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Liv Torunn Grindheim
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Angela Rekers *Editors*

Outdoor Learning and Play

Pedagogical Practices and Children's Cultural Formation

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Foreword

It is a unique experience to find a book of such a great timing. When the authors and editors of the book started their work, little did they know how the world would change and how their commitment to the topic of outdoor learning and play could be read as a response to an unexpected critical event. Suddenly, in 2020, the COVID-19 virus caused a myriad of changes to children's and teachers' lives all over the world. The pandemic is a crisis for today's children: the event and the responses to it may follow them for the rest of their lives, from their early learning to their social skills and bodily and mental health. It is our responsibility, as adults, to disprove the hypothesis that they will see themselves as a lost generation, whose lives will forever fall in the shadow of a global pandemic.

We know that transmission is higher in densely-packed indoor spaces, and the danger is ever-present in educational settings because children may become carriers who transmit the virus to the most vulnerable members of society, such as their grandparents, and children and adults with underlying diseases. Living in isolation under quarantine may have some serious consequences – delaying children's cognitive, emotional, social and gross motor development. Disadvantaged children will probably pay the greatest price, as resources like indoor space, gardens and transport to outdoor spaces will vary between families. We all need the discussions in this book to remind and inspire us when planning and policy is developed in the early childhood educational field in the future.

During crises and difficult times, notice must be taken to maintain Article 31 of the United Nations Convention on the Rights of the Child (UNCRC). This article states the specific right of all children to rest and leisure, to engage in play and recreational activities appropriate to their age, and to participate freely in cultural life and the arts. During the COVID-19 pandemic, it has been demonstrated that access to playgrounds, parks, open green spaces and landscapes has had an enormous positive impact on those with the opportunity to spend time in them in small cohorts and in fresh air. The unavailability of such places could be damaging for children and families.

People need to meet others, even in difficult times and crises, and doing so in smaller groups seems to be the way to go. Therefore, urban planning and areas for

children in kindergartens and schools must consider universal access to green spaces, open landscapes and outdoor 'garden rooms' in every neighbourhood. Parks, playgrounds and other green areas provide people with the much-needed opportunity to escape household confinement and enjoy the positive effects of green spaces on their health and well-being, to holistic education, and to create childhood memories.

This book offers a unique set of articles that set out a cultural-historical approach to outdoor learning and play. It can be read as an alternative to a 'sheet, pencil and paper' skills-centred approach to early learning and play. An approach where literacy and numeracy are associated with indoor desk work, even for very young children, seems to have increased worldwide over the years, and we need books like this one to set out alternative narratives of valuable early childhood theorising and practices more in line with sustainable goals and holistic development approaches.

Rewarding it is, therefore, to read a book in which literacy and numeracy are not ignored as such, but rather included in a broader holistic view of child development. With wonderful case studies and interesting results, the authors create new knowledge, vivid images and inspiration for pedagogical practices where cultural formational ideas and design also have a place. The authors also kindly remind us about critical situations for children such as air pollution. Despite knowledge of the outdoors as a beneficial site for young children's education, the status of outdoor activities varies in and within different cultures for different reasons. With the increasing awareness caused by the pandemic, policymakers and educators have, with this book, got additional food for thought, planning, and acting upon outdoor spaces for children. In dense neighbourhoods, decrease in air pollution is an urgent requisite to reduce health concerns, while both for urban and rural areas, the outdoor learning and play will give richness and prosperity to children.

The book makes it possible to see more clearly how early years education is not only culturally and historically conditioned, but also conditioned by the availability of nature and outdoor landscapes. The interests in this book highlight the relations and possibilities between humans and their environment, and place-based play and learning. It contributes to my understanding of how humans interact, play, and learn within outdoor spaces and on local places, and how both cultural and natural conditions constitute the content of kindergarten activity. The ideas and manifestations inspire me to think about the possibilities and richness to be found in outdoor education. When children are given access to diverse landscapes, biodiversity and various sensory and bodily experiences, we can hope they also acquire attention, curiosity and care for their relations and environment, and thereby build bodies and minds that can cope in current and future crises.

Director of KINDknow Research Centre,
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Chapter 1
Outdoors and Nature in Pedagogical Practices and in Cultural Historical Theory

Liv Torunn Grindheim, Hanne Værum Sørensen, and Angela Rekers

Abstract Despite the increasing awareness of the outdoors as a beneficial site for young children's education, the status of outdoor activities varies in and within different cultures. Aiming to broaden and challenge presupposed understandings of education and care in the outdoors, we consider the empirical findings from all the chapters in this volume in order to identify a range of conditions for cultural formation in outdoor practices both within and between different cultures. Building on Mariane Hedegaard's approach to cultural historical theory and Ødegaard and Krüger's approach to cultural formation, our analysis is performed by identifying conflicts and alignments between the values and motive orientations of the individual and those interpreted from the contextual conditions and demands of institutions and society, particularly in relation to the perception of nature. In doing so, we depict how culture and nature are interrelated from a socio-cultural perspective, and argue that perceptions of nature shaped by institutions and society play a significant role creating conditions for cultural formation. The opportunity for play, learning and cultural formation in nature appears rich within all the represented cultural spaces described in this volume, although whether these opportunities are supported consistently within wider mainstream culture is regarded as an area of tension in some chapters. Based upon our analysis, we suggest that both pedagogical practices

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and cultural historical theory need to take the outdoors and nature into consideration when emphasising pedagogical practices for children's play, learning and cultural formation.

Keywords Cultural formation · Cultural- historical theory · Early childhood education and care · Outdoors · Nature

1.1 Introduction

The status of outdoor activities in educational practices like Early Childhood Education and Care (ECEC) varies within and between cultures and countries; in some, outdoor activities are highly emphasised, whereas in others, outdoor activities have limited importance and/or fewer opportunities are provided. In Scandinavian countries, for example, outdoor activities are central to the everyday lives of young children and are promoted across the institutions of the home, ECEC and nature kindergartens as important for children's health, well-being, learning and development (Aasen, Grindheim, & Waters, 2009; Sandseter & Kennair, 2011; Sørensen, 2013). In countries such as China, however, which has high levels of pollution, children are not encouraged to be outdoors for lengthy periods (Birkeland & Sørensen, 2021). We aim to broaden and challenge existing understandings of outdoor provision by presenting this collection of research on the outdoor environment as an arena for cultural formation through outdoor and environmental education activities. The content of this chapter is, therefore, structured around the research question: *What conditions for cultural formation through outdoor and environmental education activities can be traced in practices both within and between different cultures?*

We build on a cultural historical approach, understanding children's activity as embedded in the culture of which children are a part; thus, play in outdoor spaces or activities using natural materials is also seen as cultivated. The elaborated knowledge from the chapters draws upon empirical examples from Australian, Chinese, Brazilian, Welsh, Norwegian and Polish cultures. The main aim is to identify a variety of possibilities or obstacles that the outdoor context represents as a condition of children's activity, thereby contributing to broadening the understanding of educational politics and educational practices in ECEC. Our analysis depicts that both possibilities and obstacles point to more than the outdoor environment itself. Individuals as well as institutions, presented here as teachers, parents or grandparents, ECEC settings as well as the institutional values embodied in the training of educators, are shaped by cultural values, expectations and demands. Thus, they have the potential to create possibilities and opportunities for children's development in outdoor spaces or to constrain possibilities. We, therefore, surface how cultural formation shapes perceptions of nature and subsequent opportunities for young children's development in the outdoors.

1.2 Theoretical Approach

Our theoretical and epistemic framework begins with Vygotsky's (2016) and Hedegaard's (2009, 2020) understandings of children as active agents at the core of learning and cultural formation. Children's learning and cultural formation is seen as contextualised, situated, mediated and embedded in their given cultural context. Children's development is seen as dynamic, in dialectical reciprocity with societal conditions (Hedegaard, 2009). Hedegaard (2020) argues that if researchers only study children's development by considering 'a fixed sequence of developmental stages', it is difficult to capture 'the diversity that is connected with cultural traditions in different societal institutions' (p. 2). Hedegaard and other researchers employing cultural historical perspectives have criticized research approaches that study child development without consideration of the individual as a participant in dialectical life contexts, thereby neglecting the cultural-historical conditions for children's development. Hedegaard (2009) argues that 'demands for a scientific approach have led to several one-dimensional conceptions of development, where the focus has been on the development of different psychological functions and competencies' (p. 64) with little regard for the participation of the child in activity settings shaped by cultural content. In line with sociologists and anthropologists (Corsaro, 1997; James, Jenks, & Prout, 1998; Rogoff, 2003), Hedegaard emphasizes the need to study children localized in time and space, and to take participants' values and motivations into consideration. Hedegaard (2020) asserts that it is the dialectical relationship between societal and institutional (cultural) values, expectations and demands and the child's developing motive orientation that contributes to the child's development within and across institutions in everyday activities and routines called *activity settings*.

Similarly, Ødegaard and Krüger's (2012) concept of cultural formation is understood to be an 'ever present and continuous process' (p. 21). Ødegaard and Krüger (2012) present cultural formation as a descriptive concept that portrays the acts of humans in relation to the conditions in their given culture. Both the process (act) and the result of being a part of the activity are embedded in the process of cultural formation. The individual appropriates, negotiates and challenges cultural formation, thus both shaping and being shaped by institutional values and demands. Employing a cultural historical perspective on children's development and cultural formation in activities, this anthology seeks to expand upon the cultural-historical tradition of studying children in classroom and home activities to consider children's cultural formation in outdoor spaces or in sustainability practices. In line with Vygotskian theory and Winther-Lindqvist (2019), the authors in this volume see children's development as the result of a complicated interplay between the agentic child and their environment, which, we argue, includes the socio-material affordances provided both in- and out-of-doors in early childhood provision (Rekers-Power, 2020).

The arena for cultural formation in this anthology is predominantly the outdoor environment, which ranges from urban spaces to woodlands to gardens outside the home. These areas vary in forms and conditions for cultural formation in and within cultures and countries. We, therefore, take into account that even if children have access to outdoor activities, how, where and in what forms this may be accessed, differs. In addition to cultural – and subcultural – differences, the situation, the artefacts involved, the relations among the participants and the institutional values and demands also influence children's outdoor play. Thus, children's activities are culturally and situationally constructed, and children are both co-constructers and reconstructers when exploring their social, cultural and material environments.

1.3 Methodological Approach

To trace conditions for cultural formation within and between different cultures presented in this volume, we present analysis of the activities and findings presented in each chapter to consider cultural formation as an always present, ongoing process, involving both non-human and human actors. We build our analysis on Hedegaard's (2009) model for analysing the interconnection between children's activities/routines (activity settings) and the values, expectations, demands and motive orientations at the personal, institutional and societal perspectives, as illustrated in Fig. 1.1. This interconnectivity provides the basis for cultural formation.

The natural world or outdoor environment is not an explicit part of Hedegaard's model. Since the context for the activities in this book focus upon use of the outdoors or education about the outdoors, we elaborate her model by including the *perception of nature* as an overall contextual perspective in line with *culture*, as illustrated in Fig. 1.2.

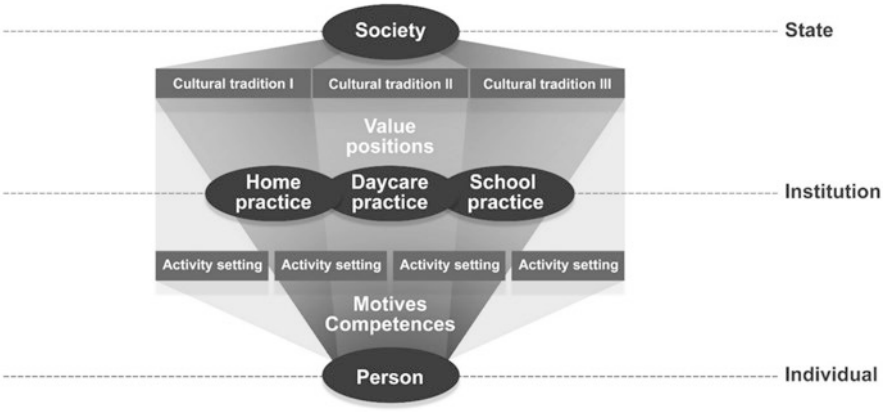

Fig. 1.1 Illustration of the relations between society-practice and persons with cultural traditions and activity settings as mediating links. (Redesigned from Hedegaard, 2009, p. 73)

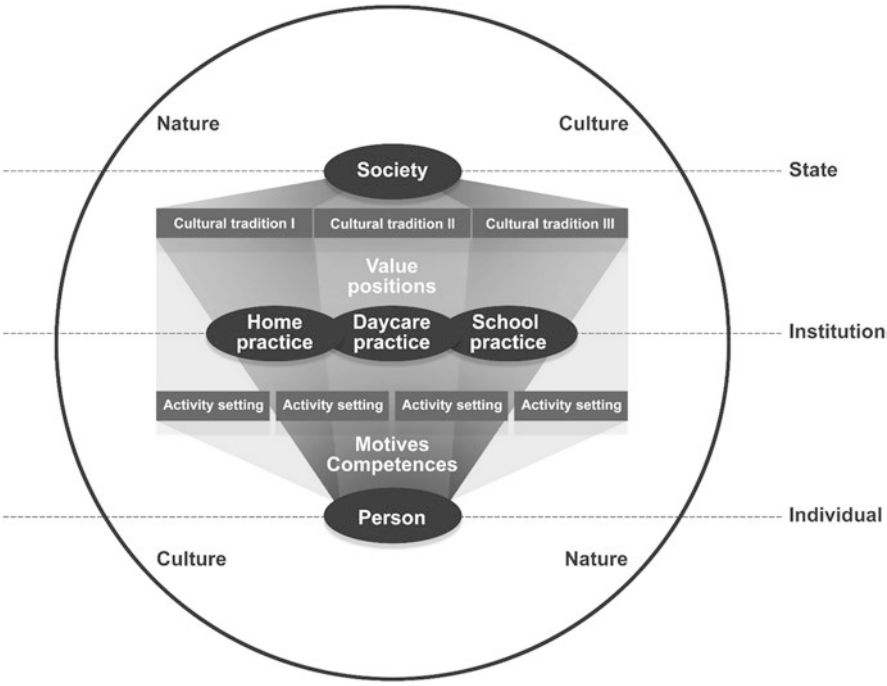

Fig. 1.2 Illustration of the relations between children as active agents and participants in different societies and institutions in dialectic relations with nature and culture

In line with cultural historical theory to date, Hedegaard does not formulate explicitly how non-human nature is perceived as part of her person-institution-society model (Fig. 1.1). Therefore, we see an opportunity for drawing out the socio-material interactions as well as the sociocultural intentions in early childhood practices that focus on nature or those that take place outdoors. In this chapter, we begin by surfacing conceptualisation of nature as embedded in all three perspectives of Hedegaard's original model. From the individual perspective, we regard humans as biologically as well as culturally constructed. From the institutional perspective, valuing nature is in the pedagogical or family practices with traditions for and prioritizing of outdoor activities and environmental education. From a societal perspective, we consider values that assert the positive influence of nature and outdoor activities on children's health, wellbeing, learning and development, as well as belief systems that regard nature as dangerous or dirty, not for girls, or not suitable for schoolchildren. These contradictions surface tensions and conflicts between the expectations for teachers to take children outdoors for play and demands about children's safety, learning and development that are embedded in the given culture.

The elaborated model (Fig. 1.2) frames our analysis. We look for conflict and alignments between the values, motives and competences of the individuals and the contextual conditions and demands in *the perspectives of persons, institutions,*

society to include the *perception of nature* as a condition for cultural formation (Grindheim, 2020). These conflicts or alignments surface the conditions for cultural formation arising from the activities that are presented in each chapter in this book. Thus, assertions from all the chapters form a part of the analysis in this chapter. The ways the involved participants deal with these conflicts or alignments are understood as ways of exploring and interpreting the individual's motive orientations together with conditions and demands in their institutional, societal, cultural *and* natural context.

1.4 Analysis and the Depicted Conditions

We consider each chapter, in order to trace conditions for children's cultural formation through outdoor activities within and between different cultures. We commence with the chapters that focus on babies and toddlers and the chapters concerning children from 3 to 6 years old in early childhood education and care settings. We then discuss those chapters that focus on children involved in family activities, and end our analysis with the chapters that consider early childhood teacher training and education. These chapters highlight the dynamic interplay between individual, institutional and societal values, expectations and demands that shape children's play, learning and cultural formation in outdoor activities.

1.4.1 Toddlers' Outdoor Play, Imagination and Cultural Formation

In Chap. 2, Ridgway, Quiñones and Li investigate the activity of three toddlers engaging with the material and social affordances of the activity settings: playing hide and seek, imaginative engagements around a fairy door in a three, finding and imitating a snail, and doing tai-chi. In this chapter, the children are viewed as explorers and active participants in their cultural formation, while exploring and engaging with their family relations and family heritages, their local cultural and natural spaces. The authors trace social and material conditions by discussing the adults' involvement and values, societal influences such as the parks and backyards themselves, and the human and non-human materials encountered by the children.

In the *personal perspective* there appears to be an alignment between the child's motives and competences and the conditions and demands of the activity setting, as each child appropriates the conditions created by the family activities in which they participate. The children's embodied motivations and participation are supported and valued by their parents' and their grandparents' warm understanding and positive attitude. In the *institutional perspective*, here represented by home/family, the support from parents and grandparents creates conditions in which the motives of

the children to be exploratory, playful, and imaginative co-collaborators may be seen as aligning with their parents and grandparents' motive orientation and ideas of what is important for their future life.

Similarly, in the *societal perspective* these motive orientations appear to be in alignment with those of the wider society in which they live, through which conditions for their participation has been shaped. For instance, the public parks encourage the practice of tai chi and also provide foliage for imaginative interactions and explorations around the fairy door in the tree. Also, the societal values may be seen in the neighborhoods in which the families live, enabling the children to explore the family garden and home renovation project in the semi-rural community. The *perception of nature*, as interpreted in the individual, institution and societal perspectives, is visible in the supportive social and material affordances of in the cultivated spaces of parks, and family- and community gardens. These spaces offer natural affordances of the grassy tussock, mulberries and insects, in addition to those opportunities that are more cultivated. In these outdoor activity settings, which are shaped by the natural, societal and familial conditions, the development of children's imaginative and exploratory play is encouraged.

1.4.2 Providing Outdoor Experiences for Infants and Toddlers: Pedagogical Possibilities and Challenges from a Brazilian Early Education Center Case Study

In Chap. 3, Costa, Rossetti-Ferreira and Mello investigate babies and toddlers' activities in an ECEC institution in Brazil, located on a former farm on the outskirts of a city in São Paulo. The authors discuss outdoor activity in both the outdoor spaces that are attached to the child-care complex, providing possibilities to move between the indoors and outdoors, and the wider outdoor areas a short distance from the building. The authors consider these spaces, some of which provide opportunity for the children to move autonomously from the indoors to the outdoors, in terms of socio-spatial practices (Rutanen, 2012). The empirical material and its analysis find few conflicts in the personal and institutional perspectives.

In the *personal perspective*, there appear to be alignments between children's motives and competences and the teacher's providing of conditions and demands, demonstrated by the teachers providing play materials and spatial access to outdoor spaces. Also, the staff were directing the infants' attention toward nature and the outdoor affordances for exploration in alignments to children's increasing walking onset and motor development, which provided an expanded range of opportunities for the children than the indoors on its own could provide. There also appear to be alignments between the parents' motives and competences for taking care and being involved with their child outdoors and the conditions and the demands represented by the daily routines and spaces for one-to one interactions between a parent and a child. As parents' use of the outdoors increased, so was their own relationship with nature enhanced.

In the *institutional perspective,* there appear to be alignments between motives among the staff and parents in this study that support access to embodied exploration and access to nature, demonstrated by the way the ECEC institution organises their daily practices involving children and parents to engage physically and sensory with the outdoors. This is presented as a contrast to many ECEC providers who are driven by demands for adult-centred provision with a focus on cognitive development, thus devaluing such outdoor provision.

Similarly, *the perspective of society* and *the perception of nature* as valued by the individuals and the institution are in conflict. The conditions and motivations traced from Brazil's intense industrial and urban sprawl, and the inequity in income that condition the upper class to colonize the few green areas available, form a conflicting contrast to motivations and conditions for young children's access to outdoor spaces. Although there is an expressed intention for outdoor activity in general, the lack of funding for infrastructure and maintenance limits the ability of ECEC institutions to provide quality outdoor experiences. Thus, young children's rights, motivations for bodily explorations and access to outdoor areas seem in conflict with political agendas.

Children are identified as active participants in their everyday life, through bodily interrelations with the staff, their parents, the artefacts, projects and nature that provide opportunities for a range of activities to emerge in alignment with their increasing skills. Thus, Costa, Rossetti-Ferreira and Mello point to how adults can be supportive of children's initiative and engagement in outdoor environments. From the alignments and conflicts presented above, the socio-material opportunities created by the childcare setting and staff provide crucial conditions for the outdoors as an arena for cultural formation in this example.

1.4.3 Princesses (Don't) Run in the Mud. Tracing Child's Perspectives in Parental Perception of Cultural Formation Through Outdoor Activities in Norwegian ECEC S

In Chap. 4, Sadownik investigates children's outdoor activities in ECEC[1] as a condition for children's cultural gender formation that may challenge parental values and cultural heteronormativity. The activity settings described in this chapter take place in a Norwegian ECEC and are discussed by Polish parents that are immigrants in Norway. In *personal perspectives*, the values and motives of the Polish parents represent both gender-traditional perspectives and gender-liberal perspectives, although their former *societal perspectives* are more closely aligned with a gender-traditional approach; these tensions are surfaced in the interviews. Thus, in considering the *institutional perspectives*, there seems to be a conflict between the values of

[1] ECEC institutions in Norway are for children from 1 to 6 years old.

gender-traditional homes, and the values, motives, conditions and demands to promote equity among genders in Norwegian ECEC institutions. The values of the gender-traditional parents were, therefore, in conflict with the institutional values and expectations, as well as with their children's and the ECEC staff perspectives. So, too, did these parents consider cultural formation to be the sole responsibility for the adults, thus negating the motive orientation of the children themselves. This authoritarian view about upbringing presents a challenge to one of the fathers with gender-traditional expectations who eventually is able to consider the perspective of his daughter as a future companion on camping trips in the wilderness, something he himself enjoys. Subsequently, there is a conflict between the father's perception of his culture's gender-traditional demands and his personal motivations for spending more interesting time with his daughter: he admits he would rather go camping with her than go shopping. This surfaces a conflict between the father's motive orientations for his daughter's future and the daughter's own motive orientation for being a 'wild', nontraditional-gendered girl.

Sadownik suggests that looking at outdoor activities involving specific persons (the father and his daughter) in a specific activity (outdoor activities), brings the *personal perspectives* to the fore, and surfaces (perhaps conflicting) value positions. This impacts upon the individual's interpretation of institutional demands for outdoor activity involvement which is non-gendered, as well as coming closer the child's perspectives. This exemplify how children develop across institutions and that moments of conflict help us to interpret the child's perspective. We also interpret *the perception of nature* as a strong actor for challenging traditional understanding of gender. The outdoors is more accepted as arena for cultivating masculinity by the gender-traditional parents; yet, the outdoors is considered an arena for gender equity in the Norwegian contemporary approach. Thus, the use of the outdoors in ECEC informs the conditions for cultural formation that challenge heteronormativity.

Children's perspectives are considered as actively challenging their parent's heteronormative views; simultaneously, ECEC and cultural values and motivations are important conditions for children's subjectivity. Cultural formation is mapped as a process of intersubjectivity. Both personal perspectives and institutional perspectives relating to outdoor activities are highlighted as conditions for challenging heteronormativity in cooperation with parents in ECEC.

1.4.4 Children's Play and Social Relations in Nature and Kindergarten Playground: Examples from Norway

In Chap. 5, Sørensen investigates the conditions and demands for one 4-year-old child's interactions with peers, during outdoor play in the fenced playground and outdoor play in nature. In *personal perspectives*, the child's values and motives are to join in and play with peers in both the playground and the natural environment – a less cultivated space. In *institutional perspectives* the child's motivation is in line

with the condition that the teacher-child ratio is higher in nature compared to the playground, thus teachers are better able to observe and interact if a child is struggling to join in with peers. Although the teachers may be equally motivated and engaged whether they supervise a larger group/number of children on the playground or in a natural environment, the conditions in natural environment allowed the teachers to join into children's play and activity. Similarly, this chapter's findings demonstrated that the developmental goals for outdoor playtime on playground differ from the goals in nature. On the playground, the goals were geared towards independent play in larger groups and becoming accustomed to outdoor life, rather than experiencing risky play and teacher involvement in conversations with the children, as observed in the more natural setting.

In the *societal perspective*, the adult motivation and involvement with the children in the nature setting particularly align with the *societal* expectations for outdoor activities in nature that stimulate nature connection, since attachment to nature is considered a cultural phenomenon in Norway. This cultural phenomenon is in alignment with this ECEC's institutional profile that obligated them to spend the major part of their day outdoors, either in nature or in the playground. In *the perception of nature*, the conditions of the natural environment are shown to be more open, in terms of space, weather and the natural elements. These conditions are valued within the individual, institutional, societal perspectives; and, the *perception of nature* aligns with the child's motivations and competences.

Sørensen outlines how the conditions and demands in the nature setting formed the possibility for the involved child to create an imaginative play scenario that included more children who wanted to join in with his imaginative scenario. Children's involvement in imaginative, explorative play and adult engagement in children's play align with the teacher's motivations both in the playground and in the nature-setting, but this motivation faces more conflicts when confronted with the conditions and demands in the playground. The child's experiences in the playground and in nature are compared in order to demonstrate how the child's efforts to be involved in play on the playground fail; however, the conditions of the nature setting, which include more actively engaged teaching staff as well as natural materials, provided enhanced opportunities for the child to be more successful in his attempts to be an active agent in peer play, learning and cultural formation.

1.4.5 Utilisation and Design of Kindergarten Outdoor Spaces and Outdoor Activities

In Chap. 6, He and Meng outline and discuss children's outdoor activities using different terrains and materials situated in kindergartens, in Bergen, Norway and in Anji, China. This chapter points to terrain and material for play, as well as societal and cultural differences in relation to education for young children that form

conditions for children's cultural formation. These conditions are surfaced and discussed by comparing and contrasting the two kindergartens.

Contrasts are found in the *individual perspectives*. Teachers in Anji mainly observe and do not direct or interfere with children while they are in the outdoors. Instead, children's learning is emphasized by collective, teacher-initiated reflections after outdoor play, designed to build upon children's existing competencies and support further concept development; these reflections highlight alignments with children's motivations and competences. In Bergen, the teachers stress situated engagement with individual children while in the outdoors and in doing so, seem to focus on what the children 'already know', rather than trying to achieve further outcomes or objectives.

In the *institutional perspectives*, there are differences in terrain and materials in the Anji Play setting and the Bergen setting. The Anji Play setting's outdoor arena is artificially designed to represent the multiple features of less cultivated natural spaces, thus demonstrating a motive orientation to recreate the affordances of more wild spaces in less urban areas. Additionally, many objects have been introduced by the adults for play materials, more in line with adventure playgrounds, whereas in Bergen, natural elements like stones, hills and sticks are the most important resources for play. Therefore, there is the institutional condition in Bergen of using what is already in the outdoor environment and travelling from the setting to explore new outdoor spaces. However, in the Anji Play example, the adults in the setting are creating conditions for children's play outdoor by bringing in materials for exploration.

Another difference between the kindergartens in the *institutional perspective* is the ways in which teachers in Anji stresses social motives, reflections, learning and interaction in the collective, while the teachers in Bergen pursue individual competences and motivations. These differences reflect the *societal perspectives* in the two cultures. While *societal perspectives* in Bergen are shaped by a cultural heritage of individual competencies in outdoor spaces, these competencies are not necessarily valued by Chinese culture. Certainly, the authors assert that Anji Play is transforming the nature of children's outdoor experiences in society, enabling these independent competencies to flourish on a physical level. However, the societal motive orientation for collective pursuit still underlies Anji Play provision.

In *perception of nature* we might say that although the human influences on resources are less visible in the Norwegian kindergarten than the Anji Play setting, both settings support children's exploratory play outdoors with multiple features that invite exploration and risky play and support holistic development. Certainly, in the Norwegian kindergarten, *perceptions of nature* as a cultural value can be traced to valuing the terrain in its unmodified state, whether in urban areas or in the mountains that surround Bergen. In the Anji kindergarten, teaching staff 'recreate' natural features thus reinforcing the boundaries to remain inside the kindergarten grounds; in the Bergen kindergarten, children are taken beyond the kindergarten grounds to explore what terrain is available in the locality.

In both kindergartens, children are valued as active exploring participants in their cultural formation. Also, the outdoor environment as a site for children's play,

learning and cultural formations is valued in both kindergartens. The chapter exemplifies and maps the integration of culture, heritage, institutions and nature in children's outdoor play in ECEC.

1.4.6 Children's Outdoor Play Activities in Kindergartens in China and in Norway

In Chap. 7, Birkeland and Sørensen outline and discuss children's outdoor activities in early childhood education institutions (kindergartens) in China and Norway for children from 3 to 6 years old, with focus on time regulation as an institutional condition for cultural formation and outdoor exploration. In *personal perspectives* the authors outline how children and teachers in both kindergartens are motivated to spend time outside. The time regulations form conditions and demands for Norwegian children to learn to dress up independently and in accordance to the temperature and weather, in order to meet both teachers and children's motivation to stay outside for a longer time. For Chinese children, time regulations of two short periods for outdoor play, such as following music signals, form conditions and demands for a collectively and efficiency transition from inside to outside and vice versa. In *institutional perspectives* there seems to be alignments in institutional conditions and demands both in the tight schedule in the Chinese kindergarten and the more open time schedule in Norwegian kindergartens, and motives for spending time outside and competences for meeting these demands. In *societal perspectives* it is depicted that the time schedules in both countries are shaped due to cultural and societal values and traditions; in Norway, outdoor activity as an established tradition serves as a reason for the emphasis on more time spent outside, while valuing outdoor education is a more recent approach to education in China. The lack of conflicts may be explained as both children and the teachers in the study have developed alignment to the routines, conditions and demands in their institutions and their society. In contrast, *in the perception of nature* we trace conflicts between children's and teacher's motives for outdoor education and the natural conditions like many cold, rainy days in Norway and days with high degree of air pollution in China.

Children are identified as active participants in their socialization, adapting their institutional and cultural conditions and demands. Time regulating is depicted as an important condition *for* outdoor activities, as well as *being* conditioned in line with cultural heritage. By looking at two different cultures' approaches to regulating time – that can easily be taken for granted – time regulation is depicted as a major condition for shaping practices in both cultures. The perception of nature seems to be the perspective that disturbs well-prepared didactical practices. From this we suggest that nature can represent an opportunity for exploring unexpected ways of doing outdoor activities, such as bringing nature activities indoors.

1.4.7 *Exploring and Discussing the Taken for Granted Advantage of Outdoor Play in Norway*

In Chap. 8, Grindheim investigates how outdoor activities are taken for granted in Nordic contexts. Her analysis is based upon videotaped activities of children's outdoor play, interviews with teachers, political documents, and earlier research. In the *personal perspective,* there seems to be a conflict between the teacher's beliefs about all the benefits of outdoor play and their statements about the need for the present, educated, conscious and well-trained teacher in outdoor activities. In the *institutional perspective*, three conflicts occur. First, a conflict is highlighted between valuing educational activities in nature compared to the valuing of institutional activities undertaken indoors. Secondly, a conflict arises between the teachers' valuing of children as peer groups independent of adult interference, and an emphasis on the dependency between generations. Thirdly, a conflict is surfaced between teachers' 'taken for granted' values and motivations for outdoor activities and the demands for more administrative tasks. In the *societal perspective*, a conflict occurs between expectations of specific, measurable learning outcomes from parents and politicians and the 'taken-for-granted' cultural values for more unstructured outdoors activities. In the *perceptions of nature,* two conflicts occur. The first is a conflict between perceiving nature as inherently innocent or good and perceiving nature as dangerous. The second is a conflict between considering nature as valuable in itself as opposed to valuing nature as a tool for meeting human needs.

Children as active participants in outdoor activities seems to be valued in all perspectives. The traced conflicts depict conditions and demands impacting upon provision, such as the limited number of qualified teachers, the economic aspects of education asking for early interventions for structured, teacher-led learning activities with explicit academic aims, and increasing administrative tasks for teachers. Although all these conditions and demands are influencing teacher's choices for their didactical practices, the author points to the 'taken for granted' approach to nature as an important condition to challenge. Taken for granted approaches can neither be improved nor cultivated if not identified and conceptualised in relation to practice. This chapter, therefore, contributes to starting a process of improving and cultivating didactical practices for outdoor activities.

1.4.8 *'All the Wild' in Wales*

In Chap. 9, Rekers and Waters investigate children's playful activity in muddy puddles at Forest School, a programme for children's outdoor activity in the United Kingdom. Forest School is often delivered in addition to a more traditional, predominantly indoor approach to early childhood care and education, on setting premises or in local woodland spaces. In this chapter, Forest School is set within a local woodland away from the primary school setting of the reception year (ages 4–5)

class. The tensions Rekers and Waters surface are first highlighted by the conflicts in *personal perspectives* that seem to occur between the children and teacher. The children's motives and competencies for social, exploratory muddy play include wading, splashing and throwing; this conflicts with the classroom teacher's perception of their water play as 'too wild' and her interpretation of this play as lacking self-regulation and social competences. Rekers and Waters argue that these conflicts may be attributed to the teacher's lack of confidence in and understanding of play's capacity for learning skills, such as self-regulation. The teacher's perspective has also been shaped by societal demands for self-regulation as an indicator of school readiness.

Thus, a conflict in *institutional perspective* can be traced from the way children's explorative muddy play is met by their teacher's disapproval to the expectations and demands of the early years curriculum. This curriculum, the Foundation Phase Framework, is intended to shift pedagogical practice from one based on achievement of specific curriculum outcomes to one that requires a play-based approach, in which outdoor play is expressly valued. However, play, whether adult- or child-initiated, is still shaped by institutional expectations for measurable competences that are applied to children's activity, whether in- or out-of-doors.

In *societal perspective*, we trace the conflict in Wales between motives and values for children's rights to participation, well-being and meaningful achievement, and the demand for the Foundation Phase Framework to contribute to reducing the attainment gap between disadvantaged children and more advantaged children in Welsh society. In *the perception of nature*, we see that playing in nature, to a certain extent, appears as a shared value and a motivation for the children, Forest School and the Foundation Phase, and for society at large since nature is seen as a suitable arena for education for the involved children. On the other hand, the cultural demands and conditions for having a good life are closely connected to government policy for education to unify a diverse population towards communal goal of civic engagement, opportunity and responsibility; these conditions influence perceptions of learners' existing competences and future achievement. The 'wild' socio-material affordances of the muddy puddle, appropriated by the children, creates tensions in how adults perceive the formation of self-regulated children.

We suggest that playing in the muddy puddle involves children as active participants in their cultural formation, while exploring peer-relations, play, verbal and non-verbal communication, interactions with their teachers and the nature. We trace conditions of peer interactions, teachers' professional confidence and training opportunities in outdoor play, and the multifactorial and contradicting expectations of and for schools in relation to children's developmental outcomes. In addition, nature offers the combinations of mud, dirt and water that form conditions for 'wild' play in communities of peers. Being met with discontent of their teacher from school when playing in an explorative way during the 'forest school class' can be problematic for children's cultural formation, and, as we interpret it, not in accordance with the purpose of inviting the children into the forest in order that they may have exploratory, experiential education in nature, as an alternative or supplement to the classroom.

1.4.9 E-STEM in Everyday Life: How Families Develop a Caring Motive Orientation Towards the Environment

In Chap. 10, Almeida and Fleer investigate children's participation in everyday routines in the home and across their outdoor communities in order to better understand how E-STEM (Environmental –Science, Technology, Engineering and Mathematics) learning in everyday practice positively contributes to the caring of the environment. Almeida and Fleer point to everyday activities and routines like walks, cooking, Skype conversations and digital searches, and building and gardening with extended family. They also point to agentic practices like creating cloth bags at home to support children's interests in reducing use of plastic bags. In addition, they highlight organised and planned educational interventions such as experiments and educational visits off-site. In *personal perspectives* children's motivations are in alignment with involved family members with a demand for promoting sustainability by E-STEM learning. Almeida and Fleer point to conditions in adult-child interaction to support learning of E-STEM concepts as performed both by direct and indirect adult-child instructions, implicit and explicit E-STEM experiences conceptualized both by everyday concepts and STEM concepts.

In *the institutional perspectives* represented by family as an institution, children's motivations for a range of different activities are conditioned very differently – by everyday routines, agentic practices and organised activities to support abstract learning. In *societal perspectives* children's motivation are met with conditions and demands for cultural formation toward caring for their environment. *The perception of nature* as an important arena to approach sustainability is traced from the emphasize of experiences in the outdoor environment during everyday walks and excursions where children are building experimental understanding of nature and E-STEM concepts, the local biodiversity, weather, the water cycle, rainbows, lava and volcanos. We suggest that nature is perceived as a condition for children's motivations that again are cultivated and in alignment with parents, siblings and the extended family motivations.

Children are identified as active participants in experiencing E-STEM related activities and concepts in intergenerational family practices. There are no conflicts to trace between children's motivations and competences and their family's conditions and demands. The conditions provided by families' everyday routines serve as experiences for further activities and investigations for supporting children's E-STEM learning. Thus, the understanding of cultural formation seems to be experiences embedded in familial everyday practices, and thereby form a complement to traditional understanding of teaching as classroom practice. Such everyday practices in the home, close to children's motivations and perspectives, demonstrate how an alignment in home and early childhood care settings forms conditions to children's cultural formation, in which sustainability is valued.

1.4.10 Curious Curiosity – Reflections on How ECTE Lecturers Perceive Children's Curiosity

In Chap. 11, Heggen and Lynngård focus on the perspectives of higher education lecturers who deliver teacher training. They see the conditions of teacher training as important for pedagogical, outdoor practices in ECEC, since teachers gain their competences from their own education. This training and teachers' competencies, therefore, impact on content and methods in ECEC. In *personal perspectives* all the interviewed lecturers valued both curiosity and wonder, although they did not make clear distinctions between the two. The lecturers were more likely to express an understanding of curiosity as bodily expression, rather than oral expressions like questions. All the lecturers agreed that children are born curious; however, they also agreed that ECEC teachers need to stimulate curiosity as an important condition and demand in ECEC. They argue that outdoor spaces provide enhanced teaching conditions for both sensory and intellectual exploration, as well as expanding the role of the teacher to also be curious and to be a conversation partner. Spaces for curiosity as conditions for children's play, learning and cultural formation are described as rich, variated, and nature is described here as such an environment. Conditions for curiosity are also shaped by opportunities for children to exercise curiosity together with other children.

In *institutional perspective* the lecturers' values and motivation for developing curiosity and wonder seemingly contrasts with conditions like the mandatory reading literature for ECEC teacher students, in which theories about curiosity are poorly covered. Lynngård and Heggen found that the ways in which curiosity is understood by the lecturers differs among the disciplines. Yet, the lecturers highlighted the importance of nurturing curiosity in the teacher training students themselves and finding ways of lecturing in order to stimulate the teacher trainees' own curiosity. *The perception of nature* is traced from the authors concerns about teacher's ability to recognize and support children's curiosity, since curiosity is understood to be an important condition for children's outdoor learning, play and cultural formation. The authors, therefore, investigate how curiosity is understood by lecturers from different disciplines.

This chapter highlights lecturers' understanding of children as important contributors in outdoor play, learning and cultural formation. The authors assert that conditions for this to happen include education for trainee teachers that provides knowledge and theories about these phenomena, and understanding the didactical ways to stimulate children's curiosity. Curiosity is understood to be both a value and a motivation, and as a condition and a demand in both ECEC institutions and in ECEC teacher education. However, Lynngård and Heggen demonstrate how there are tensions between the valuing of curiosity and the conditions for learning about or experiencing curiosity in ECEC teacher education.

1.4.11 Conditions for Cultural Formations in the Ten Chapters

From the analysis we trace conditions for cultural formation in outdoor activities *in personal perspectives* as children motivations, participation, exploration, curiosity in relation to the motive orientations of peers as well as teachers, parents and grandparents. Children's experiences in outdoor activities can form conditions for challenging adult expectations, such as parental heteronormativity in Chap. 4. We also find conditions for cultural formation in teacher's personal and professional motivations for curiosity and involvement, for collective or individual reflections and learning, and in their professional confidence and in professional development opportunities. Similarly, the motive orientations of parents, grandparents and extended family creates conditions for children's learning, play and cultural formation.

In *institutional perspectives* we trace the conditions whereby such personal motivations meet societal values and are expressed in material and symbolic artefacts, such as a fairy tale door in a tree, terrain and substances, loose parts and low structured materials, tai-chi, accessible areas where toddlers can move between indoor and outdoor spaces, diverse spatial arrangements and time regulations. In this perspective, however, lies the multifaceted and contradictory expectations for ECEC teachers to provide particular conditions for children's development. Expectations and demands on professionals in terms of achievement outcomes, qualifications, ratios, interventions for structured, teacher-led, learning activities with explicit academic aims and goals for 'school readiness', and increasing administrative tasks combined with financial strain shape the conditions for adult interactions with children and the children's development. In addition, early childhood teacher education and continuing professional development is an important condition for teachers' understanding of curiosity and exploration and how to scaffold these in their daily outdoor practices. Also, everyday life in families is asserted to be valuable as an institution for children's cultural formation and learning.

In *perspective of society* we trace the social and material conditions, such as public parks, local woodlands, foliage, family gardens, home renovations and living in a semi-rural community which provide access to nature, or the contradictions, such as conditions like politics forwarding intense industrial and urban sprawl that limit inclusive access to nature. Cultural values and motivations for concepts such as sustainability, children's democratic rights and gender equity are also important conditions for children's development and cultural formation in the outdoors, along with the intent and content of teacher training. In addition, societal value systems regarding outdoor education as good, necessary or not of interest, form cultural conditions for children's outdoor activities.

In *perceptions of nature* we trace conditions regarding embodied movement and play in conjunction with natural materials, elements, substances and creatures e.g., mud, dirt, water, stones and sticks, as well as snails, mulberries, grass, rain, wind, and pollution. Playing in nature is also asserted to be a formative condition for less gender-specific play, more involvement from teachers, more inclusive play between

peers and in the neighborhood, and increased opportunities for sustainability education.

1.5 Perceptions of Nature as an Arena for Cultural Formations

We see that the perception of nature as an arena for cultural formation differs within and between the presented cultures as depicted in the examples described in this volume. Individual, institutional and societal perceptions of nature, as well as the opportunities afforded by natural materials and spaces themselves, all contribute to children's cultural formation in outdoor activity. Different cultures place different value on children's outdoor exploration; these societal framings shape how children interact with nature with early childhood education and care.

The outdoor environment or nature in the activities presented from Australia in two of the chapters, demonstrates how these particular children's experiences are in alignment with family expectations. The children's motivations align with the family values and demands, regarding conditions for imaginative and explorative play and E-STEM experiences and learning. This lack of conflict creates a harmonious situation of development, which is also in alignment with practices at school. In Brazil, the perception of outdoor and nature as important for young children's cultural formation are pointed to, but rarely implemented, apart from in ECEC education. Babies and toddlers often have limited access to move both indoors, outdoors and in nature, in their domestic practices. The perception of nature as a gendered arena for cultural formation in conflict with their daughter's enjoyment of playing in nature, is depicted as a possibility for challenging Polish parent's gender-normative values and expectations in a Norwegian ECEC context.

The perception of nature in China as *polluted air*, and in Norway as *cold and wet*, seems to be a perspective that causes conflicts in both countries in relation to institutional practices of time regulation and cultural formation in outdoor activity. The perception of nature is also evident in how the terrain and material in kindergartens is viewed by practitioners. Although both Bergen and Anji kindergartens consider nature and outdoor play as important, their respective cultural understandings of nature impact on both outdoor materials for play and the outdoor terrain for play. In Wales, outdoor education is seen as arena with the potential to provide opportunities for disadvantaged urban children; yet, opportunities can be constrained by the demands for certain ways of behaving. Expectations for behaviour can be in conflict with the 'wildness' afforded by muddy puddles. This conflict demonstrates tensions for professionals in the Foundation Phase, in which understandings of play's potential for meeting learning and developmental outcomes is challenged by often conflicting demands on teachers. The perception of nature as an important arena for children's curiosity highlighted conflicts raised for lecturers in Norwegian ECEC

teacher education programs in relation to theorising and conceptualising curiosity and ways of performing curiosity in their teaching. Also, the often 'taken for granted' understanding of nature as an advantage for children's cultural formation in Norway, on one hand, is a condition that can limit the quality of outdoor education and, on the other hand, provides valuable conditions for building social relations among children beyond the outdoor playground.

When categorizing the different perspectives, the societal perspective and the perception of nature often seems to be connected and overlapping. Natural influences on cultural formation are apparent in the activities that are undertaken in ECEC, in relation to in materials for creative activities, in literature, affordances for risky play and so on. In the same way, cultural influences are apparent in the outdoor environment; in parks, playgrounds and woodlands or the grounds of the education/care setting, children's activities are shaped by cultural expectations. Therefore, the content and setting of the play are shaped by both cultural activities and the natural surroundings as indicated in Fig. 1.2.

