



READY, SET, GO!

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HUMAN GEOGRAPHY MASTER'S THESIS

Image on cover page taken by the author in Crooswijk's garden

# Ready, Set, Go!

A qualitative study into children's engagement in and experiences of risky play in their school's playground



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## PREFACE

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Thank you for taking the time to read my thesis about children's experiences with risky play in their playground. This thesis was written as the final product of a Master's programme in Urban Geography at Utrecht University. This research process has made me more aware of the importance of recognising all voiced in research, not just those of adults. Through the observations of and conversations with children, their worlds of play became very detailed and much more intricate than I would have initially expected. This knowledge underlines that cities are used by a variety of different age groups, and that each age group has their own requirements in order to enjoy their environment. For children this is, in part, the ability to engage in risky play. I hope you learn something about children's play experiences from this thesis and take that with you.

The thesis writing process is not an individual one. Therefore I would like to thank all the people who supported me through it. Thank you to Kirsten Visser for being my supervisor and Irina van Aalst and Jacob Herrie for your additional guidance. Thank you especially to Michelle van Benschop for the superb teamwork and making this thesis process such an enjoyable one. This thesis research would not have been possible without the support from BuurtLAB for which I have Edward Boele and Mindy Klevering to thank. The principals of the two participating schools as well as the participation of the two teachers who allowed me to come into their classrooms also have my thanks. Lastly, I have am thankful to my family and friends who rooted for me and helped keep me motivated. I am proud to be able to present this final product to you now.

## ABSTRACT

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The aim of this thesis is to answer the following research question: How do children engage in and experience risky play in the BuurtLAB/Ravottuh playgrounds in Hoogvliet and Crooswijk? The three sub questions of this thesis were answered using a qualitative mixed-methods approach. Firstly, observations and thin mapping was done to analyse the physical and social environment of the playground and how children played here. These observations and maps were then supplemented with the children's lived experiences. Children voiced their experiences by creating a mental map of their playground and then participating in a semi-structured interview. The outcomes of all these methods were then combined. The results indicated that the physical environment the children play in determines to a large extent the types of risky play the children can engage with. This engagement with risky play was found to be either encouraged by the Ravottuh supervisors while it was discouraged by their school's teachers and parents. Children were able to regulate their risks and thereby enjoy risky play practices, although each child had created their own approach to doing so.

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# 1 INTRODUCTION

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Play “is our brain’s favourite way of learning” (Ackerman, 2011, p. 11). For children this is especially true as play is vital for the way a child develops emotionally, socially and intellectually (Whitebread, Basilio, Kovalja, & Verma, 2012). The United Nations Convention on the Rights of the Child find play essential, recognizing a right for children “to engage in play and recreational activities appropriate to the age of the child” (United Nations, 1989, p. 14). Play and children belong together.

The play of children can sometimes involve physical risk, making the play thrilling and challenging (Jelleyman, McPhee, Brussoni, Bundy, & Duncan, 2019). The element of risk in play is found to improve physical and psychological wellbeing (Brussoni, et al., 2015), makes play exciting, and allows a child to fully experience and explore their world (van Rooijen, 2014). This play often takes place in playgrounds, areas specifically “designed for children to play in outside, especially at a school or in a park” (Cambridge University Press, 2021). However, the opportunities and locations for children to play freely and engage in risky play have decreased in the last few decades (Sandseter, Kleppe, & Sando, 2021). This is due to the increased focus on child safety in playgrounds, making them as safe as they can be rather than ‘as safe as needed’ (Cooke, Wong, & Press, 2019). Children are left with little chance to engage in the risky play that allows them to enjoy the benefits mentioned before. This research therefore aims to provide insight into the children’s engagement in and experiences with risky play on their playgrounds.

Earlier studies have identified eight categories of risky play (Jelleyman, McPhee, Brussoni, Bundy, & Duncan, 2019). For any of these play categories to be possible, the environment must ‘afford’ and cater to that type of play (Brussoni, et al., 2015). A child’s experience with risky play thus partially formed by the opportunities available to play risky. These risky play opportunities only result in risky play if the social context actually enables the child to take risks. The presence of adult at playground can either encourage the child to take risks, but they may also regulate the play that is possible (Kyttä, 2004). These adults can be parents or supervisors such as teachers, feeling responsible for the child’s safety (Allin, West, & Curry, 2014). Other children in the playground may also influence risky play, stimulating the child’s awareness of what play is possible (Morrongiello & Lasenby-Lessard, 2007). Nevertheless, the physical and social opportunities for risky play are only taken based on the child’s individual risk preferences. A child’s risk perception eventually determines what types and amount of risky play children feel comfortable with (Sandseter, 2009), and each child develops their practice of risky taking during play over time (Aldis, 1975).

