choice of *not acting* (further). This entails that he/she should observe the children and permit them to grapple with challenges and intervene only when they are truly stuck (Berk & Winsler, 1995; Trawick-Smith & Dziurgot, 2011). If interacting, an indirect level of intervention – hint-giving, question-asking, modelling, and other subtler forms of support – is seen as optimal for children's development while in the zone of proximal development (Trawick-Smith & Dziurgot, 2011). When these requirements are met, children are permitted to stay largely responsible for

making decisions. Following Vygotsky and neo-Vygotskian in this vein, *autonomous play* would be considered the ultimate goal of scaffolding. As soon as the child can regulate his/her behaviour and work independently, the adult/teacher should withdraw. Consequently, the optimal play situation in this study would be independent risky play, albeit with observing/supervising staff.

Method

Participants

In total, five ECEC-centres participated, with 53 children (between 1 and 3 years of age) and 21 staff (15 female and 6 male). Children were 28 boys and 25 girls, with 26 one-year-olds, 20 two-year-olds, and 7 three-year-olds. The low number of three-year-olds reflects Norwegian practise, where children move to the older age group within the semester they turn three.

The centres were selected from BePro's representative sample of 207 Norwegian ECEC-centre groups, which are mapped and measured with several standardized instruments, e.g. the Infant-Toddler Environment Rating Scale - Revised edition (ITERS-R) (Harms, Cryer, & Clifford, 2003). The centres were selected with three criteria. First, two centres were selected based on their respective scores on the ITERS-R, enabling comparisons and examination of *variation* on dimensions of theoretical interest (Seawright & Gerring, 2008), in this case, variations in the general quality of adult–child interaction (as measured by ITERS-R) and latent variations in interaction in risky play. For potential contrasting effects, one centre from the highest scoring portion of centres (ITERS-R > 5.5) and one from the lowest scoring portion were selected (ITERS-R < 2.5). Further, two forest/nature ECEC-centres were selected based on previous research indicating a bigger chance of getting relevant observations *outdoors* (Aarts, Wendel-Vos, van Oers, van de Goor, & Schuit, 2010; Cosco, Moore, & Islam, 2010; Sando & Lysklett, 2012; Storli & Hagen, 2010). Last, one ECEC-group of only one-year-old was selected to get more detailed observations of that specific age group.

Data collection

The data collection was planned and executed in cooperation with the large scale longitudinal project Better Provision for Norwegian Children in ECEC (BePro, 2013).[2] The study has obtained the required approval from the Norwegian Social Science Data Service and Norwegian Data Protection Authority, and adheres to all ethical standards and privacy policies that ensure participants' confidentiality and anonymity.

The main data collecting strategy was focused ethnography (Knoblauch, 2005), meaning that the researcher took part in children's everyday life, but recorded only selected aspects or phenomena, in this case, activities involving risk (criteria for observations are further specified below). This method is considered appropriate for collecting data on specific phenomena with as little intrusion as possible. Similarly, the role of detached observer was chosen for its non-intrusiveness, but also because it is generally regarded as well suited for ethnographic studies with children (Gulløv & Højlund, 2003) and for exploratory, descriptive purposes (Lange & Mierendorff, 2009).

Observations were directed by two main criteria: the subjective and the objective risk in a given situation (Adams, 2001; Sandseter, 2009b), thus following Bakeman and Gottman's (1997) suggestion for obtaining information on interaction by defining various forms of behaviour beforehand. Objective risk involves pre-defined, observable or measurable risk factors, while subjective risk involves how individuals perceive these factors differently in different situations. Sandseter (2009a) maintains that objective risk can be observed as the *environmental characteristics* of the situation, e.g. height, speed, unstable surfaces, etc., while the subjective risk can be observed as *individual characteristics*, i.e. how the children expresses their experience through body language, facial expressions, sounds, or words. Observations were made each time these criteria were met, resulting in a dataset made up of

units of behaviour, i.e. the smallest possible but still meaningful piece of information (Lincoln & Guba, 1985, p. 345). In this article, this unit is called 'Instance of risky play'.