Due to the overlapping and connecting parts of culture and nature in early childhood education, we conclude that *perceptions of nature* play a significant role in creating conditions for cultural formation. The opportunity for play, learning and cultural formation may be seen to be richer in nature in and within all the represented cultures in this volume. On the other hand, the societal and institutional emphasis on school readiness and defined aims for education highlight the problem of educators planning from the children's perspective, leading to conflicts between intentions and practice. These overall findings indicate that politics and educational practices in ECEC should recognize the outdoor environment as an important arena for cultural formation, which is not necessarily out of alignment with societal demands and values. Indeed, in light of global climate crisis, the consideration of nature as a vital arena for cultural formation is essential. Widening cultural-historical and cultural formation theories to not only include, but focus upon, perceptions of nature as an everyday agent in children's development is a vital step forward for research and pedagogical practice.

1.6 Summing Up

The analysis underlines how all the perspectives are intertwined; the activities undertaken in ECEC institutions can be traced to cultural heritage and traditions as well as to personal intent. These are identified in this volume by surfacing activities across and within cultural contexts. Additionally, in some chapters, researchers undertook their studies in cultural contexts different to their own, which also surfaces new understandings of cultural formation. For instance, Birkeland and Sørensen, both Scandinavian, considered how time regulations condition outdoor play in Norwegian and Chinese kindergarten. Similarly, in chapter four, He and Meng, both Chinese researchers, have studied the differences in performance and

material in outdoor play in China and Norway. Investigating more than a single cultural context reveals that the same aims can be obtained by different conditions.

Outdoor education is presented as a relevant arena for education in all the chapters. This supports the aim of the book to explore children's cultural formation in outdoor activity settings across different cultures. Although the use of the outdoors is considered by many theorists to be a Scandinavian approach, its importance for cultural formation specific to and across different cultures is demonstrated in these chapters.

By sampling and analysing all the chapters, we can also see that children are active participants in cultural formation. Due to our theoretical frame and epistemological approach, the children's active participation in their own and others' play, learning and cultural formation becomes evident. Children both align with the cultural heritage reified in educational institutions and families, and participate in ways that surface new or perhaps unexpected ways of meeting the affordances of both the natural and cultural spaces. Indeed, the elements of nature that are considered 'non-controllable', such as mud or weather, interrupt didactical practices, thus challenging that which is 'taken for granted'. In exploring these challenges and conflicts, practitioners and policymakers may be better able to understand how outdoor experiences provide cultural formation that allows for a decentralization of the relationships around the adult's proposal, and an integration of human and non-human nature.

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Chapter 2
Toddlers' Outdoor Play, Imagination and Cultural Formation

Avis Ridgway, Gloria Quiñones, and Liang Li

Abstract Discussion on toddlers' outdoor play practices in various cultural spaces is rare in literature. In Australia, toddlers' physical development and well-being is promoted but less attention is given to cultural nuances of outdoor play. We ask the question: *How does outdoor play impact on toddlers' imagination and cultural formation?* Conducted in three Australian long day care (LDC) sites, an ethically approved project *"Studying babies and toddlers: Cultural worlds and transitory relationships"* examines the process of three Australian toddlers' outdoor enculturation. The concepts of imagination and play from Vygotsky's cultural-historical theory are drawn upon in relation to Hedegaard's institutional practices model, to link contextual relations between society, community and family. Cultural formation processes in toddlers' outdoor play, we argue, are more completely understood when daily life across home and local community is acknowledged. Data findings illustrate complexity of movement and experimentations in cultural conditions, where different spaces hold possibilities for imaginative transformations in toddler's play. Implications suggest toddlers' imaginative and culturally responsive outdoor play aligns with availability of interested adult/peers, shared family and community values, and varied local spaces. In this way, affective and dynamic outdoor interactions imbue cultural formation of toddler's play and imagination with local personal meaning.

Keywords Toddlers · Outdoor play · Imagination · Cultural formation

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2.1 Introduction

> …no development – that of the child included – in the condition of modern civilized society can be reduced merely to the development of natural inborn processes and the morphological changes conditioned by the same: it includes, moreover, that social change of civilized forms and methods which help the child in adapting itself to the conditions of the surrounding civilized community. (Luria, 1994, pp. 46–56)

The aim of this chapter is to consider how the child changes socially and transforms according to the surrounding community; specifically the local outdoor environment, the home, and the local community. The social changes referred to by Luria (1994) include interactions and relationships occuring with family members. These socially interactive changes bring unique qualities to the morphological changes, embodied by toddlers in our study. These changes happen when toddlers use their bodies and relationships with others, to imaginatively transform themselves and the adults they relate to.

The focus of the chapter is on exploring and imagining the outdoor social environment that surrounds three Australian toddlers; two in Australia and one visiting China. A recent trend in research of outdoor spaces and outdoor environments suggests that these are dynamic places which afford many learning opportunities for children's (toddlers) exploration (Little, Elliot, & Wyver, 2017; Mackey, 2017). Such outdoor learning opportunities offer toddlers a chance for connecting with adults in relation to place, and for deep engagement with the beyond human-world (Robertson, Chan, & Fong, 2018). The outdoor environment and dimensions of place are also critical in relation to the quality of toddler's play explorations (Jeavons, 2017). Parents and teachers are most important for engaging in supportive and respectful conversations with toddlers and the decisions they make about the natural world, where a consideration of the cultural context is vital (Mackey, 2017). Therefore, we argue, that in studying outdoor play and the imaginative social environment in which toddlers engage, consideration of cultural formation in their natural worlds, is highly relevant (Mackey, 2017).

The purpose of this chapter is to contribute to understanding how cultural formation involves many perspectives and dimensions of toddlers' imagination in outdoor play activities. Outdoor play interactions have an affective and temporal reference point for new considerations of the processes of toddlers' cultural formation in outdoor play.

This chapter is situated in a multicultural societal context, and involves three families living in Australia, who draw on different cultural histories and practices. The term multicultural societal context in Australia refers to the notion that citizens have multiple cultural backgrounds. We find that the most recent Australian Census data (2017) shows nearly half Australians (49%) were born overseas or one or both parents had been born overseas. This highlights the rich cultural diversity of Australian Society, recognized as central to national identity. Australian Children's Education and Care Quality Authority (ACECQA) (2019, p. 1–3) guides national quality standards with statements that support the positive experiences for very

young children being in the natural outdoor environment. Learning and development are promoted in statements like: "early opportunities to engage in natural outdoor play" (2019, p. 2) can support toddlers' sense of belonging to the world, and be foundational to their exploratory interests and sensory experiences.

We argue in this chapter, that Australian and Chinese traditions of outdoor life may be used as a basis for exploring the question: *how does outdoor play impact on toddlers' imagination and cultural formation?*

2.2 Theoretical Grounding

A number of cultural-historical researchers have studied and questioned children's worlds and their everyday lives shared with others (Aronsson, Hedegaard, Hojholt, & Ulvik, 2018). In particular, Hedegaard (2018) suggests young children actively contribute to their learning through participation in different institutional practices across home and daycare settings. Young children not only contribute to their families' everyday activities, but families also have traditions that relate to their particular society (Hedegaard, 2018). While Hedegaard's (2018) argument suggests that traditions can also bring demands, tensions and conflicts, we notice that when toddlers explore their environment, this also leads to what is referred to as motive orientations that are directed towards an aspect of everyday life. Motives influence a person's action (Kravtsov & Kravtsova, 2014) and in toddlers, the dynamic aspects of their active play are culturally embodied in their learning (Sikder, 2017). In very young children, Trevarthen (2011) emphasizes that family values and intuitive abilities are present from birth. Vadeboncoeur, Perone, and Panina-Beard (2016) locate the expression of active play practices and the values that support them, within a young child's everyday social conditions. In this chapter, we examine how three toddlers actively express their bodily transformations through innate impulses, intuitions, imaginative choices and aesthetic inclinations, in outdoor play.

The social environment is a source of development for the young child's learning (Veresov, 2017). The social environment, both indoors and out, is the toddler's social world. The relations that occur in the social environment are a point for starting to think about the toddler's social situation of development (Edwards, Fleer, & Bottcher, 2019). The social situation of development was an important concept for Vygotsky's theory as it foregrounded both the young child's cultural and institutional context and lived experience in their social environment (Fleer & Hedegaard, 2010; Hedegaard, 2019).

2.2.1 Socio-cultural Experience

The social environment has a unity of personal and environmental characteristics that give rise to awareness or consciousness (e.g. Veresov, 2017). Therefore, the social situation of development includes the sociocultural environment that brings qualitative changes in the toddler through their awareness and interpretation. We argue that this is represented in the toddlers' outdoor environment and forms part of family culture and community settings.

Parker-Rees (2017) proposes that researchers think more about how 2 year olds, (the age of the participating toddlers) are "encouraged and enabled to participate in social communities" (p. 1). He introduces the notion of 'minding' as being more than the conventional meaning of, for example, caring. He brings focus to the shared attention and intention in the toddler's daily interactions with others. In particular, the way toddlers negotiate meaning is considered to flow backwards and forwards. In this ebb and flow of the toddler's meanings and interests with others, there grows an understanding of the group. Similarly, the feeling of togetherness is achieved when the toddler is in concert with others as a "collective subject" (Kravtsov & Kravtsova, 2014, p. 46). Therefore, it is important to know more about how toddlers interact with others and negotiate their ideas in outdoor activity.

2.2.2 Imagined and Embodied Transformations

Much of the toddler's sociocultural environment is formed creatively and with imagination that is considered central to cultural continuity and change (Vadeboncoeur et al., 2016). Imagination weaves past memories and experiences with what is imagined possible for the future, therefore enabling young children to act in their current environment (Vadeboncoeur et al., 2016). Imagination is essential for human activity and gives rise to creative expressions, contributing to cultural transformation of the individual. Culture also involves experiences, artefacts and narratives that enable young children to collectively imagine with others (Vadeboncoeur et al., 2016).

Vygotsky (1966) explains that young children's play "is imagination in action" (p. 3) and there exists a dual affective plane that embodies the child's own ideas, feelings and actions. The imaginary actions of the play situation affect them, and through that, they make their meanings. Extending this idea, the toddlers' affective actions trigger imaginative responses as they find ways to embody, coordinate and respond to new and imagined social situations (Quiñones, Li, & Ridgway, 2017, p. 176).

In the situation of giving sensitive support to a toddler in a playful event, a parent for example, can bring together interpretation and personal imagining that reflects the special kind of responsive reciprocity that unifies external activity into internal thinking. This process becomes embodied in consequent responses for toddlers

(Ridgway, Quiñones, & Li, 2017). Parents or grandparents usually have specialized cultural knowledge present in their natural locations; therefore, toddlers and families can realize cultural learning through shared actions (Ridgway et al., 2017).

The next section provides an account using visual methodology to illuminate stories that capture toddlers' outdoor play in different sociocultural environments that show impact on their imagination.

2.3 Method: Visual Narrative Methodology

Research data from a project *"Studying babies and toddlers: Cultural worlds and transitory relationships"* (Li, Quiñones, & Ridgway, 2016) undertaken in an Australian setting, is used in this chapter to elaborate enculturation processes embodied in toddlers' outdoor play participation. The project studied babies and toddlers relating to their world in the first 3 years of life and explored how these first relations with the world are important for learning and for understanding their perspectives.

The three researchers were in a socially unique position methodologically to undertake this research. Each researcher came from a different cultural background, yet had shared time, visual methods and theoretical thinking together. Rich discussions on play, family life and pedagogical practices accompanied by frequent sharing of video clips, enabled multiple interpretations from differing perspectives. Trust and collegiality characterized the researchers' interactions and their shared intentions grew.

Visual narrative methodology uses images paired with home video transcripts and rich descriptions of play (Ridgway, Li, & Quiñones, 2016), to capture toddlers' outdoor play in a variety of local spaces. Data illustrate the complexity of movement and explorative experimentation in outdoor spaces within different cultural conditions. The outdoor spaces all hold possibilities for imaginative transformations through toddlers' play actions. Importantly, such spaces embrace available social interaction for toddlers.

In the case examples, toddlers' relations to their outdoor environments involve change and transformation, which in turn, motivate their new activity and new learning. Data of toddlers' interactions with their social environment, generated through use of video and still images were recorded by the research team and included 1.5 h of interview data with each family. When reviewed in collaboration by the research team, these data illuminated the toddlers' active explorations of local spaces and their orientation towards imaginative and expressive embodiment of what they noticed closely in new outdoor places.

The Australian toddlers aged 20-months to 2 years came from different cultural backgrounds. Their families were visited at home and interviewed there with one or more family members present. They were video observed at home and in routine outdoor play with family members present. Families shared their toddlers' experiences that included participation in neighborhood walks, community parkland play,

playground activity and exploration of a home garden. Outdoor cultural experiences in the toddlers' daily routines usually occurred within proximity of adult or peer support, in family, home and community contexts. Adult and/or peer presence extended the conversations initiated or prompted toddlers' explorative activity, reactivity and responses to outdoor experiences.

The following three vignettes from our research data, illustrate the different cultural contexts of the participating Australian toddlers. To contextualize these activities meaningfully, the research reported is based on spontaneous family and community activity data, collected by research team in daily life naturalistic settings. The research team observed that when the toddlers' daily activity was anchored in locally situated outdoor spaces, each toddler became embodied and wholly oriented to the immediate world being experienced. The three participating toddlers' stories are interwoven in this chapter.

2.4 Story One: Toddler Luci (2 Years Old)

Luci is an Australian born toddler whose parents and grandparents were also born in Australia. Her family home although close to the city, is located opposite community parkland and playgrounds familiar to her. This local parkland offers two enclosed playgrounds specially designed, with one for toddlers and the other for older children. The choice of where to play however is made spontaneously by toddler and adult and can depend on whether or not there are other children in the particular playground. All ages use both playgrounds. Grandparents also bring toddlers there.

Winding pathways and grassy plantings in both playground spaces invite exploration both off and on the gravel pathways and areas covered by tanbark (Fig. 2.1). Both playgrounds, internally defined with surrounding grassy tussocks and low-growing flowering plants, are used for hiding games and insect searches. The

Fig. 2.1 Hide and seek in grassy tussock with grandpa

playgrounds comply with council regulation fencing and there are contained areas (Fig. 2.2) surrounded by grassy treed areas for active running, dancing and ball play. The parkland located around the two playgrounds has a central barbeque area. This area encourages community and family gatherings and is frequently used for barbeques and picnics. These outdoor facilities adjoin a walking track that leads to a community garden. Luci's mother has a plot in the community garden where local families share collectively grown vegetables and herbs, and harvest from established fruit trees. This is a long-held community tradition of providing allocated food growing spaces for families who live in the area. The community garden is well fenced (Fig. 2.3).

Luci sees a ripe mulberry in the garden (Fig. 2.4). She stretches up to reach the ripe fruit. With the mulberry's purple colour already on her fingers and around her mouth, she expresses with her whole physical being, a look of joyful anticipation of further taste rewards that mulberry fruit can bring.

Curiosity is a driving force and evident in toddlers. One morning Luci noticed that something new had appeared in the park opposite her home. A familiar playground tree had been transformed with a little door and a sign that read Fairy Door. Luci's hands clasped together reflecting delight and excitement. A huge smile lit up her small face (Fig. 2.5). In order to explore further she climbed up to the seat that surrounded the tree for a closer look. The tiny construction attached to the tree now included a small door, entrance garden with flowers and a Fairy Door sign above it.

Luci's response is visible in her animated stance and gestures. The surprise, excitement and the sheer magic of this moment, was transformative for Luci and her family.

Fig. 2.2 Enclosed playground

Fig. 2.3 Community garden

Fig. 2.4 Luci picked a mulberry

Over the next days and weeks, further additions continued to transform the imagined yet real tiny fairyland community. It began a life of its own in the community park space. One day Luci brought a torch to shine on this growing Fairy Door world, to shed light on the tiny details (Fig. 2.6). Small blue rocks had appeared as pavers in the little fairy garden yard and a miniature mushroom was placed in there. Each day Luci's wonderment unfolded in the magical ongoing changes that created further curiosity and anticipation. The fairy world was real for her. The park tree and its platform now had a new purpose and new meaning for Luci. It transformed how

Fig. 2.5 Luci noticed a fairy door

Fig. 2.6 Torch to see fairy door transformation

she played and her imagination. From the process of physically climbing onto the platform and walking around the tree, she reworked the physicality of this, and with her new experiences, entered a conceptual, abstracted and culturally imaginative fairy world. The intriguing fairy door tree brought new surprises, as over time, community users of the park added little blue paving stones and a miniature toadstool to the fairy door garden. Luci shone her torch to look closely at the fairy door and its changing garden (Fig. 2.6).

The design of the fairy door space and its carefully constructed placement in an area known to local children, gives rise to the notion of magical and imaginative learning spaces that transform and nurture young children's imagination and who might provide them. The community *caring* and *minding* that Parker-Rees (2017) refers to is exemplified here. The impact of this community experience is culturally embodied in Luci's expressions and her whole personal demeanor.

2.5 Story Two: Silvia (2 Years Old)

Silvia was born in Australia into a Mexican immigrant family. Silvia's home is located in a semi-rural community in Australia. Local places for experimentation and exploration are the home environment with a growing garden. The outdoors is an environment that offers Silvia freedom of movement and experimentation with the land. Silvia participates with her family in the garden and visits the community park, cemetery and train station. The family garden is expansive, as her parents have undergone a recent renovation in their family home. On these days, they focus on taking out weeds, moving materials. Silvia explores the garden alongside her dad and mum, while singing, moving about and finding insects. Silvia is curious and imagines how insects move and in particular, she imagines the physical embodiment of snail movements.

The following case example shows the toddler's daily activities anchored in family life. In the case example, the daily activity shows toddler embodiment and imaginative expressions and experiences with garden snails. The outside garden offers many possibilities for exploration and over time, it became part of the family's values. Silvia spends considerable time outdoors, and is able to experience and observe first-hand the family home physical changes in the outdoor garden. Dad comments, *"I spend a lot of time outside with her… a lot of things we've been through with the renovation and all that… But Silvia I think, I don't know, she's learning with us how too… she knows the – daddy's materials… She understands… and she brings her own child tools"* (Father's interview).

The following example takes place in the afternoon. Silvia has already played in the park with her mum and now they join dad who is working outside in the garden. Silvia was playing outside while her dad was pulling weeds from the outdoor patio tiles.

Silvia said in excitement (Fig. 2.7): *a boing!*

Fig. 2.7 Silvia and dad on patio pulling weeds and placing swing in tree

Fig. 2.8 Silvia took a closer look at the snail

Dad: *a boing?*

Mum said to dad and then to Silvia: *Yes, a boing's that is how she calls the swing. Just like the one in the park Silvia!*

Dad continued placing the swing and said, *I think this branch is strong; we can place it here.*

Silvia explored the space and dad continued to place the swing. While this happens, Silvia continued singing and looked at the patio tiles as she picked weeds. She stopped for a moment, she looked at the floor, and she found a snail.

Silvia looked at the snail closely (Fig. 2.8) and asked her mum: *what is it, what is it?* There is much silence and contemplation, when her mother did not answer. She was trying to think what it was. They both looked at the snail.

Fig. 2.9 Silvia moves like a snail

Fig. 2.10 Silvia moves like a snail and says hello to the snail

Silvia narrated very slowly to her mum: *she moves, she moves, she moves her tail* and then physically and imaginatively, Silvia embodied the snail's movements (Fig. 2.9).

Silvia's embodied movements were as if she was being the snail (Fig. 2.9).
Silvia: *She moves her tail, she moves her tail.*
Mum looked surprised at the unexpected embodiment, laughed and smiled saying: *oh darling!* Silvia smiled back. Silvia looked at her mum with excitement and pointed to the snail.
Mum: *She moves the tail, the snail. How does the snail move?*
Silvia moved again shaking her bump. She extended her movements by showing how the snail walked.

Silvia extended her movements and paid attention to her feet, moving them closer together (Fig. 2.10).
Mum: *You move your tail like the snail!*

Silvia to mum: *yes!*
Silvia now related and talked to the snail: *hello!* Then she sang a song. She looked at what her dad was doing. Mum and dad's discussions related to the recycled windows that dad was moving. Silvia's mum and dad joined with Silvia in singing: *where is mum*, *where is dad, here he is, here she is? Where is dad? There he is? Where is the moon? Here is the moon?*

Outdoor play and exploration were present in Silvia's everyday life. Silvia imagined and related to the snail and related to her parent's everyday interest of being in the family's expansive garden. Silvia's cultural formation involved being with her family exploring outdoors, showing cultural interest in materials and being curious towards creatures that surrounded her family home. Contemplating and observing the snail were important moments for Silvia. Silvia's mother's silence and surprise about Silvia's snail embodiment was present when mother says, *Oh darling!* rather than providing a response to Silvia, she asserts that she moves like a snail.

2.6 Story Three: El (2.7 Years Old)

El was born in Australia from a Chinese immigrant family. El travels to China to visit his grandparents once a year during a family holiday. On his second visit to China, when El was 2 years and 7 months old, he visited his grandparents for 2 weeks. He became very interested and curious about grandpa's daily Tai Chi play. His grandparents live in a small community with four high apartment buildings, in a capital city in Northeast China.

The people living in the community have a regular exercise time every day after dinner. Grandpa routinely played Tai Chi. El went to the community playground with grandpa every day after dinner. Grandpa started playing Tai Chi when particular background music came through an MP3 device.

El asked with much curiosity, Grandpa: *What are you doing?* <外公, 你在做什么?>.
Grandpa said, Tai Chi. It is very good for our body and health. <太极, 对我们的身体非常好>.
El observed closely and saw how grandpa moved his body.
Then El started to initiate his own movements by following the musical rhythms and responding to grandpa's movement (Fig. 2.11).

Figure 2.11 shows El's slow movement and his happiness in the shared moment. With a smile, he follows Grandpa's actions and said to his Mum: *Mum, Look at me!* <妈妈, 看我!> Then El kept moving with continued curiosity (Fig. 2.12) and amazement (Fig. 2.13) at the Tai Chi movements. Figure 2.14 showed El's aesthetic feelings of grace that guided him to explore his own movement with confidence. El's mum responded with a smile, *Very good movement!* <你做的好棒哦!> El enjoyed every movement with Chinese music and sounds in the environment. Many people from the community walked around after dinner.

Fig. 2.11 El embodies and imagines Tai Chi movements

Fig. 2.12 El's curiosity

Tai Chi is one representative of Chinese traditional culture, which "appears to have its roots in systems of exercise and self-defence designed over the centuries to prevent illness of body and mind…for a method of living in harmony with the various overwhelmingly powerful forces in the world" (Kauz, 1974, pp. 10–11). In recent years, playing Tai Chi is a very popular practice for older people in China, who participate in groups in the community park or playground. It is often observed early in the morning or later in the afternoon, as part of Chinese people's everyday life. Young children experience and explore community play with the older generation in the park. For El, it was his first time to observe and perform Tai Chi. His

Fig. 2.13 El's amazement

Fig. 2.14 The aesthetic feeling of grace

grandpa explained to him that 'Tai Chi is very good exercise in Chinese culture to support our health and well-being'. El told the story of his feeling about exercising with Tai Chi; a story, which can be perceived by his grandpa through the responsive performance, embodied actions and shared expressions, creatively imagined by El.

The playground with traditional Chinese decoration harmonised with the exercise of Tai Chi, which represents the Chinese culture. This influences young toddler El's sense of belonging and understanding of his heritage cultural knowledge transformed in his imaginative embodied actions.

2.7 Discussion

Insightful stories of everyday experiences (Jornet & Steier, 2015) help the researchers emphasize and analyze practical examples of toddler relations with different outdoor environments. Toddler's cultural, aesthetic, ephemeral, imaginative and embodied transformations, are the focus of our discussion. In this chapter, the child's outdoor world making is first introduced from the toddlers' perspectives including activities that characterize their choices, and their embodiment in varied cultural routines and contexts. In the three stories, we discover the toddlers' access to diverse outdoor spaces: Australian (Luci; Figs. 2.4 and 2.5) and Chinese (El; Fig. 2.11) community playgrounds, city community garden (Luci; Figs. 2.3 and 2.11) and family garden (Silvia; Fig. 2.7). All these shared places and moments with family offer potential affordances and opportunities for cultural formation, embodied imagination and learning. Cultural formation is achieved through children's exploration with adults together in the family practices. As explorers, three toddlers make meanings of their surroundings under the support of the adults, while they also achieve their cultural identity and learning.

2.7.1 Cultural Formation in Toddlers' Outdoor Environment

Hedegaard (2018) suggests that early participation relates to the children's world making which is explicitly anchored in daily life. Hedegaard notes how traditions bring demands to children and lead to creation of motive orientations that are aspects of everyday life. Toddler's motives as interests, are created with the family interest of their particular familial outdoor culture. The three toddlers' daily lives are wholly embraced within the cultural characteristics of family, home and community life. As Trevarthen (2017) proposed, "they (toddlers) are motivated to explore life in a community that will cultivate artificial cultural habits." (p. 201).

Taking into account the toddler's perspectives, as explorers, each of the three toddlers made meaningful understanding of their family traditions which formed part of their cultural formation in outdoor environments. Luci explored and played in the community playground and garden (Figs. 2.1, 2.5 and 2.6). Silvia's everyday world consisted of being curious to learn about creatures and materials and exploring with her family the garden surrounded by recycled materials for the house. She explored the garden (Figs. 2.7 and 2.8) with family, making imaginative transformations e.g. her embodiment of the snail (Figs. 2.9 and 2.10). El's interest in his family culture and Tai Chi for body and mind, imaginatively and joyfully embodied the movements (Figs. 2.12, 2.13 and 2.14) that he learns are good for health and well-being in the Chinese community.

In cultural-historical accounts of learning, mediated activity, driven by a child's curiosity in spaces of interest, is what Bligh and Crook (2017) refer to as Learning Spaces. The toddlers' playful and companionable family activities, characterized by

choice and family relationships can take in the animate and non-animate, proceed over time and space, include human and non–human elements, and involve aesthetics and memory. Adding to cultural-historical theory with a dialectical contextualization of space, place, and temporality, a perspective that uses a 'critical ecological ontology for inquiry' (Payne, 2017, p. 122), may bring further understanding of how the cultural contexts of the three toddlers' embodied engagement in outdoor activity, can bring wholeness of meaning to their everyday lives. Luci's imagined fairy world in the local parkland, Silvia's home life curiosity where she notices the non-human life of a snail on the outdoor tiles, and El's engagement, in grandfather's embodied actions and cultural movements of Tai Chi, all illustrate how cultural knowledge is imaginatively transformed in outdoor play. Three toddlers' exploration of community life confirmed that, "the development of shared cultural knowledge gives objects and actions social or moral values as well as practical or aesthetic ones" (Trevarthen, 2017, p. 202). The three toddlers' cultural formation included family traditions where curiosity and embodied imagination were present.

2.7.2 Family Members' Encouragement of Toddler's Imaginative Transformations Through Active Exploration in Outdoor Environments

The outdoor environment is a sociocultural place where toddler's culture and lived experiences are explored and formed in the social world outdoors (Fleer & Hedegaard, 2010; Veresov, 2017; Vygotsky, 1998). We argue that the outdoor environment provides an active space for toddlers to express their own imaginary individual transformations. In toddlers' imaginary choices, aesthetics and impulses are present. They are often created with family members who can encourage their toddler's active outdoor explorations.

Family members can collectively imagine with the toddlers. Movements, imaginary actions and embodiment are creative expressions that contribute to the toddlers' individual transformations in outdoor environments. For Luci, the enclosed playground provides space for active exploration of the outdoors where she imagines hiding herself from grandpa in the grassy tussocks. Luci is also curious about the Fairy Door in her playground where she imagines playing in a fairy world. Silvia learnt that her mum keenly observes and contemplates her imaginary choices of embodiment of a snail. Silvia's mum showed her surprise and acknowledgement of the snail movements, as embodied imagination that allowed Silvia to imagine what it feels like to be a snail. Similarly, El was curious noticing the musical rhythms, embodied actions and movements of Tai Chi with his grandfather with his mother commenting on his good movements. As Parker-Rees (2017) suggests in the context of toddlers' participation, enabling and encouragement are important in social communities.

We extend and show through case examples, that curious noticing by toddlers requires an attentive gaze in order to transform their everyday world and further conceptualize and embody imaginary transformation. For example, we noticed Luci's active imagination of fairies living in a local tree (Figs. 2.5 and 2.6) and Silvia's imaginary embodied movement of snails, greeting the snail in the family garden (Fig. 2.10) and El's embodiment of Tai Chi moves (Figs. 2.11, 2.12, 2.13 and 2.14) that bring health and well-being into the toddler's life. All examples are illustrative of the sociocultural nature of outdoor environments because each story involved family members' active encouragement in exploration of the outdoor environment with the curious and imaginative toddlers.

The sociocultural outdoor environment enables children to imagine and act in their local environment. It offers them a place to enjoy interactive moments. Toddlers not only live their everyday lives with interested family members but they also imagine what is essential for their own interest and activity. As Vadeboncoeur et al. (2016) suggest this gives rise to individual creative expression and cultural transformation. The three toddlers joyfully, enthusiastically and with appreciation of their outdoor environment, give us an opportunity to reflect on cultural formation. As adults, we notice their embodied imagination, evident in the example of Silvia's mother who stays in silence and contemplation, absorbed by the moment, yet still able to encourage Silvia to move like a snail. The responsive movements between El and his grandpa encouraged El to experience shared joy, and thereby transform how he experiences himself and how people might interact with others in different ways.

2.8 Conclusion

This chapter sought to determine how outdoor environments impacted on toddlers' embodied multi-cultural imagination and cultural formation in play. It was found that each outdoor play environment afforded the toddlers' imaginative exploration, which plays a vital role in their cultural formation. The three toddlers engaged in imaginative interactions, initially with fairy door land (Luci), then snail movement (Silvia), and lastly Tai Chi practice (El). The three toddlers also explored their local communities and engaged in the local outdoor environment with nature when, for instance, Luci went on an imaginary adventure in parkland, Silvia explored the family garden and El engaged with a cultural inquiry in a community space when he visited China. This study concluded that outdoor play in the community offered a pedagogical tool to support toddlers' exploration of their culture and importantly, that their play was also supported by the presence of adults in culturally bound local environments.

Implications are that the development of toddlers' imaginative, culturally responsive outdoor play, aligns with availability of interested adult/peers, shared family interests and community values, that occur in varied local spaces. Affective and dynamic outdoor interactions imbued the cultural formation of toddler's play and

imagination with local personal meaning. Having access to diverse outdoor spaces, therefore offers potential opportunities for toddlers' personal expression, imagination and cultural learning.

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Chapter 3
Providing Outdoor Experiences for Infants and Toddlers: Pedagogical Possibilities and Challenges from a Brazilian Early Childhood Education Centre Case Study

Natália Meireles Santos da Costa, Maria Clotilde Rossetti-Ferreira, and Ana Maria de Araujo Mello

Abstract Intense urbanization process in Brazil and Latin America has increasingly limited young children, since birth, to access outdoor spaces, especially green areas. Moreover, as conceptions of babies in domestic care support confinement practices, apprehending infants' constitutive specificities as being intertwined with broader socio-cultural contexts requires further investigation. Notwithstanding the challenges, Early Childhood Education and Care (ECEC) institutions can be promising places to provide babies with daily contacts and appropriation of external areas amid an expanded collective experience. This chapter tackles the process of insertion and appropriation of outdoor spaces for infants and toddlers. We bring a case study from a Brazilian daycare centre with planned multiple outdoor environments, diversified spatial arrangements and natural elements. The empirical material, referring to the transition year of a group of under-twos, includes monthly recordings of everyday routine, interviews, field notes, institutional documents. We describe and analyze various outdoor spaces and socio-spatial practices of the daycare centre based on the cultural-historical perspective of the Network of Meanings. In the first semester, environments organized in semi-open areas connected to closed spaces were more frequently used. Whereas mainly in the second semester, given walking onset and greater motor resourcefulness, the going and appropriation of green areas unfolded as a gradual process not short of struggles. Substantial planning, projects and educational situations put forward by multiple social actors within a multidisciplinary approach modulated alternation of spaces and facilitated exchanges with peers, older children and adults – including family members.

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3.1 Urbanization in Latin America and Children's Access to Outdoors

Brazil is a tropical country of continental dimensions, being the largest in Latin America and occupying nearly half of South America. It has an extensive coastal area and spans several climatic zones and biomes. The total population is estimated at 211.755.692 inhabitants (IBGE, 2019) that are heterogeneously distributed across 26 states and the federal district. The Southeast region comprises 42% of the population and is composed of four states, among which São Paulo stands out as the most populous (45,919,049 inhabitants), most demographically dense (166.23 inhabitants/km^2) and most urbanized one.

Following Latin America's historical trend, Brazil underwent intense industrial and urban sprawl, starting mainly from the 40s/50s (Rossetti-Ferreira, Ramon, & Barreto, 2002). Currently, 89% of the population lives in urban areas where medium and large cities prevail, and constructions and vehicle traffic are prioritized in the urban scenery, hindering social life in open areas and contact with the natural landscape (Montero, García, & Francesa, 2017).

In this panorama, the population struggles with unequal opportunities of access to green areas and high-quality public spaces in their daily lives, as these are distributed irregularly in cities and mostly concentrated in upper-class zones. Also, in the logic of the real estate market, gardens and green areas are usually restricted to residencies and private properties, where people of higher income enjoy exclusive use of them (Montero et al., 2017). Therefore, the issue of access to external spaces tackles the historical challenges of structural socio-economic inequality.

As participants of a socio-historical matrix (Rossetti-Ferreira, Amorim, & Silva, 2007), the present scenario affects the (in)accessibility of children to external areas and nature (Dowdell, Gray, & Malone, 2011), so that despite all environmental and climatic wealth and nature-related cultural heritage, younger generations in Brazil experience ever declining time outdoors. In the case of babies, their absence becomes socially naturalized. Due to crystalized adult-centred socio-cultural, concepts and confinement practices "privatize" infants to the domestic environment and shuns them away from mainstream research and public policy agendas (Silva & Neves, 2020). Henceforth, not only practices intensify children's confinement, especially those under the age of two, but also the field lacks investigations that discuss outdoor provision for this age group (Kemp & Josephidou, 2020; Kernan & Devine, 2010; Tiriba & Barros, 2018). Moreover, infants' social life becomes restricted to child-specific "islands" (Kernan & Devine, 2010), such as homes, leisure centres or even institutions, where spatial clusters and "relational asepsis" may separate children from the outdoors and everyday life in society.

Nonetheless, as "the context is (…) a constituent component of the very fabric of development" (Andenæs, 2011, p. 51), due to their collective and educationally-intentional nature, Early Childhood Education and Care (ECEC) settings and their socio-spatial practices stand out as promising research sites. Such contexts unveil the social world of children and the many personal, political and social issues related to childhood, such as values, rules, symbols of culture and ideology present in the subtlety of everyday life (Rutanen, 2012). Hence, ECEC centres, notably those articulated with public stances, hold the remarkable potential to foster children' cultural formation and identity as integrated to a social group, a territory and an ecosystem by promoting connection with the local community and articulating spaces as networks within an expanded coexistence (Kernan & Devine, 2010).

However, even ECEC settings may fall short of outdoor provision due to a series of structural challenges. In Brazil, despite the historical endeavour of constructing national legislation and guidelines that legitimize the importance of outdoor spaces (Brasil & COEDI, 2006; Tiriba & Barros, 2018), a significant portion of ECEC units suffer from precarious infrastructure and maintenance, being unable to offer natural and open-air environments of quality. Moreover, these spaces are devalued in pedagogical practice and overshadowed by the adult-centric schooling and cognitive learning model, which: separates thinking from the body; channels practices, routines and institutional time according to this logic; favours children's confinement; and, narrows down access to external spaces mostly to moments of recreation, purposeless leisure, or transitional breaks (Tiriba & Barros, 2018).

3.2 Research Question and Objective

Therefore, a starting point lies in promoting opportunities for action in safe, instigating and children-orientated spaces, notably gregarious and natural ones in our view. Thus, in this chapter we pose as our research question, how can outdoor spaces be afforded by infants and toddlers (under-twos) within pedagogical conceptions, practices and contexts? More specifically, how, when and which outdoor spaces could babies access, occupy and participate in their everyday experiences in collective educational settings, and how does pedagogical practice constrain the process?

Specifically, as our aim in this chapter, we seek to investigate the possibilities of access, occupation and participation of under-two babies in outdoor spaces within the pedagogical work of a Brazilian ECEC centre. To this end, we will discuss how these elements constrain infants` and toddlers experiences and appropriation of different spaces. This leads us to our theoretical approach.

3.3 Theoretical Approach

Network of meanings, educational space and the autonomous embodied baby.

The perspective of the Network of Meanings (Rossetti-Ferreira et al., 2007) is a theoretical methodological tool that has been constituted from a historical dialogue between theory, research and praxis originally from developmental studies of young children in early childhood education settings. Based on cultural-historical authors such as Vygotsky, Wallon, Valsiner and Bakhtin, we conceptualize development as a process temporally (co)constructed by active people in specific scenarios that are culturally and socially situated.

Such conceptualization causes the researcher's focus to shift from the individual viewpoint to people and groups in interaction, their interdependence, synergy, negotiations, conflicts, and mutual constitution. The phenomena are observed through the lens of a processual view in naturalistic contexts, with attention to the persistence and/or transformation of elements that, jointly, contribute to reconstructing developmental trajectories within an ecological reality. This foregrounds the intimate and reciprocal constitution between person and context through the experiences that unfold (Rossetti-Ferreira et al., 2007; Vygotsky, 1934, 2010).

In this person-context intertwining, the environment is apprehended and appropriated differently according to children's specific developmental condition and their sensory, motor, perceptual and symbolic organizations (Carvalho, Pedrosa, & Rossetti-Ferreira, 2012; Vygotsky, 1934, 2010) that become materialized in the concreteness of the society-nature relationship inserted a socio-historical matrix. Therefore, the environment is not the same at all ages, and it affords differing motivations, affective states, developmental stages and socio-cultural materiality for children. As the child's experience constitutes an inseparable unity with the meanings that are elaborated in the process, while children change throughout their development, the environment acquires new meanings according to their experiences and interpretations attributed socially, affecting and constituting dialectically the person-context unity (Vygostky, 1934; Vygotsky, 2010).

In view of the person-context unity, when it comes to ECEC contexts, the conceptualization and role of space becomes central. We define space as a curricular element, often referred to as the "third educator", which, in addition to its physical delimitation, is the place where life happens (Forneiro, 1998). For children, space is what they experience, feel and do within its contours, where meanings emerge and constitute the experiences that are unveiled there. Though space and environment may be used equivalently, here they are conceptually distinct. The physical space relates to the places where educational situations are developed, whereas the environment comprises the various objects, shapes, colours, aromas and people that inhabit and relate within the delimitation of the physical structure, as an inseparable whole.

Therefore, the environment is dynamic, lively, and embraces all these pulsating elements, constituting four interrelated dimensions: physical space – refers to concrete and organizational aspects; temporal – refers to the times and rhythms of use, including historical time, routine, and contrasting individual pacing; functional – refers to the mode and purpose of use; and, relational – refers to the people, circumstances, possible interactions and norms of use (Forneiro, 1998). In the triple logic of space – environment – place, the environment is the locus of experience, where the mediating adult, who knows and presents the objects of culture, brings the child closer to a place (Moreira, 2013).

As free movement and the autonomy of the child are starting points to this end, we should consider infants' developmental specificities, their organization and competence for social life, their possibilities for action and apprehension of the world according to what they can perceive and do with their bodies and their ability to affect and be affected by the others. Seeking to integrate these elements, we work with the notion of "embodiment" which is an instance of inseparable complementarity between the physical concreteness of the body and its experiences through active engagement with the world and others (Overton, 2008). In a dialogical relationship, the body signifies and is signified, expressed through tonicity, postures, gestures, movements of approaching or distancing, among other actions (Amorim & Rossetti-Ferreira, 2008) that allow the baby to play different roles and connect in an intercorporeal relationship.

As a rapidly-changing process, infants` relationship with the environment through embodiment changes drastically in a matter of months. In the first two years of life, it is estimated that their height doubles, the bodyweight nearly quadruples and the circumference of the head increases by about a third (Adolph, 2008). Mobility gradually develops along with postural progression from the supine position until upright posture alongside the development of expanded gestures and movements that require increased balance, coordination, strength and speed. All these elements entail key transformations of perceptual-bodily possibilities and strategies, as well as the meanings attributed to infants, the places where they are taken to, how they are positioned, and how, in turn, they may embrace or conflict these (pro)positions (Amorim & Rossetti-Ferreira, 2008).

These aspects draw attention to the practitioners` challenge of preparing environments in their functional, spatial, temporal and interactional dimensions (Forneiro, 1998) so that infants may act, express themselves, dialogue with various social actors and thus exercise their fundamental rights of participating in society (Coutinho & Vieira, 2020). In counterpoint, we as researchers and scientific toolmakers (Holzman & Newman, 1993) must take an active role in our relationship with the researched events and subjects, by building and making use of epistemological and methodological constructs that will amplify infants` action and standpoint. In our immersion in this effort, there are constant "zooming in" and "zooming out" analytical movements, in which epistemological premises channel elements and interpretations to the observed events (Rossetti-Ferreira et al., 2007) that may stand out as "figure", while others remain in the "background" as a network formation, always as a selection from a greater whole. Given these issues, we then present the construction of our methodological outline.

3.4 Methodology

We bring a qualitative case study (Rey, 2020; Yin, 2009) of a government-funded daycare centre in a medium-sized city in the state of São Paulo. The local Ethics Committee authorized the research, a partnership was established with the institution, and the participants granted their consent. Our unit of analysis (Matusov, 2007)

in this chapter was the pedagogical situations in outdoor spaces developed throughout the year.

The study followed the first year of full-time attendance of a group of infants and toddlers, internally subdivided into two groups according to age. Throughout the first semester, both remained in the nursery module, but given the difference in development, the group of toddlers was moved to a different sector from the second semester onwards. Henceforth, our records shall focus mainly on the younger group, comprising six infants (3 boys and 3 girls, initial age from 7 months to 12 months).

The follow-up was monthly and longitudinal, throughout the school year, according to the Brazilian calendar. Observational material comprises naturalistic observations, video recordings and field notes that sought to accompany moments of routine (sleep, food, bath, exchange), moments of play, and moments of interaction throughout the period of stay. For the present work, we selected only the material related to the presence of infants in outdoor spaces.

In addition to this material, the daycare centre generously granted us images from its own collection along with class reports, written by the teachers, to further detail the pedagogical actions regarding the use of outdoors. Finally, we collected informal accounts from the teachers and prominent people involved in the history of conceiving and constructing the centre, so that the previously mentioned records contemplated the pedagogical intentionality intertwined with the practices.

From the triangulation of this material, we identified all the records that presented the infant group in outdoor spaces and organized them chronologically to investigate whether their use occurred in everyday life, and if, over time, additional spaces were included in the group's routine. In our analysis, we initially present the centre and its outdoor spatial configuration. Next, by organizing such records and reports temporally and thematically, we developed pedagogical narratives (Coutinho & Vieira, 2020) seeking to apprehend which outdoor spaces were most commonly accessed routinely, what were the possibilities of using these spaces beyond teachers` routine practice and whether/which new outdoor spaces were introduced over time. Henceforth, we will proceed to the presentation of the case and discuss our findings.

3.5 Results and Discussion

Our case study is of a publicly funded daycare centre that was built in a farm of 8000 m2, in the outskirts of town. The original building functioned as a silkworms rearing house, which was later transformed into the Rural School Group, and finally into a daycare centre. This educational space, therefore, was surrounded by large outdoor areas, abounding with grass, fruit trees and allowing broad contact with nature.

In the centre's historical process, spatial conception and structuring received influence from the pedagogy of authors such as Anísio Teixeira, Celéstin Freinet and Daniel Élkonin, who based on scientific progress of children's psychology from

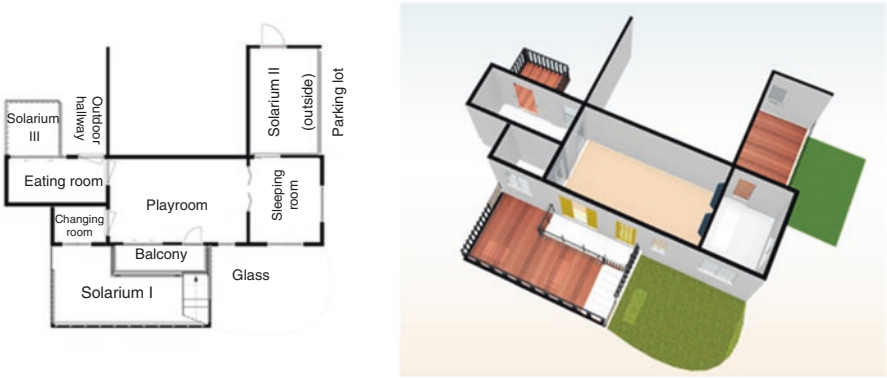

Fig. 3.1 Visual representation of the nursery complex

their time, advocated for greater freedom and autonomy for children. Also, relying on studies of environmental psychology, child development and education (Rossetti-Ferreira, Oliveira, Campos-de-Carvalho, & Amorim, 2010) institutional training oriented teachers' practice of (re)creating barriers and spatial geometry that could facilitate children's visual access of objects and same-age peers and foster greater participation, autonomy and spontaneous grouping. The centre was organized in sectors according to age groups and purpose and here we will focus on the external spaces that were intended for babies, notably those attached to the nursery complex and the wider outdoors.