The increasing awareness of the importance of risky play inspires certain organisations to choose to give priority to the child’s need for play and try to encourage the risky play they are missing. This research will focus on one such organization: BuurtLAB. BuurtLAB is a Dutch organization located in Rotterdam that aims to bring people together through neighbourhood initiatives. One of their programmes focusses specifically on the neighbourhood children’s ability to play. It is called Ravottuh, which translated means something along the lines of playing freely without care for getting your hands dirty (E. Boele, head of BuurtLAB, personal conversation, 04-03-2020). The programme has two locations in Rotterdam, one being in Crooswijk and the other in Hoogvliet as seen on figure 1.1. Here they run a during an afterschool programme where they encourage children to simply play, with little interference from the supervisors while also providing many incentives to play (BuurtLAB, 2019). Play is their main focus, with their motto being: “You haven’t played well unless you come home dirty!” (van der Worm, 2017). This organization provides the context in which the research is done.

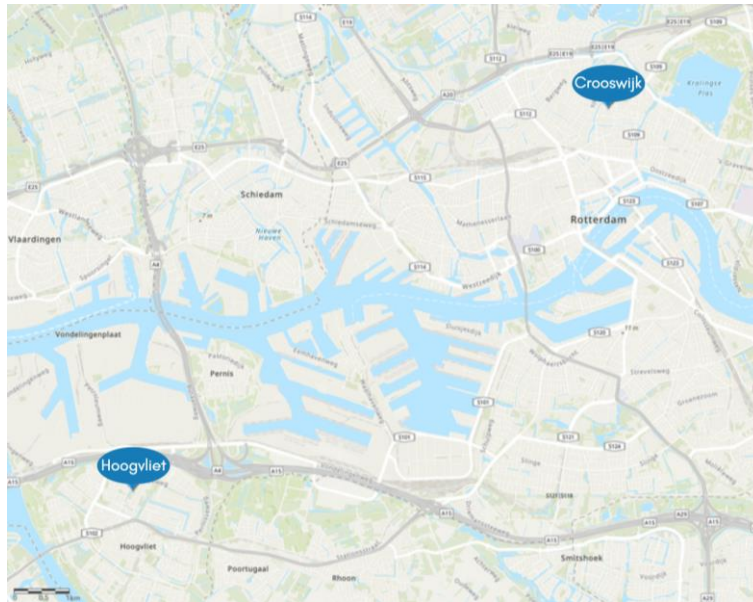


Figure 1.1. A map of Rotterdam showing the two schools where BuurtLAB runs their Ravottuh program (Esri, 2021)

## 1.1 SOCIETAL RELEVANCE

Children are spending increasing amounts of time indoors which is decreasing their mental and physical development. The increasing amounts of time that children spend inside has now been coined a 'nature-deficit disorder' (Louv, 2005), although outside play is not necessarily in 'nature'. In the Netherlands, a study by Jantje Beton found that one in seven children between the ages of four and fourteen barely plays outside (van Heerde, 2019). To combat this there is a national 'play outside day' every year in June, organised by Jantje Beton in collaboration with Nickelodeon (Kinderrechten.nl, 2019).

Technology entices children to play inside (van Heerde, 2019), and this is encouraged further when cities lack places for children to play outside. Cities do provide 'safe' playgrounds but these are deemed uninteresting and boring by children (Mijland, 2011). Research shows that children benefit from risky play situations and therefore the city can foster its children's development by providing and creating more risky play environments within the city that are easily accessible to children (Mijland, 2011).

When the environments that children play in encourage and allow for risky play, this aids a child's development but also their safety. The reason for this is that risky play helps a child to learn and face their fears at their own pace (Sandseter & Kannair, 2011). VeiligheidNL, a Dutch organisation concerned with bodily harm, lists risky play by children as an effective method to prevent them from getting hurt (VeiligheidNL, 2018). Through taking small steps in expanding the risks they take children also improve their risk awareness. The organisation finds that risky play may cause minor injuries (such as a scraped knee), but goes a long way to prevent serious injuries in the long run, by growing up to be risk aware as adults.

Oftentimes adults are the creators of children's playgrounds. An issue with this is that "adults tend to construct children's worlds and experiences *for* them rather than *with* them" (Skelton, 2009, p. 1443). In order to understand how to create playgrounds that foster risky play, it is important to understand how children experience them and what elements are important to them and their play. Researching existing playgrounds through the child's lived experiences will provide insights into how city playgrounds can foster risky play. This knowledge is necessary for future playground design that caters to risk taking.