For each such unit, a set of contextual information was collected and coded accordingly, namely time, place, who (including age and gender composition of the children, and the gender of staff), and interaction (either child–child or adult–child). Interaction was defined as verbal or non-verbal action within an adult–child play situation. This mapping provides a record of the frequency of behaviour and contextual relations, permitting statistical analysis. Video was applied for two days, to increase the level of detail in the qualitative descriptions (Knoblauch & Schnettler, 2012). Similar to the field notes, video-recordings were cued by any potential subjective or objective risk, resulting in ~4 hours of recordings. Recordings were coded similar to the field notes. In this article the data were analysed to assess whether the observed adult responses matched children's needs in risky play, and hence categorized as scaffolding.

Groups consisting of 1–3-year-olds were observed for 10 days, giving a sample of 198 instances of risky play. Initial observations indicated deviations in how children under two years played, so groups of one-year-olds only, aged 1.1–1.11 years, were observed additionally for 4 days. Observations of one-year-olds only were also quantified, but these instances are not merged with the sample of 1–3-year-olds, and only included in the qualitative analysis. The groups were observed indoors and outdoors, between August and February the following year, to examine varying environmental conditions.

Analytic criteria

For staff–child interaction, the instances with 1–3-year-olds ($n = 198$) were coded as four mutually exclusive categories; 'Alone', 'No interaction', 'Scaffolding-' or 'Non-scaffolding interaction'. 'Alone' means that staff were not in plain view at the time/place of that specific instance of risky play. 'No interaction' means that staff were present, but show no sign of interacting with the child. As theories of scaffolding adheres special significance to no interaction, challenges regarding this category are discussed below. Criteria for coding an instance as 'Scaffolding' are based on the initial theoretical assumptions, and include the following three aspects.

Warmth and responsiveness should be observed as the ECEC-practitioner consistently acknowledges children's individual emotional and physical needs in a warm and forthcoming way and responds appropriately and promptly to their cues and signals. The behaviour should also be observed as engaged and with a certain level of energy.

Joint problem-solving should be observed and should contain a risk, either or both a subjective and/or an objective risk. The observations should identify *with what* do children actually need scaffolding, how the practitioner shows genuine interest in the child's risk-taking, and how this experience is shared with the child through looks, facial expressions, body language, and/or words.

Promoting self-regulation should be observed as the ECEC-practitioner shows an appropriate response to the child's need, i.e. an appropriate action in relation to how much guidance children need at that moment in play. The practitioner's behaviour must be interpreted as an intentional choice of relinquishing control, leaving the further choices of action up to the child. Observations should show how the pedagogue communicates this to the child through looks, facial expressions, body language, and/or words.

Typically, observational tools utilize ordinal scales to assess quality, i.e. a high score indicates good quality and a low score indicates poor quality. In this study, this is simplified with a categorical variable. If the interaction in an instance is characterized with all three criteria, it was coded as *scaffolding* (which indicates a good fit response/high quality). If the interaction cannot be characterized with all three criteria, it was coded as *non-scaffolding* (which indicates a poor fit response/low quality). Hypothetically, Scaffolding and Non-Scaffolding interaction can occur in the same sequence, especially in longer sequences of play, but on a regular basis, the interaction could be deemed either /or. Therefore, in the analysis, these categories are mutually exclusive.

Findings and interpretations

The findings are split into two sections following the article's two main questions. First, the relationship of scaffolding to risky play is presented based on qualitative interpretations. Second, patterns in the staff–child interaction in risky play are presented based on descriptive statistics, and triangulated with ITERS-R scores.