The nursery complex, illustrated in Fig. 3.1, was composed of a variety of internal and external spaces, some equipped for care routine (bathing, eating, sleeping) and others structured for moments of interaction and play. The inner playroom had a seamless and unrestricted access to a balcony, providing outdoor-indoor connectedness (Kernan & Devine, 2010), and had intermediate access to the other boundaried outdoor spaces (Kernan & Devine, ibid) attached to the nursery complex, requiring passage through indoor spaces, with midway obstruction of baby gates on the doors. There was also a large solarium, which was accessed via a ramp attached to the balcony of the main hall, also obstructed by a short gate. As part of the pedagogical strategies, these attached external spaces were daily used in rotation and other spaces were gradually introduced into the babies' routine, though some should require more or less planning ahead.

There was a vast diversity of open spaces in the wider outdoors, a part composed by a complex of concrete areas and other part with several spaces in the green areas such as plazas, tables, houses, sand tanks, etc. Although groups more commonly used certain areas according to their age group and development conditions, the daycare centre sought to promote the occupation and participation of everyone in the different spaces. For this, teachers and a technical team (with pedagogical coordinators, psychologist, nutrition and nursing technician) engaged in recurrent planning and sought to integrate proposals more particularly focused on infants, their skills, challenges and needs.

In terms of socio-spatial practices (Rutanen, 2012), we observed that not all outdoor areas were accessed equally from the start. During the first semester, the infants' group would mostly be limited to the nursery's attached spaces (indoor-outdoor connectedness and boundaried outdoor spaces). We also observed that the centre created opportunities for these and wider spaces to be accessed on alternative periods, where more adults could be present. Finally, that children's developed recurrent going to wider outdoor areas upon cruising and walking onset, which happened mainly in the second semester.

Therefore, we organize narratives of these practices in a temporal logic within the following strands of analysis: "attached outdoor spaces as part of everyday life", "projects, workshops and the diversification of spaces" and "paving the way for the wider (green and concrete) areas". In each of these strands, we discuss the possibility of infants' access, the pedagogical propositions developed, and the infants' actions regarding these propositions, seeking to discuss how the intertwining of these elements constitute infants' cultural formation within the outdoors (Hedegaard & Ødegaard, 2020; Rossetti-Ferreira et al., 2007). Therefore, we shall proceed to these strands of analysis.

3.5.1 Attached Outdoor Spaces as Part of Everyday Life

We observed that, from day-one, the nursery's attached outdoor spaces were accessed on a daily basis. Because temporality is one of the dimensions of the environment (Forneiro, 1998) that alters the needs of children in this age group, the morning and afternoon periods had different temporal-spatial arrangements. The more structured outdoor spatial organizations were planned for moments of arrival, after lunch, after the afternoon nap and before departure.

In these moments, as a way of demarcating space and structuring an environment, the teachers spread out mats and large toys (e.g. activity centres, learning walkers, etc.) on the floor and hung objects (e.g. rattles, cloths, etc.) on the fences, within the children's reach. We interpreted this situation as an intentional invitation for babies to remain outside, as we identified several records in which they gathered in groups in that area and gradually stayed for a longer time, demonstrating increasing initiative to direct themselves and remain there. Also, the adult's practice of heading and staying outside were references of spatial orientation for babies and facilitated the formation of groups and fostered sustained engagement and sharing of attention/actions in educational situations (Campos-de-Carvalho, 2004; Musatti, Mayer, Pettenati, & Picchio, 2017) Over time, we observed that the babies started to head outside autonomously more often, independently of the adult being present or not.

Besides the spatial organization previously described, teachers often (re)positioned the gates' barriers and recreated spatial geometry, since many of the passages from one space to another had support for fitting mobile grids, We observed that these spatial (re)arrangements (Campos-de-Carvalho, 2004) invited infants to

experience and explore the same place differently and redirect their attention to specific features of space possibly unnoticed in their regular everyday use. For example, when teachers left the entry gate open and obstructed the corridor towards the solarium with a detachable gate, the ramp, usually a simple hallway, was transformed into a speeding "driveway" for car toys by children.

We also identified infants experiencing and appropriating the multiplicity of spatial dimensions (Forneiro, 1998) in everyday situations such as: contemplatng and interacting with the landscape and elements of nature nearby (e.g. wind, birds, trees, grass); playing with water using outdoor showers, basins and dolls (differing from the stationary posture and temporal configuration of bath routine); manipulating fluid matter, and getting dirty without restriction. Regarding the fences: toddlers threw objects beyond the gate and fence, or even tried handling the lock; cruising infants leaned on the fence and walked throughout its contours; and, infants had close or distal interaction with older children and adults who went by the corridors.

Therefore, we observed that access to external spaces was guaranteed from the beginning, became diversified over time and was legitimatized as pedagogical locus of infants' autonomy. Temporal-spatial arrays and the permanence of the adult were important elements to channel the direction and permanence of the babies. Also, practitioners had high concerns of carrying out the process gradually, respecting infants' habituation, rhythm and initiative so that they had physical and emotional security to explore such places. Finally, visual openness and postural accessibility through affordances (Gibson, 1979) (e.g. low gates and fences that afforded cruising support) fostered infants expansive and independent movement, whilst allowed extended contact with people and outer surroundings that composed a wider ecosystem, beyond the aseptic and adult-centric reference in a room.

Moreover, through the interrelationship of elements such as permeability/porosity, demarcation/flexibility, versatility/stability, and openness/containment constrained different ways of infants inserting themselves in attached outdoor spaces and integrating them into daily life as environments of exploration, discovery, and communication with the nursery's surroundings and community.

With greater habituation of babies to open-air environments, teachers began to conduct more structured actions in the nursery's attached outdoors and the wider areas, notably those which were more difficult to access on a daily basis. This occurred mainly from the proposal for projects and workshops, which shall be our following topic.

3.5.2 Projects, Workshops and the Diversification of Spaces

This ECEC unit conceived its relationship with families as a partnership and sought to establish a joint work in promoting the children's development and well-being. As a result, in addition to the practices regularly developed by the teachers, the centre promoted a series of educational situations, which were coordinated by different actors and often included families, notably through workshops and

integrative projects (Barbosa & Horn, 2009). We observed that most of these situations occurred in outdoor spaces.

Due to the proximity to parents' workplace, family members were invited to visit the centre during lunch hours and stay with their children during this period every day. Although this proposal initially sought to handle work shifts and favour a more gradual transition for full-time babies, visiting hours throughout the history of the daycare became a significant moment of integration between families and the centre community. During the visits parents often took infants to the green areas. On that occasion, they were able to have one-to-one interactions and meet more directly infants' individual interests by diversifying their access to spaces that would be difficult during group time, for requiring bodily handling and more individualized supervision (e.g. being pushed on the swing, exploring the playhouses, being carried in the lap to see the animals).

We also identified this diversification of access occurring in structured moments organized with parents. The reports mention musical recitals in the park plaza, children's birthday celebrations or craft workshops in the solariums or even at tables in the park, picnics and outdoor storytelling. Moreover, off-hours commemorative events also provided opportunities for families to circulate through the centre and enjoy their wider outdoor spaces in another setting. Hence, children were presented to and experienced a diversity of cultural arrays in the outdoors by having the necessary support to participate, express themselves and act on their interests, despite their momentary physical limitations. This all becomes fundamental in the process of transforming space in an environment, and children being invited to transform it into a place by active participation (Moreira, 2013).

Moreover, such elements proved to be potent incentives for children and their parents to experience a daily period outside with their children in a way that the experience could also be pleasant for adults, which according to Tiriba and Barros (2018) is an important step in the process of constituting experiences in the outdoors. Therefore, such opportunities also allowed parents, who are also part of this confinement ecosystem, to experience pleasant day-to-day moments with their children and come to value these types of space more.

In some of these visiting moments, the nursery's technical team held a series of sensorial workshops in which they presented sensory challenges to infants that could be freely manipulated and explored. The centre followed a plan for when and which substances would be (re)offered. These included wet and dry foods, such as cornmeal, sago, flour, objects in contrasting temperatures, fabrics of various textures, etc. It was a practice that allowed infants to experience the different sensations aroused by these elements, to help them to get used to being dirty, or even make their peers dirty. These expansive gestures, such as scattering, spilling and pinching gestures, were often newly experienced by babies by repeating several cycles of the same actions, which Henri Wallon, conceptualized as acquisition play, where the child observes using the full body, as if it were all eyes and all ears (Wallon, p. 76, 1981) (Fig. 3.2).

This was an important moment to prepare babies for the parks, where they would play with sand, mud, leaves, feel the texture of the grass and the dirt. For this reason,

Fig. 3.2 Photos from the sensorial workshops

the teachers were attentive to the children's reactions, especially those of discomfort, monitoring if the discomfort persisted or not in following sessions. Moreover, this was an opportunity for parents to experience this way of playing with their children and encourage them to explore, or even comfort their refusals and possible difficulties.

Thus, in the flow of occupation of outdoor spaces, the next step was to take children to wider outdoors in a more autonomous manner. This process occurred mainly in the second semester and will be discussed in the next topic.

3.5.3 Paving the Way for the Wider (Green and Concrete) Outdoor Areas

The centre had two complexes of wider outdoors, each at opposite ends of the unit's grounds. The area closest to the lunch room was of concrete floor and comprised covered areas (e.g. semi-open patios and corridors), as well as open areas (e.g. sports court, areas with showers). The area closest to the large solarium/entrance ramp, on the other hand, gave access to the wider green areas, which were structured in delimited spaces such as plazas, sand tanks, various types of playhouses, bird coops, playgrounds etc. According to the teacher's report and mapping of the records, the younger group most recurrent trips to these places started to take place in the second semester. At this time, only the younger group had remained in the nursery and all babies had developed independent mobility with differing onsets (crawling, cruising and walking).

The key teacher tells us that these moments were challenging, required planning in advance, and eventually demanded help from an aid. Some babies needed to be carried/physically assisted, occasionally a child expressed discomfort or needed to return to the room (e.g. diaper accident) and there was a concern that babies did not disperse. Regarding weather events, because of the hot weather subject to mosquitoes-borne diseases, parents collectively provided sunscreen and repellent

for children's daily use. Moreover, the maintenance of these spaces was costly and complex, requiring regular insect removal, gardening work, animal care, hygiene of toys and sand tanks, among other aspects.

However, notwithstanding the various challenges and requirements, the use of outdoor spaces was rooted and valued in the centre's pedagogical premise and practices. Access to the outdoors was embedded as fundamental rights of children (MEC, Brazil, 1995, 2009), that included the "right to movement in wide spaces" and "the right to contact with nature". These notions were historically built within intersectoral work and training of teachers and staff, so the centre could foster joint effort to help children make use and develop abilities that would allow them to exercise these rights. To demonstrate how access to the wider cemented and green areas took place, we selected two vignettes that will be discussed shortly.

The first vignette refers to the fifth month of attendance, in which the children's age varied between 12 months and 17 months and illustrates their going to the patio in the wider cemented outdoors. On that day, five of the babies were present (Fig. 3.3).

> Inside the room, the teacher is near a small gate that interconnects the lunch area to an external corridor. Babies gather around her, some standing, some in crawling position. After the teacher puts on her shoes, she exclaims "let's go for a walk!" and immediately one of the babies heads towards a high wooden niche where his shoes are. He tiptoes on his feet trying to grab them, but is unable to reach his shoes. A few moments later, the teacher heads outside, and the babies (crawlers, novice and experienced walkers) follow her in line. The teacher goes down the corridor and turns left. At this turning point, a wider and more visually complex spatial field opens up for the babies (e.g, crossing corridors, access to doors and patios from other rooms and people circulating). With the exception of a walking baby who follows the teacher, all the other four interrupt their traveling and stay sit when they reach this point. The teacher kneels facing them, smiles and calls out "come, let's play!".

Fig. 3.3 The group heading to the patio

> One of the babies goes out on a crawling bout towards the teacher. The remaining babies stay in crawling position, gazing at the teacher and apparently struggling to move forward. Some employees around encourage the infants verbally and offer support for cruising, helping them stand and move forward. It takes nearly three minutes for all the babies to reach the teacher. When the group is complete, the teacher spreads out a rug on the floor and provides a box of toys for the children to play.

We highlight some points from this vignette. First, we observed that when grouping close to the little gate with the teacher and even reproducing cultural gestures through immediate and deferred imitation (Werebe & Nadel-Brulfert, 1986), such as fetching the shoe, babies are able to anticipate the moment to leave and show signs of appropriation. A second point is that the difference in locomotor acquisitions integrates and constrains perception-action mechanisms in babies who move differently (Gibson, 1988). According to Kretch, Franchak & Adolph (Kretch, Franchak, & Adolph, 2014), walking babies have their visual flow and movement more easily targeted ahead, while crawling babies have their visual field more directed to the floor and need to sit and scan the environment to reach targets. This might be one of the reasons why at the corridor's turning point crawling infants struggle more to move forward, in contrast to the walking toddler.

Hence, the postural and locomotor aspects are central when considering the possibilities of infant's movement and displacement in wider outdoor space. This doesn't imply that babies were left to their devices. As they were able to take steps with cruising, their displacement was facilitated by receiving postural support from adults. Finally, not only the teacher, but other staff members were engaged in guiding babies to the patio, where they could be visible, perceptible while they could also see and perceive others.

The second vignette refers to the eighth month of attendance, with the children (who are now toddlers) ages ranging from 15 months to 21 months. On this day, there were six toddlers present (Fig. 3.4).

Fig. 3.4 The group heading to the sand tank in the green area

> The scene starts when the group of children, the main teacher and an auxiliary are moving from the semi-open corridor to the open green areas. All children can walk independently. There is a marked path on the ground that starts at the covered area and seamlessly extends to the park. Just upon entering the park, there is a broad and low stairway to facilitate small steps, but even so the toddlers struggle. In one scene, three stumble and fall at the same time (without getting hurt), placing their hands on the floor to absorb impact. One of the toddlers climbs up the remaining steps in this position (legs extended, torso bent forward and hands on the floor, also called "bear crawling"). The teacher and assistant reach out their hand and help the children who have to walk the remaining steps. Upon arriving at the park, the children begin to follow the paved path that passes by one of the play houses. The teacher and assistant, however, go right across the grass, heading towards the sand tank, and call the children. They say "sand, we're heading to the sand". Some toddlers follow them immediately, but others need to be called more insistently or led by hand. When everyone reaches the sand tank, the adults hand over buckets, water and sand tools. There is a scene in which one of the babies tries different ways of putting the sand into the bucket, first with the sieve, then with pinching hand gestures, and after looking around, says "pá.pá" (the word in Portuguese for shovel, which resembles one of the initial babbling babies' utterances). Shortly afterwards, the assistant hands over a shovel, which the baby uses to throw sand into the bucket.

In the excerpt, the marked path helped children to orient themselves, but the stairs and moving away from the path were challenges along the way. Apprehending the route and learning to walk either through a delimited path or open space with greater autonomy and confidence are embodied educational situations. Besides motricity issues, spatial and time use diverged between adults and children, in a way that infants and toddlers' processing and action time, both in gesture and in language, conflicted with the adult.

Due to such a distinction, times and directions needed to be (re)negotiated, requiring changes of rhythm, transmutation of space (Gobbi, Leite, & Pito, 2019) and re-arrangement of locomotor aims. Within a structured proposal, such as playing in the sand, cultural artefacts instrumentalized the children's actions in their contact with reality, allowing them to experience different textures, dry or wet, and to explore different modes of handling. When transferring the sand to the bucket, for instance, by testing varied hand movements and experimenting with tools, children indicate a rudimentary apprehension of everyday concepts and learning through acquisition games (Wallon, 1981).

In view of the analyzes discussed, we will move on to the final considerations.

3.6 Final Considerations

Infants and toddlers face the challenge of having their access and participation to outdoor spaces denied or hindered, which permeate historical confinement practices, with cribs, containment devices, small rooms and nowadays, even restraining through media devices (Kopp, 2011). Allied to these issues, urban structuring, socio-economic inequalities and conceptions of care and education that favor confinement and adult-centric models perpetuate those practices. Despite the

challenges, collective spaces, such as early childhood education units, have the great potential to ressignify those issues and actively contribute to their cultural formation on such matter.

Through the case, we identified that the structuring of spaces reflects expectations and meanings about what is desired in the pedagogical process. When practitioners intervene in space, by prior organization, by routine insertion, by physical demarcation, and by stimulus to the independent action of the child, they can offer children a safe and stimulating environment that provides experiences and gradual appropriation. In doing so, children can "activate the different modes of interaction with others and the environment depending on the situations they encounter and according to the means available in their behavioral repertoire and the goals they seek" (Wallon, 1942).

As "it takes a village to raise a child", the case also reveals the potential of including different actors in the daycare centre when planning actions and accompanying children in their moments in outdoor spaces. The possibility of bringing families into the centre and watching their children interacting with the outdoor environment on a daily basis contributes to the adult having a more qualified and attentive look to the way the child acts, its capacities and its challenges. The proposals for workshops and projects help to diversify the access and use of spaces, and contribute to the socialization and integration process of both children and families at the institution.

Finally, the infants' developmental resources constrain the way they are inserted and navigate through outdoor spaces. The possibility of adjoining areas closer to the rooms used by babies can facilitate their daily exposure to the outdoors and to venture into actions specifically provided by such places, in a more gradual and safe way. Also, the complexity of trips to wider outdoors, notably green areas, should be possibly considered as a pedagogical practice in itself, taking into account the differences in children's times and skills, with a distinction between those crawling, cruising and walking infants/toddlers.

Therefore, in agreement with Dowdell et al. (2011), we argue that access and exposure to nature and outdoor gregarious spaces allow babies and young children to exercise their rights and learn about the world with hands-on experience without needing adult-centered explanations, constituting their cultural formation (Hedegaard & Ødegaard, 2020) as participants in both local and wider territories. Hence, confinement practices and centralization of the relationships around the adult's proposal are more easily dissolved in the outdoors, and even upon developmental limitations, adults can be supportive of children's initiative and activeness. In a triple protagonism, the child eager to learn and act is affected by the environment, and the teacher, who knows the cultural object, presents and draws the child closer towards it (Oliveira et al., 2012). To this end, it is essential to provide possibilities of access and occupation to reframe conceptions, practices and even policies related to babies and young children.

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Chapter 4
Princesses (Don't) Run in the Mud: Tracing the Child's Perspective in Parental Perceptions of Cultural Formation Through Outdoor Activities in Norwegian ECEs

Alicja R. Sadownik

Abstract By examining Polish parents' perceptions of outdoor activities in Norwegian Early Childhood Education (ECE), this chapter discusses how focusing on the child's perspective can change and challenge parental gender-related value positions, thereby changing perceptions of the cultural formation taking place through outdoor activities. The empirical data on the basis of which this question is answered are comprised of group interviews with 30 Polish migrant parents (18 mothers and 12 fathers) whose children were in Norwegian ECEs. The applied theoretical toolkit of a cultural historical wholeness approach (Hedegaard M, Mind Cult Act 19:127–138, 2012) enables the description of (parental) experiences of cultural formation through outdoor activities as anchored in the value positions established within and across involved societies. It also allows us to grasp those moments when the focus on the child's perspective in outdoor activities challenges parental value positions and cultural traditions of heteronormativity. The concluding remarks point to the importance of enhancing both the child's perspective and the specific plane of interpersonal interactions in ECE collaborations with parents and caregivers.

Keywords Outdoor activities · Cultural formation · Child perspective · Gender performance · Parental collaboration

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4.1 Introduction

Apart from their other tasks, Norwegian ECEs are expected to "work in close cooperation and agreement with the parents" (UDIR, 2017, p. 29), and these parents may sometimes represent other value positions and thereby have different perspectives on various institutional practices as well as the cultural formation that takes place through them.

This chapter examines Polish parents' perceptions of outdoor activities in Norwegian ECEs and their children's cultural formation taking place through these outdoor activities. This creates a foundation to discuss how a focus on the child's perspective on the process of cultural formation through outdoor activities can change or challenge parental perceptions of these activities, thus challenging the silent assumptions regarding heteronormativity present in the institutional lives of modern Western societies. The chapter first presents the cultural historical wholeness approach as a framework that enables the researcher to (a) anchor the process of cultural formation in sociocultural and institutional foundations, (b) link the perceptions of certain institutional practices with value positions and (c) spot those moments in reflections on outdoor activities from the child's perspective that challenge traditional parental gender values and/or heteronormativity. Next, explanations of cultural formation, heteronormativity, and aspects related to gender in Poland are presented. The chapter then presents the research project, including its methodology, a presentation of the participants, and the results. These findings form the final basis for the discussion, which focuses on the possibility of challenging conservative gender attitudes as well as heteronormativity in general by including the child's perspective on cultural formation through outdoor activities.

4.2 The Cultural Historical Wholeness Approach and Cultural Formation

The cultural historical wholeness approach describes the child/individual as always operating in a particular context. Hedegaard (2012) divides the context into three planes:

- A *formal societal* plane that reflects historically evolved traditions in a society that are formalized into laws and regulations as *conditions* for the existence of an institution (in the model depicted as cultural traditions in a society for different institutions, reflecting different value positions).
- A *general institutional* plane that reflects informal conventional traditions and demands (i.e., related to school and home), taking form as practices (in the model depicted as, respectively, home, school, and day care practice).

- A *specific* plane that reflects the shared activity settings of persons in a specific institution (i.e., a specific home or a specific school, depicted as activity settings in the model). (Hedegaard, 2012, pp. 129–130)

All three planes are inseparable when trying to understand the child's development or social situation. By social situation, Hedegaard (2012) understands "the person's relation via motives and competences to different activity settings" (p. 130). The motives occur in relation to the realised demands and result in certain activities that can lead the child to grow certain competences, which are again the basis for further motives, activities and thereby development.

Behind certain institutional practices and their demands lie particular cultural traditions with their value positions. Cultural traditions and value positions may differ across societies as well as within a society. This means that the social situation of the child also includes the child's relation to the value positions and cultural traditions that lie behind the institutions in which the child is participating.

The model (Fig. 4.1) illustrates the three planes on which the child's development takes place. Moreover, it includes the value positions that mediate the plane of cultural traditions and institutions, as well as the motives and competences that mediate individuals' social situations (their relation to various activity settings). The human being develops by acting in response to experienced demands created by

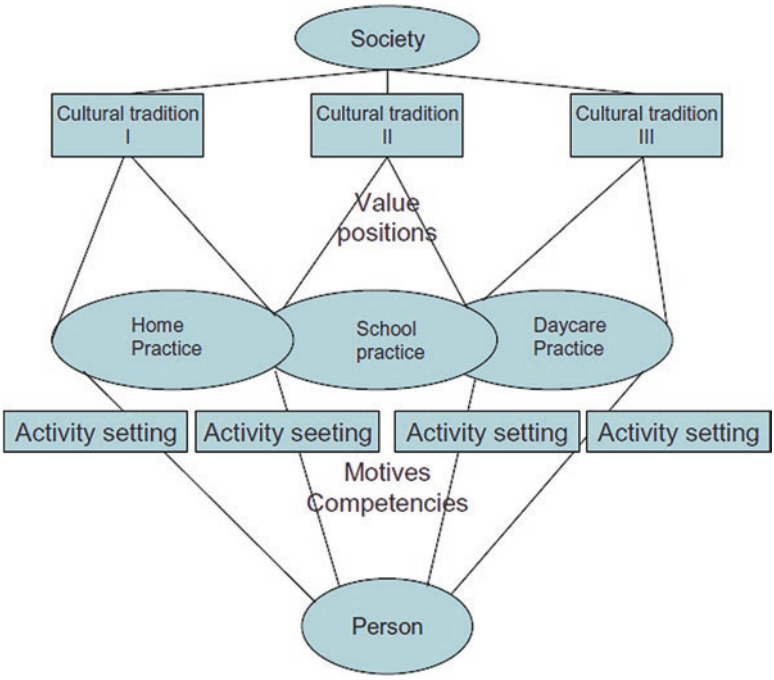

Fig. 4.1 A model of children's activity settings in different institutions. (Source: Hedegaard, 2012, p.130)

others, institutional practices, and/or sets of values and meanings presented in institutional practices and lying behind institutional settings. Activity in response to experienced demands can, however, include resistance—and thereby the occurrence of activity that differs from that expected by the institution.

Vygotsky states the following:

> Experience is a unity, in which, in indivisible form, on the one hand the environment, that which is being experienced, is presented—the experience of everything relates to something existing outside the person—and, on the other hand, how I experience it, that is, all of the special features of personality and all the special features of the environment are present in experience. (1934, pp. 97–98)

This dialectical character of an activity, which includes both the cultural traditions and demands *imposed on* the child, but also the child's own responses to these traditions and demands as a result of their own motives and competences, makes it possible to relate the categories of social situation and activity to the concept of cultural formation.

4.3 Cultural Formation

Cultural formation, also called *becoming* and, in Norwegian policy documents, *formative development* (UDIR, 2017), is a concept developed to embrace the dialectical character of the experience joining together the outside physical and cultural world with the internal processing of the experienced content (Ødegaard, 2016). Ødegaard and White (2016), in describing the historical development of the concept of *Bildung/danning/becoming*, present as critical the dialectical relationship between the culture, represented by the community, older generations and educational institutions, and the individuals actively involved in the social institutions. This allows us to see cultural formation as both the culture shaping individuals (when an individual is framed and formed by demands anchored in the values and meanings existing in the culture) and as individuals negotiating their own subjectivity (creating their own selves in dialogue with the *imposed* cultural values).

The Norwegian Framework Plan for Kindergartens: Content and Tasks (UDIR, 2017) relates formative development to the facilitation of a "probing and inquisitive approach to the world" (UDIR, 2017, p. 1). On the one hand, this promotes the sharing of values and norms. On the other hand, it endorses the strengthening of "courageous, independent and responsible participation" and the valuing of "individual expressions and actions" (UDIR, 2017, p. 21).

The dual nature of *danning* fits the cultural historical wholeness approach, where becoming's first dimension relates to the individual being introduced to the particular demands of interpersonal, institutional and sociocultural expectations. The second, self-creating, dimension relates to the individual developing various motives and activities in response to the experienced demands. (Re)acting in response to the

various demands in a dialogical involvement with them constitutes the process of formative development. This suggests that the concept of cultural formation particularly activates the *specific plane* (Hedegaard, 2012, p. 130), as it explains how culturally anchored meanings and values are lived and negotiated in institutional practices by interacting individuals who exchange and challenge each other's values and meanings through their own activities.

In this chapter, the everyday practice of ECE institutions is narrowed to their outdoor activities and the children's cultural formation taking place through them. The focus of the research is on individual (parental) perceptions of outdoor activities in Norwegian ECEs, as well as the cultural formation through outdoor activities in which children participate. As parental perceptions are shaped by parents' cultural traditions and value positions connected to gender, as well as their capability to acknowledge the child's perspective, the process of experiencing their children's cultural formation taking place through outdoor activities links the plane of cultural traditions and value positions with the specific plane of interpersonal relationships (for Hedegaard's model, see Fig. 4.1). The significant institutional context in this case is the ECE setting and *home*'s perception of it.

What is interesting in the parental perceptions presented below is that not of all them include the child's perspective on the process of cultural formation.

4.4 The Child's and Children's Perspectives

Following Sylvia's (2010) conceptualisation, I understand the child's perspective as directing

> adult's attention towards an understanding of children's perceptions, experiences, and actions in the world. Thus, child perspectives are created by adults who are seeking, deliberately and as realistically as possible, to reconstruct children's perspectives, for example through scientific concepts concerning children's understanding of their world and their actions. (Sylva, 2010, p. vi)

However, no matter how sympathetic the adults are and how close to the children they get, they will always end up generating adult objectifications of the children's experiences. Nevertheless, the effort taken seems to matter, as it can be distinguished from parental perceptions of, for example, ECE outdoor activities. The children's perspectives are here understood as representing

> children's experiences, perceptions, and understanding in their life-world. In contrast to the child perspectives, the focus here is on the child as subject in his or her own world, the child's own phenomenology. This is what adults attempt to understand through their child perspective, for example in attempts at child-focused interpretations of children's intentional acts and statements. (Sylva, 2010, p. vi)

This perspective will be applied to outdoor activities in the ECE setting in this chapter.

4.5 Gender Equality: A Value Position Occurring Across Countries and Societies (Poland and Norway)

Today, gender equality is a fundamental value position (EEAS, 2018) imposed on various cultures and societies operating in the European geographical area. Norwegian ECE is required by its steering documents to "promote equity and equality irrespective of gender, functional ability, sexual orientation, gender identity … . Kindergartens shall combat all forms of discrimination and promote compassion" (UDIR, 2017, p. 10). Outdoor activities, then, apart from being rooted in long-standing Norwegian outdoor life traditions, are activities based

> on the principle of equality and antidiscrimination and help to ensure that the children are able to experience and create an egalitarian society. Everyone shall have the same opportunities to be seen, heard and encouraged to participate in a shared activities in kindergarten. (UDIR, 2017, p. 10)

To make this happen, the staff has to act according to value positions connected to gender, which requires reflection and change. The Framework Plan for Kindergartens articulates expressly that the staff "must reflect on their own attitudes in order to best convey and promote equity and equality" (UDIR, 2017, p. 10).

ECE settings can however not expect such gender related values and attitudes from the parents, representing diverse cultural and/or national origins. In Poland, although it is formally a member of the EU, mainstream values in relation to gender consider traditional and separate social paths for two biological sexes to be the *right* paths. Women are expected to be feminine in terms of physical appearance (ideally beautiful and delicate) and choice of jobs (ideally connected to education, care and service as well as household work, with the main responsibility of caring for their own children) (Gal & Klingman, 2000; Graff, 2008). The expectations for men demand physical strength, a great career or a well-paid job, more spare time, and economic rather than care- or housework-related duties in terms of family life. In Poland, gender-related values seem to correlate with level of education and age: the older and the less educated are more likely to value traditional positions connected to gender. This also means that the younger and more educated that people are, the higher the probability that they will have a more liberated attitude to gender roles (ISSP Research Group, 2016). However, this liberation is less likely if there is involvement with certain religious movements presenting traditional gender norms as correct (European Parliament, 2011). This correlation, detected in complex and representative statistical studies (ISSP Research Group, 2016), is the reason why this study presents detailed information on the parental level of education in the presentation of the research participants.

4.6 The Heteronormative Matrix: Background to (Traditional) Gender Dualism

Within gender and queer theory, however, both prescribing certain social trajectories to certain sexes and dividing human beings into boys and girls (or men and women) are criticised (Barker, 2016; Butler, 1990; Jagose, 1997; Sullivan, 2003). Labelling certain people as men or women, which is accompanied by certain blue or pink products and practices (e.g., at the birth clinic and in the case of many children's products), is recognised by Butler (1990) as a sign of *heteronormativity*, which she sees as the uncritically assumed obviosity of heterosexuality. Butler describes the *heteronormative matrix* as a lingual pre-structure dividing human beings into two complementary types: boys and girls. On the one hand, this excludes people with an unclear biological sex from the natural order of things (Butler, 1990), while, on the other, it normalises heterosexuality. The norm of heterosexuality is thus what lies beneath the expectations for feminine females and masculine men (Butler, 1990). This suggests that Butler relates tensions between conceptualisations of gender in modern societies to the pre-assumption of heterosexuality that follows the foster's and human being's life, from the different types of talk used by parents when talking to the pregnant belly with a boy or girl inside to the limited trajectories of social careers as a result of gender.

Being socialised within the heteronormative matrix may result in specific understandings of how gender may be performed as two distinct opposites, as represented by a great part of Polish society (ISSP Research Group, 2016). These traditional gender-related norms may also result in social anxiety and moral panic (Jawor, 2014) when experiencing and/or witnessing unusual or untraditional gender performances, as these put the *natural* order of things in danger (Kopciewicz, 2005).

When it comes to the possibility of gender-liberated behaviours or unusual gender performances, the children's literature seems to allow *more*. However, this relates mostly to girls. The earlier heroines of children's books such as *Pippi Longstocking* (Lindgren, 1977) and *Ronia the Robber's Daughter* (Lindgren, 1983) are familiar in the ECE field as well as among (Polish) parents. This gender freedom is less visible in the case of boys. This is possibly mirrored in the institutional reality of many ECEs. In Tømmervåg (2017), the case of a boy who wanted to wear the colour pink is described. He wanted his outdoor overalls, underwear, clothes, rain gear and boots to be pink. The parents bought him everything in purple, and the kindergarten staff thought that this was a great solution (Tømmervåg, 2017, p. 3). This exemplifies the ways in which girls may enjoy greater acceptance of diverse gender enactments, while the gentle and soft boy who wears pink or a dress still worries ECE staff, parents and perhaps the wider society.

4.7 Methodology

The research data used in this article were gathered through a study based on a research question relating to Polish parents' perceptions of Norwegian ECE. The study was conducted among Polish migrant parents in Norway. Altogether, 30 parents (18 mothers and 12 fathers) whose children had been in Norwegian ECECs participated in interviews between October 2014 and April 2015. The participants were invited to individual one-time interviews, but as the subject of Norwegian childcare turned out to be so engaging, they asked to meet and discuss the subject with other Polish parents, preferably more than once. I followed up on this request, dividing the parents into six groups of five and meeting each of them six times during the same period of time.

As there was someone in each group who was not comfortable with the conversations being recorded, the quotations below were reconstructed and revised by the research participants. In total, 231 pages of reconstructed group discussions were generated in collaboration with the parental groups that participated in the study.

4.7.1 Content Analysis with a Focus on Outdoor Education

For the sake of this study, the research material was read and analysed based on the category of outdoor activities. To do this, a qualitative content analysis (Mayring, 2010) was used. Qualitative content analysis involves systematising the empirical material by looking at it through a certain category or category system. The starting categories are *filled* with relevant parts of the research material, which are categorised into subcategories of the empirical content. In the case of the analysis used in this article, *parental perceptions of outdoor activities* was the starting category. This was soon divided into two subcategories: *positive* and *negative*. However, a deeper reading of the content showed that parental gender-related values and attitudes (e.g., *gender-conservative* or *gender-liberal*) and being the parent of a girl or a boy were significant differentiating criteria. That is the reason for presenting the research material on the basis of *who is talking* (gender-conservative parents of girls, gender-liberal parents of girls, gender-conservative parents of boys and gender-liberal parents of boys). The content of each group's meanings is presented in a descriptive way in the results part of the text. As the parental responses direct their focus to the children's perspectives to different degrees, reflections on this are included in the presentation of the results as well as the discussion and conclusions.

Table 4.1 Overview of the background information of the participants. Source: own elaboration

Characteristic of the research participants	Mothers	Fathers	Total
Vocational education	2	1	3
Technical secondary	3	4	7
Higher education	13	7	20
Declared conservative gender values	6	4	10
Declared liberal gender values	12	8	20
3–6 years in Norway	8	7	15
7 or more years in Norway	10	5	15
Total	**Mothers 18**	**Fathers 12**	30

4.7.2 Research Participants

The research participants presented a rich array of educational backgrounds, with a preponderance of highly educated mothers. The number of years that had passed since their arrival in Norway was also very different. Nevertheless, they had gender-related value positions that seemed to differentiate their perceptions of cultural formation through outdoor activities in Norwegian ECECs, which is why these are mentioned in Table 4.1.

4.7.3 Researcher

The researcher is herself a Polish migrant mother in Norway. During this project, she had one child in a Norwegian kindergarten and was pregnant with another child. Being a (pregnant) mother was experienced by the researcher as a trust-building factor for the participants. Being in the same situation seemed to facilitate potential participants' involvement in the project.

4.7.4 Ethics

The interviews with the parents were conducted as part of a bigger research project: *Polish female migrants in Norway: A study of care deficit*. This project is funded by EEA grants and coordinated by Maria Curie-Sklodowska University in Lublin. The project was undertaken in accordance with the General Guidelines for Research Ethics (The Norwegian National Committees for Research Ethics, 2014). In the case of the group interviews with the parents, all the research participants were informed about the purpose of the study and the wider research project. In each group, there was an individual who was suspicious of being recorded, so the discussions were written down by the researcher and sent to the participants after each interview had taken place. This was done to reconstruct certain utterances as soon

as possible following the interview. The written notes and reconstructions were anonymised. The key list with the codes of the parents and their first names (not surnames) was presented to the parents in the form of a handout, which they gave back during the same meeting. These handouts were shredded after the last reconstructed transcript was made (May 2015). Participation in the interviews was voluntary, and the participants were informed about the possibility of withdrawing at any stage of the interviews.

4.8 Results

As seen in the empirical quotations below, the parents operate with a general concept of *outdoor activities*; therefore, the presentation of the results starts with a list of the outdoor activities that were detected across the whole research material. These were as follows: whole-day trips, walking/hiking (also skiing and skating depending on the quality of winter), climbing, preparing food and eating outdoors (also in winter), carpeting, fishing, art-related activities performed outdoors, sleeping outside, ball games, and visits to various natural/cultural landscapes in the neighbourhood.

4.8.1 Gender-Traditional Parents of Boys

4.8.1.1 "Manning the Boys Up": Outdoor Activities Safeguarding Heteronorm

Those parents who declared themselves to be gender-traditional and who were parents of boys perceived the outdoor activities in the ECE as "good for the boys" (Father 4, technical secondary education, 9 years in Norway). The benefits for boys were understood in relation to the consideration that outdoor activities are good for developing the masculine features of boys. However, when comparing the outdoor activities in the Norwegian ECE to their own backgrounds in Poland, the parents tended to comment that "it's unusual how much time they spend outdoors" (Mother 3, vocational education, 4 years in Norway). Nevertheless, the outdoor activities were generally perceived as good for "their boys" as they "man them up."

> It's strange that they spend so much time outdoors, but maybe it's good, actually. He [our son] will at least not differ so much from his cousins in Poland … this gender is here overall, but I hope this outdoor staff will man him up, so that he is not like the … mayor of Slupsk.[1] (Mother 7, higher education, 6 years in Norway)

[1] Referring to the first officially declared gay in Polish politics, who was elected to the mayoral position of a little town: https://www.economist.com/europe/2018/09/20/can-a-young-gay-mayor-change-poland

"Manning the boys up" was important for this group of parents, as it was seen as preventing homosexuality in the future. In the quotation above, there is a direct reference to the mayor of the Polish town Slupsk. Robert Biedron is internationally known as the first gay mayor in Poland. Other parents did not refer to other well-known gay people but rather described the outdoor activities as preventing the boys from being "a sissy" (and other such formulations unmasking homophobic parental attitudes rooted in a deeply internalised heteronormativity).

The outdoor activities thereby seemed to relieve the fear of "what if my boy ends up gay?" What the parents did not appear to acknowledge was not only the child's agency in this process but also that the ECE staff mediated the outdoor activities to the children. However, the sociocultural acceptance of homosexuality in Norwegian society was both noticeable and worrying to them.

> I'm worried when I think in what kind of society my son is growing up, with gays on every level and a total acceptance for that. I hope that the harsh outdoor activities in the kindergarten will wake up his inner man and that he will not be influenced by the popular culture. (Mother 1, secondary education, 7 years in Norway)

Even though the culture and society worried them, they did not mention the staff who, from a sociocultural perspective, represent society in the children's daily institutional life. They also did not seem to realise that the child was an actor or subject who, operating in the borderline between home and the ECE setting, was in the process of creating their self in dialogue with the encountered demands, expectations and value positions. This suggests that in these parents' responses, the cultural formation did not exist as a dialectical process but rather as a one-way influence on children, who *soak up* all the content that was presented to them. These parents, however, referred only to the content presented in the ECE setting, while the values present at home were not mentioned as having any influence.

4.8.2 Gender-Liberal Parents of Boys

4.8.2.1 Creating One's Self in Respectful Dialogue with the Staff, Who Impose Activities But Not Attitudes

In contrast, this group of parents was focused on how the kindergarten staff presented, explained and supported children in the outdoor activities. Equally important were the children themselves, including their personalities, motives and meanings. This suggests that in the utterances of these parents, the *specific plane* (Hedegaard, 2012) of the persons involved in the activities was highlighted. The parents of boys who were referred to as "more gentle" pointed to the importance of the quality of interactions between the adult and the child in outdoor activities. The parents of the "gentle boys" were very glad to hear and observe that the ECEC staff did not force "their boys" to become "tough men" but that they showed respect and helped the child to "be himself" in the process of the structured activity.

> What we like is that our son is not being forced to be the "hard man." He is rather delicate, and I know that he is crying a lot on such a long trip when it's raining or the hail falls, but I also know that his feelings are recognised, that he hears that they understand his experience and they show him ways to get warm again. This recognition of the child's emotional reactions is great here. (Mother 16, higher education, 7 years in Norway)

Directing the attention of the institution and its activities to the child's perspective had, according to this group of parents, other positive, long-term consequences.

4.8.2.2 Outdoor Activities as Meeting the Child's Interests and Preventing "Drop-Out"

The other gender-liberal parents of boys pointed at outdoor activities as being in line with their sons' interests and thereby good. They said that they helped the boys to know what they were good at, thereby building their self-esteem. This emphasis on meeting the children's interests could be interpreted as another way of parents approaching the children's perspectives on institutional activities.

> What makes me so happy about the outdoor activities is that they are exactly what my son's like. I know him, and I know that he would have problems sitting and listening. In such a case, he would only be told that he is doing something wrong: don't run, sit down, don't get up and so on. And in a kindergarten with so much outdoor activity, he is not a problematic naughty boy; he can be himself and learn that he can manage a lot of things. (Father 6, higher education, 7 years in Norway)

These parents saw the outdoor activities—activities that matched the boys' interests—as demands that the boys found easy to respond to as a result of their motives and competences. Thereby, they were able to become more involved in the institutional life in positive rather than just *problematic* ways. This suggests that the parents perceived the outdoor activities as an institutional way of taking the children's perspective.

4.8.2.3 Witnessing Girls as Equally Strong: Facilitating Gender Equality in the Future

All the boys' parents who declared themselves to be gender-liberal pointed to the importance of the fact that "their boys" were witnessing girls participating in all the—perceived as masculine—outdoor activities. That was described as good for the development of gender-equal societies. Because of the normative content, in the utterances below, the child's perspective appeared not in terms of what the child *liked* but in terms of what the child got access to. Watching peers of different genders performing the same outdoor activities was seen by this group of parents as beneficial for their sons.

> I'm so glad Piotr sees girls sawing wood, skiing and so on. (Father 6, higher education, 4 years in Norway)

> This is what is necessary for the boys to see … so that it's natural for them that we are equal. I'm happy for my daughter-in-law—for the equal division of domestic work … if my son decides to marry a woman [laughter]. (Mother 16, higher education, 7 years in Norway)

The last response offered a reflection on the heteronormativity that the mother was aware of but did not want her son to feel forced to reproduce. She perceived, therefore, the outdoor activities as an arena that could be taken differently by individuals regardless of gender. That was, in her eyes, beneficial for general equality between genders not only in terms of equal division of domestic work but also in terms of various life choices, including life-partner choice.

4.8.3 Gender-Traditional Parents of Girls

4.8.3.1 Outdoor Activities as a Tool of Normative Disaster

The gender-traditional parents of girls were aware that the kindergartens were structured to promote gender equality, but they saw the promotion of this, including through outdoor activities, as a normative disaster. They seemed to be worried about the values on which the upbringing of "their girls" was based in the ECEC setting, including the kinds of effects this might have on their futures. Many of the conservative parents mentioned the eventual possibility of returning to Poland to save their daughters.

> I'm afraid that she will lose her girlhood—and the possibility of being happy within the role that women have in society … and that she will become a strange something girl–boy who doesn't know who she is … It's against nature and not healthy. (Mother 3, secondary education, 8 years in Norway)

This perception seemed to be rooted in heteronormative values, and it acknowledged neither the staff, who could present the activities in different ways, nor the children and their subjectivity during the process. The cultural formation through outdoor activities was seen as a definitely one-way influence. The parental focus was not directed to how the child might experience or respond to this; instead, it was attached to the parent's own fear of what the child might become ("a strange something"). Focusing on the unfulfilled heteronormative norm did not allow the parents to recognise individuals who had a significant role in the child's becoming.

4.8.3.2 It's Not for the Girls, But It's Good for My Relationship with My Daughter

Even though the parents representing traditional gender norms generally agreed on the negative influence of outdoor activities on their daughters' future gender performance, some of the fathers revealed that they were happy that their daughters were introduced to the outdoor activities. The reason primarily given was that they, the

fathers, also liked the outdoor activities very much. The vision of future outdoor trips together with their daughters was much more tempting to the fathers than accompanying them on typical *girly* activities. Moreover, sharing in an activity that they both liked seemed to them to be a better base for building a relationship.

In the response below, a gender-traditional father approached the *specific plane* (Hedegaard, 2012) of interpersonal interactions, realising that slipping from the norm of the feminine female was in the long run better for both the daughter, himself and the relationship between them.