## 1.2 SCIENTIFIC RELEVANCE

Risky play is often associated with active, outdoor play (Wyver, et al., 2010). Locations for risky play are often playgrounds, which are publicly accessible places that are deliberately designed for children to play. Earlier studies about risky play have found that risky play among children can take various forms (Sandseter, 2009) and has numerous health benefits (Brussoni, et al., 2015). Risky play can be fostered or encouraged in 'supportive environments' (Brussoni, et al., 2015) but research shows outdoor play is being inhibited and discouraged by parents due to safety concerns (Wyver, et al., 2010). Restricting this form of play may actually limit children's development, limiting their opportunities later in life and therefore more supportive environments should be designed. Earlier studies, such as that by Wyver and colleagues (2010), therefore recommend that neighbourhood design to be done with children's right to play in mind.

Studies have been done through observations to understand the environmental and individual characteristics that relate to risky play (Sandseter, 2009; Stephenson, 2003; Waters & Begley, 2007). These approaches have been theory-driven as observations were done by researchers. Data driven approaches have been taken through community engagement practices but this included people age 15 and up (Gerlach, Jenkins, & Hodgson, 2019), rather than the children actually playing. Another study did include interviews with children (Sandseter, 2007), but did not have a main focus on this. This thesis aims to take a data-driven approach, from the perspective of children who play. Van Rooijen (2014) stresses to allow children to use the playground however they would like, and therefore the experiences of children are valuable. The main focus of this research will be on the experience of children regarding risky play and their engagement with risky play, a gap that currently exists in the research. The focus will be on the influence of the physical and social context, and how this compares between the children.

## 1.3 AIM AND RESEARCH QUESTION

The research is part of a larger study into 'The Power of Risky Play' done by the University of Utrecht. It is an interdisciplinary study which the Faculty of Veterinary Medicine and the Faculty of Geosciences participate, along with other parties. Within the Human Geography department the focus is on risky play in regards to institutions, parents and children. The aim of this research is to gain an understanding of how children perceive their playgrounds and the risks involved in playing in the BuurtLAB/Ravottuh playgrounds of Hoogvliet and Crooswijk, and how they value these playgrounds. This leads to the following research question:

**How do children engage in and experience risky play in the BuurtLAB/Ravottuh playgrounds in Hoogvliet and Crooswijk?**

1. How does the playground influence children's engagement in (risky) play?
2. What are the children's experiences with risky play on their school's playground?
3. How does the child experience the social context surrounding their ability to play risky?

The first sub question considers the physical environment that the playground provides and its relation to risky play. This question will be answered in terms of the playground's design (Czalczyńska-Podolska, 2014) and consequently the affordances this provides for risky play (Brussoni, et al., 2015), followed by how the children actually use their playground. The second and third sub question then focus on the children's own experiences with risky play in their playground and how they experience the social context of their play. Combined, these provide the individual, physical and social context allowing for conclusions about engagement in and experience of risky play as a whole.

## 1.4 METHODOLOGY

This research takes a multimethod approach consisting of thin mapping, observations, and mental mapping combined with in-depth interviews. Firstly, unstructured observations combined with thin mapping create a baseline of the ability to play and especially the ability to engage in risky play in the two playgrounds. Then, structured non-participatory observations establish the type of play actually practiced. These methods combined help to answer the first sub question and provide usable insights for in the interviews with children. Afterwards, the participating children will be enabled to provide their experience of risky play in their playground. This starts by firstly asking the children to draw a map of their playground. This is then used as an aid during an in-depth interview with the child in which their play and the social context of their playground and their ability to play is discussed. These methods combined allow for a comprehensive understanding of the children's engagement in and experience with risky play in the playgrounds.

## 1.5 READING GUIDE

After this introduction, this thesis will lay out the theoretical framework used as the basis for the research. This will firstly cover risky play in general and the relevance of the physical and social context, after which the focus is on how risky play is experienced by children in particular. The methodology of this research will then be further described and supported. After this, the results from the research done will be outlined and then conclusions based on the research questions will be drawn. To end this thesis, these conclusions and the overall research process will be discussed and possible next steps will be identified.