The relationship of scaffolding to risky play

To investigate the relationship of scaffolding in risky play, qualitative interpretations of two episodes are presented to answer the following questions: (1) Is it play? (2) What is the risk involved? (3) With what do the children need support? (4) Can the response be characterized as appropriate to the child's need? (5) Can the adult response be characterized with all three criteria for scaffolding? The first example is chosen from the category of playing with speed, which was the category linked with the most scaffolding (37%):

Example 1

Thomas (teacher) is sliding/sledging with a group of 8–9 children, aged 2 to 6 years. (The day before, the teachers made huge piles of snow on the slope, which now have hardened and they have dug holes through the piles, acting as tunnels to slide through.) They slide on large soft mats. Thomas is sliding for about an hour and his behavior is consistent throughout. At the top, he waits for everyone that wants to join the 'train' (two-three mats joined/held together). He addresses each one individually, 'do you want to join?' etc. To Elias (3,1)[3]: Do you want to sit here (on his lap)? Elias points to the rear. Thomas lets out a small laugh: 'To avoid snow in the face?' (Refers to the previous slide, where Elias got snow in the face and started to cry). You should sit in front of Emil then. This means Elias sits behind Thomas, and therefore is more shielded from the blowing snow. Everyone is seated (Thomas and four children), but they wait patiently for Sondre (2,6). He wants to run together with an older child in front of the sliders (like a 'bull run'). Thomas: 'Sondre? Will you be able to get away? … Are you ready?' Sondre:'Yes, we are ready!' Thomas: 'Ok, here we come!' Off they go. They almost catch up with Sondre at the bottom, Thomas brakes carefully with his hands and Sondre throws himself to the one side, avoiding being hit. They all laugh. (Nature ECERS-center 3, Day 4)

This episode is characterized as *play* based on its voluntary nature and apparent intrinsic value. All children involved seem highly motivated for the repeated walking up and sliding down with no other external reward than the activity itself. Further, it is categorized with the risk category 'playing with speed' based on the objective risk of potential pain and injury in case of an unfortunate impact. There are also displays of subjective risk, such as the cheers of exhilaration sliding down the slope, crying while getting covered in snow, hesitation before the next run, and increasing the risk by running in front of the sliding 'train'. What are Elias' and Sondre's needs at those specific moments? Seemingly, Elias wants to reduce the risk (for example to avoid snow in the face), and Thomas' comfort, support and suggestion for an additional measurement for safety (sitting behind the teacher and together with an older boy) is interpreted as an appropriate response. Indeed, the consequence is that Elias joins for another run, and does not cry. Sondre, on the other hand, apparently wants to increase the risk (by running in front of the ride and avoid being hit), and he seemingly awaits Thomas' response. Thomas' questions ('Will you be able to get away?', 'Are you ready?') are interpreted as indirect guidance, and this level of support is a good fit to Sondre's needs. Indeed, he goes ahead with running in front, falls and laughs with the others at the bottom of the hill. Showing with his tone of voice and approach in general, he shows that the ultimate decision of further actions is up to the child, hence it is interpreted as fulfilling the third criteria of scaffolding, supporting children's self-regulation.

Additionally, considering Thomas' interaction in general, the two first criteria are also met, facilitating intersubjectivity and creating an atmosphere where fun, exciting experiences, and learning is possible. Thomas' interaction is interpreted as *warm and responsive* throughout. He is calm and patient and handles the different situations – from crying and comforting to fun and laughter – with sincerity and engagement. The episode indicates that *joint attention*, rather than joint *problem-solving* is an appropriate term to describe the several foci of interaction between Thomas and the children. Even if the children give themselves tough challenges, and such challenges can be defined as problems, the children themselves probably do not perceive them as such. Rather, it seems they are highly motivated for experiencing risk in such ways, not (only) to solve the challenges, but simply by increasing or maintaining the risk, they increase the possibility of a fun and thrilling experience, which is an end in itself.