> I agree that it's maybe not for girls, all the wild stuff here … and the outdoors. It definitely wasn't for my little princess, as I imagined her before. But when I think about it, the more I like it, because … I'm glad that instead of running around the shopping centres and beauty salons with my teenage daughter, in the future, of course, I'll be able to take her for a tent trip, with a big chance that she'd really enjoy it. (Father 12, vocational education, 9 years in Norway)

However, as in the utterances of other gender-traditional parents, neither the child's agency in cultural formation nor the home were mentioned as important value-related contextual factors. The daughter appeared here in her *future—outdoor enjoying—version*, formed by the ECE setting. As this matched the father's interests and thus could strengthen the relationship between the two of them, the father was willing to distance himself from the cultural gender norm (of keeping girls away from outdoor activities). In other words, through looking at the outdoor activities through the lens of an interpersonal plan, he challenged the necessity of implementing the traditional gender norm in the case of his own child. It was also important that the future "big chance that she'd really enjoy" the outdoor activities took as its point of departure the fact that the girl already showed interest in these activities. This case showed that the child's perspective was taken into consideration when emancipating oneself from traditional gender norms.

4.8.4 Gender-Liberated Parents of Girls

4.8.4.1 Outdoor Activities as an Institutional Way of Meeting the Girls' Diverse Interests

Pippi Longstocking appeared in the responses of gender-liberated parents, most often as a descriptive and friendly *label* they put on their own daughters. When Pippi Longstocking was mentioned by one parent during one of the interviews, many others said, "yeah, my daughter is also a Pippi Longstocking" or "I also have the honour to be a father of Pippi." The *label* worked, on the one hand, as a recognition of the child's perspective and a description of the daughter's movement- and outdoor-related interests, while, on the other hand, signalling parental approval of the daughter's process of overcoming the artificial borders that have traditionally been put on girls (Graff, 2005). Moreover, the children's perspectives and

experience of outdoor activities as well as other aspects of the ECE content were highly valued and served as very basic criteria for discussing the ECE activities.

> This is just so great, that she can be a girl in so many different ways here … and that she can explore and choose herself what kind of girl she actually wants to be. I like that she can explore, search, get dirty, but also be a princess and have fun with it. Especially because she is rather a Pippi Longstocking type. (Mother 11, higher education, 12 years in Norway)

For the parents of those labelled Pippis, the outdoor activities offered by the kindergartens were of crucial importance. They represented an institutional way of not only taking the children's interests seriously but also opening them up for diverse performances of the female gender. The outdoor activities were, in this sense, an institutional demand in which the daughters were supposed to get involved through their motives and activities. However, the developed motives and activities were up to the children. No particular child's response to the educational offer was seen by the parents as expected by the ECE staff. This indicates that the parents recognised the ECE as facilitating the children's cultural formation, with a focus on the children's self-creation through access to different kinds of content. When talking about self-creation, the parents focused on the gender aspect; however, they were open to very different ways of performing this, as both Pippi and Princess were welcome to appear. As they generally saw their daughters as already emancipating from traditional gender norms by being Pippis, they also underlined the institutional openness brought about by the outdoor offer, which allowed their daughters to respond without disturbing the institutional order. "It's important for me that she is not criticised or in any way punished for being so 'wild' but that she gets an offer to which she can respond by being herself" (Father 4, higher education, 4 years in Norway).

4.8.4.2 Outdoor Activity and Interaction with Staff as Creating Children's Subjectivity

The staff's openness to children's experiences and dialogical engagement with the institutional content were also noticed by the gender-liberated parents of girls who did not possess outdoor interests and dispositions.

> My daughter likes very much all the things that I as a feminist simply reject, but I allow her to find her way. And this is what I like about the staff: that they know that my daughter would rather stay inside and play being a princess, but the plan of the day is that everybody goes out to run in the mud, and then they don't expect that she will be happy about it. They allow her to be unhappy by getting dirty, wet and cold. She is respected at the level of her reactions to this. (Mother 17, higher education, 6 years in Norway)

This utterance shed light on another way of cultural formation taking place through the outdoor activities, whereby the girl was allowed to dialogically engage in a relationship with the activity and the staff, creating herself as a subject resisting the outdoor-life culture. She became involved with the institutional demands by developing *stay-inside* motives and resistance. The mother, who was able to take the

perspective of the child, allowed her daughter to do this, even if it contradicted value positions that she chose herself as an adult woman.

4.9 Discussion

The results showed that the parental experience of the cultural formation taking place through outdoor activities was framed by the parents' value positions related to gender as well as their ability to acknowledge the interpersonal plane and thereby the child's agency in the process of *becoming*. The liberal parents were more capable of including the child's perspective as well as realising the complexity of the interpersonal interactions directing in various ways both the processes of cultural formation and the institutional life of the ECE setting. The traditional parents seemed not to realise the institution's *specific* plane (Hedegaard, 2012), nor did they see their own children as subjects in ongoing cultural formation. This reflected how they did not perceive cultural formation in the way that it is defined in this paper but rather as a one-way stimulus (conflicting with their own values). Paradoxically, they also did not recognise their own home-based and value-related influence on the process.

This is why it was particularly interesting when a parent declaring traditional values touched the *specific plane* of interacting individuals. This was a moment when one-way influence transformed into cultural formation in which the child was a subject. Father 12, when taking his daughter's perspective, challenged his conservative vision of her. Even though he limited the child's perspective to what his daughter liked and what "she with a big chance will enjoy," this involved a transformation of his traditional norms with their potential consequences for his daughter's future life. Even if his response might be interpreted as having his own enjoyment in focus (he liked outdoor activities very much), this showed that looking at outdoor activities from the *specific* plane of interacting individuals could challenge his own value positions and change his perception of institutional demands. Getting down to the *specific* plane makes individuals important, thereby also making the children's perspectives significant.

Following the child's individual needs and agency while in contact with a gendered phenomenon such as outdoor activity allows the heteronormative matrix to be challenged. Challenging and eventually overcoming the matrix is possible for children because they are not yet completely programmed by it (Butler, 1990), and so many actions not in line with the heteronormative gender division of activities are likely to occur. However, taking the perspective of the child may also be about allowing the child to follow the heteronormative matrix, even if this is against our own gender values. That happened in the utterance of the feminist mother (Mother 17) who, by taking her daughter's perspective, accepted her way of resisting the outdoor artefacts and activities, even though the mother herself would have loved her daughter to be a wild outdoor Pippi. Taking the child's perspective allowed her

to see her own feminism as the result of a free individual choice, which again enabled her to accept her daughter's quite different choice.

4.10 Conclusions

Hedegaard (2012) claims that research focused on the sociocultural conditions of children's development should aim to improve the conditions of children's development. If we approach this objective through the results presented in this chapter, we can point to the importance of enhancing the child's perspective and the *specific plane* of interpersonal interactions in ECE's cooperation with parents.

The children's perspectives were conceptualised by the interviewed parents as the individual children's preferences (activities they liked and enjoyed) and individual features (e.g., delicate, sensitive, and not calm). However, they were also perceived in terms of institutional adjustments involving the creation of activity settings that demanded from the children motives and competences that were in line with the children's interests and personalities. The main conclusion of this paper in terms of the research-based development of institutional practices is the importance of ECE parental collaborations that not only extend our understanding of the child's perspective but also reflect on the ECE institutional context from this perspective.

These two aspects may become interesting starting points for early childhood institutions and educators seeking to encourage dialogue with parents and caregivers to facilitate the transformation of parents' values and agency in relation to the cultural formation of the child as well as the development of the child as a self-creating subject. Ideally, this dialogue between families and ECEs could form the focus of participatory and action research in order to develop complex, yet applicable and locally sensitive, knowledge.

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Chapter 5
Children's Play and Social Relations in Nature and Kindergarten Playgrounds: Examples from Norway

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Abstract In kindergarten, outdoor playtime is usually a break from more structured activities. It is leisure time and an opportunity for children to engage in free play with friends. Previous research indicates that time spent outdoors facilitates playful physical activity and that playing in nature inspires children's creativity, imaginations and play across age and gender. In short, play and social relations are crucial for young children's development and cultural formation. This study investigated children's play activities during *outdoor playtime* in nature and on kindergarten playgrounds. Its empirical materials consisted of video observations of 12 four-year-old's activities in nature and on a kindergarten playground and interviews with two kindergarten teachers. One child, Benjamin was the primary focus, and five more were also included. Two examples of one child's social play in nature and on the playground were analysed to illuminate the different conditions and challenges he encountered. The findings indicate that children's play in nature tends to be more creative and inclusive than that on kindergarten playgrounds, that kindergarten teachers participate more in children's play in nature than on playgrounds and that children are sensitive to and try to engage in what they view as a correct form of discourse with their teachers. The author argues for further research on the subject to learn more about children's social relations, creativity and cultural formation during outdoor playtime in nature.

Keywords Children's play activities · Kindergarten playground · Outdoor playtime · Playgroups · Play spaces in nature · Social relations

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5.1 Introduction

Outdoor playtime is valued in the Nordic countries and internationally in Early Childhood Education and Care institutions. The time outside is seen as a break from more structured activities that occur inside. It is leisure time and an opportunity for children to engage in free play with friends. Kindergartens and kindergarten teachers are central to securing the conditions for children's play in ECEC. Almost all young children in the Nordic countries[1] attend public or private kindergartens, where they spend approximately 7.5 h a day. In the Norwegian Framework Plan for the Content and Tasks of Kindergarten (2017), it is stated 'play shall be a key focus in kindergarten, and the inherent value of play shall be acknowledged. Kindergartens shall make good provision for play, friendship and the children's own culture' (2017, p. 20). It goes on to say that 'kindergartens shall inspire and make room for different kinds of play both outdoors and indoors' (p. 20).

These societal and political statements define play as important for children's development and cultural formation, and they oblige kindergartens to offer good conditions for play. However, the plan does not contain precise descriptions of how kindergartens should meet the obligations, though it is clear that children's play should be prioritised.

Kindergartens are societal institutions, each with a specific history and specific social and physical conditions. Institutional history is reified through children's participation and social interactions in the available activities, which condition their development and cultural formation (Bang, 2009). According to Barker and Wright (1966, 1971 as cited in Bang, 2009), the concept of the human environment can be summarised in three general dimensions: artefacts, social others and self. However, the physical environment is important as well (Fjørtoft, 2001, 2004; Grahn, Mårtensson, Lindblad, Nilsson, & Ekman, 1997). Social play is important for young children, and outdoor play in nature or on playgrounds affords ideal opportunities for it. Several years ago, Swedish landscape architect Grahn et al. (1997) studied children's activities and development in two kindergartens. Their results showed how the conditions for children's play were influencing their activities and their development. Children showed better results in motor function (i.e., balance, agility and strength), health and cognitive skills (i.e., concentration when conditions allowed them to climb, run, build, tumble and hide and have space for their imaginations, independence and social play in small and larger groups (Grahn et al., 1997, p. 96–97). Additionally, they found that children who spend many hours outdoors in all weather and in natural landscapes are better positioned for learning and development than children who spend their outdoor playtime on a playground with limited variations in terrain and equipment. In a natural landscape, where there is enough space for children to find interesting spaces in which to play, their activities are more imaginative and more varied, ranging from wild and noisy to calm and quiet.

[1] According to Nordic Statistics, Denmark, Norway, Sweden and Iceland, 97% of children from three to five attend kindergarten, in Finland it is 70% (NOSOSKO, 2014).

There were more disturbances and conflicts on kindergarten playgrounds than in nature, which the researchers attributed to the limited amount of space. Norwegian researchers Sandseter (2009, 2010) and Gurholt and Sanderud (2016) reached the same conclusions, adding that children's curiosity and engagement in explorative activities and risky play enjoy better conditions in nature.

A recent study of 5-year-old children's physical activity in 43 kindergartens in Denmark showed that they engaged in more physical activity when they were outdoors (Olesen, 2014) and another found that their play activities were more diverse when teachers regularly participated and allowed the activities to be rough and wild (Sørensen, 2013). In line with this, Sandseter (2009, 2010) found that it is important for children's well-being and development to include possibilities to engage in risky play, such as climbing trees, in which falling is a risk, or playing in the wilderness, in which getting lost is a risk. Ulset, Vitaro, Brendgen, Bekkhus, and Borge (2017) examined the relations between children's time spend outdoors and their cognitive and behavioural development, finding that outdoortime in preschool supports children's development of attention skills and protects against attention problems and hyperactivity symptoms.

Children in most Norwegian kindergartens spend 1–2 h a day outside on the playground during the winter and more than 4 h in summer (Paulsen et al., 2012 as quoted in Løndal & Fasting, 2016). Children in outdoor kindergartens spend more time outdoor in general than children in other kinds of kindergarten do (Birkeland & Sørensen, this volume, Ulset et al., 2017). Regular trips outside the kindergarten area to other play places, such as forests or parks, provide children with opportunities for a variety of activities depending on the environment and its affordances (Bang, 2009; Fasting, 2015).

In some European countries (e.g. Poland), parents expect and allow their boys to go out and play in the dirt, but their girls are expected to play more quietly (Sadownik, this volume). In the Anji province in China, outdoor play is encouraged (He, this volume) more than it is in other regions (Birkeland & Sørensen, this volume), though recognition of its relevance is growing. Playful outdoor physical activity is a good opportunity for children to be with friends and have fun (Sandseter, 2009, 2010; Sørensen, 2013). Fantasy play and role play are also important ways of acquiring competences and learning about one self and the social world (Fleer, 2012; Sørensen, 2017).

Just as physical environments shape children's outdoor experiences, kindergarten teachers and the pedagogical practice do as well. In a study on kindergarten teachers' interaction styles, Løndal and Greve (2015, p. 469) found three main approaches to teachers' involvement with children: a surveillance approach, an initiating and inspiring approach and a participating and interactional approach. The surveillance style is often practiced when outdoor playground time is defined as time for children's undisturbed free play alone or with peers and supervised by one or two kindergarten teachers. Earlier research (Sørensen, 2013, 2017) revealed that most children spend their outdoor playtime engaged in play activities and having fun with other children. Often, during outdoor playtime, kindergarten teachers' take coffee breaks in shifts and do practical work or have meetings with colleagues,

parents or other professionals, meaning that child-teacher ratios are often lower than during the rest of the day. Additionally, kindergarten teachers interact more with children in nature-based play spaces or in other spaces beyond the kindergarten playground than they do on the playground, and therefore all children can be expected to be included in playgroups and social activities when play is experienced beyond the kindergarten (Sørensen, 2017). Based on this research, it is obvious that there is a need for a fuller understanding of how different conditions, environments, people, artefacts and pedagogical practices form the social situations for children's development during outdoor playtime.

This study focuses on a 4-year-old boy named Benjamin and his social situation and cultural formation in outdoor playtime in kindergarten. It is not a study of his individual development; rather, the aim was to investigate how different outdoor play settings (i.e., nature and the kindergarten playground) afford different social activities for children and to examine how their individual learning, development and cultural formation take place through dialogical interplay with the environments, artefacts and other people. The research question is: how do play spaces in nature create conditions for children's play and social relations relative to those of kindergarten playgrounds?

5.2 Theoretical Perspective on Play

The cultural historical theory of child development defines play as a purposeful and meaningful activity for children and the leading form of activity for those of preschool age (Vygotsky, 1966); through play, children learn about themselves and the world around them, and play frames their development and cultural formation. Children learn about the social world and achieve important competences in their interactions with kindergarten teachers and other children (Hedegaard, 2008). Play is the leading source of development in children's preschool years, and therefore, the conditions for play are part of the conditions for children's learning, development and cultural formation in early childhood education (Vygotsky, 1966, 1978). Several Nordic ECEC researchers have spoken in favour of young children's right to play in kindergarten and against school-like activities taking over that important time or efforts to use play as a tool only for learning (Hedegaard, 2014, 2017; Øksnes, 2017; Sommer, 2015, 2018, Tanggaard, 2015). They have also warned politicians and professionals against the consequences of restricting the time and space for play by focusing on school activities because the outcome may be that children are less likely to learn. As a way of protecting the conditions for children's play in kindergarten, Tanggaard (2015) suggested a focus on creativity in pedagogical and didactical practice. According to Tanggaard, creativity is not only related to aesthetical or artistic activity; rather, children are creative when they actively and curiously explore and investigate their environment, engage in fantasy and otherwise use their imaginations.

5.3 Children's Learning, Development and Cultural Formation

The youngest children are dependent on caring social relations with their parents (Stern, 1977, 1985), and from ages three to six, which is their preschool epoch, interactions and social relations with peers are crucial to their well-being, learning and development (Schaffer, 1999; Sommer, 2003, 2015). Creative, social and imaginary play are meaningful activities for the child and have positive effects on children's learning, development and cultural formation (Bozhovich, 2009; Fleer, 2009; Schousboe, 2013; van Oers, 2013; Vygotsky, 1966). Nature and outdoor life have positive influences on children's development, including motor development as a result of engaging in play and movement on varying terrain and physical and mental health as a result of the fresh air and calm environments (Sandseter, 2009). Additionally, nature and outdoor life positively influence cognitive development because of the possibilities of exploring and learning about different phenomena in nature, such as plants, animals and insects (Grahn et al., 1997; Ulset et al., 2017). Additionally, children can discuss philosophical questions about life and death (Lipponen, 2019) with engaged and available kindergarten teachers when, for example, they see small creatures or dead animals.

Children's motives in play are meaningful to them even if they may be unknown to their teachers. In cultural-historical theory, a motive is more than an object that a person desires; it is part of a culturally meaningful practice and is embedded in a societal practice, such as kindergarten. A motive can emerge in play and can be a wish to be with friends, have fun or engage in risky or imaginary play. Motives and motivation are not properties of a person or factors that determine actions but are representative of 'a dynamic relation between person and practice' (Hedegaard & Chaiklin, 2005, as cited in Fleer, 2012, p. 91).

5.4 Studying children's Outdoor Play Activities and Social Relations

This study investigated children's play activities and social relations during outdoor playtime in order to understand how conditions differ in nature and on kindergarten playgrounds and how these differences influence children's play, social relations and cultural formation. The case study was qualitative, and the data collection methods were video observations and interviews. In employing the interaction-based observation method (Hedegaard, 2008; Sørensen, 2019), the researcher captured children's activities, physical movements and dialogue. The empirical materials consisted of 4 h of video observations of the children's activities in nature and on the kindergarten playground with Julie and Sara during autumn 2015 and spring 2016. The use of a video camera allowed the researcher to focus on one or more children and to interact with them without having to take notes. Ethical reflections

on the use of video observation in child research were necessary to respect of children's privacy (Sørensen, 2014). Three semi-structured interviews were conducted with the kindergarten teachers responsible for the children to get insights into the reflections and considerations behind the pedagogical practices related to outdoor playtime, the teachers' understandings of the social relations in children's playgroups and their thoughts about their involvement with children both in nature and at the kindergarten (Flick, 2002).

5.4.1 The Kindergarten

This study took place at an outdoor kindergarten in a suburban area of Western Norway. The kindergarten has 90 children from 1 to 6 years old divided into six groups. The kindergarten's pedagogical practice was based on traditional Norwegian values that include a close connection to and passion for nature and an active outdoor lifestyle. Children spent most of their time outdoors. Three days a week, from around 9:30 a.m. to 2:30 p.m., they went on tours to other play spaces, such as natural playgrounds, sports arenas and public parks. Before leaving for the tour every morning, the children waited for everybody to be ready and played for a while on the playground; before their parents arrived to take them home in the afternoon; they spent time on the playground primarily engaged in self-initiated play but sometimes also in teacher-organised play activities. The remaining two days of the week were spent at the kindergarten; most of the days were spent on the playground, and meals were served outside unless it was very cold and rainy. When parents enrolled their children in the outdoor kindergarten, they received information about its pedagogical practice and values. They were told that children were allowed to engage in risky play (i.e., climbing trees and playing close to water or around a campfire). They were also informed of the very likely possibility of children coming home with dirty clothes.

The children and their teachers valued outdoor playtime, viewing it as a break from indoor activities and a good possibility for free play. Additionally, it contributed to fulfilling the aims of the Framework Plan for the Content and Tasks of Kindergarten (2017): 'Kindergarten shall be a safe and challenging place in which the children can experiment with different aspects of interaction, community and friendship' (p. 11) and 'kindergarten shall be an arena for daily physical activity, and it shall promote joy of movement and motor development in the children' (p. 11).

5.4.2 Children

Benjamin is the focus child in the examples of social play, and his efforts to initiate and participate in play with other children while in nature and on the playground were analysed from his perspective. In social play situations, Anna, Laura, John, Peter and Tom from the group of 12 four-year-old children were also included.

5.4.3 Kindergarten Teachers

Two kindergarten teachers, Julie and Sara, both had deep roots in the Norwegian tradition of recognising outdoor life as important to cultural formation. They both had several years of experience at the outdoor kindergarten.

5.4.4 The Empirical Material

The analyses of the video observations utilised Vygotsky's theory of play and child development (1966) and Hedegaard's model (2008) for analysing children's social situation of development in which the personal, institutional and societal levels are interrelated as the conditions for children's everyday lives in kindergarten. In the analyses, children's play activities and social relations were examined in relation to conditions in nature and on the playground. The interviews were analysed to reveal the kindergarten teachers' understandings of their societal responsibility for children's cultural formation, how Norwegian values and traditions were incorporated into their pedagogical practice and how outdoor playtime was organised as part of the pedagogical practice.

5.5 Benjamin's Play Activities and Participation in Playgroups

Two examples of Benjamin's play activities and his participation in playgroups in nature and on the playground are presented here to illuminate how easily he established shared imaginary play with Anna in nature but struggled to be included in play on the playground first with Laura and then with John, Peter and Tom. The analyses adopted Benjamin's perspective to see how different conditions, environments and artefacts offered different possibilities for his play and inclusion. In the first example, Benjamin and Anna found a challenging path in a small forest leading to a fine spot they called The King's Place for imaginary play, and some of the other children came and joined their play. In the second example, Hey, don't push me,

Benjamin and Laura were engaged in a social play activity on the playground until Laura physically and verbally rejected Benjamin. After the rejection, Benjamin made many attempts to find other playmates before he was accepted as a participant in another group. The examples were chosen because Benjamin had an active role in the social situation and took the initiative several times, but his social interactions differed in the two play spaces, and the differences seemed to be related to the conditions.

5.5.1 Example 1. The King's Place

On this day in October, the 12 children and two teachers left the kindergarten and walked to a public park with a small forest. Benjamin and Anna walked into the wilderness through some tall grass and wild bushes. Benjamin and Anna climbed up a big tree. They found themselves a place to sit, and Benjamin made sounds as if he was shooting and flying. 'Now we're here,' he said. I (the observer) asked them where they were. Anna answered, 'At school.' Benjamin answered, 'On Iceland', and he continued, 'This spaceship…' and then 'I'm the king.' Anna added, 'I'm a king too.' 'Yes', said Benjamin, 'we are kings of the entire world.' Three other children joined them in the tree. Benjamin pointed at me and said to Anna: 'She's a baby.' I answered with some baby sounds, giggling, and they both looked at me, laughing. Benjamin made his spaceship send some meatballs[2] in my direction.

When Benjamin and Anna were together in their adventurous play and mutually positive interactions, they shared the intentions of playing an imaginary game in nature and they interacted with the artefacts offered by the conditions. During their dialogue, they created the King's Place together, building on the environment and each other's ideas and fantasies in which almost anything was possible because the environment and artefacts were open to their creative and fantastical interpretations. They might not have shared the same inner imagining of The King's Place, but they did share the imaginary play. Additionally, through their playful interactions, they created a common imagination in dialectic interplay with the environment; they created their own social situation (Hedegaard, 2008).

During their play and social relation, they confirmed each other's imaginations. Their play and imaginations were verified by the other children's interest and by an adult, namely me, watching and filming them while I was smiling and joining in. They could tell they had created something special, which had a positive effect on their cultural formation.

[2] I presume that Benjamin's inspiration to shoot with meatballs stem from an animation movie for children: *Cloudy with a chance of meatballs.* Sony Pictures Entertainment, 2009.

5.5.1.1 'What Does She Want to Hear From Us?'

Julie, one of the teachers, was also interested in the imaginary play at The King's Place, so she asked Anna and Benjamin what they were playing and what they were doing in their play. Anna told her about the shortcut and explained that it was some kind of a secret path through the wilderness, very challenging with tall grass and wild bushes. Anna also told her about The King's Place. Benjamin told her about how safe this place was for them to play in, with branches to hold on to so they would not fall.

Julie was close enough to see their play and wanted to show her interest in learning about it, and she asked them what they were doing. In their conversation with her, Benjamin and Anna referred to two categories of risky play (Sandseter, 2009)[3]: play with the risk of getting lost and play at heights. Using their imagination, the children could feel the real risk of getting lost in the tall grass and wild bushes, even though they were not so far away from the group. The path they took was more exciting than the ordinary and easy path, and it was a good example of how nature offers conditions for children's exploration and imaginary play with their peers. To assure Julie of how secure they were, Benjamin demonstrated that he was conscious of the risk of playing at heights and had decided it would be safe enough for them. It was interesting that Anna and Benjamin understood Julie's question differently. Anna told her about their exciting play, and Benjamin told her about the safety of their play spot.

5.5.2 Example 2: 'Hey, Don't Push Me!'

The second example is from a morning on the kindergarten playground. Benjamin was playing with Laura on the slide; they seemed to be enjoying themselves. Only one kindergarten teacher, Sara was present on the playground. She was busy, both supervising the playground and preparing a warm meal to cook on the fire and serve the children at lunch.

Benjamin and Laura went down the slide side by side and climbed up together in what seemed to be a positive relation with a common understanding of the activity. The first conflict occurred when Laura pushed Benjamin so he went down alone and she remained sitting at the top. Benjamin seemed unhappy about this; he had a sad look on his face but did not say anything. He climbed back up and sat beside Laura again. She pushed him down the slide one more time, and this time, with an aggrieved voice, he shouted, 'No!' He climbed up again, and when he got to the top, he told Laura, 'Hey, don't push me!' He tried to continue the sliding activity, but Laura kept pushing him away. Then Benjamin changed his play activity and began

[3] In her research, Sandseter described six categories of risky play: 1) play at great heights, 2) play at high speed, 3) play with harmful tools, 4) play near dangerous elements, 5) rough-and-tumble play and 6) play where the children can get lost.

to run up the slide. He tried several times, variating the lengths of his strides but without success. After having watched Benjamin's efforts, Laura came down from the top and tried to run up the slide. She took a long inlet and ran at full speed up the slide until Benjamin slid into her. It was not clear whether Benjamin's move was deliberate or accidental. Laura said, 'Don't, Benjamin! Benjamin!' with anger in her voice, and she continued: 'Now I'm leaving!' She walked away from the slide, and Benjamin followed her for a while before giving up.

Benjamin's and Laura's play and social situation changed from harmony to conflict, and then Laura left Benjamin. In my interpretation, Benjamin's intention was to be with Laura and play with her, and Laura's intention was to see how Benjamin would react to her quite repellent behaviour. Going down the slide and climbing back up could have become boring after a while, which might have been why she decided to push him. The teacher did not notice the conflict, and none of the children alerted her.

After Laura left Benjamin, he tried to get into a playgroup with John, Peter and Tom, who were playing with some small cars. 'I'm going to the airport', Peter said, and the children discussed where the drive should begin and where they were driving. Benjamin stood beside John, with Tom and Peter nearby. John looked at the three other boys and shouted, 'Come on, Tom and Peter!' Benjamin followed them. John turned around, and in a quiet and friendly voice, he said, 'We want to play by ourselves for a little while, Benjamin.' A few seconds later, John said to Benjamin: 'Well, do you want to play by yourself? Do you want to play by yourself?' I could not hear Benjamin's answer, but John said, 'Then go away.' John turned around and said to Tom and Peter: 'Benjamin wants to play alone.'

Trying to become a member of the other playgroup was not easy for Benjamin. John seemed to be the leader, and he did not want Benjamin to join. Maybe he had some negative experiences with Benjamin, or maybe he wanted to maintain his play as it was. Tom and Peter did not seem to care; they did not actively invite or exclude Benjamin. John only asked Tom and Peter to come with him. He changed his message to Benjamin from 'we want to play by ourselves' to 'Benjamin wants to play alone' in order to indicate that it was Benjamin's decision not to play with them. However, Benjamin did not give up. He was patient and persistent, and after a while, he participated in the car play activity.

Laura later joined the car play, and she, Benjamin and Peter ran after the cars driving down the hill. John sat on the ground, watching the cars go down the hill and children returning them. Peter informed me, the observer: 'We're running a car race.' I tried to get more information, but they ignored me. After some time and effort, Benjamin finally seemed to be included as a member of the playgroup.

The conditions on the playground were not so inspiring for imaginary play. The slide was a piece of equipment that only allowed for going down or running up. Sliding down was easy, but running up was not. Playing with the small cars became a competition among the children. Based on my analysis and interpretations of this video observation, I concluded that Benjamin intended to interact and play with some other children on the playground. He wanted to be physically active, using his body and exploring the possibilities the conditions offered. The relationship between

Benjamin and Laura seemed to be equal in the beginning, but after Laura rejected Benjamin, he tried to establish their play relation again but did not succeed. Then he tried to be included in the new playgroup by following their ideas and their way around the playground to find a place to play. He compromised and let the other children decide the content and actions of the activity, and after several attempts, he managed to be included. Benjamin was alone and persistent in his efforts, not asking the teacher (or the observer) for help. In nature, the teacher was interacting with Benjamin and Anna, but on the playground, she was busy and not involved in their activities.

The examples are not representative of all children in outdoor kindergartens; however, situations such as these are common. The examples illuminate the social situations of a child who is a popular playmate when the conditions are open and there is room for creative play and the interpretation of natural artefacts and environment but who struggle to be accepted as member of a playgroup when the conditions and artefacts are less open to fantasy and imagination.

Interviews with the teachers revealed that they enjoyed being in nature and sharing their passion for outdoor life with the children. They valued experiences in nature as more important for children's cultural formation and future lives than traditional indoor school activities, such as drawing, writing names and counting numbers. When the teachers took the group to other play spaces outside the kindergarten, they appreciated having time to engage in play and other activities with the children without the interferences of work and meetings. They also had time to talk to the children about societal or scientific topics with the purpose of teaching them and preparing them for the future. Due to safety, there were more kindergarten teachers for the group of 12 children when they went beyond the playground, and there were no meetings or other disturbances, so they had more time and better opportunities to interact with the children and engage in their activities.

5.6 Discussion

'In play a child is free. But this is an illusory freedom' (Vygotsky, 1966, p. 10). The findings in this study show how outdoor playtime on playgrounds can be a painful arena for children striving to be accepted. Benjamin had to be very persistent to be included in a playgroup on the playground with a teacher supervising but not intervening. In nature, however, he was a popular playmate with fantastical ideas for imaginary play, attracting other children to become member of his very open and inclusive playgroup. These findings indicate that play spaces in nature offer better conditions for creative and inclusive activities and that nature facilitates children's play outside their usual playgroups. Additionally, nature provides conditions for a variety of play that contributes to children's cultural formation. Sharing imaginings and creative ideas in social relations facilitates new relations and friendships, which is positive for children's well-being, learning, development, cultural formation and awareness of diversity.

Another finding is that the ways kindergarten teachers interact with children tend to be more participatory in natural conditions, whereas on the playground, the approach is more one of monitoring, as teachers need to supervise a larger area with many children and be ready for an intervention if any of the children get into serious trouble.

Play on playgrounds is valued as an opportunity for children to learn to get along in larger groups without needing the close support of adults; they can handle smaller problems by themselves and become more robust. In addition, kindergarten teachers value the outdoor lifestyle and aim for children to become more accustomed to it, though it can be difficult sometimes (i.e., when children are cold or tired but still have to carry their backpacks and continue walking because the teachers expect the experience to help them overcome larger problems or challenges later in life).

5.7 Conclusion

The aim of this study was to investigate how outdoor environments in nature and on kindergarten playgrounds are associated with children's social relations and imaginary play. I examined how nature creates and affords better and more inclusive conditions for children's play and social relations and how their learning, development and cultural formation takes place through dialogical interplay with environments, artefacts and other people.

By interpreting the empirical materials to find patterns in the situated complexities of the institutional practice (Hedegaard, 2008), I found different conditions for children's play activities and social relations in nature than on the kindergarten playground, specifically in relation to their inclusion in playgroups. In nature, the environment and artefacts are more open to children's imaginations than the equipment and artefacts of a kindergarten playground. The teachers have more time and fewer tasks in nature, and they can be more involved and focused on children's activities and well-being.

Allowing children to engage in social play in nature tends to have positive all-round effects on their development. They practice their movements, imitate others' movements, plan how to master new challenges, learn to try more than once, find that they are able to do what they intend and feel the success of overcoming new challenges. Environments that can support children's creativity and curiosity offer possibilities for a variety of play activities. With enough well-educated kindergarten teachers aware of how to relate to children in a respectful way and with warmth and interest, children will experience better conditions for learning, development and cultural formation.

This study's empirical material illustrated how complicated it can be for a child to participate in a playgroup on a playground compared to in nature. When struggling to find somebody to play with, play is not a pleasure and is not free at all; rather, it is an experience characterised by a conflict, rejection and compromise when trying to adapt to a playgroup from a position of little or no power.

This study also revealed that children are quite sensitive to the demands of their teachers and try to engage in what they view as a correct form of discourse while demonstrating their awareness of different adults' roles and functions. We saw how at The King's Place, Anna and Benjamin tried to adjust their comments to what they expected Julie wanted to hear, while their dialogue with the researcher was more playful.

Finally, based on findings of this study, an argument can be made in support of giving young children time to play in nature with space for creative and meaningful activities and with kindergarten teachers present because of the positive effect this has on their social relations, cultural formation, learning and development. Because play, social relations and friendship are so important in children's lives, there is a need for further research focusing on the conditions for play (Hangaard, Rasmussen, & Øksnes, 2017) and the influence of play in their cultural formation, learning and futures.

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Chapter 6
Utilisation and Design of Kindergarten Outdoor Space and the Outdoor Activities: A Case Study of Kindergartens in Bergen, Norway and Anji in China

Wanqiu Meng and Min He

Abstract Compared with Norwegian kindergartens that emphasize how outdoor activity benefits young children's integrated development, Chinese kindergartens reluctantly encourage children to go outside for long time. A county named Anji in South China's Zhejiang province has started to change this approach to outdoor play. Kindergartens there provide outdoor equipment to support children's outdoor activities for longer periods of time. This approach is called Anji Play and has been recommended by Chinese Ministry of Education for all of the country. It has also attracted ECE experts overseas. In this chapter, we describe and analyse children's outdoor play in an Anji setting and in a Norwegian kindergarten from the perspective of the utilisation and design of kindergarten outdoor space. The study takes an ethnographic approach. We collected photo observations, anecdotal recording and interviews from one kindergarten in Bergen, Norway and one in Anji, China. The observation results focusing on outdoor play in the two kindergartens were discussed with kindergarten teachers, principals, professors and college students from China and Norway. Our aim was to interpret the core concepts, goals and concerns of Norwegian and Anji play from multiple perspectives to understand children's cultural formation in the two cultural contexts. We found the cultural values and traditions influence how outdoor play is performed and there are clear links between culture and children's cultural formation.

Keywords Kindergarten · Outdoor space · Outdoor play · Norway · Anji · Cultural formation

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6.1 Introduction

The outdoors can be described as an open and constantly changing environment, where it is possible to experience freedom, engage in gross motor development through boisterous movements, and be in contact with natural elements (Maynard & Waters, 2007). Compared with indoor play, children in the outdoors have more autonomy and can enjoy enhanced space, time and self-chosen activities (Bento & Dias, 2017). A kindergarten should provide children the best quality of education; Mohidin, Ismail, and Ramli (2015) found that this could be achieved only if the designer, as well as policymakers, are aware of the factors that promote a better environment for these children. Especially in city centers, outdoor spaces that children can use must be designed to meet needs for both children's learning and playful activity. In such designs, both natural and artificial elements must be used (Acar, 2014). Furthermore, Salı, Akyol, and Baran (2014) claimed that there should be endeavors to provide necessary play equipment in playgrounds. Therefore, the design and utilization of outdoor spaces of kindergarten should be taken seriously.

Nordic countries, especially Norway, emphasize outdoor play in kindergartens for its benefits for children in health, cognition, social communication and other development aspects (Wagner & Einarsdottir, 2006). Norwegian children spend a significant amount of time in kindergarten outdoors, e.g., 70% in summer and 31% in winter semester (Moser & Martinsen, 2010). Compared with Norwegian kindergarten's promotion of outdoor activity for children's integrated development, Chinese kindergartens reluctantly encourage children to go outside for long periods of time. However, Anji County has introduced outdoor equipment devised to support children's outdoor activities for extended periods of time. It is called "Anji Play" and is recommended by Chinese Ministry of Education for all of the country; it has also attracted Early Childhood Education (ECE) experts from overseas. Indeed, some kindergartens in the United States have purchased Anji kindergarten outdoor equipment to trial. As researchers, we had the opportunity to undertake fieldwork in Anji County and in the city of Bergen, in order to consider the similarities and differences within the cultural formation of outdoor activities and use of environment in both places.

This chapter, therefore, aims to surface the similarities and differences on kindergarten's outdoor space utilisation and design between Anji and Bergen, identify significant features of outdoor activities and explore children's cultural formation through outdoor activities in these spaces.

6.2 The Background

6.2.1 Anji and Bergen

Anji is a county under the jurisdiction of Huzhou City, Zhejiang Province, located in the hinterland of the Yangtze River Delta with the Tianmu Mountain Range in the southwestern part of the county. It is surrounded by mountains on three sides, with

a depression in the middle and a sprawling basin topography in the northeast. Anji County administers eight towns, three townships and four streets and had a registered population of 466,100 in 2016. Rich in agricultural resources, with a large number of excellent, new, special and agricultural products, such as bamboo shoots, white tea, mountain vegetables, etc., Anji maintains a high social and economic development level.

Bergen is Norway's second largest city and the capital of Hordaland County. It is also the largest city in western Norway with a registered population of 243,000 in 2017. It is situated on the steep fjord line on the west coast of Norway, leaning against the harbor and seven hills. The warm winds of the Gulf Stream contribute to Bergen's reputation as a rainy city.

6.2.2 Anji Play: The Way to 'True Play'

Anji Play is a comprehensive approach to early learning developed over the last 18 years by Ms. Cheng Xueqin, Anji County's Superintendent of Public Early Education and is practiced currently in 130 public kindergartens. It has revolutionized traditional Chinese kindergarten provision with its ethos: "Let the play light up the child's life", which Cheng Xueqin and the other Anji educators call "True Play[1]". Its formation is based upon Ms. Cheng's observations of what she describes as three eras of play provision in preschools, from 'no play' to 'false play' to 'true play', according to the official website about Anji play[2].

Before 2000:'No Play' Era

Before 2000, the phenomenon of Early Childhood Education "Primary" was quite common, especially in Chinese county towns and rural areas. Early Childhood Education "Primary" refers to the preschool education that neglects the significance of young children's physical and mental development; instead, young children are expected to learn the content of elementary school using the same approaches for the elementary students (Yu, 2012). In this 'no play era', children were confined to narrow and crowded rooms and were offered little chance to play.

2000–2008: 'False Play' Era

Children were encouraged to only play games mechanically according to the themes, steps and roles formulated by teachers. Ms. Cheng observed that the children's enjoyment could be described as 'false joy', in which they appeared devoid

[1] Anji educators insist that in the kindergartens of Anji, children lead their own play and self-expression. Children chose what, where and with whom to play. According to the Anji teachers, self-determination in play, ownership of discovery and learning in play and the time and freedom to express complex intentions in play, is True Play.

[2] The official website of Anji play introduced the formation process of Anji Play in detail. The introduction of the three stages in this study are all taken from http://www.ajplaychina.com/Home/Contents/detail.html?id=2939andkey=fazhanandkeywords=发展历程

of the pleasures encountered in discovery play. Therefore, she referred to this as 'false play'.

2009-Present: 'True Play' Era

Characterized by the words "Love, Risk, Joy, Engagement, Reflection", Anji Play is synonymous with "True Play", in which children have autonomy in their playful activity. In such play, there is the potential to conduct in-depth, complex and lasting exploration in spontaneous and autonomous play. With the support of the local government, the reform of children's daily opportunities to include 'True play' is the practice of preschool education promoted by all kindergartens in the county.

On the basis of the True Play, developed over 9 years of reflective practice, Anji Play explores a set of Anji Play Curriculum which focus on children's play experience and cover various forms of activities in kindergartens. At the individual level, teachers voice that in previous eras, they felt deeply shackled by formalism and utilitarianism, tired yet inefficient, resulting in job burnout; thus, Cheng (2019) argues that the Anji approach not only allows children but also teachers to feel a sense of happiness. At the institutional level, Anji approach is a new mode that takes the reform of preschool education into the overall development plan of community and rural areas (Li, 2019) . At the societal level, the documents issued by China have absorbed the Western early education ideas and specific practices that pay attention to the value of childhood. Although the *Guidance for Kindergarten Education (trial version)* issued in 1989 clearly points to 'Taking play as the basic activity, integrating education into various activities',[3] what kind of play to implement and how to implement the play has been gradually explored over the years. Education in China emphasises the cultivation of collectivism and the adaptation of children to social norms and social organisational structure. Therefore, educational practice is shaped by cultural norms, control and discipline that focus on collective cultural responsibility. Anji Play, however, puts the preschool education ideological paradigm into practice by emphasising play as the 'basic activity'. Researchers such as Coffino and Bailey (2019) point out that the Anji Play approach 'is deeply resonant with Western models of experiential learning' (p. 4).

To a certain extent, Anji Play has absorbed Western democratic culture found in Nordic countries' approaches to early childhood. However, compared with the Nordic countries, Anji emphasizes the education in the play and pays attention to children's reflection and learning. Combined with the local natural conditions, redefinitions of the value of childhood and the rights of the child, Anji Play is a revolutionary model that has changed the kindergarten culture.

[3] Retrieved September April 1, 2020, from Ministry of Education, PRC, http://www.moe.gov.cn/srcsite/A02/s5911/moe_621/201511/t20151119_220023.html

6.3 Cultural Relativism

Norwegian scholar Birkeland (2016) criticized the inclination to evaluate educational practice from a mono-cultural perspective in cross-cultural comparative studies. Cultural relativity is an undeniable fact and cultural relativism holds that the outsiders should not use their own set of standards to measure the moral or social institutions of other culture (Donnelly, 1984).

Focusing on culture is the historical choice of Comparative Education (CE), which is also an important theme of contemporary CE study (Yang, 2017). After the 1970s, the qualitative research methods of comparative education quickly rose. Comparative education scholars uphold cultural relativism, emphasized the value of internal views, the importance of cultural models and the practice of education (L. R. Yang, 2015, S. P. Yang, 2012). We take cultural relativism as our theoretical framework aiming to go deep in different cultures to practice and experience, not just to describe the surface of the phenomenon. To explore children's cultural formations through outdoor play, we need to overcome our own cultural prejudice and be aware of bringing our own value orientation into the research process.

6.4 Method

The material presented in this chapter is from a comparative qualitative study in which an ethnographic approach was taken. Our research method was influenced by 'video-cued multi-vocal ethnography' used by Tobin et al. (2009). Tobin and his colleagues photographed the daily life of kindergartens in the three countries of the United States, China, and Japan, and edited the video into a 20-min short film. The researchers invited early childhood educators from three countries to discuss the same video in order to trigger multi-party dialogues, explanations and arguments. Tobin et al. (2009) use conceptualizations of culture as the main tool to explain phenomena, pay attention to the interpretation of cultural insiders, and put the culture-based classifications and concepts above objectivity. These explanations and arguments may reveal the core concepts, goals and concerns of early childhood education in a culture.

Inspired by Tobin, we collected photo observations, anecdotal recording and interviews from one kindergarten in Bergen, Norway and one in Anji, China. The observation results focusing on outdoor play in the two kindergartens were discussed with kindergarten teachers, principals, professors and college students from China and Norway. Data were gathered in order to interpret the core concepts, goals and concerns of Norwegian and Anji play from multiple perspectives so that we could better understand children's cultural formation in the two cultural contexts.

Table 6.1 Demographic information of the Anji kindergarten and Bergen kindergarten

	Anji, China	Bergen, Norway
Location	Anji	Bergen
Outdoor area of kindergarten	9100 square meters	936 square meters
Number of children	554	20
Age of children	3–6 years old	1–6 years old
Number of classes	18	1
Number of employees	65	5

The data include 10 field observations, 40 photos, 15 transcribed interviews, 7 meeting minutes and 4 play sharing records[4] of the Anji kindergarten.

The kindergarten in Anji is a garden-style, multi-functional kindergarten with diverse ecological environment. It is a model kindergarten for kindergartens in Zhejiang Province and an experimental base for education and scientific research of Anji Play. The kindergarten in Bergen is a small-sized, family-style kindergarten. The basic information of the two kindergartens is shown in Table 6.1.

The two kindergartens differ greatly in size, children's ages and the teacher-child ratio. The common feature and most important criterion for choosing these two kindergartens was the fact that both kindergartens value outdoor play, allowing opportunity for at least 2 h of outdoor play each day. However, each kindergarten also has specific characteristics that we attribute to institutional perspectives of children's outdoor play.

We refer to Hedegaard's (2009) model for analysis for interpreting the individual-institutional-societal perspectives. Hedegaard proposed that children's learning and development through participation in institutionalised practice can be viewed from all three perspectives.

6.5 Utilisation and Design of Kindergarten Outdoor Space from the Institutional Level

6.5.1 Challenge and Breakthrough: Kindergarten Return to Nature

In the Anji kindergarten, children have at least 2 h of outdoor play every day. At about nine o'clock in the morning, the outdoor space comes alive with hundreds of children playing and talking with each other. Children climb up and down on the barrels, boards and large cubes, which they are able to stack as they wish; play with sand and water in the wide lawn, hillside and sand pool; and, paint on walls, ground, even one obsolete car.