## 2 THEORETICAL FRAMEWORK

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### 2.1 UNDERSTANDING RISKY PLAY

A widely and internationally referred to definition of risky play is that of Sandseter (2009) who defines risky play as:

“thrilling and exciting form of play that involves a risk of physical injury” (Sandseter, 2009, p. 4)

This definition relates risky play to physical activity, thereby risking physical injury. Risky play is part of a broader concept that is called ‘beneficial risk’. This is defined by Cooke and colleagues (2019, p. 2) as “engaging in experiences that take a person outside of their comfort zone and include outcomes that may be beneficial to learning, development and life satisfaction”. This not only relates to physical aspects of risk but also involves social, emotional and cognitive risks. It is acknowledged that there are many other forms of beneficial risk, such as social risks, that put children in new challenging situations. For instance, when children stand up to adults or dress up in different clothes than expected from their social environment (Cooke, Wong, & Press, 2019). In line with these insights, Sandseter and colleagues (2017) adjusted their former definition of risky play to a more holistic one, defining it as:

“Play that involves uncertainty and exploration – bodily, emotional, perceptual or environmental – that could lead to either positive or negative consequences” (Kleppe, Melhuish, & Sandseter, 2017, p. 381).

This new definition is broad in what it considers as risky play. This does not provide the ability to synthesise risky play into categories because there would be too many. Since play is inherently a physical activity and this research is done in a playground setting, the first definition of risky play by Sandseter (2009) is used. This is done to be able to better distinguish the interaction between children and their playground (Sandseter, 2007) and risky play in this context. However, from the second definition it is adopted that risky play activity does not necessarily lead to a possible danger of injury (Sandseter, 2009) but rather to uncertainty and exploration with potential positive or negative consequences (Kleppe, Melhuish, & Sandseter, 2017).

There is an important distinction between risky and hazardous play. A hazard is seen as something that is not clearly apparent to a child at play, such as head entrapment (Little & Eager, 2010). Therefore, hazard is related to negative outcomes, in risky play literature also referred to as ‘negative risk’. Risk in risky play literature is however predominantly viewed as a ‘positive risk’ wherein safe environments are not those that ensure safety from all possible harm, but rather environments that offer “safety to explore, experiment, try things out and to take risks” (Tovey, 2007, p. 102). This way, environments like playgrounds can offer positive ‘healthy’ risk (Little, Wyver, & Gibson, 2011).

Risky play can happen indoors and outdoors. However, most research on risky play focusses on the outdoors (Wyver, et al., 2010). The outdoors provides opportunities to stimulate risky play with certain environmental characteristics (Tovey, 2007; Little & Eager, 2010). A study by Sandseter, Kleppe and Sando (2021) compared how the affordances for risky play differ between indoor and outdoor areas, finding more opportunities for children to engage in risky play in outdoor settings. Especially nature-based risky play allows children to engage deeper in play as the environment is more complex (Brussoni, Ishikawa, Brunelle, & Herrington, 2017). Public play areas like playgrounds and schoolyards provide play opportunities for multiple children in neighbourhoods and can be designed and supervised in certain ways that stimulate this kind of play. It is also found that especially outdoor risky play has

positive effects on physical activity and social health (Jelleyman, McPhee, Brussoni, Bundy, & Duncan, 2019). Therefore, this research focusses on outdoor risky play possibilities.

Playgrounds can afford risky play practices in multiple ways. From literature research it becomes clear that the experience of what is 'risky', is shaped from different perspectives. This is summarized in figure 2.1. On the left side the objective, environmental perspective that contributes to risky play is shown. These are characteristics that shape the possibilities of risky play practices happening at a playground. These are defined by physical and social characteristics such as the design of the playground and the presence of supervisors and others (Sandseter, 2009; Tovey, 2007; Brussoni, Olsen, Pike, & Sleet, 2012; Jelleyman, McPhee, Brussoni, Bundy, & Duncan, 2019). On the other side is the subjective, individual perspective of what is perceived as risky play. It appears that risky play is subjectively constructed by people involved in risky play activities such as children, professionals, and parents (Sandseter, 2009). The individual characteristics of a child are part of this subjective construction as they influence the child's use of space and their willingness to take risk. This relates to how children perform in play. For example, the heights they climb and speeds they reach. Sandseter (2009) emphasizes that both the child's surroundings and their individual characteristics make up the probability of being injured or being challenged in the process of play. Moreover, risky play is also experienced by the observers, mostly professionals and parents. What is seen as risky depends on their everyday evaluation of risky play (Brussoni, Olsen, Pike, & Sleet, 2012; Cooke, Wong, & Press, 2019; van Rooijen & Newstead, 2017; Jelleyman, McPhee, Brussoni, Bundy, & Duncan, 2019).