Notably, in this episode the ultimate goal of scaffolding, autonomous play, as prescribed originally, is not observed. But considering the young age of the children, the literature suggests that close and continuous interaction is desirable, even when children are able to play independently (Albers, Riksen-Walraven, & de Weerth, 2010; Bowlby, 1982; Helmerhorst et al., 2014; NICHD, 1996; Stern, 1986). The crucial aspect – whether the interaction supports self-regulation or not – remains related to how the teacher supports each child's decisions to continue the activity on their chosen risk level (increase, maintain or status quo).

To substantiate the concept of scaffolding further, Thomas' example is contrasted with three rapid, consecutive examples where the (totality of) criteria are not met:

Example 2

13:31. Emma (1,2) climbs up on a children's chair. Liz (teacher): 'Emma? (Very friendly). Liz gets up from the corner mattress, walks over to Emma: 'You? – Little climber!' She lifts her down. Holds her fingers, helping her to walk across the floor, away from the table.

13:46. Emma climbs up on a children's chair and further up on the children's table (approx. 50 cm high). Helen (practitioner) comes over and lifts her down: 'You're not allowed to climb up on the table, you know.' Puts her on the chair, starts playing 'away-boo'. Then she says: Do you need a new diaper? Come let's change your diaper." Walks off to the bathroom.

13:51. Coming back from diaper change, Helen puts her down on the floor. Emma crawls directly to the chairs next to the table, starts to climb on the chair. Liz comes after 15 seconds, stands next to her. When Emma is up, Liz lifts her up, carries her out to the wardrobe/dressing room, singing to her.

These episodes are categorized as 'playing with heights', whereas the table's relative height to the child (50 cm) represents an objective risk of physical injury. Seemingly, both Liz and Helen consider this objective risk and deter Emma from continuing the activity, and their actions are interpreted as active and intentional. This is also why non-scaffolding is interpreted as being different to no interaction.

Does Emma actually need scaffolding? Emma displays an apparent motivation and ability to climb, and according to Trawick-Smith and Dziurgot (2011), a 'good-fit' response would be to leave her handling this on her own. However, entailing a slight risk of injury, staff choose to intervene, stopping the activity by physically removing Emma from the spot and distracting her attention. Although there is warmth in their interaction, the strategy of distracting attention is not interpreted as sensitive towards her interest, rather as avoiding taking Emma's perspective. One way of establishing joint problem-solving (or perhaps also here: joint attention) in these episodes could be to acknowledge Emma's interest in climbing, but consecutively communicate, with words and body language, that there is a risk of injury and rather propose an alternative spot for climbing.

Here the practitioners deprive Emma of a fun and exhilarating experience, all safety-issues considered. This has relevance for self-regulation, as they miss the opportunity to address Emma's potential ambiguous feelings of fear and excitement, and by doing so, they miss the opportunity to connect words to her emotions and experience and thus help her to self-regulate. Their actions remove an

opportunity to allow Emma to ultimately decide for herself whether to continue or withdraw, which would further strengthen self-regulation. Specifically for coping with heights, Poulton and Menzies (2002) have shown that experience with falling in childhood predicts less fear of heights in adulthood. Kretch and Adolph's (2013) experiments also indicate that experience is necessary to develop comprehensive risk assessment competence. In this vein, Emma can be said to be deprived of an opportunity to habituate fear and to learn comprehensive risk assessment, hence a 'poor fit response' to Emma's needs.

While their responses fit professional norms they can be regarded as leading to overprotection, with the potential negative consequences for development as described by, for example, Ungar (2009). Children with overprotecting parents tend to become anxious and perceive the world around them as dangerous, consequently failing to assess risks appropriately. Admittedly, literature on overprotection focuses largely on the parent–child relationship, and one can assume that a phenomenon like anxiety acquisition is more likely to occur in close emotional relationships. Nevertheless, indications of a more general risk-averse society suggest additional effects, where many similar experiences add up to a general feeling of anxiety (see for example Kadison & DiGeronimo, 2004). In general, by overprotecting, one misses a fundamental aspect of learning through play, namely stimulating the ability to handle the unexpected (Pellis & Pellis, 2007; Spinka et al., 2001).