[4] Play Sharing records is a fixed procedure of Anji, which will be described in detail in the following text.

The terrain of the Anji kindergarten has been carefully and artificially designed; venues of different materials afford different types of activities, including lawn, sand, plastic floor, tile, marble and cobblestone. In addition to a variety of terrain type, Anji kindergarten also builds a variety of uneven ground, such as slopes, slideways, caves and gullies with a certain slope and height to provide the experience of tilt, conversion, inertia, friction and balance brought by different slopes.

Rich in variety and quantity, the Anji kindergarten provided low-structured, open-ended materials of all sizes, include both highly designed and found objects whose size and variety invite children to engage in large-scale construction, design, combination, recombination, revision, imagination and self-expression (Fig. 6.1). Anji educators believe that play materials are the material basis of children's play. Providing sufficient materials with various playing methods can meet children's needs and further enhance children's rights (Cheng, 2019). Based on different types of materials and equipment, the outdoor space is divided into climbing area, sand water area, construction area, swing area, rolling plastic barrel area, painting area and role-playing area. At present, each class play in one area for one month, then change to another area.

Water, sand and soil are also important resources for children's outdoor play and there are a variety of faucets. Children use water to play sand, draw, make canals, play mud and clean themselves after playing. They work together to connect pipes

Fig. 6.1 Children challenge themselves by manipulating various materials. (Source: Author 2018)

to transport water and dig sand to make canals which were big projects that appeared to endlessly fascinate the children.

Anji's educators have consciously shifted from the traditional knowledge-based and teacher-based orientations to the child-based orientation. Compared with the Chinese traditional, flat playground covered with large outdoor equipment, highly-structured toys and materials, Anji kindergarten matches the adult's educational intention with the children's needs. Through changing the environment, materials and time from the perspective of children, providing children with choices, Anji kindergarten presented a new play state and promotes teachers' continuous reflection and improvement.

6.5.2 Inheritance and Continuation: Kindergarten in Nature

At the Bergen kindergarten, after lunch, children will go outdoors for 2–3 h (except 'camping day' every Thursday when they are outdoors the whole day). Children sometimes play on the grounds of the kindergarten, and sometimes go off-site to nearby communities, forests, mountain, lakeside and other natural places. Due to the small number of children, children seemingly merged into the natural surroundings.

Norwegian teachers and experts believe that there is no need to provide so many materials. One of the professors of Western Norway University of Applied Sciences (HVL) pointed out that nature can provide rich materials and low-structural materials can stimulate children's imagination and creativity. As the principal said in interview: 'It's the forest that never gets empty.' Natural resources are the most important source of learning (Fig. 6.2).

Inside of kindergarten grounds, the playground consists of varied terrain with space to actively play. There are plum and apple trees in addition to berry bushes and children can climb and explore the environment, using all the possibilities. The ground of the Bergen kindergarten is an uneven and unmodified natural site and it adjusts according to local terrain conditions. The principal of the Bergen

Fig. 6.2 Different kinds of natural elements in and out of the Bergen kindergarten. (Source: Author 2018)

kindergarten stressed the importance of uneven and natural ground, which can help children conduct themselves to be able to keep balance without falling. She further pointed out that there are many mountains in Bergen, and children must learn how to deal with uneven mountain roads.

Teachers not only make full use of natural and neighborhood sources near the kindergarten, but also organize collective outdoor activities outside of the kindergarten, such as hiking the 7-Mountains (the seven mountains surrounding Bergen, Norwegian name: De 7 Fjell), visiting Langegården (a local farm in Bergen) every fall and spring and the skiing trip to Finse[5] for 3 days in April.

We can clearly see that the Bergen kindergarten outdoor play focus on natural elements, and most of the children's outdoor activities interact with nature outside of the kindergarten. As the *Framework Plan for Kindergarten* of Norway (2017, p. 52) explicitly proposed that 'kindergartens shall enable the children to appreciate nature and have outdoor experiences that teach them to move around and spend time in the outdoors during the different seasons.' The Norwegian interviewees felt that the kindergarten was preparation for life outside the kindergarten and the outdoor life is education for sustainable development. By observing children's outdoor play, as researchers we felt that in Bergen, children are the children of nature, and human beings are the children of nature.

6.5.3 Similarities and Differences of Kindergarten Outdoor Environment from the Institutional and Societal Levels

The two kindergartens both reflect the growth of children in the outdoors. However, the Anji and Bergen kindergartens are quite different in terms of utilisation and design of kindergarten outdoor space. The Anji kindergarten provides a well-designed outdoor space full of teachers' pedagogical input, while the Bergen kindergarten is more open and integrated with ecological and natural environment. Although both are urban, the Bergen children have better access to off-site areas with more diverse physical affordances and the Anji site has to re-create what is naturally available for the Norwegian children in a relatively enclosed space. In addition to population density of children and social security conditions, the differences of outdoor environment are largely influenced by cultural values of the institutional perspective.

Norwegians are strongly attached to nature (Borge, Nordhagen, & Lie, 2003). Nature preschool has become popular in Scandinavian countries (Lysklett & Berger, 2017). A nationwide parental survey show forests are the most common outdoor space in residential areas in Norway (Gundersen, Skar, O'Brien, Wold, & Follo, 2016). In survey responses, 97% of parents stated that their children have access to

[5] Finse is an area in the Ulvik municipality of Hordaland, Norway. It is an ideal place for skiing and snowboarding and 2.5 hours by train from Bergen.

forests within walking or cycling distance from home and when it comes to suitability for play, 88% state that their children, in general, have good or very good opportunities for play in nearby nature (Gundersen et al., 2016).

In China, the benefits of exploring nature for young children are being acknowledged and expressed in policy and practice in recent years. *Guideline for Learning and Development of 3–6 Aged Children* (Ministry of Education, 2012) suggests to 'take children into contact with nature to stimulate their curiosity and investigation desire (p. 43).' However, modern Chinese society attaches great importance to the development of cities. From the perspective of commercialisation, the kindergartens in rural areas are relatively belittled. Modern kindergartens tend to be urbanised and commercialised. Urbanisation has resulted in children in many cities being separated from contact with nature, despite the many benefits that this can provide for play and learning. Big gaps exist between needs and reality in natural playground planning and design (Wang, Woolley, Tang, Liu, & Luo, 2018). Anji appropriated the state of urbanisation under the leadership of Cheng Xueqin in the process of China's urbanisation. Through her own investigation, learning and personal experience, Cheng strived to return children to nature and develop various abilities through activities in nature. Therefore, the cultural conditions for outdoor play in Anji Play settings attempt to replicate some of the variety of features that may be found when venturing off-site into more natural settings; yet, the resources that are provided are more in keeping with an urban landscape, e.g., made from plastic and recycled materials.

On the whole, the Bergen's kindergarten is a kindergarten in nature. Children's outdoor play in natural situations occur naturally without teachers' presupposition or requirements, while the Anji kindergarten's outdoor environment is still created by adults for children. Although the children are allowed some choice in how they use the materials provided, in China, teachers often hold a static and isolated view of educational environment subconsciously (Huang, Zhao, & Jarrett, 2019). Kindergartens often take 'environment' as a separate topic for research and implementation. Through carefully designing the environment to meet children's various needs and development, the Anji teachers expect children to accept and practice their educational ideas and intentions, that is, problem-solving and deep learning.

6.6 Learning and Reflection of Outdoor Play from the Individual Level

Reflection of outdoor play is timetabled into the schedule for everyday activities in the Anji kindergarten. It is a semi-formal teaching opportunity organised by teacher and directed by children. There are three ways to reflect: (1) Reflection during play. (2) Recording Play Stories. (3) Play Sharing. Observation of a 6-year-old boy *Playing Sharing* in the Anji kindergarten illustrates how children are supported by teachers, peers and the environment to reflect and express their play experiences.

Extract from Observation of Zhangxiao (anonymized) *Playing Sharing*

After playing with gyro toys in the construction area during outdoor play, the teacher organised the children to discuss and share with each other.

Zhangxiao: I feel that the lace-shaped gyro can beat your opponent away.

Teacher: Opponent? What are you playing today?

Zhangxiao: The Gyro Battle!

Teacher: The Gyro Battle, there are opponents, right? I have photographed it for you. Let's have a look (show the video). Is this?

Zhangxiao: Yes, that's it.

Teacher: Oh, this big one is an arena.

Zhangxiao: I have a question, why my nut arena always tilted?

Teacher: Can you help him to solve it?

Amy: The screws are loose.

Teacher: She feels that the screw is loose.

Zhangxiao: But everything is normal. The screws in it haven't loosened.

Teacher: He said that he checked every one of them. Maybe it was one of the reasons. Who else knows why his arena is always tilted?

Luna: There must be someone who touches it very hard and it will tilt.

Teacher: What reason did Luna say just now?

Zhangxiao: She just said that someone must have touched it heavily, but we all touched it lightly, sometimes we didn't touch.

Teacher: Luna thinks that the reason why it collapsed might be that a very heavy external force touched it, and it just fell unbalanced, right? But no one touched it. What is the reason? Tom, what do you think?

Tom: It might be that the next thing is supported by only one foot.

The child, Zhangxiao's, perspective. Zhangxiao and several other boys played the game of "The Gyro Battle". During play, Zhang Xiao found that the nut arena they built always tilted. After returning to the classroom, Zhang Xiao record their play stories by drawing (Fig. 6.3) and can't wait to ask this question during Playing Sharing. Other children combine their own experience to help him analyze the cause of the problem. Around this issue, the children discussed in depth for about 20 min, and many of them contributed their ideas. Finally, the teacher suggested that the children can test these conjectures through practical operation in the afternoon.

The Kindergarten Teacher's Perspective During outdoor play time, as a non-participant observer, the teacher is always observing children with using her mobile phone to take videos and photos. After returning to the classroom, she imports the videos and photos into the TV in the classroom to play relevant videos and photos in time for the whole class. When children share their play stories, the teacher can help them sort out, analyze and summarize their experiences, and slightly promote other children to actively think and participate in discussions.

The Pedagogue's Perspective Anji educators recognize that reflection about the experiences in plays has a critical role in translating experience to knowledge. Metacognitive reflection allow children and adults to gain deeper insight into the complexity of their thoughts, actions, learning and development, foster greater complexity and challenge in play. In the kindergarten in Bergen, discussion and reflection is not a fixed time procedure, but a random and informal sharing exchange.

Fig. 6.3 Zhangxiao's play story of "Why is the nut arena always tilted?" (Source: Author 2018)

Norwegian teachers see no need to organise regular, collective discussions; the individual interests and motivations of children are more important, according to our interview findings. A Nordic professor questioned the content and form of the Playing Sharing activity,

> 'Play contains multiple phenomena, children's experience in the play is quite complicated, may be contain multiple dimensions of society, emotion, creativity, and imagination. But the discussion in the classroom is relatively simple. After returning to the classroom, it is more like subject learning and cognitive discussion. There may be some children who are not very interested in the aspects that teachers often pay attention to, such as architecture or sandstone, which cannot be connected with their own experience' (interview, 29 October 2018).

Anji kindergarten teachers also point out this problem with traditional Chinese approaches to early childhood pedagogy at one staff-meeting (31 October, 2018). They are now consciously cultivating the ability of teachers to organise discussion and develop it into a comprehensive and cross-curricular discussion, including health, language, society, science and art.

However, from the child's perspective, it seems that Zhangxiao and the others enjoy the in-depth conversation that they shared with the teacher. The conversation lasted 20 min and the scientific concept development supported by the teacher planning the afternoon's activities to inquire further was in response to the children's interests. This demonstrates the value of the Anji Play approach, which builds upon children's discovery, a characteristic of True Play.

6.7 Significant Features of Cultural Formation from the Three Levels

Through the comparison and analysis of Anji and Norwegian kindergartens, we trace different core concepts, goals and concerns relating to children's cultural formation in relationship to all the three levels.

The Children's Perspective Children in Anji kindergarten learn knowledge by solving a series of interesting and challenging practical problems. Through "learning by doing", children actually experience the operation process and find the content that they are interested in. The Play Sharing activities organized by teacher focus on solving practical problems to improve children's logical thinking and problem-solving ability. In Bergen, the symbolic meaning of construction is considered important. Children's activity is encouraged to be imaginative and creative, in order that even practical activities support holistic development.

The Institutional Perspective The Anji kindergarten emphasizes pragmatism and drawing out conceptual knowledge from play situations. By providing rich and diverse materials focusing on building, manipulating and movement, children learn to share, record, think and solve problems. The use of the play equipment that has been created on the kindergarten grounds provides some stimulus for further learning when indoors. In contrast, the Bergen kindergarten appeared to pay more attention to the immediate links between the kindergarten and the world beyond the kindergarten, specifically cultural and natural experiences based upon the built and natural landscape within which the kindergarten already sits. There was an emphasis on aesthetic qualities, such as melodious music, the spiritual world and the meaning that children give to the world around them.

The Societal Perspective Since the Opening of China, in 1987, Chinese society has gradually addressed issues concerning poverty and has begun to attach importance to vulnerable groups, especially children. The contemporary early childhood curriculum in China can be seen as reflecting a hybrid of three cultural threads, traditional culture, communist culture, and Western culture (Zhu & Zhang, 2018). These three cultures are in some ways contrary to each other. For example, Western societies can be called individualistic societies: advocating competition and individual initiative, emphasizing the differences between people. Whereas the collectivist orientation has been deeply entrenched in Chinese culture for thousand years, which stresses the priority of group goals over individual goals and the importance of cohesion within social groups (Pan, Wang, & Li, 2018.) This could be linked to those principles of AnjiPlay, which have adopted Western ideals of democracy and individual choices to demonstrate some of the conflicts.

Through the reform from 'False play' era to 'True play' era, AnjiPlay is challenging some of the social pressures for collectivism, yet retain elements that support children's development alongside the 'free play'. At the same time, the collective

discussion of Play Sharing and cooperative construction in outdoor play also reflect collectivism that emphasises the interdependence of each individual. Therefore, AnjiPlay is a breakthrough improvement due to the changes of Chinese society, influenced by a hybrid of three cultural threads and reorientation of the value of childhood.

Nordic child centeredness and the Nordic welfare state are two cultural aspects of Nordic countries (Kristjansson, 2006). Among the Nordic countries, Norway is a typical modern welfare state. The Nordic welfare system gives adequate benefits for children and families. Combined with a high living standard and a view of nature as an arena for recreation and well-being, most people in the Nordic countries spend an extensive amount of their spare time outdoors (Sandseter & Lysklett, 2018). Across generations, the tradition of visiting nature areas and hiking in the mountains or forest areas has been kept as a natural part of daily life (Borge et al., 2003). This cultural heritage is also integrated into the education system as part of the basis on which the content and practices of early childhood education and care (ECEC) institutions are formed. The kindergarten values equality, inclusiveness and the rights and status of children. Children are encouraged to experience the authenticity of the natural life during the free outdoor play, develop awe and love for nature and give meaning to the world through imaginary paths, dialogue with nature, and the use of nature materials as symbols and props in play.

6.8 Conclusion

In general, the findings demonstrated that kindergarten is set within the natural world in Norway and natural world is brought into the kindergarten in China. Also, the Norwegian kindergarten traditionally pays attention to what children already know, and the Chinese kindergarten tradition pays attention to what children do not yet know.

There are obvious differences between the two kindergartens on the terrain types, outdoor equipment, outdoor area and natural elements of outdoor space. Anji places emphasis on the design of outdoor space and children's skills using designed, recycled, rustic and local materials while the Bergen kindergarten pays attention to the utilisation of existing outdoor space, making full use of natural and neighborhood sources in and outside of the kindergarten.

Differences in outdoor space also lead to differences in children's outdoor play. In Anji, children's play varies according to different kinds of materials that teachers bring to the space. The Norwegian kindergarten's outdoor activities are seasonal and the children's activities vary according to different seasons based upon what they find. Children can fully experience and explore the change of the nature in the lake, forest, mountain, farm, etc.

Teachers of the two places also have different ideas on the outdoor learning mode. Teachers of Anji mainly observe when in the outdoors rather than directing or interfering with children's play. They attach great importance to the reflection and collective discussion after outdoor play and role model learning. Teachers in the Bergen kindergarten stress engaging with children during the play itself and value

children's individuality and individualized learning. They do not necessarily bring the play scenarios back into the classroom for discussion and reflection.

The culture seems to shape how outdoor play is performed. Although, there are many differences between cultures in outdoor space and educational concepts, both of the outdoor spaces are interesting and different types of play can be created, which provide children with different levels of challenge and meet the development needs of children with different ages. Most of the outdoor play materials are low-structured and have many affordances.

Finally, Bergen's kindergarten education is situated within consensus and promotion at the national level. Anji is only a partial breakthrough in a small area of China. It is not the universal education mode in China, but an influential, innovative play-based education on behalf of the direction of Chinese preschool education reform. We believe this work can be inspiring not only to China and Norway, but also for many other kindergarten teachers, stakeholders and researchers, wanting to improve the quality of the pedagogical practice in ECE to provide conditions for children's learning, development and cultural formation.

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Chapter 7
Time Regulation as Institutional Condition for Children's Outdoor Play and Cultural Formation in Kindergarten

Åsta Birkeland and Hanne Værum Sørensen

Abstract Time regulation is an important aspect of the everyday life in any kindergarten and has an impact on which activities are given priority. In this case study, the outdoor playtime in one kindergarten in China and one in Norway is compared based on the understanding that children's cultural formation develops in a dialectical relationship between children's interests and motives and societal, institutional, and weather conditions. The aim of the article is to identify how time regulations provide conditions for children's play and cultural formation during outdoor playtime. The research question is: *How does institutional time regulation interplay with the pedagogical practice and children's activities in the outdoor playtime?* Employing a cultural-historical approach, drawing on Hedegaard's concepts of development and cultural formation as an individual, institutional and societal process, the dialectical interplay between institutional time regulation and children's engagement in outdoor activities is the unit of analysis in this study. Our findings indicate that the kindergarten teachers in the Chinese kindergarten as well as the Norwegian kindergarten aim to adjust the pedagogical content and time schedule to the traditions, values, and conditions in both countries. This chapter contributes to knowledge about the interplay between institutional conditions and children's activities and cultural formation in outdoor play.

Keywords Kindergarten · Outdoor play · Time regulation · Cultural formation · China · Norway

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7.1 Introduction

Outdoor play in kindergarten is a crucial part of everyday life in kindergartens globally, and is organized as a temporally and culturally re-occurring event in most kindergartens[1] (Bang, 2009; Birkeland, 2019). The importance of outdoor activities in kindergartens has received increased concern and focus globally (Waller, Ærleman-Hagser, & Sandseter, 2017).

Concern for children's health and general well-being due to limited physical activity have been major topics in prior research (Dowda, Pate, Trost, Almeida, & Sirard, 2004; Dowda et al., 2011; Karlsson, 2012). Studies of outdoor play have made inquiries into the quality of the design and equipment in outdoor playgrounds by using the ECERS rating scale (Dowda et al., 2004, 2011; Hu, Marco, & Chen, 2015; Sørensen, 2013). Other studies have focused on the different purposes of outdoor playtime such as risky play (Sandseter and Lysklett, 2017), exploration of nature (Hammer & He, 2016), physical education and health effects (Brussoni, Gibbons, & Gray, 2015; Liu & Tobin, 2018), and play in general (Sørensen, 2013; Sørensen & Birkeland, 2020).

However, the conditions for outdoor play vary according to societal expectations and demands, institutional practices, personal motivation by children and teachers (Hedegaard, 2009), and weather conditions (Sørensen & Birkeland, 2020). This article is based upon an understanding that children's outdoor play develops in a dialectical relation between these conditions.

Time regulation as such is not a neutral practice, but rather is value-laden, indicating what focus is prioritized. How everyday life in kindergarten is structured is an indication of the intentions and goals which have become more or less tacit (Birkeland, 2019). The everyday structure and program have been neglected as a focus for research on outdoor play, despite it being an important institutional condition for children's outdoor play. This chapter investigates time regulations of children's activities in the outdoor playtime in one kindergarten in China and one in Norway, thus obtaining insight into local practices (Flyvbjerg, 2011; Stake, 2005; Yin, 2009) of outdoor play activities and nuancing the understandings of how the outdoor playtime in kindergarten are conditioned of institutional, societal and cultural differences. The aim of the chapter is to identify how time regulations of the outdoor activities intersect with children's engagement in outdoor play activities, and thereby provide varied conditions for children's play and cultural formation in different institutions. The primary research question is therefore: *How does institutional time regulation interact with pedagogical practice and children's activities in outdoor playtime?*

[1] *Kindergarten* in some English-speaking countries, including the United States, refers to the first year of elementary school. In this article *kindergarten* refers to programs in China and Norway that are independent from the elementary school systems. In China, kindergartens (you'eryuan) primarily provide early childhood education and care to children from 3 to 6 years old. In Norway, kindergarten (barnehage) refers to institutions for children 1 to 6 years old. Throughout the article, we use the term kindergarten to refer to similar programs in China and in Norway.

Studying varieties of interplay between institutional conditions such as time regulation and children's engagement in play will contribute to understanding the complexity of institutional practices and outdoor play activities. We have chosen two kindergartens situated in different cultural contexts with different societal and institutional expectations and demands and different climate and weather conditions to illustrate varieties of interplay between time regulation and children's activities. Furthermore, we will analyse video observations of children's and kindergarten teachers' transitions from indoor to outdoor activities and compare how institutional time regulation in two different kindergartens interact with children's engagement in outdoor activities and play.

The dominant outdoor practices in Chinese kindergartens have favoured *Guangbo ticao*, morning group exercises (Liu & Tobin, 2018) and physical education lessons such as structured physical activities in which children mimic demonstrated gross motor movements, over outdoor free play (Hu et al., 2015). Hu et al. emphasize that the design of outdoor play space lacks diversity in the design of play areas. There is a growing concern in China for how rapid urbanization is depriving children of natural play areas. Researchers have also paid increased attention to this development (Wang, Woolley, Tang, Liu, & Luo, 2018). The main concern for early childhood education (ECE) in China today is to give more time and space for child-initiated play and unstructured activities in the outdoor playground (Wang et al., 2018).

The dominant practice in Norwegian kindergartens has been to give extensive time for outdoor activities and to let children have access to natural environment and outdoor play spaces (Moser & Martinsen, 2010). Kallestad and Ødegaard (2013) illuminate that the activities in Norwegian kindergartens typically result from children's own initiatives, so also in the outdoor playtime. They explain this through the concept of "free play" as child-initiated play, which is well embedded in Norwegian kindergartens' culture and tradition. However, the dialectic between time regulation, institutional practices, and children's outdoor play have been given less priority (Birkeland, 2019).

In the following sections, we will elaborate on the theoretical perspectives of our study, and subsequently will describe the methodological and analyses approaches. In the results section, we will present the general time schedule in the two kindergartens, the time schedule for outdoor playtime, and the time regulation of transitions between activities. The discussion section will consider how time regulation provides conditions for play and cultural formation. Finally, we present the implications of our study.

7.2 Theoretical Framework

The theoretical framework of this study is based upon a cultural-historical research tradition, understanding children's learning, development, and cultural formation as a dialogical process between the child and the environment (Vygotsky 1966, 1998). Leontiev (2005) argues that child development must be understood as more

complex than an unfolding of the child's abilities and talents, and that it is not sufficient to view the environment as a single factor contributing to the unfolding of the child's attributes. We need to understand children's development from a *wholeness perspective*; that is, as a dynamic and dialectical process between the person's activities, intentions and motives, institutional traditions and practices, societal demands, and material conditions (Hedegaard, 2009, 2012). From this perspective, children are viewed as active agents interacting with their surroundings (Hedegaard, 2012; Leontiev, 2005; Vygotsky, 1998).

Conditions for social situations are shaped at different levels (Hedegaard, 2008a, 2014) including the societal, institutional, and personal levels, and the dialectical relations between these levels. An additional dimension was added in Sørensen and Birkeland's study (2020), which highlighted how climate, weather, and air quality also provide conditions for pedagogical practice.

The societal perspective in Hedegaard's (2012) model elaborates on the historically developed context of the society, in which traditions and values are developed through generations and implemented in laws and policy documents. In Hedegaard's model of children's activity settings in various institutions (2012), the societal perspective is depicted as cultural traditions in the multiple institutions of society, which in this study refer to the different cultural historical value positions in China and Norway.

Societal conditions for early childhood institutional practice include location and housing, the kindergarten's physical and economic conditions, and structures and routines of the day based on the societal demands, as interpreted by the kindergarten teachers and managers in cooperation with parents. These conditions influence the social practices and activity settings in which the children may take part. Societal conditions and political decisions also influence the education of the professionals responsible for pedagogical practice at the institutional level of kindergartens.

Institutional practices in kindergarten create conditions for the activity settings and children's learning and development. These everyday practices should be viewed as working towards connecting and fulfilling societal traditions, values, and anticipations with personal motives, education, values, and ideas for the benefit of children. Cultural ideas form in the interactions of everyday practices, but they also refer to values and meanings far beyond the institutional sphere (Gulløv & Højlund, 2003, p. 142).

The personal perspective includes adults and children as participants in different institutional settings. The teachers in kindergarten and school are part of society, socialised through their own upbringing and education and their understanding of the demands and expectations put on them by society, the local municipality, and parents. The children have their first social experiences in the family, where they are socialised into traditions and norms in their own family, before they meet and interpret the demands and expectations of kindergarten teachers and other children. Since children in China usually enter kindergarten at the age of three and as many as 84.4% of children in Norway attend kindergarten from the age of one (Statistic in Norway, 2019) children are exposed to a double-socialisation process (Sommer, 2003).

Activity settings are planned and organized situations or shared activities in the pedagogical practice in kindergarten, in which children are expected to participate (Hedegaard, 2012), such as outdoor playtime. Analysing and conceptualising what is occurring in an activity setting means investigating the societal and institutional conditions for the activity setting together with the demands on children and kindergarten teachers in the social situation.

In most cases, the original time regulation is based on intentional and conscious choices of action to reach specific goals. Time regulation is thereby not a neutral dimension of the everyday life of kindergarten, but rather reflects societal demands as well as institutional practices. This implies that, for example, the time schedule can be traced back to what former kindergarten teachers have tried to achieve and what the object of kindergarten has been (Stetsenko, 2005). This history may reflect clear intentions. However, conscious choices about time regulation may over time become routinised, immanent and taken for granted, so that the justification for regulating time may amount to little more than pointing to having regulated it that way previously.

7.3 Studying Children's Outdoor Play Activities in Kindergarten

The fieldwork for this study was conducted in March 2017 with 7 days of observations in a Chinese kindergarten and five[2] days in a Norwegian kindergarten. The observations were participant observations which consisted of obtaining photos and video of children's activities and play in the *outdoor playtime* activity setting in each kindergarten. We also obtained insight into the time regulation through observations and interviews of the teachers.

7.3.1 The Sample of Kindergartens

The two kindergartens in this study both emphasize children's access to outdoor activities. The Chinese kindergarten is a public kindergarten in one of the suburbs of Beijing and has 300 children from the ages of 2–6 years in 9 classes. The kindergarten is providing approximately 2 h daily outdoor time for children, in accordance to the demands in the new curriculum guidelines. These outdoor activities range from gardening, animal care, physical exercises, child-initiated play, teacher organized games, and outdoor project work. In addition to activities in the outdoor play

[2]The children and the teachers in the Norwegian kindergarten were already familiar with the researcher, so the relation had been previously established. The parents and the children themselves had given their consent to be videotaped.

area, the kindergarten organises projects on a farm connected to the kindergarten and environmental projects in the local surroundings.

The Norwegian kindergarten is situated in the outskirts of Bergen and has 90 children in the from the ages of 1–6 years in 6 groups. It is an *outdoor kindergarten*, which means that the children and the kindergarten teachers spend most of the day outside, approximately 6 h in the cold and dark season, and around 8 h during the summer. Three to four times per week, they go on trips to other play spaces, parks, sport areas, or natural settings to play, ski, ice skate, or mountain walk. Lunch and afternoon snacks are served outside, unless it is very cold or raining heavily.

7.3.2 Participants

In the Chinese kindergarten, 30 children and their two kindergarten teachers participated. In the Norwegian kindergarten, 12 children and their two kindergarten teachers participated. All children were 4–5 years old.

7.3.3 Empirical Material and Analyses

The photo and video material from the kindergartens consists of 3 h of video and more than 100 photos from the Chinese kindergarten and the same amount of material from the Norwegian kindergarten. The empirical material also includes interviews with the principals and kindergarten teachers, framework plans, and time schedules.

The analyses takes as its point of departure the different qualitative levels of interpretation suggested by Hedegaard (2008b), beginning with a common sense interpretation to understand what is occurring in the activity setting. Then the situated practice level is analysed to determine the time regulations in the actual kindergarten context, which is followed by a thematic analysis to obtain an overview of the empirical material and understand the patterns in the pedagogical practices.

7.4 Ethics

This study is based on a thorough knowledge of young children's learning and development in ECE and insight into the legislation and purpose of the researched institutions.[3] We respect children's integrity, safety, and well-being as well as the

[3] As researchers, we are situated in the Nordic context, Denmark and Norway, with a solid foundation in ECE, as kindergarten teachers and as kindergarten teacher educators. Additionally, Birkeland has more than 15 years of experience with ECE in China (Birkeland, 2019, 2020), and

children's and kindergarten teachers' right to be anonymous in our research. We were ready to leave the role of researcher and take on the role of responsible adult in every situation during our research (Sørensen, 2014). The Norwegian Centre for Research Data, NSD, has approved the study ethically and the Chinese kindergarten gave permission according to their ethical standards.

7.5 Findings and Analysis of Empirical Material

In this section, we will first introduce the general daily time schedule in the two kindergartens. Then we will present the time regulation of different activities during outdoor playtime. Furthermore, we will give examples of the transition between indoor and outdoor activities in the two kindergartens. In the last section, we will present our analysis of how the time regulations give indications of values, expectations/demands, and intentions/goals.

7.5.1 The General Daily Time Schedule

Table 7.1 is an overview of the daily time schedule in the two kindergartens. The table illustrates how much time the children spend indoors and outdoors.

Both time schedules include indoor and outdoor activities, meals, and transition periods. The main difference in the two time schedules is the amount of time spent outdoors and indoors. Another significant difference is the period allocated for rest in the Chinese kindergarten.

Table 7.1 Daily activity settings in the two kindergartens

Time	Activity – China	Activity – Norway
07.00–07.30		Arrival, breakfast and indoor play
07.30–08.00	Arrival	
08.00–09.00	Corner activity	
09.00–09.30	Snacks/bathroom	Transition/bathroom
09.30–10.30	Activity of the day	**Outdoor playtime**
10.30–11.30	**Outdoor activity**	
11.30–12.00	Lunch	Lunch outdoor
12.00–14.20	Sleeping time	**Outdoor playtime**
14.20–14.40	Snacks	
14.40–15.30	**Outdoor activity**	Snacks outdoor
15.30–16.00	Indoor activity	**Outdoor playtime**
16.00–17.00		

Sørensen has several years of experience with outdoor activities in kindergartens in Denmark and Norway (Sørensen, 2013).

The children in the Chinese kindergarten are expected to be outdoors 2 h a day according to the Curriculum Guidelines (MOE), see Fig. 7.1. Exceptions to this rule occur during polluted days with bad air quality and days with tough weather conditions, such as heavy rain, snow, or cold weather. Then the children are indoors doing physical training and games. During the 7 days of observation, the children stayed indoors all day one of the days. The schedule has a variety of activities such as corner activity, the activity of the day, outdoor activities, and daily living activities such as meals, hygiene, bathroom visits, and sleeping time. All children leave the kindergarten at the same time at four in the afternoon.

The time schedule in Fig. 7.1 is a visual illustration of children's time spent outdoors and indoors in the Chinese and Norwegian kindergartens. This schedule depicts how much time the children spend outdoors either on trips to other outdoor play spaces or on the playground in the Norwegian kindergarten, totalling 6 h. This is not regulated by the Norwegian curriculum guidelines, named Framework plan, but rather is an institutional choice of being an outdoor kindergarten. The arrival period is not clearly defined with specific activities, but is open to individual choices, breakfast, and play. The transition from indoors to outdoors is based upon individual choices among the children whether they want to go out early or play indoors. There are no organized activities for the children during this period. Additionally, daily living activities such as bathroom visits and hygiene are based upon individual needs. The meals are served outdoors unless it is extremely cold or rainy. The children leave at different times, and they spend approximately 7–8 h in kindergarten per day. The kindergarten closes at five in the afternoon.

7.5.2 The Time Schedule on the Outdoor Playground

When looking specifically at the outdoor activities, one can identify similarities and differences between the two kindergartens.

The total time spent outdoors differs in the two kindergartens, 2 h and 6 h for the Chinese and Norwegian kindergartens, respectively (Table 7.2). As a percentage of the time spent outdoors, both kindergartens have time for teacher-organized games, child-initiated activities and transitions. The Chinese kindergarten has additional collective physical training such as Gong Fu and dancing. The Norwegian kindergarten has no such collective physical training; instead the children are physically active when they go walking on trips and when they are playing in nature or at different sport arenas.

The general time schedule for outdoor activities in the Chinese kindergarten does not give a full picture of the clearly structured activities and time regulation. Table 7.3 demonstrates the detailed structure of the outdoor playtime.

The time is clearly structured, as displayed in Table 7.3, providing a specific time schedule for the different activities such as collective physical training, teacher organized games and child-initiated play during this one-hour outdoor playtime.

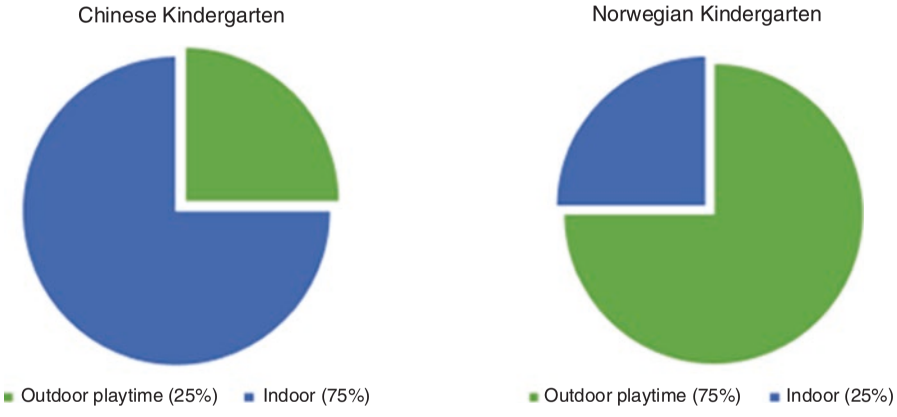

Fig. 7.1 Outdoor playtime throughout the entire day in Chinese and Norwegian kindergarten (To be able to compare the amount of time spent indoors and outdoors, Fig. 7.1. is based on the condition that children spend approximately 8 h per day in kindergarten in China and in Norway, and thus 25% or 75% respectively of the time is allocated for outdoor playtime)

Table 7.2 Amount of time allocated for different activities, as a percentage and minutes of daily outdoor playtime

Activities in the outdoor time	Chinese kindergarten, amount of time in different activities outdoor		Norwegian kindergarten, amount of time in different activities outdoor	
	Percentage	Minutes	Percentage	Minutes
Collective physical training	10%	12	0%	0
Teacher-organized activities	20%	24	15%	54
Child-initiated activities	50%	60	60%	216
Transitions	20%	24	15%	54
Meals	0%	0	10%	36
Total	100%	120	100%	360

Table 7.3 Regulation of outdoor playtime in the Chinese kindergarten

Time	Activity
10.30–10.35	Line up in the hall and walk outside collectively
10.35–10.45	Collective activity with physical training
10.45–10.50	Collective transition to the game area
10.50–11.05	Collective teacher organized game
11.05–11.10	Transition to another area of the playground
11.10–11.30	Play activities (sand, climbing, bicycle)
11.30–11.35	Collective transition indoors and lunch time

The time schedule is also dominated by being a collective time schedule where all the children do the same kind of activity and have collective transition periods.

In contrast to the Chinese outdoor playtime, the Norwegian outdoor playtime is less structured, and there is more time for spontaneous choices and child-initiated activities (Table 7.4).

7.5.3 Time Regulation of the Transitions Between Activities

The time regulation is particularly clear during transition time. This is seen in the transition between indoors and outdoors activities and in-between-activities. Here we present two examples of transitions, one from each kindergarten.

Table 7.4 Regulation of outdoor playtime in the Norwegian kindergarten

Time	Activity
08.30–10.00	Transition, visiting bathroom, getting dressed and ready to go outside at an individual pace
10.00–12.00	Outdoor activities, primarily child-initiated activities
12.00–12.30	Lunch outdoors unless the rain is very heavy
12.30–15.00	Outdoor activities, primarily child-initiated activities (85%) and secondary teacher-initiated activities (15%)
15.00–15.30	Afternoon snack (fruit and bread) outdoors, unless the rain is very heavy
15.30–17.00	Outdoor activities until children picked up by parents

7.5.3.1 Transition from Indoor to Outdoor Activities in the Chinese Kindergarten

It is Monday morning at 10.30. The music is coming on in the classroom and all the children are tidying up after their collective activity, putting their chairs by the tables (ready furnishing for lunch after outdoor playtime).

Observations:

> Some children go to the bathroom and some children go to the hallway and line up. After a few minutes all children are ready to walk outdoors. Two of the boys are having fun together, laughing. All the children walk in two lines with the teacher in front down the stairs to the first floor. The stairway has footprints going down on the right side of the stairs, whereas the footsteps going up is on the left side. The children use most of the space when going out and no one corrects them.

The transition period between different activities in the Chinese kindergarten is collectively organised and characterised by routine and efficiency. Due to societal and institutional demands, the children do not go outside if the weather or level of air pollution do not permit it. This means that the issue of taking warm clothes or rain clothes is not applicable. The children often wear their coats on inside in the wintertime and in the summer time there is little use for rain clothes. The children do not need to wait for each other to get dressed, but go directly outside. In addition, the teacher organises the transition between different activities outdoors and the children walk collectively from one area to another.

7.5.3.2 Transition from Indoor to Outdoor Activities in the Norwegian Kindergarten

It is Monday morning around 8 o'clock, and the group has the kindergarten bus at their disposal, so the activity of the kindergarten teacher is concentrated on getting ready to leave. The teachers have different jobs to do; a lot of packing occurs

because each child must have his or her own backpack with extra clothes, lunch box, and a bottle of water. The kindergarten teachers also bring their own outdoor gear, a first aid kit, coffee, children's knives, and handicraft items.

Observations:

> Four boys are together outside the wardrobe, where they are waiting to leave the kindergarten. They were quickly dressed and ready, wanting to wait outside, and spend time playing 'play-fight' on the waiting area. It is a privilege for the eldest to play outside, without supervision, and this is attractive to the four boys. Play-fight is a sort of experimental activity: it is a test of strength, courage, and endurance, both entertaining and scary at the same time. There are different rules in this activity, not all kinds of fighting are accepted, and the fight must stop when one of the participants says 'I'm not okay'. Suddenly, the play-fight gets loud and sounds like someone is in trouble. The teacher opens the door and asks if everything is fine, and reminds the children of some of the rules in play-fight.

When all children are dressed to go and all bags are packed, it is the end of the play-fight activity for this time. The activity was the boys' way of utilising the small amount of time during transition from the indoor to the outdoor program.

The children in the Chinese kindergarten require little time to be dressed for different weather conditions. Rather, the transition was collective and efficient with little time to wait for each other. There were moments of communication between the children, but few playful episodes.

The children in the Norwegian kindergarten spend a significant amount of time training to be dressed for the cold and wet climate and training to be independent in putting their outdoor clothes on. This means that the children have to wait for everyone to finish before leaving for a trip or waiting for a teacher to walk with them to the playground. This provides room for playful episodes and communication for the children.

7.5.4 Analyses of Values, Expectations, and Goals during Outdoor Playtime

A common-sense interpretation of the time schedule reveals that it as an important institutional condition in both kindergartens regulating the day and the specific activity setting, and is a situated practice for children's learning, development, and cultural formation. A thematic interpretation of the findings indicates that temporal settings are value-laden and reifications of intentions and goals and clearly define expectations and demands of the children (see Table 7.5).

Studying the time schedule in the Chinese kindergarten demonstrates societal and cultural values of variation and balance. This is expressed in the balance between daily living activities and learning/play activities, between teacher and child-initiated activities, between rest and activity, and between indoor and outdoor activities. In the Norwegian kindergarten, one can clearly identify the importance of outdoor life as the most valuable space for learning and development and the importance of conquering natural elements.

Table 7.5 Values, expectations, and goals in the time regulation of outdoor playtime

Time regulation	Chinese kindergarten	Norwegian kindergarten
Societal and cultural values	Balance as an overall value	Outdoor life as real life
	Children need protection against natural elements	Children need to experience natural elements and weather conditions to become strong
	Self-regulation through the collective group – interdependence	Self-management/autonomy and independence
Institutional goals	Efficiency	Learning and development takes time
	Highly structured	Spontaneous structure
	Balance between different activity settings, between teacher-initiated and children-initiated activities, rest and activity	Play as the most important activity to develop
	Physical training through exercises	Physical training through play activities
Expectations and demands	Protect themselves from tough weather conditions	Endure tough weather conditions
	Self-regulation by adjusting to the time schedule of the group	Individual self-regulation – find meaningful activities within broad frames for activity
	Listening to and following instructions	Take initiative, being imaginative, creative, and robust

Furthermore, we found highly specific demands and expectations of the children in both kindergartens. The children in the Chinese kindergarten are supposed to move from inside to outside in an efficient way. Slowing down this transition was regarded as a loss of time. They have limited time on the outdoor playground since the space is shared by many classes at different times, and time should be used efficiently. The transitions between the different activity settings on the outdoor playground are also collective, based upon interdependence and a high degree of efficiency. The time regulation in the Norwegian kindergarten is more individualised and seems to demand more autonomous behaviour. Nevertheless, the Norwegian kindergarten children are expected to be outdoors in any kind of weather. There is also a clear expectation for the children to find meaningful activities in playing outdoors, whether they are on the kindergarten playground or on trips in nature.

7.6 Discussion

These findings illustrate that time regulation is not just an organisational issue, but is also influenced by societal values and institutional expectations and demands on what to emphasise in everyday life in kindergarten. In this way, time regulation is an important condition for institutional practices and children's play and cultural formation.

7.6.1 Time Regulation as Condition for Institutional Practices

Many aspects of Chinese early childhood education practices have changed over the past 30 years in accordance with a series of state-led, top-down ECE reforms promoting play-based, child-initiated, and individual-oriented practices (Tobin, Hsueh, & Karasawa, 2009; Liu & Tobin, 2018). Contemporary Chinese ECE is a hybrid terrain of old and new practices, producing tensions between Chinese traditional cultural expectations and Western educational values (Liu & Tobin, 2018).

Traces of this hybrid terrain of contemporary Chinese ECE can be identified in the regulation of time in outdoor playtime. In the 1950s, Chinese early childhood education was highly influenced by ECE in the Soviet Union (Liu & Tobin, 2018). Activities in kindergarten programs were highly structured with limited time for every lesson, approximately 20 min, with a primary focus on teacher-initiated collective activities (Pan, Wang, & Li, 2018). This has been the dominant practice in Chinese kindergarten until the last decade. However, the time regulation of outdoor activities is, as reflected in our findings, now highly influenced by the Chinese framework for kindergartens, namely the Early Learning and Development Guidelines for children aged 3–6, which emphasises time for child-initiated play and individual-oriented pedagogy. Outdoor playtime may now be considered a hybrid of collective activities such as *guangbo ticao*, teacher organized collective games, and child-initiated play activities. This balance of a variety of activity settings in outdoor practice is a predominant feature of the time regulation in this Chinese kindergarten.

Outdoor activities and play have been and are still highly valued in the Norwegian society in general and in early childhood education in particular. Historically, Norwegian kindergartens have emphasised the importance of outdoor play. Moser and Martinsen (2010) found that the general time spent outdoors in summer time was 70% or two-thirds and in winter time 30%, or one third, of the time. The dominant institutional practice in this particular Norwegian kindergarten is to have outdoor playtime and outdoor activities most of the day. However, in response to discussions of increasing pressure for learning outcomes in Norwegian kindergartens combined with more strict safety rules on the outdoor playground, there is a countermovement emphasising more outdoor activities by establishing outdoor kindergartens. The time regulation in this particular kindergarten is an example of this countermovement, which argues for being outdoors in all weather conditions.

As a consequence of the loose structure of the time regulation, the content of the outdoor playtime is based upon spontaneous decisions and choices and is, as such, less predictable for the children. Most of the activities are based upon children's own initiatives, although teachers decide the time frames of when to undertake specific activities, such as when to go for ice skating or play in the forest. The children can act within a certain frame of possibilities decided by the teachers, and therefore everything is not based on the children's own ideas. This form of time regulation demonstrates that the teachers need to pay attention to both societal and institutional values and plans and adjust this to their knowledge about the particular child.

7.6.2 Conditions for Play and Cultural Formation

A grand narrative of the history of Chinese early childhood education is considered by many researchers as being defined by the hybrid influence of Confucianism, Communism, and Western ideals (Liu & Tobin, 2018). However, as Liu and Tobin argue, this grand narrative may be reductionist and tautological (2018). All early childhood education is informed, influenced, and inspired by cultural loans. This grand narrative underestimates the complexity and fluidity of Chinese culture and society. Chinese children are introduced to traditional collective physical training, which may seem to contradict the emphasis in the curriculum guidelines on child-initiatives and child-initiated play. Keeping both collective physical training and child-initiated play as activities in outdoor playtime underscores the importance of balance in Chinese early childhood education. The outdoor activities are thus intended to support Chinese traditions and values.