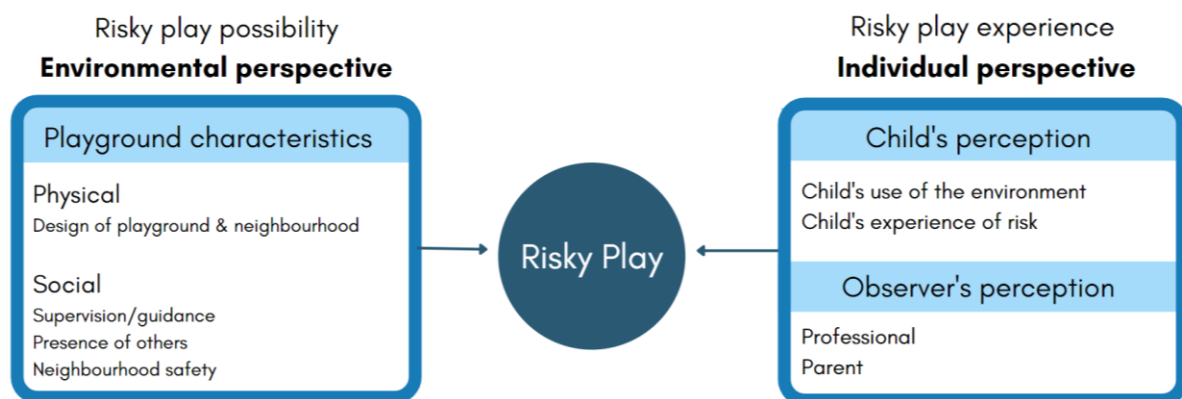


Figure 2.1. Theoretical approaches to understanding risky play perspectives

The following paragraphs elaborate on the topics mentioned in the above illustration. First, the physical and social environmental characteristics are explained. Then the actual benefits of risky play for children are further clarified, explaining how the environmental characteristics can stimulate multiple types of development in children. The last section explains how children themselves experience risky play.

## 2.2 PHYSICAL PLAYGROUND CHARACTERISTICS THAT INFLUENCE RISKY PLAY POSSIBILITIES

This section elaborates on how physical playground characteristics can stimulate risky play practices, these characteristics greatly influence a child's ability to engage in risky play (Brussoni, et al., 2015). For instance, 'safe', rubberised playgrounds are considered boring by children and therefore discourage physical activity (Mijland, 2011) while environments that are supportive of risky play encourage children to play (Sandseter & Kannair, 2011), even if the child is risk-averse (Waters & Begley, 2007). Research has shown that children seek the ambiguous feeling that comes from excitement and fear experienced during risky play, and therefore will try to take risks even if their

physical environment is made more 'safe' (Sandseter, Kleppe, & Sando, 2021; Sandseter & Kannair, 2011).

In order to understand physical playground characteristics that can stimulate risky play, it is interesting to first examine what makes up a good playground and how risk plays a role in this. According to Czalczyńska-Podolska (2014) a playground should support physical, social, emotional, and cognitive development, which can be accomplished by having certain critical features that are defined in three categories, accordingly: appearance, usage and arrangement.

Firstly, appearance constitutes that playgrounds should be created as "magical" and unique playscapes. This is divided in uniqueness (e.g., identity in design, presence of non-standard, custom, or innovative design) and contrasts (e.g., changes in scale, texture, colour, materials). Secondly, usage underlines that playgrounds should provide gradual challenges, a variety of equipment and elements, objects and materials that are flexible in usage and can be used in a child's own way or can be transformed. This is subdivided in variety (interactive space, high exploration, and the manipulation factor), curiosity (space diversity: built by elements or equipment that can be changed or manipulated and flexible materials) and challenge/achievement (tasks and testing skills and mastery, built by elements for physical activity, elements with some 'safe-risk' elements). Lastly, arrangement refers to the fact that playgrounds should be zoned to clearly define space by functional and visual boundaries, which is called Enclosure. Furthermore, the playground should be arranged as a complex space integrating all of its play units and the surrounding context, which is referred to as Continuity. Table 2.1 shows a summary of how these features are potentially created (Czalczyńska-Podolska, 2014, p. 134).