Characteristics from the mapping

Early observations indicated that children sometimes would play without staff supervision entirely. These instances were coded 'no staff present' to assess how often risky play would occur out of staff's view altogether. One assumption would be that if staff inhibit risky play, e.g. if they were inclined to often stop or discourage such play, children would seek opportunities for such play outside of staff view. The mapping shows that children engage in risky play with no staff present in 27 of 198 (13.6%) (Table 1), so the occurrence was relatively rare, and the analysis does not give any clear indication whether playing with no staff present is connected to some specific characteristics.

Of the remaining 171 instances staff were present, there was no interaction in 70 of the instances (40.9%) (Table 1). Staff–child interaction, directly related to the child's risky play, was observed in the remaining 101 instances. Of these 101 instances, 'Scaffolding'- and 'Non-scaffolding'-interaction was observed in 78.2 and 21.8% of the instances, respectively (Table 1). This indicates that it would be approximately equally probable that children who were engaged in risky play would experience either no interaction or scaffolding, while it would be moderately rare that they were met with non-scaffolding interaction.

The frequencies of each interaction category (*no interaction, scaffolding, and non-scaffolding*) where triangulated with ITERS-R-data from the two ordinary ECEC-centres selected from the BePro sample (Table 2). Only the two ordinary centres were feasibly comparable in this regard, and therefore the other centres have been excluded from the ITERS-R-triangulation. Notably, Centres 1 and 2 were selected based on their respective high and low general ITERS-R score for contrasting effects, and this contrast is apparent in their respective score on Interaction (Subscale #5). The aim was to

Table 1. Staff–child interaction in risky play.

Staff characteristic	All instances of risky play frequency/percent	Instances with staff present frequency/percent	Instances with staff interacting frequency/percent
No staff present	27/13.6	–	–
No Interaction	70/35.4	70/40.9	–
Scaffolding	79/39.9	79/46.2	79/78.2
Non-scaffolding	22/11.1	22/12.9	22/21.8
Total	198/100	171/100	101/100

Table 2. Cross-tabulation: staff's interaction in ECEC-centre.

Staff's interaction		Centre 1	Centre 2	Total
No interaction	Count	14	34	48
	% within staff's interaction	29.2%	70.8%	100.0%
	% within ECEC-centre	25.5%	56.7%	41.7%
Scaffolding	Count	35	17	52
	% within staff's interaction	67.3%	32.7%	100.0%
	% within ECEC-centre	63.6%	28.3%	45.2%
Non-scaffolding	Count	6	9	15
	% within Staff's interaction	40.0%	60.0%	100.0%
	% within ECEC-centre	10.9%	15.0%	13.0%
Total	Count	55	60	115
	% within staff's interaction	47.8%	52.2%	100.0%
	% within ECEC-centre	100.0%	100.0%	100.0%

investigate if this variance would be reflected in aspects not examined by the standardized instrument.

Centres 1 and 2 were observed for three days each and have approximately the same total number of instances of risky play with staff present (Centre 1: $n = 55$, Centre 2: $n = 60$). Between the two centres, Centre 2 has 34 instances of no reaction, compared to Centre 1's 14. Of scaffolding interaction, Centre 1 has 35 instances, compared to Centre 2's 17. Of the relative few instances of non-scaffolding interaction, Centre 2 has 9 instances, compared to 6 in Centre 1.