At first glance, the collective movements from indoor to outdoor may be interpreted as exclusively disciplining children's bodies through accommodation to the temporal order, which requires the correct use of time and the children's correct use of their body. This interpretation may overlook the implicit cultural logic about the pleasure of the collective spirit (Liu & Tobin, 2018). The pleasure of the collective spirit and cultural formation through the group is clearly exemplified by the *guangbo ticao*, which is only possible to do collectively and which has other dimensions than pure physical training (Liu & Tobin, 2018).

Simultaneous to cultural formation through collective experiences, the time regulation of the outdoor period in the Chinese kindergarten clearly manifests the importance of individual time. Although the time frame is decided by the teachers with little influence from the children, the children had time for developing their play without corrections or instructions from the teachers. Introducing child-initiated play in accordance with the curriculum guidelines has been a somewhat painful process in Chinese kindergartens (Pan et al., 2018). Child-initiated play has been interpreted in many ways and the teachers have had problems loosening the control and structure. In this kindergarten, it was clearly observed that the time regulation provides conditions for child-initiated play.

Just like the time regulation in China, the time regulation in the Norwegian kindergarten has embedded specific expectations and demands on the children. The children are expected to take the initiative to play and find meaningful activities in nature. This is an example of giving children 'action space' in the educational environment (Nordin-Hultman, 2004). Other expectations and demands are to be self-organised, organising the play, and individually deciding on playmates. These expectations do not express an emerging practice. Quite the contrary, these expectations have been dominant practice for a long time in Norway. The notion of free play, meaning that children are supposed to take the initiative and decide the topic of play, play-materials, and who to play with have been dominant practice in Norwegian kindergartens for decades and even more so during outdoor play

(Kallestad & Ødegaard, 2013). In this way, one can say that the children demonstrate self-regulation by organising their own activities.

7.7 Concluding Remarks

As illustrated in this chapter, the question of time regulation in kindergartens is not simply an organisational, structural question of division of labor and shared playground. Implicit cultural beliefs with different values, expectations, and demands are embedded in the regulation of time in both kindergartens. In turn, these time regulations in kindergartens establish the conditions for different institutional practices as well as conditions for children's play and cultural formation.

The implicit cultural logic in the Chinese kindergarten indicates the importance of collective spirit of living in harmony with others. The time regulation has a repetitive character of bodily practices combining self-discipline, perfection through rigorous training, and social harmony. The time regulation in the Chinese kindergarten further illustrates the importance of balance: balance between teacher-initiated activities and child initiated activities, balance between physical training and play, balance between large group activities and individual/small group activities, and balance between activity and rest. The transition periods demand efficiency and give little space for children's spontaneous playful episodes and communication.

The implicit cultural logic in the Norwegian kindergarten implies the importance of enduring and conquering nature and weather conditions. The children are supposed to find meaningful activities and be self-organised. The loosely structured transition periods can result in much waiting time; therefore, practitioners expect the children to make these periods meaningful for themselves. The expectations of taking the initiative and being autonomous are prevalent.

Due to the changing demands from curriculum guidelines and education frameworks, the question of time regulation needs to be addressed. Changes in curriculum guidelines with an emphasis on play and outdoor must be followed up by questions of time regulations and changes in these guidelines. As illustrated in the Chinese kindergarten, the kindergarten has made changes in the amount of outdoor time and the amount of time allocated for child-initiated play after the curriculum reforms. The findings and discussion in this article highlights the importance of conducting qualitative in-depth studies of how the regulation of time impacts pedagogical practices in kindergartens and our understanding of children's cultural formation.

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Chapter 8
Exploring the Taken-for-Granted Advantage of Outdoor Play in Norwegian Early Childhood Education

Liv Torunn Grindheim

Abstract It is claimed that nature is given temporal and cultural dimensions in Norway, in a transgression of the distinction between nature and culture. The overall emphasis on nature in the Nordic countries may represent an unconscious taken-for-granted understanding of nature as the best place for children's play, learning and cultural formation. Understandings of a strong Norwegian cultural connection to nature, and thereby outdoor life, as an important arena for children's cultural formation may be challenged by changes in Early Childhood Education (ECE) institutions and the contemporary society. Such changes can force conflicts that help in depicting what is taken for granted. This chapter is therefore structured around the research question: *What conflicts can be found between ECE teachers' values and motives for outdoor play versus contextual conditions and demands in personal, institutional and cultural perspectives and in the perception of nature?* By exploring conflicts between contextual conditions and demands and ECE teachers' values and motives, the aim is to get a broader insight into perspectives and conditions for children's cultural formation. The analysis draws on 15 interviews with ECE teachers, political documents and earlier research. The analysis reveals that nature as a valued arena for cultural formation, through play, may not be as apparent as expected in Norwegian ECE.

Keywords Early childhood education · Nature · Nordic · Cultural formation · The taken-for-granted

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8.1 Introduction

The overall emphasis of the impact of nature in the Nordic countries may result in taken-for-granted understandings of nature as the best place for children's playing, socialisation and cultural formation. The historical heritage of Norwegians' connectedness to nature is outlined in Gullestad's (1992) pioneering anthropological works, in which she describes how nature was an important symbol in the formation of a national identity in Norway (p. 202). Her arguments align with Witoszek's (1991) work, which asserts that the connection to nature is a national identity for Norwegians (p. 12). Witoszek traces this national identity to the Norwegian emphasis on the pleasure of outdoor activities, the happiness of staying in the wilderness in the family cabin during weekends and holidays, the position of the Norwegian farmer who played an important role in building the democratic model in post-war Norway, the strong egalitarian impulses and Næss' (2005) Deep Ecology utopia. In Næss' utopian vision, humans, animals, plants, forests and oceans co-exist. There is no need for alcohol or other stimulant drugs because no one is bored. Witoszek (1991) claims that nature is given a temporal and cultural dimension in Norway that overcomes the distinction between nature and culture (p.13).

The Norwegian conceptualisation of nature as part of the national identity explains why it is considered culturally important for children to develop a strong attachment to nature. According to Gullestad (1992), there is an understanding among Norwegians that attachment to nature serves to bind the nation together (p. 202). Until the 1990s, most children in Norway did not attend ECE institutions. Before ECE institutions became well established in Norway, most Norwegian parents expected their children to play outdoors for several hours each day, in order to obtain benefits from wild-life experiences and to become more independent (Gullestad, 1992, p. 204). In addition, Nilsen (2008) outlines how state policy has traditionally regulated access to nature for families and individuals (p. 44). She points to the Law of Common Access (*loven om allemanssretten*), which gives everybody the right to access the natural environment, whether this is privately or publicly owned. Nilsen (2008) also points to geographical opportunities for nature engagement in Norway, due to the short distances between towns and unbuilt spaces. Both the Law of Common Access and close proximity to nature – even if living in a town – facilitate the practical and everyday access to nature for most Norwegians.

The same politics, expectations and practices have also been a part of Norwegian ECE institutions. The politics are spelled out through the framework plan for the content and tasks for kindergartens (UDIR, 2017). '…[C]hildren shall be given outdoor experiences and discover the diversity of the natural world, and kindergartens shall help the children to feel connectedness with nature' (p.11). Birkeland and Sørensen (2021) report that children in Norwegian kindergartens are – on average – outside for 2 h a day in winter and more than 4 h in summer. The fenced playgrounds have features that are both cultivated and not cultivated; for instance, there are areas with stones, hills and trees as well as play equipment like swings, sandpits,

play houses and play boats. Most ECE institutions visit local natural spaces, such as the forest and coast, at least once a week and more often during the summer.

In addition to these kinds of typical outdoor play experiences in ECE institutions, Moen, Blekesaune, and Bakke (2008) point to the increasing number of nature daycare centres (*naturbarnehager*) in Norway. In these *naturbarnehager*, children spend time in the local nature – outside the fenced playground of the institution – during the core period of the day when all the children in the group are present (10 am to 2 pm), every day, throughout the year. Moen et al. (2008) assert that these ECE institutions are popular among parents. Lysklett and Emilsen (2007) outline that these ECE institutions also are popular among teachers, especially male kindergarten teachers. The popularity can be explained by Nilsen's (2011) research that describes the strong expectations of teachers that Norwegian children should master the wilderness and the climate. Valuable outcomes from outdoor activities are also underlined by Sandseter's (2009) research, which demonstrates that the ability to encounter risks and challenges is ultimately beneficial for development. Sandseter (2009) describes how children intentionally pursue risk in their outdoor play through seeking great heights and high speed and by performing play in hazardous, dangerous and daring manners. Additionally, the children actively evaluate the positive and negative outcomes of these play situations. Therefore, outdoor play is emerging as an important area for developing the ability to encounter risk.

The customary Norwegian connectedness to nature may indicate an unconscious taken-for-granted understanding of nature as the best place for children's cultural formation. In spite of this conviction and in line with taken-for-granted understandings, it seems to be hard for ECE teachers to explain why they see the outdoor environment as important. The taken-for-granted can be recognised by investigating tensions or conflicts (Grindheim, 2020). This chapter is therefore structured around the question: *What conflicts can be found between ECE teachers' values and motives for outdoor play versus contextual conditions and demands in personal, institutional and cultural perspectives and in the perceptions of nature?* By analysing teachers' vocalisations about outdoor play, I investigate conflicts between the teachers' values and motives about outdoor play versus conditions and demands from the institutional and cultural perspectives and from the perception of nature. Thereby, I aim to investigate the assumed approach to play in nature in Norwegian ECE.

There is seldom a singular discourse of what is considered to be the most important or the best approach for the next generation. The Norwegian (and the Nordic countries') history of strong connections to nature, and thereby valuing outdoor life as something important to pass on to the next generation, may be challenged by changes in ECE institutions or in the contemporary society. By obtaining a broader insight into several perspectives on children's outdoor play and learning, we may be able to both challenge our view of cultural formation and explore what are regarded as important content and methods in ECE institutions. The analysis from 15 qualitative interviews among ECE teachers, earlier research about outdoor play or conditions for outdoor play, and political documents, reveals that nature as a valued arena for cultural formation through play is not as obvious as may be expected. The results

from the analysis indicate that humans, culture and nature seem to be hard to separate in children's cultural formation during play in nature.

8.2 Theoretical Framework

The theoretical framework that underpins my analysis to trace conflicts between ECE teachers' values and motives for outdoor play, versus conditions and demands in their context, takes departure from Ødegaard and Krüger's (2012) outline of cultural formations. They present cultural formation as an always-present and continuous process, in which active agents are at the core of learning and cultural formation. Humans' learning and cultural formation are contextualised, situated, mediated and embedded in their given cultural context (p.12). Ødegaard and Krüger (2012) present cultural formation as a descriptive concept that depicts an act of humans in relation to the conditions in their given culture. Both the process (act) and the result of being a part of the activity are embedded in cultural formation (p. 22). Understanding both the process and the result as cultural formation leads to the realisation that humans are both being formed and able to form their culture, the people they are involved with and their contexts.

Understanding humans as both shaped by and actively shaping the conditions and demands of the culture and the practices they participate in is in line with how Hedegaard (2009) outlines children's development as interwoven into institutional practices that are embedded in societal and cultural conditions and demands. Even though Hedegaard's theory emphasises children's learning and development, I take departure from her thinking while emphasising the teachers' values and motives, aiming to depict knowledge from the personal, institutional, cultural and natural perspectives. The taken-for-granted advantage of outdoor play in Norway is challenged by tracing the conflicts that occur between teachers' values and motives versus the conditions and demands in personal, institutional and cultural perspectives and regarding the perceptions of nature.

8.3 Method

The material that forms the starting point for my analysis is from a study undertaken in collaboration with an ECE institution in Norway from April 2015 to August 2017. Most often, empirical material that informs analysis in research emphasising everyday activity is, in the first stage, collected from the researcher's physical position in the field (Denzin & Lincoln, 2008, p. 29). This is not the case in this project. The primary position of what data were collected comes from the teachers' understanding of what activities they found interesting. However, my concerns and aims for the project, and the way I cooperated with the teachers, also contributed to the choices that were made. The institution is located in an urban area on the west coast

of Norway. During the period of this research, 63 children between one and 6 years of age were attending the institution. They were divided into four age-specific groups. The staff comprised nine assistants and seven teachers, including the manager and an extra teacher who took care of children with special needs.

Five teachers at this ECE institution made videotapes to illustrate children's activities that they found to be of special interest and value. I visited their institution to pick up the videos and interviewed the teachers who had recorded the activities, meeting one teacher at a time as well as the children in the video(s). I visited the institution 11 times for 2 to 4 h to do the interviews. Altogether, I obtained 13 videos of activities that range in length from 1:11 min to 10 min, and all are followed by comments from the teachers who made the recordings. Seven videos also include comments from the children involved. The videos contain activities that took place over the period of 1 year and involve different teachers, children, activities and places, but they are all from the same institution.

My project was part of the research group *Conditions for Children's Explorations*. Since two of my colleagues in this research group were investigating outdoor activities (Birkeland & Sørensen, 2021), I told the teachers that I preferred that they chose indoor activities when making videos of activities of special value and interest. The main emphasis was on what they saw as especially valuable and interesting activities, which may explain why six of the thirteen videos recorded outdoor activities, in spite of my suggestion that they should audio-visually record indoor activities. It may also indicate that the cultural dimension of outdoor activities as valuable activities in the Norwegian context could trump my wish for them to pick indoor activities.

Following my first analysis, which evoked more questions about the teachers' values and motives for the activities they found of specific value and interest, their opinions about play and the conditions and demands they meet in their daily practices, I did a group interview (lasting about 90 min) with four of the five teachers who had made the videotapes. In addition, I participated in two staff meetings (each lasting 1 h): the first to introduce and discuss my aims and research interest and the second to present and discuss my findings.

That the videos included outdoor activities despite my wish for indoor activities, and that no one in the group interview mentioned the subject of outdoor activities or referred to differences in outdoor and indoor activities, awoke my interest in how outdoor play is explained and outlined by Norwegian ECE teachers. This interest became even stronger when I noticed that, not only did the teachers hardly mention their views about outdoor education, but neither did I follow up this theme by questions in the interview. All these experiences may point to using the outdoors in ECE as something 'taken-for-granted'. I therefore contacted several ECE institutions, using the initial questions from the group interview and including a question about outdoor play. From this request, I received nine texts in response. Some of these texts were an individual response and some of them were notes from a group discussion among the staff in an ECE institution. The material for my analysis is based upon the content about outdoor activities in these nine texts, and comments made by the teachers about six audio-visual recordings of outdoor activities. Altogether, this creates a data collection of 15 qualitative interview transcripts. In addition, I include

political documents, the Norwegian Framework Plan for the contents and tasks of kindergartens, and earlier research, to inform my analysis.

The analysis builds on a conflict analysis (Grindheim, 2020), in which I trace conflicts between values and motives versus conditions and demands from personal, institutional and cultural perspectives and regarding the perceptions of nature. The data from the interviews with teachers are thereby considered to reflect their values and motives; and the teachers' articulations point to conditions that are seen in personal, institutional and cultural perspectives and regarding the perceptions of nature. The interviews form the basis for my analysis, but the teachers' utterances are understood in relation to relevant policy documents and earlier research. Although some of the conflicts can be related to more than one perspective – they are interwoven and interrelated – I keep them separated, aiming to make my analysis more transparent. The teachers' verbalisations are written in quotation marks. I am fully aware that this small-scale qualitative material does not represent all Norwegian ECE teachers. In spite of these limitations, I suggest that my analysis points to something relevant to take into consideration when discussing the content and methods of early childhood education.

8.4 Analysis and Findings: Conflicts in the Four Perspectives

To obtain more insight into conflicts that can be traced between ECE teachers' values and motives for outdoor play versus contextual conditions and demands for outdoor play, I trace conflicts in the data from personal, institutional and cultural perspectives, and regarding the perceptions of nature.

8.4.1 Conflict from the Personal Perspective

From the interviews, a conflict seems to occur between teachers' values and motives for emphasising outdoor free play (less controlled) versus their arguments for the need for teachers to be present and involved.

8.4.1.1 Less Controlled Play Versus the Need for Teachers to Be Present and Involved

On the one hand, all the teachers stated that 'outdoors there were fewer activities controlled by the teachers'. I interpret this as a reflection of their understanding of 'free' play as valuable and that less control is a motive for outdoor activities. This is in line with research that states that 'free' play and outdoor activities are often presented as being closely connected in Norway (Nilsen, 2012). Also, all the teachers stated the benefit that 'children were using their whole body for learning outdoors'.

I understand these comments to indicate that they value embodied learning. The value of learning as embodied – as more than cognitive and mental – is also emphasised in research (Stolz, 2015). Additionally, the teachers' responses demonstrated that they value 'outdoor activities as physical training (gross motor skills)'. I interpret this as valuing physical health and that this can more easily be obtained in nature or outdoors in free play, which confirms Gullestad's (1992) research. The teachers also pointed out that there were 'fewer conflicts outdoors – especially in the wilderness', which I interpret as valuing harmony. The connection between nature, free play/freedom and harmony can be traced in the heritage from the Norwegian philosopher, Arne Næss (2005), and his conceptualisation of nature as an ecological utopia (or Deep Ecology) where humans, animals, plants, woods and sea are connected in peace and harmony (Witoszek, 1991). The teachers also mentioned that outdoor activities and free play 'support good self-esteem', which I interpret as valuing well-being. The connection between outdoor free play and well-being can also be traced in Sandseter's (2009) research that demonstrates that children who challenge themselves in outdoor activities are better able to manage risk-taking.

On the other hand, when asked what conditions were necessary for obtaining the types of play that they value, the teachers responded that this kind of play 'asked for present, engaged, involved teachers that are aware of what values are to be emphasised'. They also stated that 'knowledge about play, respect for children, their needs, development and conditions', are necessary to obtain the teachers' favourable opinion of outdoor activities. When organising my material this way there seems to be a contradiction and a conflict between all the benefits of outdoor, free play and the need for the present, educated, conscious and well-trained teacher. Perhaps this is an indication that nature *per se* is not enough in the eyes of the teachers. It seems that both the intentional human teacher and the outdoors are considered essential to facilitate good education.

8.4.2 Conflicts from the Institutional Perspective

From the interviews, three conflicts seem to occur from the institutional perspective. One is the teachers' values and motives for education in nature versus valuing institutional activities. Another is the teachers' valuing of children as tribes separated from adults versus intergenerational perspectives. In addition, a third conflict occurs between teachers' taken-for-granted values and motivations for outdoor activities versus claims for more administrative tasks.

8.4.2.1 Education in Nature Versus Valuing Institutional Activities

On the one hand, the teachers stated that there were more opportunities for 'multitasking outdoors, there were possibilities for several activities that happened parallel in time'. For example, when two girls were pretending to make cakes out of sand and water, one of them went to collect more water. On her way she engaged with other children pretending to be workers making a dike to keep the water from the fields, at the same time as she was involved in the sand and water play with the first girl. I interpret this – as the teachers value and are motivated to expand children's ability to multitask – as being able to shift activities and being flexible. This is in line with Nilsen's (2012) research in which she traces how readiness to shift and flexibility come to the forefront when teachers condition and value outdoor activities (p. 218).

The teachers also pointed out that 'there is more space for play involving a variety of roles; for example, family play where there is room for movement like taking a taxi or a bus or driving the car to work because of the physical distances that it is possible to create between the "house" and "work"'. In addition, the teachers point to the outdoors as 'a place that allows for experiences like watching the rubbish truck and the workers emptying the rubbish bins or the construction of a new building'. I interpret these two last utterances as demonstrating that the teachers value and are motivated to expand children's role-playing. Valuing role-play for children's development has a long history in ECE and can be traced from the heritage of Vygotsky (2016), who emphasises (role) play as the leading line in children's development.

On the other hand, the content of the children's outdoor play, their activities and roles that I refer to above, are institutional activities. The children made cakes, recycled the water, played families, used private and collective transport and went to work when playing in nature. In addition, due to the closeness between nature and urban areas, the children were able to watch different workers preforming societal duties like emptying rubbish bins and constructing new buildings on their way to investigate the local nature. All these activities can be connected to institutions like homes or workplaces. Therefore, a contradiction and a conflict seem to occur between education outdoors or in the wilderness, while at the same time valuing institutional content. Perhaps this indicates the cultural heritage that emphasises humans' duty to cultivate and harvest nature. Such a cultivation has to happen in nature. Again, it seems to be hard to separate humans and nature when educating children.

8.4.2.2 Valuing Children as Tribes Separated from Adults Versus Intergenerational Perspectives

On the one hand, the teachers stated that 'the outdoors made room for play that children can manage without teachers being a part of the game. Play that requires space – games like hide-and-seek that are more fun the more children that are

involved'. I interpret this as that the teachers valued and were motivated to establish community, belonging and friendship among children, which is also in line with the Norwegian Framework Plan for the content and tasks of kindergartens: 'Kindergartens shall make good provision for play, friendship and the children's own culture' (UDIR, 2017, p. 20). Research presented by Kjørholt and Tingstad (2007) indicates that when constituting childhood as a period in the lifespan of humans, children were constituted as something other than adults. Children became tribes – separated from adults embedded in their own culture (James, Jenks, & Prout, 1998). Like western societies colonising indigenous tribes and thereby destroying their culture, adults'/teachers' interventions in children's lives may harm their peer-communities.

On the other hand, as mentioned above, the teachers pointed to institutional conditions and demands like 'the need for qualified teachers'. Therefore, a contradiction and a conflict occur between understanding children as a community of peers that had to be protected from adults versus an intergenerational perspective emphasising that there are also empowering and important relations between the generations (Grindheim, 2017; Lee, 2001; Mannion, 2010).

8.4.2.3 Motivations for Outdoor Activities Versus Claims for more Administrative Tasks

On the one hand, all the teachers mentioned how they value outdoor activities. Reasons for their valuing and motivating for children's outdoor activities are read from their descriptions of the benefit from outdoor play that formed conditions for children to 'using their [children's] whole body', 'supporting self-esteem', 'supporting creativity', 'challenging gender dichotomies', and 'laying the foundation for sustainable development'.

On the other hand, Norwegian ECE institutional managers have experienced changes in the last few years in their contextual conditions and demands for what duties to perform, by receiving more administrative responsibility because of changes in the way that Norwegian local municipalities are organised. Therefore, the managers need to delegate more administrative tasks to the teachers (Børhaug, 2011; Seland, 2009). Research has depicted that extra administrative tasks are limiting the time that teachers are directly involved with the children (Granrusten & Moen, 2009; Helgøy, Homme, & Ludvigsen, 2010; Larsen & Slåtten, 2014). These administrative tasks, in addition to more meetings among the teachers, are often done in the period of the day when children are playing outside. Therefore, the less qualified members of staff often spend more time looking after the children during outdoor play.

This dilemma of how to prioritise tasks can be traced from the teachers' utterances that pointed to 'room and space, material, time and economy' and 'qualified teachers' when asked for conditions for realising the outdoor play they valued. Their priority of when to interact with the children may, on the one hand, indicate that the time spent outside will be of educational value even if less qualified staff

members are looking after the children because of the advantage of nature as an agent for cultural formation. On the other hand, it may indicate that the overall emphasis on nature is not as overall as expected since it may be seen as an arena of lesser educational value. Thereby, the involvement in the outdoor context is not prioritised among teachers. Anyway, a conflict occurs between what context (outdoor or indoor) that is emphasised for educational purposes versus the taken-for-granted motivations and value of outdoor activity.

8.4.3 Conflict from the Cultural Perspective

From the interviews, a conflict seems to occur between parents' and politicians' expectations of ECE to solve a range of contemporary challenges that serve as conditions and demands versus taken-for-granted Norwegian values and motives for more unstructured outdoor activities.

8.4.3.1 Unstructured Outdoor Activities Versus Measurable Educational Outcomes

In the interviews all the teachers, on the one hand, mentioned that 'outdoor activities are less regulated by the staff'. On the other hand, the teachers' valuing of fewer regulations and motivations for children's initiative forms a conflict with changes in Norwegian ECE. During recent years, Norwegian ECE institutions have experienced both a growing and changing public and political interest (Grindheim, 2018). The growing interest can be explained by the rapid expansion of ECE institutions in Norway. From being a desired option for a few (18% in 1980), there are now ECE institutions available for most Norwegian children (91% in 2017). Therefore, most of the citizens, including parents, grandparents, aunts and uncles, are personally engaged in how ECE institutions are contributing to their children's education. In some urban geographical areas, the owners of ECE institutions compete to attract parents. Therefore, families are viewed as customers within the framework of competitive local institutions regulated as a market for meeting the individuals' needs for future education. Political interest in ECE institutions is also changing. Not only are ECE institutions viewed as a political tool for gender equality by paving the way for women's role in the labour market (Korsvold, 2005, p. 21), but they are also seen as an arena for resolving a variety of contemporary problems. Through early interventions, ECE institutions are supposed to neutralise class differences (Stortingsmelding nr. 41:2008–2009, 2009:10), provide school readiness for bilingual children (Stortingsmelding nr. 17:1996–98; Stortingsmelding nr. 49:2003–2004; NOU 2011:14; Drange & Telle, 2011) and prevent behavioural problems and school dropouts (Webster-Stratton, 1999). From an economic perspective, education paves the way for early intervention, so that the outcomes can be achieved in the least 'costly' way possible. This can be seen in the constant pressure to start teaching

academic skills at a progressively younger age (Bodrova, 2008). Education is emerging as an economic investment. Politicians and parents are thereby strong agents, representing both economic and political resources, when it comes to defining the content and methods of ECE (Grindheim, 2018). Economic and political resources are important conditions and demands for ECE institutions.

These conditions and demands in the societal/cultural perspective influence what are seen as important content and methods in ECE and ask for measurable educational outcomes controlled by teachers. At beforehand defined measurable outcomes form a contrast and conflict to what the teachers pointed to when describing outdoor activities as 'less regulated by the staff'. Outdoor activities in nature are seldom structured, teacher led, learning activities with explicit academic aims. Therefore, a contradiction and a conflict emerge between demands for ECE to solve a range of contemporary challenges in the presumedly less costly way to meet their customers' wishes versus the taken-for-granted values and motives for outdoor and more child-initiated activities. The teachers' reference to 'economy', as a condition for the play they value, also underlines the emphasis on costs and this emerging conflict.

8.4.4 Conflicts from the Perception of Nature

From the interviews, two conflicts appear from the participants' perception of nature. The first is a conflict between teachers' values and motives understanding nature as 'good' and serving equity, versus nature as dangerous. The second is a conflict between the teachers' values and motives understanding nature as valuable in itself (eco-centric perspective), versus nature as a tool for meeting human needs and something to be cultivated by humans (anthropocentric approach).

8.4.4.1 Nature as Good Versus Nature as Dangerous

On the one hand, the teachers asserted that 'outdoor activities can challenge gender dichotomies'. I interpret this utterance as that the teachers value and are motivated to create more equity among genders. The statement is followed by the explanation, 'in outdoor play in nature, there are fewer gendered tools for play'. The outdoors as an arena for more equity among genders is often supported by research (i. e. Erden & Alpaslan, 2017).

On the other hand, the teachers, when asked for conditions for obtaining less gender-biased play, responded that this play called for conditions 'like smaller groups of children, since play in the wilderness, for example climbing trees, calls for teachers paying close attention'. Therefore, a contradiction and a conflict seem to occur between an understanding of nature as a creature of the good (equity among genders), versus nature as dangerous. Werler (2015) states that nature does not have any intention or plan for humans – neither good, nor bad. He states that the

dichotomy between nature and culture is a construction, made by language and by the duty to cultivate and harvest nature.

8.4.4.2 Nature as Valuable in Itself Versus Nature as a Tool for Meeting Human Needs

On the one hand, the teachers state that 'play in nature is more creative and more explorative'. I interpret this as teachers valuing natural materials that children use as mediating tools in play, for example rocks and sticks, because it is not pre-defined how to use them or what they should be used for, like more commercial toys, that are more frequently encountered indoors. There may also be more to explore outdoors; the teachers pointed to 'insects, plants, water, sand, trees to climb'. I interpret this as reflecting the teachers' perception of nature as a tool for the conscious human being, that is close to an anthropocentric approach.

On the other hand, the conditions for obtaining this valuable creative, explorative play is based upon access to natural spaces that are still not cultivated by humans. In addition, the teachers pointed out that 'outdoor play lays the foundation for sustainable development'. I interpret this as that the teachers value and are motivated to continue the heritage of an educational understanding of sustainable development emphasising children's closeness to nature by playing in nature (Sanderud & Gurholt, 2014). By learning to love nature, humans will also care for and protect nature (Chawla, 2006), and recognise the connectedness and the dependence between nature and humans, and that we all are nature (Dickinson, 2016). Thereby nature is presented as valuable in itself, closer to an eco-centric perspective. Connectedness to nature has been a global discourse in sustainability education (Boldermo & Ødegaard, 2019). The national discourse in Norway, valuing outdoor activities, has been closely connected to the global discourse on environmental protection (Heggen, 2016). The main approach in the national and global discourses is that connection to nature is leading the line to constructing environmentally protective subjects (Nilsen, 2012, p. 215). Therefore, a contradiction and a conflict seem to occur between the anthropocentric and the eco-centric perspectives.

8.5 Summing Up and Exploring the Emerging Conflicts

From the *personal perspective,* there seems to be a conflict between all the benefits of outdoor play and the need for the present, educated, conscious and well-trained teacher. From the *institutional perspective*, three conflicts occur. First, there is a conflict between education in nature versus the valuing of institutional activities. Second, there is a conflict between the teachers' valuing children as tribes separated

from adults versus intergenerational perspectives. Third, there is a conflict between teachers' taken-for-granted values and motivations for outdoor activities versus claims for more administrative tasks. From the *cultural perspective*, a conflict occurs between expectations of parents and politicians versus taken-for-granted cultural valuing of more unstructured outdoor activities. In the *perceptions of nature,* two conflicts occur. The first is a conflict between nature as innocent – serving the good – versus nature as dangerous. The second is a conflict between nature as valuable in itself versus nature as a tool for meeting human needs. Outdoor activity seems to be valued from all perspectives, but conflicts are emerging, when meeting conditions and demands.

When exploring these conflicts, most of them indicate that nature, culture and humans are hard to separate. Drawing on interviews, research, political documents and changing cultural conditions and demands for ECE it seems, on the one hand, that the historical emphasis on outdoor activities is narrowed. On the other hand, if nature *per se* makes children free, offers harmony, more space for a variety of activity in the institutions, societal equity between genders, peer-communities and an eco-centric understanding, there may be a possibility of making spare time for teachers to do administrative tasks. This forms a contrast to utterances that emphasise the present, educated teacher, knowledge, economy, experiences for institutional role-play and nature as a tool for creativity. In addition, outdoor activities also emerge as being trapped between the Norwegian 'love of nature' and the expectations of educational outcomes. The interviews also reveal that outdoor activities are constituted by the kinds of practices that are embedded in ECE, the Norwegian culture, and nature, which is accessible and frequently in use.

Ambiguities occur, according to what conditions are best for cultural formation. An understanding of nature as both a place that does not have an intention and as one that represents 'good formation', appears. The teachers' articulations reflect their valuing of and motives for outdoor activities when they are explicitly asked for their opinions. It may be a task for researchers to raise such questions to obtain knowledge of the taken-for-granted. Thereby, both teachers and researchers will have a voice in the choir of agents that direct the content and values in ECE, to serve conditions for children's exploration. The taken-for-granted can be neither improved nor cultivated if not conceptualised. When humans and nature emerge as two sides of one coin, they can easily be trapped as the one or the other, and the outdoor environment can offer neither cultural nor natural formation without the presence of interacting humans. In this way, a more complete model can emerge, which includes nature, culture and humans where both children and teachers are in intergenerational relations, in the ongoing formation of ECE. Active and conscious researchers and teachers, in collaboration with children and parents, as well as a variety of contexts for children's exploration, are important for children's exploration, play and learning.

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Chapter 9
'All of the Wild': Cultural Formation in Wales Through Outdoor Play at Forest School

Angela Rekers and Jane Waters-Davies

Abstract This chapter takes the specific context of outdoor play in the Foundation Phase in Wales to explore how children's activity and participation is mediated through the socio-material affordances of muddy puddles at forest school. The research was underpinned by the cultural-historical tradition of making visible the sociocultural practices and individual participation which shape the child's experience within an educational setting. The discussion in this chapter is centred upon the following questions: During forest school sessions for pupils aged 4- and 5-years old, what conflicts may be surfaced as classroom teaching staff aim to meet Welsh Government expectations for both outdoor play and self-regulatory skills development? How do these conflicts shape the child's experience of participating in outdoor play? The analysis draws upon data gathered during 8 months of fieldwork; audio-visually-recorded observations and video-stimulated interviews with classroom teachers and forest school leaders are used to consider an episode of conflict during play in a muddy puddle. We explore, from child and adult perspectives, the institutional values of the Foundation Phase, demands for reception year practice and subsequent expectations about children's participation, highlighting the mediating messages being given about 'how to be' and what competencies are valued in the activity setting of mud play.

Keywords Conflict · Motive orientation · Socio-material affordances · The Foundation Phase and Forest School in Wales

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9.1 Background

Since devolution in 1999, the Welsh Government (WG) has established goals for education in its National Curriculum for Wales based upon environmental sustainability, the Rights of the Child and Wales' unique cultural identity, including the Welsh language, as an independent country within the United Kingdom (UK). Additionally, goals for play-based learning both in- and outdoors are included in the Foundation Phase Framework (FPF), the statutory curriculum for children between the ages of 3- and 7-years old (Taylor et al., 2015; Welsh Government, 2008/2015). Pertinent to the content of this chapter, it is worth noting the FPF was founded upon a concern to diminish the persistent attainment gap between pupils considered to be disadvantaged and their more advantaged peers, which is a feature of the Welsh education landscape (EEF, 2018; Waters, 2016). In the Welsh context of multiple deprivation, we acknowledge evidence about how this context shapes teacher behaviour, indicating that teachers, as the general population, tend to hold negative bias and associated low expectation about the potential attainment of those from socio-economically deprived backgrounds (Campbell, 2013, 2015; Welsh Government, 2017).

The FPF requires teachers to take an active, participatory role in children's play and activity, and to facilitate exploratory learning. The child is viewed as inherently curious and active in the search for meaning. However, teachers are also required to assess literacy and numeracy skills development and to support children's development of self-regulatory social skills. Baseline assessments and outcomes-based requirements of the Foundation Phase contribute to a 'top-down' pressure, which can contribute to practitioners' (mis)understandings of child-directed play (Siraj, 2014), and a lack of time for observing children's learning within self-directed play (Rekers-Power, 2020). There are also deeper tensions at work within the enactment of the FPF. The Foundation Phase practitioner needs to adopt a pedagogy based on a theoretical understanding of the child that is informed by sociocultural theory, rather than one that relies heavily on developmental theories (Waters, 2016). Yet, the accountability systems indicted above determine a conceptual understanding of the young child as needing to be developed into the 'school-ready' child. This chapter asks about the construction of the 'school ready' child, and offers a view that young children may indicate their developing self-regulation skills during playful behaviour.

Outdoor play is increasingly recognised as providing conditions for children's learning and development that are in alignment with FPF values (Bilton & Waters, 2017). Since the implementation of the FPF from 2008, forest school (FS) provision has been advocated as a means of providing experiential outdoor learning and play for young children on a regular basis (DCELLS, 2009; Knight, 2016; WAG, 2008). Historically in Wales, outdoor learning experiences have been located within the field of outdoor education, in the domain of one-off 'field trips', and/or residential centre provision for older students (Williams & Wainwright, 2014). Therefore, the FPF has created new cultural standards through expectations for *everyday*

opportunities for children to utilise the outdoor environment for learning and playful activity. This chapter uses empirical research findings to demonstrate some of the tensions inherent in the attempt to cultivate cultural conditions for outdoor learning.

Within the Welsh context there is a transitional 'Reception' year of education that marks the child's journey into statutory school at the age of 5 years. Pupils generally begin this Reception year when 4 years old. The Reception year sits within primary school and provides a rich time of cultural formation as the child negotiates and appropriates the standards of the distinct FPF early childhood curriculum within the school setting. This chapter demonstrates how cultural formation in the outdoors can be mediated by a conflict between (mis)understandings of outdoor play-based approaches and institutional demands for the young child to 'become' self-regulated in readiness for primary school. We consider the implications of such conflict for children's trajectory of self-experience.

In the research study upon which this chapter is based, the FS programme was delivered by a registered charity that provides year-long sessions for learners of all ages and abilities in local woodlands, as well as outdoor learning and play training for teachers and other professionals. As an institution, the charity's practice is informed by its values for delivering a learner-centred pedagogical approach based upon engagement with the natural world (Rekers-Power, 2020). Rather than following a set curriculum, FS practice is based upon a set of Six Principles (FSA, 2018). These principles, or values, situate the individual as holistically developing within an ecological community encompassing both human and non-human nature. There is an expectation that practice will be based upon learner (child)-initiated, leader (adult)-supported playful experiences. Moreover, there is the expectation that the natural environment will also initiate and shape activity.

As an alternative pedagogical model (Kraftl, 2015; Rekers-Power, 2020; Waite & Goodenough, 2018) or 'wilder' approach (Knight, 2016, p. 57) to outdoor learning, FS provides opportunities for children's appropriation of affordances not necessarily promoted by the indoor classroom or school-grounds provision. Indeed, one critical feature of FS is the opportunity for imaginative and developmentally appropriate risky play (Davis & Waite, 2005; Ridgers, Knowles, & Sayers, 2012). Although tensions lie in assuming all forest school leaders adhere to a particular value-system or pedagogical approach (see Leather, 2018), in this study the FS leaders had personal and professional values that aligned with an 'ecosocial identity' (McCree, 2020) based upon environmental ethics related to social ecology and deep ecology social movements (Rekers-Power, 2020). Although the charity was an institution based upon an alternative pedagogical approach founded in ecological understandings, it also aligned with the FPF intentions for outdoor, experiential play.

The tensions that are surfaced in this chapter centre upon the difficulties that early childhood practitioners may encounter when their understanding of outdoor play means they fail to recognise the extent of the skills being practiced by children in such play activity. The episode outlined in this chapter considers mud play as an *activity setting* (Bang, 2008). Mud play, usually in the form of 'mud kitchens' (White, 2011), is an increasingly institutionalised activity setting in early childhood

settings, due to conceptualisations of children having reduced opportunities to play outdoors and to engage in play with natural materials (Chawla, 2015). Indeed, in the pilot study, one young boy, when asked what he liked about forest school, replied: 'All of the wild! Especially the mud!' Yet, such wild play becomes a contested space in the episode presented here. The teacher in this study expressed concerns about the behaviour of some of the children in her class and in interview, she maintained that they 'need to learn how to play without being so out of control'. This statement, with its implicit judgement that certain types of play and certain manifestations of self-regulation do not reflect the 'school-ready' child, sets the backdrop for the episode considered in this chapter.

The questions guiding the analysis of the empirical material presented here are: During a forest school session for young children, what conflicts in cultural formation may be surfaced, as new teaching staff aim to meet Welsh Government expectations for outdoor play if considered distinctive from other goals such as self-regulation? How do these conflicts shape the child's experience of participating in outdoor play? This chapter, therefore, reflects upon an episode of playful activity at FS to explore, from the child's and practitioner's perspectives, the values and expectations of institutional practice in relation to outdoor play and how children's participation is framed and shaped by these values and demands.

9.2 Theoretical Approach

The research project detailed the social and material affordances of institutional practice and the engagement of individual children in activity settings, in order to consider the cultural formation of children's developing motive orientation and competencies as they actively negotiate the values, expectations and demands of institutions (Hedegaard, 2018). The study was underpinned by Hedegaard's (2018) *wholeness approach* to studying children's development using cultural historical activity theory. Hedegaard (2014) asserts that to study the child's perspective, it is necessary to 'follow how the child's orientation in the world interacts with the demands that the child meets in the different institutional settings' (p. 192). The demands and expectations of institutions are conceptualised by Hedegaard (2014) as 'forces from the surrounding world on the child that guide the child's activities' (p. 192); yet, the child also is understood to be an active agential being who shapes their own activity by appropriating the affordances of the socio-material environment in line with their motive orientation (Bang, 2009).

The doctoral study built upon Bang's (2008, 2009) conceptualisation of behaviour settings (Heft, 1988) and affordances (Gibson, 1979/2015) as the basis for an environmental affordance perspective analytic framework. In doing so, it is possible to explore the mediational affordances of *things*, *social others* and *self-experience*, in order to make visible the inter/intra-activity at work within cultural formation. *Things* are comprised of artefacts, or that which has deliberate institutional intention, as well as natural features, surfaces and substances, such as mud puddles,

which may/may not have deliberate institutional intention, yet the affordances of which may also be mediated in practice (Rekers-Power, 2020). The affordances of *social others* include the biotic lifeforms, primarily human, with which the child engages in socially-directed activity (Ibid). The notion of the *affording of self-experience* contributes to an interpretation of how the individual experiences the act of participating in activity settings, with existing and developing competencies and motive orientation in dialectic relationship with those which are valued within collective practice (Bang, 2009).

Transitions, crisis and conflict are all considered pivotal to the social situation of development as the individual participates in collective activities. As an individual within collective experience, the child develops motive orientations in relation to their perspective of these practices (Bang, 2009). The child's existing motive orientation can be most visible in episodes of conflict when they are unable to do what they want to do or when their activity appears to be in opposition to that which is promoted or valued by the practice situation (Hedegaard, 2018). This conceptualisation of conflict as a moment of intersection between individuals' motive orientations and between an individual and an institution demonstrates two central tenets of cultural historical theory relevant to the material presented here: one, that the individual is an active agent, experiencing and participating in culturally- and historically-situated institutional practice on multiple levels in the moment; and two, that analysis of these moments of intersection between institutional demands and individual participation has the potential to contribute to theorisation of both practice and participation.

9.3 Method

The empirical material presented here is from data gathered during a doctoral research project. The ethnographic study was undertaken in a primary school, catering for children between the ages of 3- to 11-years, located in the centre of a local authority-maintained housing estate in an urban, post-industrial town. Adjacent to the housing estate is 7000-acre woodland, where forest school sessions for the reception year children take place one day a week throughout the school year. During the project, the first author visited both the classroom and the forest school setting for one to two days per week during two school terms and collected data using observations, audio-visual recordings, interviews and video-stimulated accounts (Theobald, 2017). The material discussed below has been selected on the basis of *conflict* from the corpus of data that included 10 hours of video-recorded observations and 3 hours of video-stimulated interviews.

Participants included children, teaching staff and forest school staff. There were two reception year classes at the school; one class was led by an Early Years teacher (EYT), who had training in early childhood pedagogy, and the other by a Newly Qualified Teacher (NQT) whose previous experience had been working with children aged 94–5 years11 as a teaching assistant. The episode presented here is from

the Newly Qualified Teacher's class; she is anonymised as 'Mrs Evans'. The Forest School Leaders (FSL) had youth work and play work qualifications, in addition to their Level 3 Forest School Leader training.

9.4 Material

In this episode of conflict, we consider both the visible conflict between children and adult, as well as the less visible conflict between societal and institutional values and the teacher's interpretation of subsequent demands; these conflicts provide opportunity to surface both the child's and the adult's perspectives. At forest school (FS), a group of children are playing in and around a muddy puddle. The FS Leaders have set up the FS site prior to the children's arrival; during this episode, they are engaged with other children who are lighting a campfire, climbing trees and using tools.

The available *things* with which the children in this episode engage are as follows: artefacts, such as waterproof jackets and wellington boots, buckets, spades, a drainpipe set at an angle between a tree and a rock, and plastic toys, i.e. dinosaurs, buckets and balls (Fig. 9.1). The features and substances with which they engage include the mud, the water, sticks and the space within and outside of the puddle. Some of the children are using spades for digging mud on the edges of the puddle; others are playing with the buckets, collecting water to pour down the drainpipe.

The *social others* include the children's peers as well as the teacher, a teaching assistant and the researcher. The adults stand on the periphery, observing the children's play. The classroom teacher and a teaching assistant are watching the

Fig. 9.1 The Muddy Puddle activity setting

children, as well as chatting with each other; the researcher is standing nearby filming with an iPhone.

Joshua, aged 5, enters the water to stand and balance on a plastic tray lying in the puddle (boy on the right in Fig. 9.1). He is smiling. Mrs Evans says sharply, 'Josh-u-a!' He turns to look at her, bites his lip, turns back to the water and scoops some up in a bottle. The teacher repeats his name.

From an adult perspective, confirmed by later video-stimulated interviews with adult participants, it appears that she is saying his name because she is concerned he is in the water with his camouflage trousers getting wet, as they are not waterproof, nor are they tucked into his wellington boots. Joshua's reaction, however, indicates that he does not understand why she is saying his name; yet, her tone is warning. Indeed, some children look up from their play to look at the teacher and follow her gaze to Joshua. Although Joshua does not have waterproof trousers on, he has worn camouflage trousers deliberately for forest school. These are the kind of 'trousers that [one of the forest school leaders] wears', he asserts later in a video-stimulated interview. This demonstrates his motive orientation to align with demands using FS leaders as role models, and her clothing as a guide, although this alignment is not recognised by the teacher.