Table 2.1. Features of a playground that create social and play value (Czalczyńska-Podolska, 2014, p. 134)

<b>Zone features impact on playground social and play value</b>		
	<b>Feature category</b>	<b>Potentially created by</b>
Appearance	<b>Uniqueness</b>	Thematic elements, landmarks, animal features, fantasy, shapes, diversity in topography
	<b>Contrasts</b>	Over-scaled or under-scaled elements (miniature, child-sized, colossal) or diversity in scale, texture, color, materials
	<b>Curiosity</b>	Elements or equipment that can be changed, modified or manipulated, interactive features, dynamic place that can be rearranged, plants and animals, flexible materials, elements stimulating senses
Usage	<b>Variety</b>	Multi-activity settings, multi-route or multi-spatial experience settings, undefined settings, open-ended places, open area with no equipment, places with plants, natural objects and materials that can be used in own way or can be used to transform place into thematic object, e.g., boat or fire truck
	<b>Challenge/Achievement</b>	Places to play above the ground, many heights or levels, moving equipment, "figure out" elements, safe-risk elements, visual completion points, incentives and rewards
Arrangement	<b>Enclosure</b>	Good functional definition of the area, functional clarity, visual and tangible boundaries or walls
	<b>Continuity</b>	Activity loops, good integration with adjacent zones, internal/external linkages, inviting access

When these features are compared to the definition of risky play, it becomes clear that some overlap can be found. Multiple features stimulate bodily exploration and uncertainty, such as curiosity and variety, and challenge/achievement entails 'safe-risk' elements. A 'good' playground according to Czalczyńska-Podolska (2014) thus must have risky elements, alongside many other features.

Other research specifically determined what kind of categories provide risky play possibilities. Jelleyman and colleagues (2019) found eight categories, as indicated in table 2.2, this is an addition to a former categorisation by Sandseter (2007). Each category represents a form of risky play and explains

what types of risk are associated with it. All these categories require a certain design of the physical environment or a physical attribute to allow for risky play possibilities. Play with dangerous elements, for example, can be done with the provision of trees, cliffs or water features, and play with tools requires these tools to be physically present.

Table 2.2. Definitions of risky play (Jelleyman et al, 2019)

Category	Risk	Examples
<b>Great heights</b>	Danger of injury from falling	Climbing, jumping, balancing, hanging, swinging
<b>High speed</b>	Uncontrolled speed and pace that may lead to collision	Swinging, sliding/sledging, or non-motorised vehicles
<b>Adult tools</b>	Potential for injury or wounds	Knives, saws, axes, drills, ropes
<b>Dangerous elements</b>	Risk of injury from falling into or from something	Trees, cliffs, water, fire
<b>Rough and tumble</b>	Children may harm each other	Play-fighting, wrestling, fencing with sticks
<b>Disappear or get lost</b>	Children are unsupervised, alone or lost	Roaming neighbourhood with friends or alone, exploring
<b>Loose parts</b>	Danger of injury from sharp or heavy objects. Use of dirty objects	Tyres, sticks, timber, tarpaulins
<b>Messy play</b>	Illness from unsanitary environments	Painting, play in mud, dirt, sand, water

Brussoni and colleagues (2015) conducted a systematic review of literature about risky play environments. For this review they identified 10 possible risky play environments and linked these to what type of risky play is allowed for and which category of risky play this falls under. Their systematic review guide (table 2.3) visualises how risky play categories can be achieved in various types of environments. They conclude that environmental features, which they refer to as the ‘affordances for risky play’, allow children to engage in certain types of play behaviours. These features are physical, either loose or attached.

Table 2.3 Defining risky play environments (Brussoni, et al., 2015, p. 6429)

<b>Risky Play Environment</b>		
Environment that affords or accommodates risky play behaviours		
<b>Affordances</b>		
Features of the environment can enable and invite children to engage in certain types of play behaviours [70]. Affordances are unique for each individual and can be influenced by personal characteristics (e.g. strength, fear) and other features that may inspire or constrain actions (e.g. trees with low branches afford climbing).		
<b>Risky Play Environments</b>	<b>Affordances for Risky Play</b>	<b>Risky Play Category</b>
<i>Climbable features</i>	Affords climbing	Great heights
<i>Jump down-off-able features</i>	Affords jumping down	Great heights
<i>Balance-on-able features</i>	Affords balancing	Great heights
<i>Flat, relatively smooth features</i>	Affords running, RTP	High speed, RTP
<i>Slopes and slides</i>	Affords sliding, running	High speed
<i>Swing-on-able features</i>	Affords swinging	High speed, great heights
<i>Graspable/detached objects</i>	Affords throwing, striking, and fencing	RTP
<i>Dangerous tools</i>	Affords whittling, sawing, axing and tying	Dangerous tools
<i>Dangerous elements close to where the children play (e.g. lake/pond/sea, cliffs, fire pits, etc.)</i>	Affords falling into or from something	Dangerous elements
<i>Enclosure/restrictions (e.g. differently sized sub-spaces or private spaces where children can explore on their own or hide away from larger groups, mobility license)</i>	Affords getting lost, disappearing	Disappear/get lost

RTP = rough and tumble play

### 2.2.1 The influence of outdoor affordances of risky play

Most risky play research is conducted outside since outside play is found particularly beneficial for children. Additionally some categories can only or mainly be conducted outside due to outdoor environmental aspects, such as playing with dangerous elements (can require lakes, rivers, wood for fire) (Sandseter, Kleppe, & Sando, 2021), disappear or get lost (can require the streets of the neighbourhood) and messy play (can require muddy, sandy and water environments).