Discussion

Three aspects emerge from the findings regarding the potential adaption of scaffolding to risky play. First, both historically and concurrently, scaffolding relates to cognitive and social aspects of development, such as language development, cognitive problem solving and dramatic-, make-believe- or rule play (Berk & Winsler, 1995; Bodrova, 2008; Bodrova & Leong, 2006; Hammond, 2001; Siraj-Blatchford et al., 2002). As there are obvious bodily aspects of risky play, a more holistic view of learning processes needs to be applied. Second, *joint problem solving* seems not always to be involved in interactions related to risky play. In this study, children do not necessarily experience the risk as a 'problem', rather it could be perceived as something fun and exciting (Sandseter, 2010). Therefore, *joint attention* – together with other required criteria for high-quality interaction – appears to be a sufficient prerequisite to establish scaffolding. Third, according to the original concept of scaffolding, appropriate and timely withdrawal is an essential part of scaffolding. As maintained by e.g. Trawick-Smith and Dziurgot (2011), when children play autonomously, no interaction is needed, moreover, interaction would be considered a 'poor fit' response. Consequently, in this study, consciously chosen *no interaction* can be interpreted in general as a situation of trust and confidence between staff and children, and indeed, the children actively seek out risks to a large extent in staff's presence (35.4%, Table 1).

However, this interpretation poses several challenges. First, we must ask what staff are doing while not interacting. For example, are they observing the children (which would be positive) or are they busy with other tasks (which would be negative)? This distinction is previously made only by a few, e.g. Trawick-Smith and Dziurgot (2011) who distinguish 'observation' and 'no interaction'. This distinction is not made in this article, first because priority is given to detailed description of the actual interaction, and second, based on pure observations, it is difficult to interpret and categorize variations of no interaction. For example: If a practitioner is sitting in the room with six or seven children, looking around, sometimes making a comment to another staff and sometimes to a child: Is she (intentionally) observing, supervising, or ignoring? As pointed out by Bakeman and Gottman (1997), interaction should be observed as a sequence in time. In this study, appropriate withdrawal is part of a sequence of scaffolding, while no interaction is when staff do not interact in relation to the risky play (at all) in one sequence.

Still, if *no interaction* could be interpreted as a good fit response (hence high quality), there are several challenges. First, most previous research on scaffolding focuses on children from three years and up and the expectations for autonomous play are obviously related to this age. The literature maintains that infant/toddlers need close relations and interaction with their caregivers (Albers et al., 2010; Bowlby, 1982; Helmerhorst et al., 2014; NICHD, 1996; Stern, 1986), and autonomous play cannot be given the same value as with older children. Second, this study focuses on play with a probability of potential harmful consequences, but from the analysis, it is not clear whether children's need for protection is best safeguarded by attentive, supervising staff (no interaction), or, from participating staff, 'inside' the play (scaffolding). Regardless, it would seem appropriate that ECEC-practitioners should strike a balance between participation and observation. Therefore, as the third point, although autonomous play is seen as valuable, there are several reasons why practitioners should be involved in play; even in play that does not need support. Such reasons could be that the play context is ideal for taking the children's perspective and getting to know the individual child (Corsaro, 2003; Degotardi, 2010), with a range of potential positive developmental effects (Albers, Riksen-Walraven, & de Weerth, 2007). Close participation might also increase the chance of detecting unwanted behaviour such as 'subtle bullying', which could be difficult to identify by simply observing (Alsaker & Valkanover, 2012). There is also an intrinsic value of adults and children sharing experiences (Hewes, 2014).

Hence, common play experiences and continued scaffolding are interpreted as high-quality staff–child interaction, and, as shown, the total portion of scaffolding *while interacting* is large (78.2%) (and non-scaffolding low) (Table 1). This might imply that the practitioners in this study are aware of the intrinsic value and developmental benefits of exploration and risky play, and/or that they operate within a cultural context with some tolerance for risk-taking (Borge et al., 2003; Little et al., 2012; New et al., 2005). This last interpretation proposes that the high portion of scaffolding is only transferable to similar contexts, e.g. in this case, Nordic countries. However, the finding might have a wider relevance since there are indications that the Nordic countries are gradually entering a more risk averse paradigm (Sandseter & Sando, 2016). More importantly, the potential transferability for this finding lies with two other aspects. First, the observed age-related play behaviour is interpreted as universal: the basic need for exploration and risk-taking is a natural and essential part of well-being and development (Mayer & Beckh, 2016; Miller & Byrnes, 1997; Ryan & Deci, 2000), hence practitioners' ability to respond appropriately to this is interpreted as high quality. This interpretation is supported by the triangulation with ITERS-R; Centre 1 (with the highest ITERS-R score) has the highest portion of scaffolding (Table 2). Second, the objective risks, hence the probability of injury, observed in this study is generally low. Therefore, risky play, as defined here, would presumably not trigger neither the fear of actual injuries nor legal consequences related to child injuries in ECEC.