Joshua gathers some water from the puddle into his bucket and walks around the far edge of the puddle (away from Mrs. Evans) and pours his water down the drainpipe. The water splashes onto a plastic dinosaur at the bottom of the pipe. Joshua smiles at the teacher. This activity appears to be acceptable as she stops saying his name in a warning tone and turns to talk to the teaching assistant.

Opposite the drainpipe, Chantelle, in a pink waterproof suit (far right in Fig. 9.1), approaches the puddle with a small container of water that she has retrieved from a nearby stream. She smiles at the teacher and says, 'I'm just gonna [sic] throw this in here.' Chantelle turns to the other children and shouts: 'Ok, guys, out of the way!'

The children who are digging stop to watch her. There is a big splash as the water is thrown into the puddle. Joshua is looking at Chantelle, smiling and laughing; the other children also watch the water's dispersal in the puddle with interest. Chantelle looks in her bucket and throws out the little water that remains.

Mrs Evans says sharply to Chantelle: 'Do you think that's a good idea?'

Chantelle looks tentatively at the teacher, with a half-smile on her face.

Mrs Evans repeats the question twice more. Chantelle is still smiling at the teacher, but begins to back away, looking around nervously.

Mrs Evans continues: 'What would they say if they got soaked? What would you say if someone went and poured muddy water all over you?'

Chantelle continues to back away; but, Joshua has moved into the centre of the puddle, where the water Chantelle poured has landed.

Mrs Evans says to Chantelle: 'Think! Chantelle, think!'

Chantelle, looks down at her bucket, and says quietly, 'I can't.'

Joshua has filled his bucket with water. He calls, 'Look out!' and flips the water out of it up into the air. It lands on him and he smiles at the teacher. No one else is in

the puddle. Is he trying to draw Mrs Evans' attention from Chantelle, showing Mrs Evans that he knows to tell others to watch out, or demonstrating that if Chantelle had gotten him wet, he would not mind?

Mrs Evans turns her attention to Joshua. 'What would someone say if – What would *you* say if someone threw muddy – water over you?'

Joshua looks down at the muddy water. He shrugs, looking confused, half smile on his face, looking into the muddy puddle. Chantelle walks to the far side of the puddle so that Joshua is in between the teacher and herself, drops her bucket in the water, then retreats from the puddle to go play elsewhere.

Another boy, Joe, pours water down the drainpipe and Mrs Evans laughs. She says to the teaching assistant: 'Joe loves water play!' From her response, it appears that pouring water down the drainpipe is the preferred way of utilising full buckets of muddy water from a classroom institutional perspective, although she has not articulated this verbally to the children, and although it is at odds with the forest school institutional perspective, which allows space for risky play.

9.5 Analysis

9.5.1 Conflict: Institutional Conditions for Outdoor Play

There is some tension between how outdoor play is conceptualised from a forest school (FS) perspective and from a classroom/school perspective (Maynard, 2007). The forest school leader training incorporates sustainable use of natural resources and a play work perspective that supports the provision of resources as 'loose parts' (Nicholson, 1972). In interview the FS Leaders said that they evaluated mud play from three angles. These are related to sustainability: 'is the environment being harmed?'; safety: 'is the muddy puddle become stagnant and breeding harmful bacteria' or 'is the mud going in anyone's eyes?', and developmentally: 'in what ways is this activity supporting learning and development?'. Their response to the episode, as ascertained in video-stimulated interviews after the event, was that the children were enjoying themselves, taking care of each other, and throwing/pouring water to see how it landed indicating early scientific concept development. The leaders said there was not a 'right' way to play in the muddy puddle and that getting wet was part of the children's learning to manage risk and exploring properties of the natural world. Therefore, from the FS perspective, the children's activity with *things* was in alignment with FS expectations.

The FS leaders also saw alignment in the *social others* affordances aspect of the episode. They remarked that Chantelle warned the others to 'look out!' before she threw the water, which they perceived as demonstrating care for others, and that Joshua seemed to try to 'protect' Chantelle by diverting the teacher's attention from her to himself to demonstrate that not everyone would mind if someone got them wet. These perceptions of acceptable 'wild' play characterise the motive

orientations of the forest school leaders, in which there is room for social and exploratory play in which getting wet is an acceptable risk. The FS leaders asserted that they consider play, even risky play, as a means of practicing competencies in social skills and self-regulation (e.g., Bodrova, Germeroth, & Leong, 2013; Brussoni et al., 2015; Pellegrini & Smith, 1998; Whitebread, Jameson, & Basilio, 2015). The perceptions of the leaders when viewing this episode provide a basis for interpreting alignments between motive orientation of forest school and the children. Importantly, the forest school leaders' interpretations of the event align with the demands of Foundation Phase to provide opportunities for experiential play, risky and social play considered beneficial for children's learning and development.

The teacher's perspective, however, is in conflict with FS practice and is arguably in contrast with FPF values. Her perspective of the play appears based upon how outdoor play might be promoted on school grounds or her expectations for children's behaviour indoors, as demonstrated by the constraints she places on the affordances of water play. Careful play using artefacts in specific ways is encouraged; but, 'wild' play, in which children utilise the affordances of artefacts differently to expectation and might get themselves or others wet, is discouraged. The teacher suggested, in the video-stimulated interview following the event, that her response to the children's play was motivated by annoyance at the children for getting wet, as well as by concern about children learning to care for themselves and others – and, importantly, her perception that Joshua and Chantelle were not competently doing so. The teacher's motive orientation, as representative of the school institution, was focused upon controlling the activity and the children's participation therein, presumably in order to maintain control and ensure everyone was able to play without getting uncomfortable, e.g., wet. This suggests an orientation toward risk-aversion that, rather than supporting children in learning to manage risk, results in their confusion and disengagement. The teacher's response also indicates a cultural perspective in which the children's inter/intra-actions with the natural materials of the environment are less recognised or valued than the inter/intra-actions with human-fabricated artefacts, although both have cultural constraints specific to their intended 'uses'.

9.5.2 Conflict: Motive Orientations and the Personal Perspective

The conflict between the teacher and the children (Joshua and Chantelle) highlights how the institutional perspective, as enacted by the teacher, presents a dilemma for the children's participation. The teacher perceives the ways in which Joshua and Chantelle play with and in the muddy puddle to be problematic. In interview, she maintains that they 'need to learn how to play without being so out of control'. We may conjecture that, from her perspective, these children were not displaying what she would accept as 'school-ready' self-regulation; this may create concern or even

fear on her part of the children being 'out of control'. From an environmental affordance perspective, the children appropriate the affordances of the muddy puddle for *wading*, *splashing* and *throwing*, as well as *pouring*. Not all of these affordances are encouraged by the teacher. Although this way of participating is not necessarily out of alignment with forest school motive orientations for experiential and exploratory play with natural materials, the teacher would prefer that these affordances are constrained (Kyttä, 2003) at forest school as they would be on school grounds.

Similarly, the social others available in the activity setting – the teacher and peers – afford *watching*, *laughing* and *playing together*, which is in alignment with practice demands. Yet, because *throwing* of water and *wading* in deep water is not acceptable from the teacher's perspective, the teacher does not recognise the appropriation of valued social affordances. Indeed, her own social affordances for Joshua and Chantelle also include *reprimanding, rejecting* and *confusing*. The conflict highlights how what the teacher affords the children is not in alignment with Foundation Phase values for *supporting* and *guiding*. Due to this, Chantelle eventually disengages and leaves the activity setting. This results in a failure to support Chantelle's developing motive orientation, as an individual within collective practice, who is both capable of *looking out for her peers* and demonstrates a desire to be in alignment with institutional values by *looking to the teacher for approval*.

The socio-material affordances of the muddy puddle hold the potential to contribute to how Chantelle may begin to perceive of herself as a competent member of the class culture: as *one who looks out for others*, as *one who successfully plays*, and other self-experiencing affordances for cultural formation. Bang (2009) asserts that the developing of motive orientation in alignment with institutional orientation allows for a sense of self as one who has or is developing the competencies that are valued. Because Chantelle's personal actions in relation to the collective activity of muddy puddle play appear to be rejected by the teacher, an opportunity is lost to engage Chantelle in developing an understanding of what expectations there are for participation in the muddy play and how she might form motive orientations that are more clearly in alignment with institutional practice. The forest school leaders, who were less astonished by the 'wild' throwing of water, were better able to view Chantelle as socially and physically competent. Had they been present, perhaps they would have been able to laugh with her and praise her care for the others, thus reinforcing her self-experience as one who is capable of both playing well with natural materials and with others.

Joshua also seems to be without a clear understanding of how he might be able to participate in a way in which he might receive praise for aligning his motives with those of the institutional perspective(s). By continually looking to the teacher for approval, he also demonstrates a motive orientation to both play with the muddy water *and* please the teacher. Additionally, although he does not have waterproof trousers on, he has worn his camouflage trousers in order to fit into what he sees as a forest school dress code. They are the same as one of the forest school leader's trousers. The teacher's interactions with him seem to confuse him, rather than guide him.

Joshua also demonstrates motive alignment with school practice in regards to how to treat others. He seems to care for Chantelle by trying to deflect the unwanted attention from the teacher from her to himself, trying to make the teacher laugh and calling 'look out' to his peers. The teacher, Mrs Evans, however, displays disapproval toward his behaviour, rather than articulating praise or clarifying what is expected. His developing motive orientations of *dressing appropriately, caring for others*, *exploratory play with natural materials* and *playing well with peers* have been ignored. Later, however, the teacher offers approval and recognition toward Joe, a child whose ways of participating and his appropriation of the water play more visibly, and perhaps consistently, align with the teacher's expectations and demands. Although Joshua also appropriated water play similarly when he used the plastic tube in similar ways, his actions were not necessarily praised and specifically supported by the teacher. His ways of meeting the affordances of the activity setting, as an expression of his own playful interaction with available materials, were met with disapproval, thus reducing opportunity for him to understand how he contributes to and belongs in the institutional culture of the reception year.

The aligning of motive orientations is a way in which children begin to develop in relationship with the collective, institutional practice (Bang, 2009). The ways in which the child experiences *self* in relation to collective motive orientations contributes to the child's engagement with institutional practice. The child begins to be able to see oneself in relation to what is valued in practice, such as '*caring-for-others-able'* and '*playing-well-able*'. If the child's ways of participating are rejected without support for how to be in alignment or without acknowledgement of existing competencies, children are at risk of becoming disengaged and unable to understand how their participations fits in to the collective whole.

9.6 Discussion

Children's cultural formation occurs as children participate in everyday activities within institutional practices of home, care and educational settings. Kallestad and Ødegaard (2013) assert that cultural formation is 'the shaping of new meanings, identities and practice' (p. 75), recognising the dialectical activity that characterises both the individual's development and the sense of self as a participant within collective practice. From a cultural-historical perspective, the social and material conditions of institutional practice mediate children's participation; thus, the values, expectations and demands that characterise institutional practice may be viewed in relationship with the affordances of activity settings (Bang, 2009). Across the lifespan, individuals are confronted with the values, expectations, demands and standards of new institutions; conflict or crisis may arise particularly during times of transition as they learn to merge existing skills and motive orientation with the new standards.

The episode presented here indicates that young children are looking toward the adults to determine what values are being promoted and trying to understand what

is expected of them in relation to institutional values and demands. The FS leaders recognised the children's developing competencies in alignment with institutional values and expectations in these episodes; however, the teacher appeared focused on shortcomings and lack of specific competencies. This may be due to the newly qualified teacher's previous classroom experience in another school or her lack of professional development in play or outdoor play specifically. The Foundation Phase Framework can be aligned with international approaches to early childhood education and care predicated upon a commitment to play, most often valued for contributing to learning outcomes and cognitive development, as well as emotional, social, and physical development (Broadhead, 2006, 2009; Brooker, 2011; Pellegrini, 1988, 2009; Siraj-Blatchford & Silva, 2004; Wood, 2007a). Research on play also asserts its potential for enhancing the well-being of the child, as an individual and as belonging to a group (Aasen & Waters, 2006; Sandseter & Seland, 2016).

However, as Wood (2007a) notes, a shift from a pedagogy based on achievement of specific curriculum outcomes to one that requires a play-based approach is significant and full of inherent tensions. These tensions centre on the problematic nature of how play is understood (e.g. Wood & Attfield, 2005), the regulation of play within early childhood curriculum frameworks (Wood, 2007a, 2007b) and the reification of play within early years practice (Cannella, 1997; Stephen, 2012). The ambiguity inherent in the claims made in Foundation Phase documentation for 'well planned play' (WAG, 2008, p. 5), 'free play' (WAG, 2008, p. 5) and play that is 'structured with clear aims for children's learning' (WAG, 2008. p. 7), without any differentiation between these play forms, may illustrate further the challenges facing practitioners seeking to implement the Foundation Phase Framework.

The conflicts described in the muddy puddle activity surface a lack of recognition on the part of the teacher that the children are developing self-regulatory competences and aligned motive orientations by looking to her for guidance and caring for each other, even in risky play that may be perceived as 'too wild' or 'out of control'. This situation, we argue, may contribute to children becoming marginalised as badly behaved and subsequently disengaging from school learning if they perceive that they are failing to meet teacher expectations.

This chapter highlights the social and material affordances of institutional practice and the engagement of individual children in activity settings, in order to consider the cultural formation of children's developing motive orientation and competencies as they actively negotiate the values, expectations and demands of institutions (Hedegaard, 2018). The Foundation Phase was conceptualised as an alternative approach to formal schooling for children under the age of eight. The outdoor environment, when coupled with an alternative pedagogical approach such as play and nature pedagogies like forest school, allows for children's experiential learning through the medium of playful activity with natural materials. Hännikainen, Singer and van Oers (2013, p. 165) assert that:

> [P]lay seems to be a valuable medium for children to participate in cultural life, to learn how to live together, to learn how to deal with authority, conflicts and power, and to appropriate basic cultural values, attitudes, abilities and knowledge.

The values of Early Years provision in the UK typically relate to learning and skills outcomes, which are shaped by accountability measures and meeting pupils' wide range of needs, so that children develop their competencies and realise their potential to participate as members of a classroom first and, later on, mainstream society. These values lead to demands and expectations for learning, participating and behaving, e.g., self-regulation and listening, in order to promote smooth transitions between pre-school, reception year and primary school. Importantly, play in the outdoors can be a valuable medium for children's participation in a cultural life that expands the range of affordances for cultural formation and 'participation in cultural life' (Hännikainen et al., 2013), including interactions with non-human nature in a more 'common worlds' pedagogical approach (Taylor, 2013). In light of Welsh Government goals for well-being and sustainable futures (Welsh Government, 2015), it is essential that alternative pedagogies, such as forest school, are able to not only create space for such experiences that allow for a wider range of socio-material affordances and ways of being, but that such pedagogies not be constrained themselves by lack of understanding or training.

Government policy for education is based upon the 'values, beliefs, activities and practices' (Tudge et al., 1999, p. 68) of wider mainstream society, which attempts to unify a diverse population toward a communal goal of civic engagement, opportunity and responsibility. These values and expectations, in turn, influences perceptions of learners' competencies (Aasen, Grindheim, & Waters, 2009; Mahn & John-Steiner, 2002; Waite, Huggins, & Wickett, 2014) and significantly affects children for whom educational equity is most essential (Wood, 2007b). Hedegaard (2010) argues that values and demands may also lead to tensions between expectations for the child as a future being while also providing 'space' for children to be themselves in the present and to be viewed in terms of existing competencies. Arguably, a cultural framework that limits or does not recognise the role of children's interactivity with the affordances of natural materials, even while arguing for outdoor play, loses opportunities for children to develop sustainable ecological identities as part of the wider community of species as well as to develop an identity as a successful learner.

By observing diverse children's participation in relationship with the socio-material affordances of the woodland, teaching staff may be encouraged to consider how children are developing motive orientation in alignment with the multiple values of the Foundation Phase Framework. In doing so, teachers may be better able to support children's diverse ways of participating, in order that children who may be at risk from disengaging in school due to a perceived lack of alignment may be more inclusively engaged and find space to belong.

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Chapter 10
E-STEM in Everyday Life: How Families Develop a Caring Motive Orientation Towards the Environment

Sylvia Christine Almeida and Marilyn Fleer

Abstract Internationally there is growing interest in how young children engage with and learn concepts of science and sustainability in their everyday lives. These concepts are often built through nature and outdoor play in young children. Through the dialectical concept of everyday and scientific concept formation (Vygotsky LS, The collected works of L.S. Vygotsky. Problems of general psychology, V.1, (Trans. N Minick). Editor of English Translation, RW Rieber, and AS Carton, New York: Kluwer Academic and Plenum Publishers, 1987), this chapter presents a study of how families transformatively draw attention to STEM and sustainability concepts in the everyday practices of the home. The research followed a focus child (4–5 year old) from four families as they navigated everyday life and talked about the environments in which they live. Australia as a culturally diverse community was reflected in the families, whose heritage originated in Europe, Iran, India, Nepal and Taiwan. The study identified the multiple ways in which families introduce practices and conceptualise imagined futures and revisioning (Payne PG, J HAIA 12:2–12, 2005a). About looking after their environment. It was found that young children appear to develop concepts of STEM, but also build agency in exploration, with many of these explorations taking place in outdoor settings. We conceptualise this as a motive orientation to caring for the environment, named as E-STEM. The study emphasises for education to begin with identifying family practices and children's explorations, as a key informant for building relevant and locally driven pedagogical practices to support environmental learning.

Keywords Environment · Sustainability · Agency · Transformative · Young children

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10.1 Introduction

Growing environmental changes do impact on young children directly and indirectly. Yet the research suggests that very little attention has been directed to identifying children's experiences or to determining how everyday environments at home and in the community shape perspectives and motive orientations (Hedegaard, 2012). Despite young children's views generally not being documented as part of the research, there is evidence that they do have agency, with some research showing that they can and do productively 'contribute ideas, energy and creativity to managing and solving local [environmental] issues' (Davis, 2015, p. 16). But as yet, we do not know enough about how families create the conditions to support their children to be agentic about caring for the environment.

This chapter is concerned with presenting the findings of a study that sought to determine how families in everyday life create the conditions for children's explorations of STEM, but with a focus on caring for the environment. Known as E-STEM (Environmental – Science, Technology, Engineering and Mathematics), the goal of the study was to examine how some families living in Australia, contribute positively to the cultural formation of children in ways that develop a motive orientation for caring for the environment. Although debates exist in relation to terms, such as environmental sustainability education (Madden & Liang, 2017), environmental education (Davis, 2009), education for sustainable development (Siraj-Blatchford, Mogharreban, & Park, 2016), we focus primarily on a broad conception of environment as conceptualised by Payne (2014) where we foreground the child's everyday experiences in the home and community. Community experiences are often embedded (although not limited to) outdoor settings that offer rich learning and play opportunities for young children.

To achieve the goals of this chapter, we followed children over time in a broad range of everyday contexts in order to gain insights into how families and communities introduce STEM thinking in informal settings, such as homes, playgrounds, and community events. In drawing upon cultural-historical theory (Vygotsky, 1987), we analysed how children's experiences informed their understandings about the world around them as a particular form of cultural formation. The findings are presented in the latter part of the chapter. We begin this chapter by discussing the literature relevant to the focus of the study.

10.2 Background Literature on Sustainability

Overall, studies of early childhood sustainability and environmental education have made important contributions to sustainability, with contributions from Canada (Elliot & Krusekopf, 2017), Chile (Simonstein, 2016), China (Zhou, Liu, Han, & Wang, 2016), Kenya (Macharia & Kimani, 2016), Korea (Park, Shin, & Park, 2016), Norway (Heggen, 2016), Portugal (Folque & Oliveira, 2016), Sweden (Kultti,

Larsson, Arlemalm-Hagser, & Pramling-Samuelsson, 2016), Turkey (Haktanir, Guler, & Ozturk, 2016), UK (Siraj-Blatchford, 2016), and the USA (Mogharreban & Green, 2016). What emerges is a plurality of pedagogical practices (Arlemalm-Hagser, 2017) for the development of a concept of sustainability (see Pramling Samuelsson & Park, 2017), with some international comparisons between early childhood educators (Japan, Australia and Korea) showing that traditional nature based approaches dominated (Inoue, O'Gorman, Davis, & Ji, 2017).

Studies focused on early childhood have mostly been "fragmented and ill defined" (Siraj-Blatchford et al., 2016, p. vii,). To rectify this, the OECD has funded research, and this important work has identified biodiversity, climate change and disaster risk reductions as key for future change and that these should be tackled more systematically (Siraj-Blatchford & Pramling-Samuelsson, 2016). While there are some cultural-historical studies focusing on environmental education through everyday experiences in early childhood (Edwards & Cutter-Mackenzie, 2013), there is limited understanding of how the learning of concepts supports a caring environmental orientation or action at home.

In line with a need for more systematic focus in research, Young and Elliott (2014) have recognized not only meaningful contexts for learning concepts of sustainability, but have identified key concepts that young children are capable of engaging in in support of caring for the environment. Young and Elliott (2014) have suggested that the concept of sustainability can be realized through early learning (Young & Elliott, 2014) of big ideas, such as, conservation, life and food cycles, biodiversity, endangered species. Similar content areas have been documented by Desjardins and Wakkary (2011). These studies focus on a conceptually oriented approach and can be clustered around core concepts of E-STEM that the study reported in this chapter is interested in.

Studies relevant to the focus on family appear to be far and few between with limited research into children's experiences at home and its impact in later life as pointed out by Payne's (2005a) who found that parents played a key role in developing what he called green environmental sensibilities. Families raised children's consciousness of caring for the environment in everyday routines in the home. In interviewing families about their practices across three generations, Payne (2005b) found *doing* as an approach to learning was central to how these families enacted environmental activism. Habituation and naturalism emerged as the dominant practice. There was a meshing of real, direct, active and embodied experiences as part of the daily routines. Payne says that the families fostered "an ethos or culture that a positive difference" could be made "through one's everyday actions and interactions" (p. 92). As with the previous study, Payne (2005b) noted that families found it was not important to teach ecological knowledge but that consciousness raising, a sense of agency, resourcefulness and lateral power in 'sustaining' were found to be central for caring for the environment. He conceptualized the independent relations of household members and plants, animals and so on, as *oikos* – environmental house or place.

Intergenerational research by Meeusen (2014) has also demonstrated that families pass on environmental concerns to their children, but only in families engaged

in effective communication with their children. The study undertaken in Belgium, surveyed parents and their adolescent children and noted no gender differences. Communication also featured in a Danish qualitative study by Grønhøj (2006) when examining green consumer practices associated with organic food, water and energy, waste and transport. Mostly, families' interactions were conflict-ridden, and families mostly dealt with day-to-day practices with inconspicuous consumer behavior.

Payne (2014) has suggested that the everyday lives of children goes beyond nature and includes broader contemporary developments, such as the internet and how this mediates life in the home. For instance, "Children now experience unknown people, virtual images or abstract events on the other side of the globe in cultural settings, socio-environmental conditions and time frameworks utterly different from their own" (p. 69). It has been argued that meaningful contexts in early childhood for realizing these learnings include, biodiversity audits, creating frog bogs, bird baths and feeders, and making compost, worm farms and vegetable patches (Young & Elliott, 2014) all of which are mostly situated in outdoor learning contexts.

In line with these earlier studies we were interested to know how families create the conditions for the cultural formation of their children related to E-STEM. We examined the organization of young children's participation in everyday routines in the home and across their communities, in order to better understand how E-STEM learning in everyday practice positively contributes to the caring of the environment. In particular our research sought to delve into knowing how families frame children's conceptual thinking over time to inform and support their actions in solving everyday problems, particularly meaningful problems associated with sustainability and caring for the environment.

10.3 The Study

Our research aimed to shed light on how STEM concepts give opportunities for environmental exploration in everyday family contexts where a child's cultural formation is in the process of developing. In line with this aim we sought to identify and understand how diverse families with their children:

1. pay attention (or not) to environmental and scientific problems that arise informally in everyday life
2. create the conditions (or not) for children to seek out and use STEM concepts in order to solve meaningful problems in everyday life that are linked with environmental issues

10.3.1 Participants

The research had 5 focus children in the age range of 4–5 years and their extended families from one state of Australia in order to capture a broader range of family members engaged in everyday scientific problems. The participants exemplify the Australian representation of cultural heritages originating in Europe, India, Iran, Nepal and Taiwan.

10.3.2 Procedure

Stage One: Families Filming Everyday Practices and Routines Using a digital GoPro *action-camera*, families filmed everyday practices in their home and communities over a period of 2–6 months. The *action-camera* was mounted to a small cap/headband, and given to a focus child from each family.

Each family was visited 3 times in the course of the data collection period for collection of video content and for informal in situ interviewing. We collected over 14 hours of data per family.

Stage Two: Preparation of Stimulated Recall Video Content The research team examined the data for examples of practices associated with everyday concepts and STEM concept formation, and where participation structures for learning are organised in the context of solving problems. Segments of video material were put on to memory sticks, and sent back to the families, and then subsequently used as the basis for focus group interviewing.

Stage Three: Focus Group Interviewing Using stimulated recall techniques (Lyle, 2003), the families attended two focus group sessions throughout the data collection period to discuss the videos, photographs, and any other items with the research team they felt explained their home contexts and previous STEM problems that they may have solved with their children. These sessions were conducted in family homes with the research team members. These moments of data were used during the stimulated recall interviews to deepen conversations.

At the conclusion of the data collection period, families were brought together for a final focus group discussion of their materials and the edited movie files on memory sticks. This culminating session was an important event for children and their parents involved in the research to celebrate the work they do together as families and foreground the learning opportunities that their everyday practices offer to their young children.

Stage Four: Data Analysis and Synthesis The analysis was informed by cultural-historical theory. Young children experience their physical world every day of their lives through participating in family routines and different activity settings. Mostly

children experience their physical world at an everyday level, such as when composting food scraps (decomposition), sorting rubbish into different bins (materials and their properties), or when harvesting vegetables from the garden (growth, life and living). When these routines become consciously understood as specific concepts during discussions and actions with their families, it can be argued that families are supporting the cultural formation of the child. Captured in curriculum and in the literature as STEM concepts, STEM concepts are human cultural inventions. Analysing the relations between everyday and scientific concepts helped us to better understand the practices of the families. We used Vygotsky's conception of everyday and scientific concept formation to determine when and how families dynamically helped their children to understand STEM concepts to explain the observed family practices of caring for the environment. How children entered into these practices and how families created the conditions and participation structures was further theorised using Hedegaard's (2012) conception of motives and demands.

The researchers synthesed data from Stages 1, 2 and 3 using Vygotsky's (1987) conception of everyday and scientific concept formation to determine when and how families dynamically helped their children to understand STEM concepts to explain the observed family practices of caring for the environment. How children entered into these practices and how families created the conditions and participation structures was further theorised using Hedegaard's (2012) conception of motives and demands.

10.4 Findings

The findings of our research point towards significant and meaningful links made by families with their children in relation to caring for the environment while at the same time learning STEM concepts. The two main themes addressed in this chapter are:

Everyday family practices that give time and space to the cultural formation of E-STEM.

Everyday adult-child interactions that support the cultural formation of E-STEM concepts.

10.4.1 Everyday Family Practices that Give Time and Space to the Cultural Formation of E-STEM

Intentional practices that support meaningful environmental and STEM related everyday concepts appeared to be deeply embedded in many of the families' everyday practices. Parents, grandparents, siblings, uncles/aunts and local/community

Table 10.1 Everyday family practices linked to STEM concepts

Everyday routines	Agentic practices	Organised activities to support abstracted learning
Everyday walks	Creating cloth bags at home to support children's interests in reducing use of plastic bags	Investigate projects to further extend children's interests, for example in rainbows or volcanos
Skype conversations and digital searches	Searching for online materials - weather and tornados to see how these are formed	Learning from online videos and shows about science concepts, like where things come from and how things are made
Building and gardening with extended family		Special 'lessons' organised by aunty to support learning of the water cycle, including making special props and experiments

green spaces seem to play a crucial role in supporting links between practice and concepts (see Table 10.1).

The study found that adults provided opportunities both explicitly and implicitly to feature STEM in children's lives. There were three types of routines evident in the families we followed.

First, at the **implicit** level, everyday practices featured families giving time and space for children to experience the outdoor environment. By creating routines, like working with family members in the garden, children physically explored life and living, and positively experienced the localised footprint of food production. Similarly, everyday walks and visits to the park gave children opportunities to experience the outdoor environment, and to have the possibility to experience nature and all that this affords. These examples shown in Table 10.1 Column 1, illustrate E-STEM at the everyday practice level because children viscerally experienced their outdoor environment, thus building everyday conceptual foundations for later noticing and potentially abstracting from these concrete experiences. At the everyday level, we theorise that children are building experiential understandings of the E-STEM concepts such as, the footprint of local food production, where in the future comparisons could be made to the quality/organic nature of the produce bought or questions asked about the footprint when buying vegetables. Similarly, observation of the local biodiversity featured in children's lives when visiting parks, and these experiences were in some families only at the everyday conceptual level because adults did not draw attention to E-STEM concepts to explain the practices. Consistent with the research of Payne (2005a) these early practices are thought to positively impact on later beliefs and values expressed by adults when remembering their early experiences of nature.

Second, our findings show that other families engaged explicitly in E-STEM practices at the everyday level. For instance, in making carry bags to take to the shops, families actively demonstrated sustainable practices (Table 10.1, Column 2). These practices are illustrative of working at an everyday conceptual level in E-STEM because children experience making bags, using these bags when shopping, and knowing from family dialogue that they replace the use of plastic bags.

This example is illustrative of an agentic practice to reduce plastics and avoid problems of plastics in the waterways. Making calico bags demonstrates an important practice and orientation to caring for the environment. But it does not show in itself, what level of scientific understanding children have about the risks of plastics for the biodiversity of the waterways or other important E-STEM concepts. At the everyday level, this practice and others like it enacted in the family homes, builds foundations for practical actions important for later deeper conceptual understanding of E-STEM. This is in keeping with the key role of everyday concepts as theorised by Vygotsky (1987).

Third, at the abstract E-STEM conceptual level, some families introduced to children important STEM concepts that would help them better understand big ideas in caring for the environment, such as, learning about the water cycle, or searching for information associated with the weather. STEM concepts introduced by the adults in the families appear to matter, as they seemed to follow the everyday conceptual pathways that children experienced or showed interest in. A typical example from the data set follows in the next section. Importantly, the introduction of abstract concepts (Table 10.1, Column 3) could meaningfully explain the everyday practices and routines (Vygotsky, 1987), and therefore could theoretically open up opportunities for children to act with conceptual understanding in the future.

Together, the implicit and explicit everyday family practices noted in the data (Table 10.1) suggest that children's cultural formation of E-STEM was in the process of developing. Important practices and family routines associated with nature appeared to be orienting children towards acting in support of their environment. By families giving time and space to experiencing nature, or engaging in practical everyday activities in support of caring for the environment, important pathways for later E-STEM understanding were being laid.

10.4.2 Everyday Adult-Child Interactions that Support the Cultural Formation of E-STEM Concepts

A second major finding related to the importance and diversity of adult-child interactions in support of caring for the environment. We noted a clustering of interaction types associated with explicit or implicit E-STEM content, but also valued family practices some of which were intergenerational but not necessarily focused on caring for the environment.

Profiles of adult-child interaction that were identified are discussed in relation to the implicit and explicit E-STEM practices as introduced above (horizontal axis). The vertical axis captures the continuum of direct and indirect instruction by the adults across families and contexts (Fig. 10.1).

In the previous section, implicit E-STEM interactions were noted through how the family provided time and space to walk through to the local park and experience nature and when making calico bags. Details of three examples from different

environmental contexts (Table 10.1) follows, where adult-child interactions are shown. In the first example, Edgar is making a parsley dip after harvesting the herb from the vegetable garden as shown in Fig. 10.2.

Vignette 1: Uncle's veggie patch

The following vignette from a home visit where the family is sharing data and recalling their experiences. Mum prompts Edgar to explain what they did with the GoPro yesterday. They took it to Uncle Shane's veggie patch. Edgar with his Mum's help explains that the veggie patch is in the front door and they picked parsley to make special dip. Edgar helps his Mum make it.

Mum: Yesterday where did we go?

Edgar: Hmmm

Mum: Uncle Shane's veggie patch

RA: Ohh and where is this veggie patch?

Edgar: Mum can you help me say

Mum: OK. Uncle Shane's veggie patch is our in the front yard and Uncle Shane lives next door. He is Riley's daddy. And what did we pick from the garden?

Edgar: To make my special dippy

Mum: Yes to make your special dippy. What do we need?

Edgar: Parsley

RA: Do you know how to make your dippy? Do you help your mom?

Edgar: Yeah I do ((Go Pro video and conversation during Home visit 2)

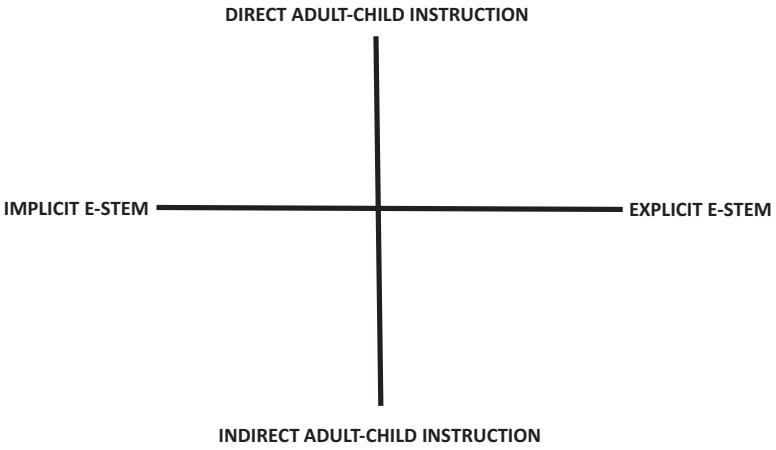

Fig. 10.1 Typologies of adult-child interactions that support the cultural formation of E-STEM concepts

Fig. 10.2 Harvesting food from the vegetable garden

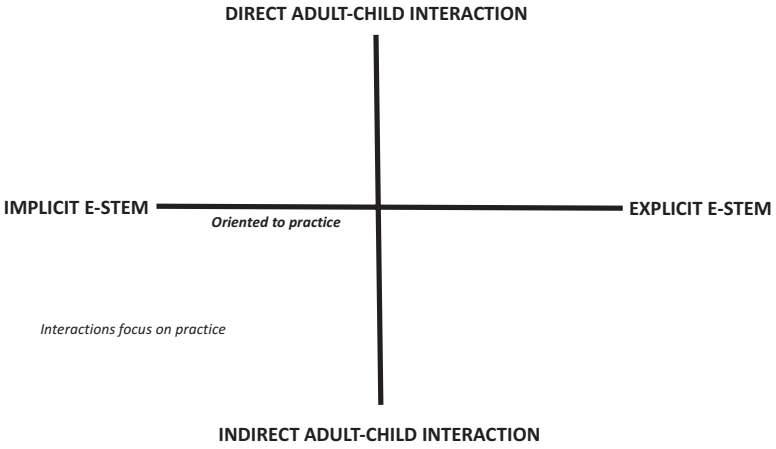

Fig. 10.3 Interactions focus on practice

This example can be conceptualised along the horizontal continuum as closer to an implicit E-STEM profile of the cultural formation of the child to caring for their environment. This pedagogical practice is illustrated in the bottom left side quadrant, as shown in Fig. 10.3 below. In this example, the family pedagogy is oriented towards practice because no instruction or mentioning of E-STEM concepts is evident. However, it is an important everyday practice about nature and the harvesting of food.

We also noted similar nature activities in other families, but where a different kind of interaction was evident. Examples of family pedagogy that gives more explicit E-STEM content follows in Vignette two and three. The second vignette is

Fig. 10.4 *Vignette 2* Noticing small detail in the environment and looking to find out more

related to a nature walk where 'noticing and subsequent researching' is illustrated, and the third vignette features story narratives to foreground the changes in the same environment over time.

Noticing and researching: What we found was that families not only engaged in practices in support of caring for their environment, they also created opportunities for noticing the biodiversity in nature when on family walks but with a view to researching STEM concepts to give greater scientific meaning to what was observed. For instance, Vignette 2 taken from the data set elaborates the environmental pedagogical features of family practices for making conscious valued forms of STEM concepts at the everyday level. As will be shown below, the families' everyday practices appeared to feature many opportunities for supporting children to notice 'little things' in nature using all their senses. In Vignette 2 Fig. 10.4, the image shows the family examining a branch of wattle that they found outdoors. Banoo noticed some features of this wattle and so the family decided to bring a part of it home in order to further explore it through researching in books and on the internet.

A big part of the conversation between the adult and the child was comparing the leaves and blossoms of the found branch, to the images on the computer with Banoo then exclaiming *'So it must be the same'* (GoPro video data shared during Focus group interview 2, Family Banoo). This was a family practice which was encouraged in Banoo since Banoo was a baby and had continued over time. According to the mother, *'Even when Banoo was very young, when Banoo was in my arms, I encouraged her to touch leaves'* (Focus Group interview2, Family Banoo).

Narratives for foregrounding environmental changes over time: Vignette 3 is a narrative that featured through reading books and passing down family stories. This is especially foregrounded in Edgar's data where storytelling and passing down family values are important in the family (particularly about DIY such as composting and gardening and preserving food).

Vignette 3: Mum Explains That Story Telling Occurs Often

Grandma talks about stories when she was a child living locally and things that her own mother told her. Mum explains that stories and talking is often about how the area has changes over time, especially in relation to past generations of the family (fourth generation living in the local area). Talking about how the land and natural environment and talking about how things have changed, having to be careful about impact on the environment and sustainable use of resources. Since the family has lived in the same local area for four generations, there is sharing and talk about how the local environment has changed over time and Edgar is often part of this conversation.

This is exemplified in the conversation below:

Mum: We do a lot of story telling and (looking at his sister) will make up stories at night for the boys. A lot of these are traditional stories like Goldilocks and the three bears etc where we will change the names

Grandma: But I tell a lot of stories too. Like I'll tell stories about mum – my mum or my dad or when I was a child and we could roam all around the cliff and we would build cubby houses…… things that my mother told me and I now grasp and take those contexts in. I think my mum was remarkable so I tell things that she did when she was growing up.

Mum: And I think this is where – we are third and fourth generation living here in this area – we talk about it a lot. Like when we drive to school we talk about, isn't it funny how grandpa used to play marbles here because there was so much bush and trees. And now isn't it a bit sad that there are no trees around (Focus group interview 1, Family Edgar)

It was found that some families mentioned indirect attention on abstract concepts of E-STEM through deliberately embedding learning within everyday practices. For example, one of the participants said:

Grandma and Mum are both teachers, and talk a lot about how learning is 'embedded' in E's everyday life. Rather than pre-planning for learning, it usually occurs as opportunities arise throughout the day. Mum values the pedagogical abilities of both the early childhood teacher and family day carer. It is evident that both Mum and Grandma are both very aware of, and extend, the learning that occurs during kinder or day care (Researcher field notes after Focus group interview 1 and 2, Family Edgar).

These examples can be plotted on to the typology shown in Fig. 10.5 in the bottom right quadrant.

While intentional and purposeful learning of science and sustainability was evident in families' everyday practices, there were a number of planned educational interventions. These opportunities arose on an ad hoc basis and families maximised the learning potential these provided. For instance, visiting zoos, aquariums, historical places, old mining towns, botanical gardens as well trips to home countries and

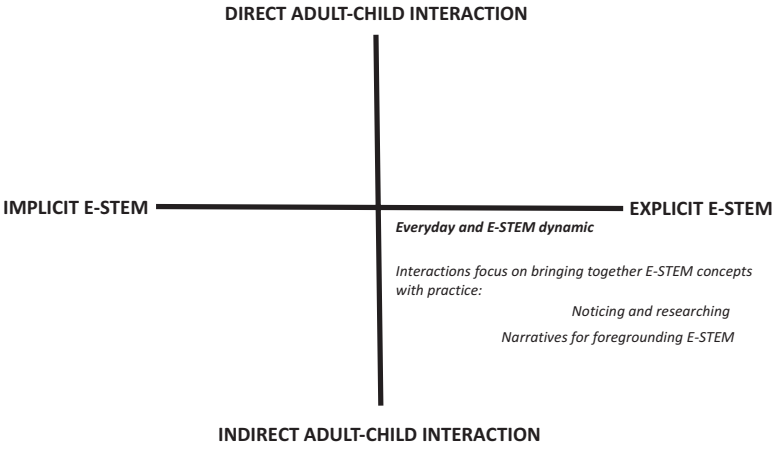

Fig. 10.5 Interactions focus on bringing together E-STEM concepts with practice

other overseas destinations provided may learning opportunities. But there were also organised activities specifically for the instruction of E-STEM concepts. What we found when analysing the data, was that some families appeared to teach concepts to their children when on excursions, and others when setting up organising activities specifically for this purpose. There were two ways that this tended to happen in the families in our study. Some families directly taught abstract concepts through setting up activities associated with an interest. An example of a simulation is given further below to illustrate this profile of family pedagogy (Vignette 4). Some families directly taught E-STEM concepts in a formal manner to their children, as is shown in the cooking example further below (Vignette 5). Both vignettes focus on teaching concepts, but not necessarily on caring for the environment at that moment.

10.4.2.1 Indirect Attention on Abstraction

Simulations of STEM concepts: In Vignette 4, Sahil's family organised many activities to support his interest in lava, tornadoes and volcanoes as a follow up to learning at his centre. The following typical example shows a carefully crafted and designed activity creating volcanoes using baking soda and water along with Sahil's favourite cars (Fig. 10.6).

> *Aunty Mary explains how the hot molten rock comes to the surface of the earth. Sahil asks how this can be, and she explains. Then she adds the vinegar to the 'volcano' to make the 'lava'. Sahil pretends to touch it saying 'its hot, its hot'.* (Family focus group interview 2 sharing *Sahil Phone video explaining volcanoes*).

This example of everyday practice can be plotted in the top left-hand quadrant because the focus is on direct adult-child interaction through creating a simulation to feature STEM concepts. It is an abstracted concrete activity (Fig. 10.7).

Fig. 10.6 *Vignette 4* Setting up specific activities at home to learn about abstract concepts - simulations

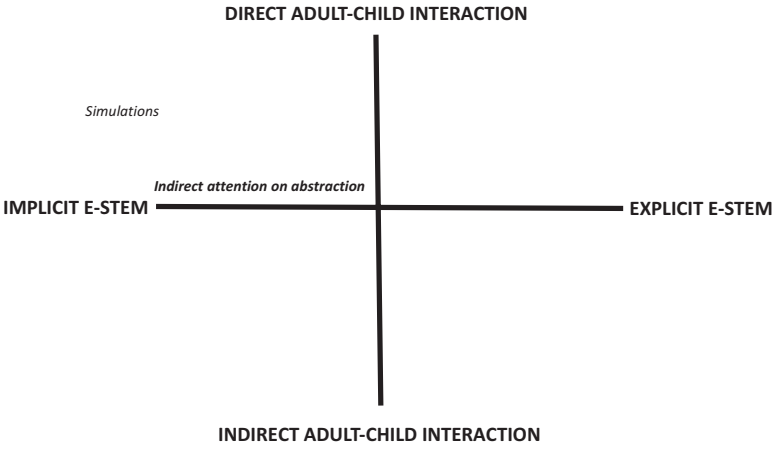

Fig. 10.7 Indirect attention on abstraction

10.4.2.2 Direct Instruction of Abstract Concepts Not Related to the Environment

An everyday routine that was popular among the families was cooking. Some families especially involved their children in this practice, using the opportunities to highlight specific STEM concepts. What we noticed was that some families used cooking from a view of learning science and family traditions, but did not make explicit links to the environment or sustainability. Vignette 5 of 'cooking with concepts' follows.

Anita is seen participating in the process of making chappatis which is a daily family routine (Fig. 10.8).

Anita is rolling some dough with a rolling pin while Mum asks what is happening. Anita explains what it is.

Mum: when you are rolling the dough what is happening to it?
Anita: It's getting circle
Mum: It is changing its shape, mm?

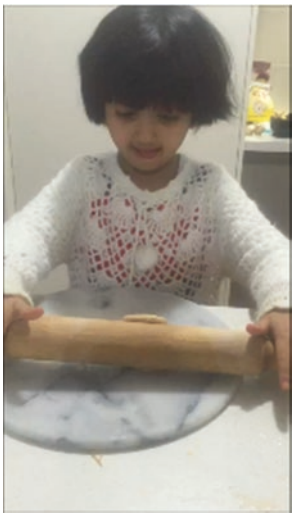

Fig. 10.8 *Vignette 5*
Cooking without concepts

Mum then points out that the dough was a ball but now it is flat and round. (Phone video shared by family)

Mum encourages Anita to keep rolling to see if it can be made thinner. 'A' looks at the dough and explains that it looks like a diamond shape, and then a 'lemon shape'. (Go Pro video data and Family focus group interview 2)

The adult is questioning and describing what is happening mathematically and to some degree scientifically during the process of making the chappatis. The focus group interviews suggested that the activity was also seen by the adult as a way of staying connected to family traditions and the ethnic practices of their culture. Science concepts like, rolling, pushing, pulling, and mathematical concepts, such as, thick, thin and shape, provide contexts for Anita's everyday conceptual development. There is also an explicit foregrounding of STEM concepts through direct instruction by the adult. But as with the example of the vignette of volcano simulation, there is no specific mention or link made to caring for the environment or sustainable practices in food security, footprint, etc., as was found in the earlier examples. This adult-child interaction example of cooking with a focus on concepts is plotted in the right top quadrant because the interaction is direct and explicit (Fig. 10.9).