The affordances can influence a child's willingness to take risk. An emphasis on outdoor play can also influence a child's willingness to take risk. During the study by Sandseter, Kleppe and Sando (2021), 4.1% of the 10.3% of time spent in risky play out of total play time was with play at great heights, 2.9% was play with speed and 2.7% was rough-and-tumble play. Of these three most occurring types of risky play, play at great heights and at high speed occurred more during play outside while rough-and-tumble play occurred more indoors. This highlights once again how the physical environment provided in an outdoor play area encourages risky play.

### 2.2.2 Disappear or get lost: Independent mobility

One category of risky play differs from the others, which is the 'disappear or get lost' category. This category can be fulfilled by means of the design features of a singular play area, such as the provision of a maze or secluded corners and private and enclosed spaces that give children the feeling of being alone (Brussoni, et al., 2015). However, this category can cover a wider surface than a playground, corner, square or other block of the neighbourhood since it also covers free roaming *through* the neighbourhood. Jelleyman and colleagues (2019) refer to the possibility for a child to roam free through the neighbourhood as: 'Independent mobility'. It is the active transportation of a child without or with limited supervision of adults.

Since limiting children's independent mobility by parents is mostly due to fear of traffic (Jelleyman, McPhee, Brussoni, Bundy, & Duncan, 2019), road safety is an environmental characteristic (also added in the figure 2.1 overview) that can stimulate this risky play category. It is found that more walkable neighbourhoods (higher street connectivity and low traffic volume) increase walking trips by children to school (Lin, et al., 2017). Providing safe, walkable neighbourhoods may increase children's independent mobility and play (Villanueva, et al., 2014). However, parental judgement of what a safe neighbourhood is, is very subjective and therefore even walkable neighbourhoods can lead to a limited amount of independent mobility (Witten, Kearns, Carroll, Asiasiga, & Tava'e, 2013).

### 2.2.3 The benefits of risky play for children

The act of physical play in general is widely associated with bodily development on the one hand, such as the development of neural pathways for sensory integration, motor function and balance, and mental development on the other, as it helps in overcoming anxiety, building self-esteem and the ability to regulate behaviour and emotions (TED, 2016; Brussoni, et al., 2015; Jelleyman, McPhee, Brussoni, Bundy, & Duncan, 2019). Klein (TED, 2016) summarizes that 'decision making is like a muscle that needs to be exercised' and risky play that involves child direction, not adult direction, is key to train these figurative and literal muscles.

Regarding risky play specifically, it encourages children to become comfortable with their fears at their own pace. An example is a fear of heights being alleviated by positive emotions that come from play (Sandseter & Kannair, 2011). Without being aware of it, children use play to test the boundaries of their environment. Playing and taking risks allow children to develop their physical, cognitive, social and emotional capabilities (Graham & Burghardt, 2010; Pellis & Pellis, 2013; Vanderschuren & Trezza, 2014). Taking risks during play also help to build confidence, resilience, and creativity (Brussoni, et al., 2015; Little & Wyver, 2008; Cooke, Wong, & Press, 2019). Overall, environments that supported any

type of risky play led to an increase in physical activity and increased time of play (Brussoni, et al., 2015).

Sandseter and Kannair (2011) describe that each category of risky play, as seen in table 2.2, has its own possible functions that explain why they contribute to child development. Playing at great heights allows a child to understand their environment, practice their motor skills which builds muscle and endurance. Playing at high speeds enhances depth and movement perception, and improves physical fitness. Rough-and-tumble play allows for physical training, but also to improve social competences and understand social situations and peers, and regulating emotions. Play where children can 'disappear'/get lost allows a child to become at home in their environment, and build confidence. Allowing a child greater independent mobility, which involves a risk, enables them to be more physically active (Brussoni, et al., 2015). Especially play where children ran the risk to disappear/get lost greatly influences habitual and consistent physical activity. Play with dangerous tools builds an understanding of how to manipulate objects and how to use tools. Finally, children sometimes seem to be unaware that they play near dangerous elements but experiencing some possible risks can help them to understand and be aware of real risks.