Last, can *no interaction* be interpreted as low quality? This would seem to depend on the situational context. The finding of a high level of no interaction is in line with other studies, indicating low levels of interaction between staff and infants/toddlers throughout the day (Hallam et al., 2009; Zanolli, Saudargas, & Twardosz, 1997). For one, this can be related to structural prerequisites, associating low frequencies of interaction to low staff-to-child ratios or large group sizes (NICHD, 1996). However, the staff–child ratios and group sizes in this sample do not deviate from the national norms (Gulbrandsen & Eliassen, 2013). A suggestive interpretation can be drawn from the triangulation with data from the ITERS-R, where the ECEC-centre with the lowest scores has the highest frequency of no interaction (Table 2). Generally, preliminary findings from the BePro study indicate that negative, potentially harmful, interaction (such as intrusive, permissive, or punitive behaviour) is rare in Norwegian ECEC. Rather, low quality is manifested as lack of interaction (Bjørnestad, Os, & Hegna, 2015). This indicates that risky play is not very different from the types of play specified in the ITERS-R and that it requires the same sensitivity and responsiveness from staff. Moreover, a prominent characteristic of risky play in this age group is its subtleness and briefness (Kleppe et al., In press), and one can speculate that such play is more likely to go 'off the radar'. Staff with generally poor interaction

skills might also lack the necessary knowledge of the individual child and therefore ignore or misinterpret such brief and subtle behaviour.

Conclusion

While interacting, ECEC-practitioners in this study respond to young children's risky play extensively in a good way. This might indicate that these practitioners have knowledge and acceptance of a wide range of children's needs and behaviour, and/or it might indicate that they are working within a cultural context that allows them to act appropriately on this knowledge. This article suggests further that high-quality staff–child interaction in risky play fits the concept of scaffolding, with some adaptations. While triangulated with the ITERS-R, a high frequency of scaffolding in a centre concurs with high process quality as measured by this instrument. The moderately large proportion of no interaction is more difficult to interpret. It might be interpreted as autonomous play with no need for adult intervention and/or reflect a situation of trust between staff and children. However, this would probably not be regarded as high quality in various ways, particularly in relation to the children's age, but also related to the intrinsic value of staff and children sharing play experiences and the many potential positive outcomes. To that effect, a high frequency of no interaction in a centre concurs with low process quality as measured by the ITERS-R.

While this study relates several theoretical constructs to observations of risky play, it is a small scale, exploratory study. Hence, further discussions and developments of the theoretical framework are needed to examine the validity of scaffolding as a fruitful theoretical approach to understand interaction in risky play. For ECEC-practise, further investigations are needed to examine whether the lack of interaction actually reflects a good fit response or, alternatively, put children at risk of injury. Ultimately, studies should explore whether these findings can be reproduced on a larger scale, especially the high proportion of scaffolding, and how this might vary in different cultural contexts.

Notes

1. Although the CLASS-Infant incorporate an aspect of children's exploration (Facilitated exploration) (Jamison et al., 2014), it would not be suitable for older children, and there would potentially be several challenges assessing subjective and objective risk as described in the Method-section of this article.
2. The ITERS-R data used in this article are acquired through two projects funded by the Research Council of Norway, 'Better Provision for Norway's Children in ECEC' and 'Searching for Qualities'.
3. Age in (year, month).

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