Overall, the study found a range of pedagogical profiles, and these were focused on STEM concepts (biodiversity), E-STEM practices (making calico bags), and also valued family and cultural practices (cooking) that were not necessarily associated with the focus of this chapter. However, the latter pedagogical practices gave context for better understanding how different families created the conditions for the cultural formation of E-STEM.

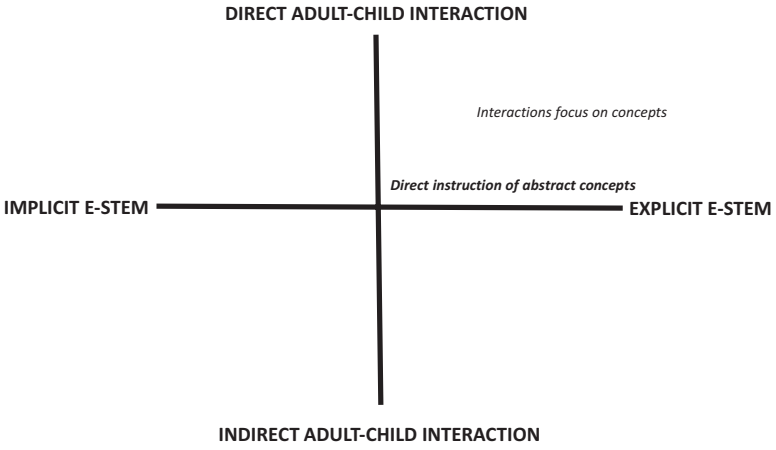

Fig. 10.9 Direct instruction of abstract concepts

10.5 Discussion

By investigating the practices of our focus families, we were able to examine how in the different home contexts, children were being oriented towards caring for their environment as part of their cultural formation. Through using a typology to map and analyse practices, we were able to make visible both adult-child interaction types (vertical axis) and the degree of STEM concepts introduced to children (horizontal axis). The typology gave the possibility of noting if STEM concepts were made explicitly conscious to children and if they meaningfully supported the children to care for their environment. Figure 10.10 brings together the exemplars introduced in this chapter within the typology.

As might be expected, a diversity of pedagogical approaches was evident across the families for orienting children to the environment. What we noticed was that STEM concepts were being introduced regularly to the children – some explicitly and others more implicitly. However, not all families made links with the STEM concepts in support of looking after the environment. These families clustered in the top two quadrants of the typology. What we learned about these families was that direct adult-child interaction focused on learning STEM concepts, such as cooking with children and the volcano activity. We also learned that this direct instructional interaction type appeared to be closely aligned with the learning of abstract STEM concepts. But the context seemed to be meaningful for the children, even though the interactions were not at all related to caring for the environment. Learning about caring for the environment did not appear to be conceptualised by these particular families as something to be taught directly to their children.

All families knew the goals of the research and were active agents in documenting what mattered to them about E-STEM for their child. So it was surprising that

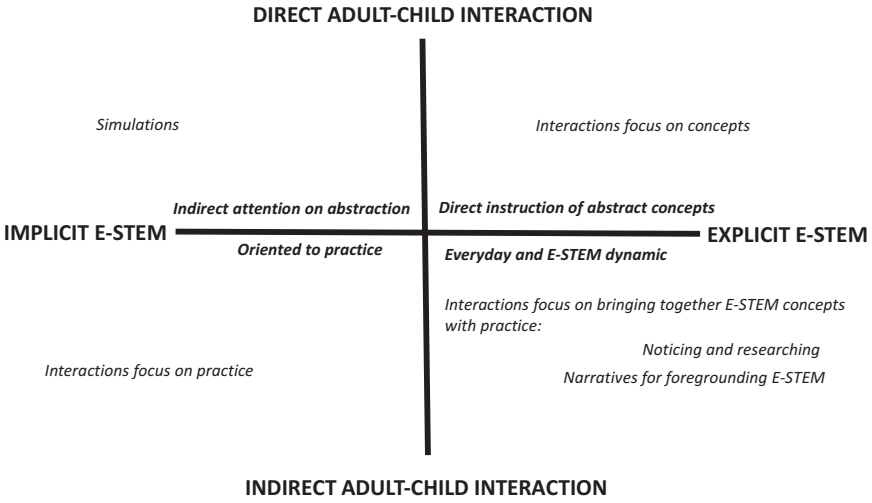

Fig. 10.10 A diversity of pedagogical approaches in families for supporting E-STEM

E-STEM was not featured in the actions of the families when showcasing valued family practices through video recording everyday practices.

In summary, the families in our research who adopted more direct adult-child instruction of STEM did not practice E-STEM instruction explicitly. This raises questions for us as researchers. Could these families potentially have a more broadly framed view of the environment, whereby direct instruction of STEM was thought to give conceptual understandings in support of future thinking and action in caring for the environment? Could E-STEM not be viewed by these families as an abstract concept? Payne (2010) has said that when researching green families that they are "far more interested in an everyday ecopolitical education" of their children than building a conceptual orientation that is "factually driven" (p. 228). We suggest that in our families, adult-child interaction is about learning STEM concepts for future meaningful actions – that is, learning concepts that they can use later to make informed scientific decisions which could support caring for the environment. Theoretically, our families could be thought to be conceptually oriented and potentially future driven. Further research would be needed to confirm this theoretical proposition.

In turning to the bottom quadrant of the typology, we also learned that families who were more implicit in their actions, appeared to use everyday practices to embed learning of concepts, but with a motive orientation towards caring for the environment. Those families who clustered in the bottom two quadrants of the typology exhibited practices that oriented the children to the environment, such as the making of calico bags or researching biodiversity of their local community. We suggest that E-STEM learning is being established at an everyday level and is being oriented to immediate action, but with future understandings of the science concepts associated with caring for the environment being laid.

Finally, our findings suggest that those families who are orienting their children to E-STEM appear to be more implicit in their interactions. It is possible that caring for the environment is considered by these families as something that they wish to make visible to their children within the practice of everyday life, rather than as specific lessons abstracted from the practice of the environment. It would appear that the children are being shown ways to act in support of the environment through participating in practices, such as making calico bags, harvesting food, or studying plants after walking in the park. These family experiences appear to afford an action oriented approach to the environment, such as, researching, using alternatives, experiencing local footprint, which when taken together could be theorised as agentic, future oriented practices, that support the next generation to care for the environment. However, more research is needed to have confidence in this theoretical proposition.

10.6 Conclusion

This research aimed at better understanding the contexts of young children who come from diverse cultures and who are supported by their families with learning about their environment including play and learning in nature and outdoors. Theoretically, a cultural-historical reading of our findings would suggest that children's everyday experiences are important in building future imaginings of sustainable practice and foundations for learning or acting with knowledge of E-STEM in the future. Focusing on the child's perspective of their lived everyday contexts, is a new focus for research that has the potential to yield base line data that can inform future studies into understanding how the diversity of families who live in Australia interact with their children in support of caring for the environment.

A key finding of our research was the crucial role adults play in helping children transition from everyday concepts to E-STEM concepts through their lived experiences. These happen either from direct, intentionally set up opportunities or embedded instances that are harnessed by families for delving deeper into learning about caring for their environment. Our research showed the deep connections between STEM and E-STEM learning and how families orient children to the latter through indirect interactions. Foregrounding conceptual connections is suggestive of the potential for building children's motive orientation in support of environmental and sustainability practices and future action. Payne (2005a) suggests that in his research, "parents' eco-pedagogy and praxis (re)constitute the environmental actions and learning of their children" (p. 2) as part of everyday family practice. Bottcher and Dammeyer (2016) in the context of disability introduce the concept of imagined futures which helps explain this finding. They suggest that families have an imagined future in mind as part of the upbringing of children. Families want the best for their child, and they organise experiences in line with this goal, regardless of how far away that imagined future might be. Incrementally, families build the experiences and understandings daily in line with their goal of the imagined future.

How families do this varies, such as an explicit or implicit focus on E-STEM and direct or indirect instruction. The typology of family practices presented in this chapter is a first step in theorizing this relationship that we found between adult-child interactions and direct and indirect E-STEM conceptual oriented practice. However, more research is needed across a broader number of families if we are to understand E-STEM practices in family homes can bring about lasting change in support of our fragile environment.

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Chapter 11
Curious Curiosity – Reflections on How Early Childhood Lecturers Perceive Children's Curiosity

Marianne Presthus Heggen and Anne Myklebust Lynngård

Abstract Curiosity and wonder are considered fundamental for children's development. However, no precise definition of curiosity exists, and there is little research on the nature of curiosity. There is also a lack of knowledge and ideas about how pedagogy can sustain and stimulate curiosity. Drawing upon empirical material from semi-structured interviews with seven Early Childhood Teacher Education (ECTE) lecturers from the disciplines of mathematics, arts, literature, drama, pedagogy, science and physical education about their view of children's curiosity, the authors aim to explore the lecturers' understanding of children's curiosity and how this understanding varies between disciplines. Children enact their curiosity in a cultural-historical context. The cultural-historical tradition of outdoor play is a part of the institution's practices influencing the children, while the children may use curiosity to influence the content of these practices. Although the lecturers are from different disciplines, their understanding of curiosity were consistent, particularly with regards to their focus on bodily expressions of curiosity. Expanding the concept of curiosity, we suggest the term *bodily curiosity* to recognise and operationalise a sensory, active and embodied search for answers. Similarly, we suggest the term *bodily wonder* about a kind of embodied philosophising.

Keywords Curiosity · Bodily curiosity · Bodily wonder · Cultural conditions for curiosity · ECE

> With respect then to curiosity, the teacher has usually more to learn than to teach. (Dewey, 1910, p. 29)

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11.1 Introduction

Curiosity is one of the most commonly used words to describe children's behaviour in early childhood. Children's curiosity is often expressed by asking questions and there is an understanding that the more questions asked, the more curious a child is (Jirout & Klahr, 2012). However, children explore the world with all their senses, not only verbally.

As natural science lecturers in early childhood teacher education (ECTE) we wanted to investigate children's curiosity in nature; thus, in a pilot study in 2017 we equipped children with action cameras worn on their chests and filmed their activities in nature. We expected to see curious children asking questions in line with earlier research. Through our analysis, we found that the children were actively engaged with and explored nature, but they asked few concrete questions. We noted many interesting situations and will share two of those here. These, as well as others, made us realize that we did not have a good tool to categorise and discuss children's behaviour and link it to curiosity. We found a need for a deeper understanding of the concept *curiosity*, the difference between curiosity and wonder, and its link to exploratory behaviour. The situations described below demonstrate some of the dilemmas we faced when we tried to analyse behaviour as signs of curiosity.

> We are in a nature area with a Norwegian pre-school. Only a minute after we start our trip a little boy screams happily and jumps up and down on the ground. "Look, I found two of those things with spit on it," he says. "Spittlebug," the teacher replies. "Oh, there are more of them; there are three, no four," the little boy continues. He is very eager and looks happy. Several other children are joining him, looking at the bushes with all the spittlebugs. The teacher asks him if he remembers reading about this animal in a book. "Yes," he replies, and continues looking for more of them. "Let`s see if we can find anything inside the spit. We can use a straw," the teacher suggests. "There is nothing inside," one of the girl states. "Maybe it has moved," the teacher replies. "Yes, maybe it has moved to here," another child says. A girl starts to explore some bushes a bit away from the other children. She is talking to herself saying, "I also found a, eehh, spittlebug, no I found two, and there is a third."
>
> The next day, in a forest with another pre-school, we discovered a boy sitting alone by a pond putting his hands into it, shifting them from inside to outside very slowly. This continued, looking like a ritual. The boy did not speak, and he was just looking at his hands in the pond. He was concentrating intently. After many minutes, I asked him what he was doing. "I am washing my hands," he said, and the moment he had with the pond was over. He stood up and walked away.

In the first situation, the child discovered an animal they have been reading about earlier. Was his reaction a sign of curiosity and desire to learn more about the animal, or was it a sign of pure happiness at meeting an old friend? They looked inside the spit to find the real animal as the teacher suggested, yet the situation ended in a competition to find the most animals. In the second situation the boy involved did not speak at all. He just held his hands in the pond and stared into his hands in the water. Was he curious about anything, or was it a situation of silent wonder? What are the differences between curiosity and wonder, and does it really matter?

These examples show how important it is that pre-school teachers recognize different signs of curiosity to be able to maintain and develop it. Outdoors, and

especially in nature, there is an expectation that children's innate curiosity will bloom. In the outdoor-tradition in Scandinavian pre-schools, many learning activities take place in nature. These activities are often expected to start with children's initiative and curiosity, but studies indicate that it is necessary to question the quality of follow-up learning interactions (Lynngård, 2015), as well as whether such initiatives are followed up in the pre-schools (Ejbye-Ernst, 2011; Thulin, 2011).

As natural science lecturers, we have our understanding of curiosity and wonder, but other lecturers may have other perspectives. Through early childhood teacher education, the students develop their understanding of such concepts from lecturers based in different disciplines; these multiple perspectives shape their practices together with the "culture" in the pre-schools themselves. Therefore, in the multidisciplinary context of ECTE, we wanted to investigate how lecturers from different disciplines conceptualise curiosity.

Importantly, to understand and discuss how we can support children's curiosity, a deeper understanding of the terms *curiosity* and *wonder* is needed, and, how these concepts are established and expressed. In this article, we first explore and discuss these two terms, then turn to our research question: How is curiosity understood among lecturers from different disciplines in early childhood teacher education?

11.2 Curiosity and Wonder in Theory

Curiosity, as a concept, seems to be taken for granted (Chak, 2007); although it is a concept that has been discussed for centuries, no exact definition exists (e.g. Jirout & Klahr, 2012). Based on Loewenstein's (1994) broad review of studies on curiosity theories, Jirout and Klahr (2012, p. 125) propose an operational definition for measuring children's scientific curiosity, as 'the threshold of desired uncertainty in the environments that leads to exploratory behaviour.' Yet, this definition is too complex to function as an everyday definition of curiosity in ECE and ECTE. It neither includes the value perspectives related to relational and democratic perspectives that Menning (2017) suggests to include in a definition of curiosity.

Central in Loewenstein's (1994) review is the information gap theory of curiosity, suggesting that curiosity is a result of the unpleasant feeling of deprivation. This gives a motivation to seek information to reduce the negative feeling. There are, however, no clear distinctions between the terms *curiosity* and *interest* (Luce & Hsi, 2015). This link between interest and curiosity is recognized when Kashdan and Silvia (2005, p. 368) suggest defining curiosity 'as the recognition, pursued and intense desire to explore novel, challenging and uncertain events.' In this understanding, it is the individual's motivation that links interest to curiosity in which new discoveries enhance interest and increase curiosity.

Dewey (1910) describes curiosity as a desire for fullness of experience. He describes a flow in this process starting with physical curiosity, based on sensory experiences. This curiosity may be developed by social influence, and further supported as intellectual curiosity when it is transformed into interest in problem

solving. Berlyne (1954) distinguishes between perceptual and epistemic curiosity. Perceptual curiosity is aroused by new or special sensory impressions leading to specific explorations (Berlyne, 1954), while epistemic curiosity is stimulated by intellectual uncertainty leading to questioning to gain knowledge (Berlyne, 1966). Others have separated curiosity into 'diversive' and 'deep epistemic' curiosity (Lindholm, 2018, p. 988). Diversive curiosity is expressed as a somewhat 'superficial' desire to know facts. Deep epistemic curiosity builds upon diversive curiosity, but also includes characteristics of wonder, such as reflection and experiential questioning. Lindholm (2018) argues that a child needs to have a solid foundation of facts before independent and scientific thinking can take place. Hence, Lindholm (2018) argues that deep epistemic curiosity normally take place in older children. In this kind of curiosity, the combination of wonder and diversive curiosity causes reflection, knowledge and a desire to find out more, implying a tight connection between curiosity and wonder.

Lindholm (2018) and many others (e.g. Hadzigeorgiou, 2014; Opdal, 2001) articulate the differences between the two concepts. Opdal (2001) describes wonder as 'the state of mind that signals we have reached the limits of our present understanding, and that things may be different from how they look' (p. 332). He suggests that wonder can contribute to a desire to investigate and seek new discoveries, thus playing an important part in development of creativity and critical sense. Philosophical pondering is more often connected to wonder, and physical exploration linked to curiosity (Opdal, 2001). Lindholm (2018) describes wonder as a silent experience of something that triggers the senses and is ignited by perception rather than reflection.

Children are assumed to be born curious (Hodgkin, 1976), but other arguments suggest this is not the case (e.g. Lindholm, 2018). Some studies indicate differences between children's curiosity (Cohen, Schone-Bake, Elger, & Weber, 2009; Gruber, Gelman, & Ranganath, 2014). It is difficult, however, to know how curious a child is. Children express their curiosity in different ways (Luce & Hsi, 2015), and their curiosity may be reflected towards different objects (Coie, 1974). Curiosity is often thought to be verified by verbal questioning, and the more questions the child asks, the more curious a child is perceived (Jirout & Klahr, 2012; Patrick & Mantzicoupoulus, 2015). Expressions of curiosity, however, vary between different cultures (Rogoff, 2003), and children from different cultures are known to ask different types and amounts of questions (Harris, 2012).

Curiosity can also be seen as exploratory behaviour or as collecting and touching (Jirout & Klahr, 2012). Gurholt and Sanderud (2016) introduce the concept of curious play as a theoretical framework to understand children's attractions and explorations in nature. Based on Merleau-Ponty's (2013) argument that children's existence is rooted in their bodily orientation to the environment, Sanderud and Gurholt (2014) suggest that curious play may help children's self-understanding and generate more curiosity. Children's curious, explorative and playful activities in nature can be interpreted as a drive to explore their bodies through sensory interactions with the surroundings (Sanderud & Gurholt, 2014).

The terms curiosity and wonder are widely used in pre-schools as well as in curriculums and literature concerning early childhood (e.g. Menning, 2017). Hammer (2012) showed in her study that *wondering* was among the highest valued activities in pre-schools. Although curiosity and wonder are considered as fundamental for development in any society, there is a lack of knowledge, ideas and even discussions on how pedagogy can nurture or inhibit curiosity (Cohen et al., 2009; Egan, Cant, & Judson, 2014; Lindholm, 2018). Curiosity seems to be valued as a tool for gaining knowledge (Menning, 2017), and teachers that support children's own investigations are seen to support children's curiosity and learning more than those explaining verbally (e.g. Milne, 2010; Van Schijndel, Franse, & Raijmakers, 2010).

Indeed, Lindholm (2018) argues that the scientific explanations teachers give in response to children's curiosity may prevent further curiosity instead of promoting it. He concludes that early childhood teachers should pay attention to moments of wonder to maximize children's experiences. This is in line with the pedagogical practices Hammer (2012) found; it did not matter what the child was wondering about, wonder in itself was seen to be important. According to this line of thought, children in pre-schools should be stimulated through experiences in nature, arts, aesthetics and stories (Hadzigeorgiou, 2005; Lindholm, 2018). If we consider curiosity and wonder as different concepts, one of the conclusions must be that they call for different actions from the teachers in pre-school; certainly, Lindholm (2018) argues that a focus on wonder in early childhood stimulate curiosity in the future.

The lecturers in ECTE may be seen to represent different disciplinary cultures. Our knowledge is developed and formed in the cultures in which we participate (Rogoff, 2003; Vygotsky, 1978). If, as Menning (2017) argues, we do not necessarily share a common understanding of the terms curiosity and wonder, these different understandings may affect the way lecturers treat curiosity in early childhood teacher training.

11.3 Research Context

Although children's curiosity is considered a general phenomenon, curiosity is also shaped by culture. From this cultural-historical perspective, ECTE lecturers may have contributions which may be applicable generally across cultures, as well as culturally specific contributions. Therefore, we will present the research context.

This study was undertaken in Norway, where most children between one- and six-years old attend early childhood education institutions. There is a strong sociocultural tradition in these settings that emphasises play, learning and care (Ministry of Education and Research, 2017). Pre-school staff consists of one to two pedagogues and trained assistants per group of children. The pedagogues have completed a three year Bachelor's degree course in Early Childhood Teacher Education (ECTE); the three year programme is organized around multi-disciplinary subject areas, such as arts; nature, health and movement; children's play and learning, etc. The lecturers of these subjects are mixed from different disciplines and the courses

are structured in a range from disciplinary to interdisciplinary teaching (Hauge & Heggen, 2019). Some pedagogues in the pre-schools also have a post-graduate Master's degree in Early Childhood. The assistants may have a high-school specialization in Early Childhood, but this is not compulsory. Some assistants have had previous careers or training in other backgrounds.

Knowledge may be seen in a cultural-historical context as something that we construct and reconstruct (Fleer & Pramling, 2014). We postulate that the knowledge, or understanding, of curiosity by the staff in the pre-schools is shaped by the university training of the pedagogues, as well as their everyday pedagogical life in the pre-schools. In parallel, we believe that the ECTE lecturers' perceptions of curiosity are coloured by their culture, in the sense of their disciplinary background and professional environment. In order, therefore, to get an insight into the views on curiosity that exist in ECTE in Norway, we interviewed ECTE lecturers from different disciplines on their conception of children's curiosity.

11.4 Methodology

To explore the concept of curiosity in ECTE, we interviewed ECTE lecturers from seven disciplines on subjects related to their understanding of curiosity. We chose a semi-structured interview, structured around five questions upon which elaborations were made during the interviews. The interview revolved around our open-ended questions: Can you say a little on what you consider 'curiosity' to be in children? How can one discover children's curiosity? Should one stimulate children's curiosity? Is there a separation between curiosity and wonder? Which literature, if any, do you think your understanding of curiosity is based on?

In our invitations to the interviews, the lecturers were informed that we worked with children's curiosity. They were asked to refrain from reading literature on the theme prior to the interview, as we wanted to explore their already established understandings that they convey to the students. The interviews lasted around 30 minutes; they were recorded and transcribed by the researchers.

The interviews were analysed using a conventional qualitative content analysis (Hsieh & Shannon, 2005). The researchers familiarized themselves with the material by transcribing and reading the material individually. We then discussed the material and started identifying codes that seemed apparent in the material. Both researchers then coded all the transcriptions individually. During a subsequent discussion, we coded the categories based upon our findings in relation to the following themes: *expressions of curiosity*, *stimulation of curiosity*, *curiosity or wonder*, *curiosity in ECE [Early Childhood Education] and ECTE*, *theoretical perspectives on curiosity*, *disciplinary perceptions of curiosity* and *curiosity as a cultural trait*. These categories form the basis for the discussions in this chapter.

The ECTE lecturers included in this paper were selected to represent the variety of disciplines present in ECTE. Although most subjects in ECTE have a practical aspect, some disciplines are seen as more theoretical than others. We wanted to

cover both practical and more theoretical disciplines; therefore, we invited lecturers from pedagogics, science didactics, arts, mathematical didactics, drama, physical education and language. We invited one lecturer from each field, and everyone responded positively to participating in the research. We selectively chose to invite lecturers that we consider to have a particularly tight connection with early childhood education. Six of the lecturers were among those we first invited. One was our second choice.

The pre-school lecturers portrayed a rich understanding of curiosity. It is our impression that they share many of their views on curiosity, although their understandings also differ. To shed light on how the different professional cultures may have coloured their views on curiosity, quotes and some of the general descriptions are labelled with initials: Arts lecturer (AL), Drama lecturer (DL), Science lecturer (SL), Mathematical lecturer (ML), Pedagogue lecturer (PL), Physical Education lecturer (PE), Language lecturer (LL).

11.5 Portrayed Perceptions of Curiosity

Overwhelmingly, the lecturers saw intrinsic values in children's curiosity. They also seemed to consider children as born curious, in line with research literature (e.g. Hodgkin, 1976; Jirout & Klahr, 2012). This implies that the trait is universal for all children, and the lecturers justified this with evolutionary explanations, *e.g*. that the children need to explore the world to learn and to get to know themselves, their environment, and the relationships between humans and between humans and their environment. *If you consider curiosity as a basis of existence... then it is clear that if you stop being curious then, no, that is only depressing. No. But, if you stop being curious, you stop caring about your surroundings* (PL). This quote demonstrates how the pedagogue, as well as several of the other lecturers, see connections between curiosity and development, thus emphasising the value she gives it. In this section, we will look further into how the lecturers describes children's curiosity and reflect upon how this relates to literature on curiosity.

11.6 Understanding Curiosity

11.6.1 Curiosity in Different Cultures

In Norwegian pre-school culture, children's participation forms the basis for the pedagogical activities (Menning, 2017; Ministry of Education, 2017). The lecturers in our study state that although they, in line with this culture, consider curiosity as a positive trait, it may cause challenges in the daily life in the pre-schools: *Curious*

children may give the adults challenges in busy everyday situations. [...] I think that curious children, not always are considered positively (LL).

Some of our lecturers pinpoint that different cultures value curiosity differently. Their view is supported by the finding that children's questioning differs between cultures in different countries (Gauvain, Munroe, & Beebe, 2013) and that children asking questions to elder in a society may be considered impolite (Harris, 2012). Lindholm (2018) sees curiosity as more of a cultural than a genetic trait. The art's lecturer expressed how she saw this: *The view on curiosity might have changed, and it might also be culturally dependent. Do we want curious children? In different cultures, this might not be so important. [...] But, I have concluded, that of course we want curious children. It is a quality in the act of being curious, and curiosity is something we want in our education, and in my discipline, we try to stimulate curiosity because in curiosity, there is a drive to understand, to learn and understand your life and yourself.*

One of the lecturers also mention how she considers gossip to be a negative form of curiosity. When we asked if she saw this in children, she said: *No, no. Thank god! It is a cultural thing that comes later, I think* (DL). Surprisingly, a study by O'Neill, Main, and Ziemski (2009) shows that pre-schoolers talk about other people and their thoughts and feelings, in ways that are similar to the concept of gossip. There may be good reasons to talk about other's feelings and thoughts, although this is considered negatively in many cultures.

11.6.2 Curiosity or Wonder?

As we have seen in the theoretical outline on curiosity and wonder, these concepts are often intermingled with an indistinct separation between the two. The lecturers in our study attempted to distinguish between the two concepts. The arts lecturer described that for her, wonder and curiosity have different colours. The language lecturer stated: *If you look it up in a dictionary, wonder might be listed as a synonym, and vice versa.* She continues to explore her own separate understanding of the two concepts: *...Curiosity for me means that you have a bigger drive to figure things out, to find a result, while to wonder, then you are not so concerned to link this to a result.* Curiosity was often described as a will, an urge or a need to understand, an understanding in line with the information-gap-theory where children are curious because they feel a need to achieve understanding (Loewenstein, 1994).

While the physical education lecturer links curiosity to bodily activity, she links wonder to thought processes: *I believe that wonder is more a process of thoughts, they may question things, but they don't have to be active. [...] if you are to separate it like that.* This resembles how Berlyne (1966) describes epistemic curiosity, showing how the concepts of curiosity and wonder is intermingled. Wonder was linked to situations of imagination or fantasy, seeking a different kind of knowledge. *Wonder has a more philosophical aspect than curiosity* said the pedagogue. However, she

continues with a reservation: *...the way I understand this.* This understanding is similar to the distinction used by Opdal (2001).

Lindholm (2018) argues that children's predispositions to wonder and curiosity is affected by age and claim that we should have more attention to wonder than curiosity in early childhood education. The lecturers we interviewed however argue that both wonder and curiosity belongs in the field of early childhood education. They are in line with the Norwegian Framework plan for Pre-schools (Ministry of Education, 2017) which describes how *pre-school staff shall stimulate children's curiosity [...] and encourage them to wonder, investigate, trial and experiment* (pp. 50–51). The difference between the concepts of wonder, curiosity and exploration, seems to be unclear in this framework also, but wonder and curiosity are used in relation to different subject areas. Where curiosity is linked with learning natural sciences, wonder is more commonly used in connection with arts and music (Menning, 2017).

11.7 Expressions of Curiosity

11.7.1 Bodily Expressions

All the lecturers highlighted how one could observe children's curiosity in their body language and activities. Several of the lecturers talked about body language as an expression of curiosity: *that they put their nose and head forwards* (DL). Some of them also talked about children's gaze. *I see it in their eyes!* (PL). The pedagogue also notes that we may discover when curiosity is satisfied in children's body language and eye-movement. The language lecturer express: *I also believe that one may be curious and quiet. That depends on the topic of the children's curiosity.* While definitions of curiosity often state that curiosity leads to exploratory behaviour (Jirout & Klahr, 2012), it seems as the lecturers we interviewed linked bodily movements as indicators of curiosity directly, not only as indictors of further exploration derived from curiosity. This understanding of bodily expressions of curiosity might be understood in light of Merleau-Ponty's (2013) bodily phenomenology, in which the world is sensed through bodily exploration. In Merleu-Ponty's (2013, p. 330) words, "It is not consciousness who touches or who palpates, it is the hand."

The lecturers also underlined how children's bodily expressions of curiosity differ. The pedagogue lecturer elaborates: *[W]hen a one-year-old is curious, it is often about pulling that cord and put it in their mouth to see what happens then. [...] Every time a small child gets their hands on new things, they explore them. [...] Older children may start to be curious about more than what they see right in front of them. [...] When you are older you tend to explore more in depth, and spend more time on each thing*. The sensory curiosity she describes here can be seen as physical curiosity, the first step in the development of reflective thoughts (Dewey, 1910). This understanding seems to be in line with earlier studies on the curiosity of small

children that share their attention and ask questions by pointing their finger towards the object of interest (Begus & Southgate, 2012).

The physical education teacher links curiosity with bodily movement, but also that it could lead to physical exploration: *I see an active child, exploring the environment. How can I use this environment? [...] They explore the environment and they try out activities and such things, then I consider them as curious, they are curious on the room, or they are curious on this area, or ... So, I first and foremost think of an active child* (PE). This spontaneous exploration has also been highlighted in earlier behavioural studies on curiosity (Jirout & Klahr, 2012), and such physical exploration has been linked to children's investigation of the environment and their own bodies through curious play (Gurholt & Sanderud, 2016).

11.7.2 Verbal Questions

Verbally expressed questions are often described as the foundation of children's curiosity (Jirout & Klahr, 2012; Patrick & Mantzicopolous, 2015). Still, the lecturers we interviewed all talked extensively about bodily expressions of curiosity before they refered to verbal questions. Questioning was only described after first having described the bodily expressions. The lecturers then elaborated how verbal questions would supplement other signs of curiosity. They also described how the ability to ask questions could be age-dependent. *While a bit older children might perhaps ask questions in addition. Not in place of, but in addition* (PE). Such an age-dependent development of verbal inquiry is described in Engel (2015) and might be connected with deep epistemic curiosity. As this relies on an age-dependent development, Lindholm (2018) suggest that deep epistemic curiosity is uncommon in pre-school age children. For the study participants, it appears they think that questions were over-rated. The science lecturer underlined that the questions did not have to be verbal: *No... the kid stops in the middle of a movement, or gaze, or...* The lecturers in our study hence seem to value bodily expressions of curiosity over questioning.

Questions are not necessarily signs of curiosity, and both the pedagogue and the science-lecturer problematize this. The science lecturer described how children might express genuine curiosity through questions, but she also underlined that it was hard to interpret these signs, and she suggested that often children ask questions in order to gain attention or recognition, rather than expressing curiosity. The science lecturer refers to a recent article in a newspaper: *He [the author] claimed that children ask questions although they are not interested in the answers. Hence, that it was just a façade, that it was not important... to get answers* (SL). She continues however with: *I do not think I recognize this*. It is not clear whether answers to such questions lead to enhanced interest and curiosity.

The lecturers hence described how children's expressions of curiosity differ. The diversity of expressions, especially those which are subtle, such as the children's gaze, challenge the teacher's ability to recognize curiosity. We will look further into

this when we explore what the lecturer expressed about curiosity in early childhood education.

11.8 Stimulation of Curiosity

11.8.1 The Role of the Environment

In line with Dewey (1910), the interviewed lecturers agreed that teachers who provide children with rich environments and experiences will support their curiosity. They express that it is important to create space and designate sufficient time for curiosity. The Drama lecturer expressed it as *opening doors [...] to where the answers are, to where we may explore more. To more inspiration.* This may refer to what other lecturers describe as rich and generally stimulating environments or activities. Hackman and Engel found that children's curiosity varied more between children in different environments than between children of different ages, underlining the importance of the environment (Engel, 2015). Creating space for exploration, questioning and wonder in rich environments has been argued to condition curiosity (Gurholt & Sanderud, 2016). Lindholm (2018) argues for maximising situations with a rich variety of experiences, drawing from art, nature and culture, and the interviewed lecturers found rich environments in nature to be well suited for stimulation of curiosity.

However, even in what might be described as a rich environment, such as the outdoors, the role of the teacher is still critical. The mathematics lecturer was concerned that teachers too often minimize situations in which children express or could express curiosity. She questioned the focus on teaching children the definition of a perfect circle, which, in a mathematical sense, is so strict and theoretical that children may not be able to find a perfect circle in nature. Instead, she argued that encouraging children to find many examples of 'almost round' objects in nature was more likely to stimulate curiosity.

11.8.2 The Role of the Teachers

The lecturers expressed that, in their opinion, curiosity can be stimulated and sustained and they shared many reflections on how this is possible. They highlight ECE centres and the teacher's important role in sustaining curiosity: *It is important to take care of it too; [it is] one thing to stimulate it, [and another] to take care of it* (ML). Dewey (1910) suggested that teachers could merely "keep alive the sacred spark of wonder and to fan the flame that already grows" (p. 29). Participants saw this stimulation as the responsibility of the teachers and stated that teachers could

stimulate children's curiosity by creating opportunities for rich experiences and by their reactions to children's expressed interests.

Teachers' reactions to children's exploratory behaviour affect their further investigation (e.g. Chak, 2010). The science lecturer links the tendency to extend an explorative situation with the ability of the teachers to be curious themselves: *It is particularly dependent on being with curious adults. [...] I am certain there is a contagion effect* (SL). The science lecturer later elaborates about having '*…a behaviour that makes you collect sensory perceptions. I guess it will tempt others to ask you what you are doing. Hence a kind of "look here", but "listen here" – the exploring movements one step ahead of "Look here!"* (SL).

The physical education lecturer expressed it her way: *How the adults are in the pre-schools [...] in relation with movement and development and in connection with the development of the entire child. [The child] must be able to experience different environments and then it is clearly the adult that has to seek out the different environments* (PE). There are many aspects to this conditioning, and the pedagogue touched upon several of these in the following statement: *You must create space for questions from the children, and you have to acknowledge the children when they bring forward whatever they have to contribute [...] It is not sufficient to sit and be ready to answer questions when they come, but you have to show, as an adult, that we may have these manners, and that I as an adult also can be curious, and ... when we suddenly find something in the forest, find [an animal] cadaver, or whatever might show up, then for adults to be curious yourself [...] For adults, it is so easy to think safety straight away, let's keep away, there might be bacteria here. What? What in the world, what has happened here, and yes, how can we find out what kind of animal it is. [...] Then we start to wonder. What do you think it is? It is probably a dinosaur, or maybe a deer, or maybe a dog or, and then they start* (PL). The pedagogue lecturer stresses that adult's use of time, opening up situations and being curious are important in such situations. Where adults actively ask many questions, it has been found that also children ask more questions (Harris, 2012). It might be easier to support children's curiosity, to maximize a situation, to prioritize time to explore and enter situations of sustained shared thinking as a curious adult. Certainly, if met the right way, children's own curiosity may often be the best stimulation of even more curiosity. The lecturers focus on how teachers should take the time to be a good conversational partner. When children and adults have a common commitment and share their thoughts in sustained shared thinking, conversations last longer and better support children's development (Siraj-Blatchford, 2009). Focusing on the role of the teachers, the language lecturer said: *Be a conversation partner that supports wonder, rather than hurrying to a closed answer.*

11.8.3 Stifle Curiosity?

Several of the lecturers were concerned that teachers may stifle children's curiosity. The arts and the mathematics lecturer describe how we often don't prioritize time to let curiosity flourish. *Because we do some things that I believe minimize a little bit*

quickly in our everyday activities, you are in a hurry and then reply too quickly or dismiss it. Are not entering into the curiosity in a way. One are not ready to accept the invitation to tag along, to be curious (ML). The mathematics and science lecturer specify how pre-school teachers may resolve questions by giving absolute answers. *We know so much. It is hard not to give all the answers.* (ML). The mathematical lecturer is further concerned that an apparent availability of correct answers deprive room for curiosity, and she questions whether curiosity is valued in early childhood mathematics education: *Because you think there is only one right answer. Then there will be no room for curiosity or wonder.* The science lecturer gave an example: *Maybe there is a tendency that we might say: "Yes, that is a Crested Tit" and then it stops. So, some answers stop communication* (SL). Closed answers, such as mentioning species names, have been found to shorten children's engagement (Gustavsson & Pramling, 2014), while open-ended communication may sustain it (Siraj-Blatchford, 2009).

In fact, children may stimulate other children's curiosity more successfully than teachers are able to. In line with Harris (2012), many of our lecturers express how they believe that children of the same age often are the best stimulators of curiosity: *To be in an environment where other children also may be curious, like three-year olds, then it is very socializing with a three or four-year old that is already curious. This will be more decisive than an adult* (SL).

11.9 Curiosity and Learning

The lecturers we interviewed seemed to consider that stimulation of wonder and curiosity are a way to ensure appropriate learning in early childhood. *You may say that curiosity, wonder and exploration belong in the field of early childhood education. [...] to lead us into a different way to work according to frameworks* (DL). The Drama lecturer expands this further when she describes how both curiosity and wonder are present in the framework plans *to ensure that they are not tempted to old fashioned teaching. No early childhood persons want that, but maybe, maybe people outside the field of early childhood. Parents, or...* Therefore, it seems the lecturers value curiosity for its learning potential. Whereas Dewey (1910) links curiosity through wonder to learning, others (e.g. Opdal, 2001) suggest that philosophical wonder can lead to curiosity and exploration, further leading to learning. Although the lecturers separated between curiosity and wonder, and linked them to learning, it was not clear from this material how they made this link.

Whereas curiosity has been linked with the motivation to learn and more effective learning experiences (e.g. Gruber et al., 2014), the lecturers in this study seem to be more concerned that curiosity may ensure an appropriate method by which to learn. The focus on curiosity in whitepapers and frameworks (Menning, 2017) may however lead to an anticipation of many questions from the children. Several of the lecturers underline that equating frequent questioning from children with curiosity is a problematic myth. Moreover, the drama lecturer express concern: *It may be*

something to hide behind... that they [the children] are so curious, hence that they are given the responsibility to learn everything by themselves today. That the adult disclaim responsibility... Right? (DL). She continued: *Not all children are equally curious, I think that is part of a myth. Of course, they are different. Children are very different. [...] It is not that simple* (DL). Thus, she echoes Gruber et al. (2014) who found individual differences in curiosity.

11.10 Curiosity in Early Childhood Teacher Education

11.10.1 Theoretical Perspectives on Curiosity

None of the lecturers gave a clear definition of curiosity, and few used literature on curiosity in their teaching. Yet, the lecturers were able to provide a few examples of literature that they linked to curiosity. The arts lecturer said she used thinking from Reggio Emilia to support her understanding. The drama lecturer cited Vygotsky as central to linking curiosity to learning in a suitable way for small children. The science lecturer also used Vygotsky to link curiosity with fantasy; and, she linked curiosity with research on brain development. Not surprisingly, the lecturer with most clear references on this theme was the pedagogue. She linked curiosity to Næss and Huizunga's concept of *Homo ludens*, the playing human and Piaget's thoughts on equilibrium. These theoretical backgrounds range from theories close to early childhood practices to more philosophical works on the human mind.

Jirout and Klahr (2012) discuss that such variation may result from a lack of a good operational understanding of the concept of curiosity. It is interesting to see that lecturers in ECTE, where curiosity is a central concept, have an incomplete understanding of these concepts. An increased theoretical understanding of curiosity seems to be needed in early childhood teacher education. As the science lecturer in this study exclaimed: *I feel ashamed!*

11.10.2 Disciplinary Differences in Perception of Curiosity

The lecturers' understanding of curiosity and wonder have been developed within their disciplinary theoretical frameworks, but the understanding of curiosity also includes other interdisciplinary differences. The lecturers we interviewed described various objects of curiosity, such as different natural objects, animals or trees, or on how things work, often framed within their discipline. While the arts lecturer described curiosity on materials, the drama lecturer talks about the implicit exploration in process-drama. Curiosity was also described as playing with words or creation of new words (LL), on different forms or figures (ML), on different phenomena

(SL) or active exploration (PE). The object of curiosity was sometimes also described as abstract, such as language or relations between humans: *What is important for me is not only about how things work, but how relations work* (PL). Menning (2017) calls for this broad understanding as it includes curiosity as a democratic value, and points to the implications of this in teacher education.

We see these different understandings as natural in a multidisciplinary education. Different children are curious about different objects (Coie, 1974), and there might be a risk that early childhood teachers recognize or stimulate the form of curiosity they value the most. The physical education lecturer expresses this: *First and foremost, I think of an active child. [...] And I think that for me that might be more important* (PE).

These differences need to be addressed in early childhood teacher education. As the science lecturer in our study expressed: *...I believe that those who will work in early childhood education should consider: Where do I stand in this context – which understanding do I have? And again, that they might shift between different conceptions of different subjects. It might be that curiosity in drama, arts, is something different than curiosity in relation to natural sciences.*

11.10.3 Curious Students

The lecturers seemed to have an underlying assumption that curiosity lessened as children got older, in line with Patrick and Mantzicopoulos (2015) study of children's motivation for learning science and Luce & Hsi's (2015) study which found that questioning seems to decrease with age. They problematized a lack of curiosity among the students, and they are not the only ones. As Parvanno states: 'students seem to lose what once came naturally' (Parvanno, 1990, in Jirout & Klahr, 2012, p. 126). This worries the lecturers we interviewed for two reasons. First, they worried for the students' own sake: *But I think that the students must be curious. They get nothing out of the education unless they have curiosity as a driving force to explore new things* (NT). This perspective is underlined by Hadzigeorgiou (2014) who saw that student involvement increases when teachers awaken wonder and emphasize this part of their learning process. Secondly, the lecturers stressed that early childhood teachers should be curious to stimulate children's curiosity in pre-schools. ECTE must support and develop the student's curiosity: *They must practice wondering. The children deserve that* (DL). The study's participants agree with Engel (2009), who argues that education programs must provide young teachers with a chance to pursue and expand their own curiosity to cultivate it in their students. There are, however, few studies which consider how we may stimulate curiosity at the university level (see discussions in Egan et al., 2014; Luce & Hsi, 2015).

11.11 Further Contemplations

We started this chapter with two stories in nature showing possible signs of curiosity in pre-school children. Both stories are open for interpretations, demonstrating the difficulty in knowing how to recognize curiosity and how it should be met. The question now remains to see if we are closer in our understanding of the two stories after interviewing early childhood teacher educators representing different disciplines?

All the lecturers we interviewed highlighted the importance of curiosity in pre-school and shared a surprisingly similar understanding of curiosity. Nevertheless, there were differences, mainly on views on the objects of curiosity. Some of the differences may indicate that their understanding is based within their disciplines, such as how the physical education teacher highlights bodily activities and the pedagogue highlights relationships. The disciplinary differences are also reflected in the lecturers' theoretical perspectives. The lecturers suggest similar ways to sustain and stimulate curiosity. Although the similarities between the lecturers are evident, the present differences reveal a challenge for early childhood teachers trying to understand, define, operationalize and theorize the concept of curiosity.

All the lecturers in our study state that curiosity must be sustained and stimulated, that ECE teachers are responsible for this, and that doing it effectively requires insight and knowledge. In the situation with the spittlebug, the pre-school teacher shared the situation with the boy and she seemed very interested in what he had found. Despite this, her intervention did not seem to stimulate further curiosity among the children. Rather, the children seemed to be motivated by each other, in line with what our lecturers claim: children at the same age often are the best stimulators of curiosity.

The way we meet children's apparent wonder and curiosity is important. When the boy was sitting with his hands in the pond, the adult abruptly ended the activity with her intervention. The boy's activity may have many similarities with what the lecturers described as wondering, a philosophical state where you might fantasize and seek a different kind of knowledge. This boy may also, of course, just have been enjoying the sensation of the water on his hands, not thinking of anything in particular at all. Regardless of what he was doing, it seems that by asking a question, the adult disrupted his interaction with the water.

These stories reveal the need for a better understanding of curiosity and how we may stimulate that in children. They also point back to one of the most interesting parts of this study, namely how all our lecturers highlight bodily curiosity. The lecturers describes how curiosity is expressed through bodily language and active explorative behaviour, and to a lesser degree by verbal questioning. This is unlike the impression we get from earlier research and literature. Where Dewey (1910) describes physical curiosity as sensory experiences and a first step in curiosity, our lecturers describes bodily curiosity as a state with an intrinsic value of equal or even higher significance than other varieties of curiosity. We hence suggest the term *bodily curiosity* to recognize and operationalize this sensory, active and embodied

search for answers. When the boy was sitting by the pond, we would like to suggest that he was in a sort of *bodily wonder* – not seeking cognitive understanding, but simply as a kind of embodied philosophizing. *Bodily curiosity* and *bodily wonder* will be subject to further research.

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