Risky play has great anti-phobic effects because children are exposed to settings that allow them to accept and face their fears (Sandseter & Kannair, 2011) and is therefore a part of a child's natural development. Children who are not exposed to or allowed to play in their environment do not develop the mechanisms needed to lose their innate fear of certain ecological stimulation, which may lead to anxiety later in life. Therefore, if risky play is hindered, it can increase the level of neuroticism in a society. Risky play should therefore be facilitated rather than discouraged.

### 2.3 SOCIAL PLAYGROUND CHARACTERISTICS THAT INFLUENCE RISKY PLAY POSSIBILITIES

The presence of adults at the playgrounds directly influences the possible risk in play. Children mostly play under adult supervision (such as caregivers, supervisors and parents), and these adults regulate the activities that the children can engage in (Kyttä, 2004), including the amount and extent of risky play. What is too much or too little supervision is negotiated in terms of what is 'good for the child'. Sometimes the supervision limits children; "the notion of young children's almost constant supervision in their outdoor play raises questions as to when children are allowed to experience the 'thrill' of making their own risk decisions and learn to take responsibility for risk, away from adult presence" (Allin, West, & Curry, 2014, p. 655). Oftentimes, appropriate adult supervision is mentioned as requirement for creating an appropriate environment for risky play, which leads to positive risky experiences (Yalcin & Erden, 2018; Little, 2015). The right amount of supervision leaves room for child direction instead of adult direction and limits supervision and interventions (TED, 2016; Jelleyman, McPhee, Brussoni, Bundy, & Duncan, 2019). This is a flexible approach to supervision, allowing children to find challenges without being in hazardous positions (Little, Wyver, & Gibson, 2011). A very detailed division in possible supervision-modes and interventions is the intervention ladder by van Rooijen (2014), see figure 2.2.



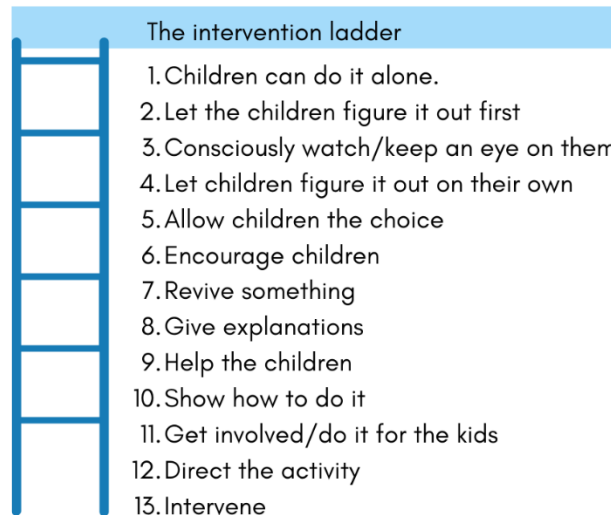


Figure 2.2. The intervention ladder when supervising children at play (van Rooijen, 2014)

### 2.3.1 Differences between supervisors

Nevertheless, gender role expectations from society and family can influence a girl's or boy's behaviour. These gender role expectations come from the adults that surround children. The supervisors' genders can also influence their acceptance of risky play by children. A study by Sandseter (2014) found that male supervisors were more likely to seek excitement than female supervisors, and therefore allowed children to take more risks while playing. Interestingly, male supervisors responded that children engaged in risky play more often than female supervisors responded indicating the gender of the supervisor can also influence the perception of risky play (Sandseter, 2014).

The culture of the supervisors also makes a difference in the extent to which children are allowed to engage in risky play (Sandseter, Kleppe, & Sando, 2021). Studies have not been done in all countries, but of the countries considered in studies, Norwegian and Canadian adults were found to be less weary of risks in play than those from Australia, the United States and the United Kingdom (Sandseter, Kleppe, & Sando, 2021; Sandseter, 2014). This was especially the case in the acceptance of outdoor risky play, where Norwegian culture places an emphasis on children's freedom to play outside (Guldberg, 2009)

### 2.3.2 The presence of others; peer-pressure and strangers

Other visitors at the playground, such as peers and neighbourhood residents, also influence the possible amount of risk in play. For instance, it has been found that oral persuasion and observation of peers can stimulate children to participate in risky activities (Morrongiello & Lasenby-Lessard, 2007). Additionally, peers can influence the type of risky play that is possible, with rough-and-tumble play requiring other children to be present otherwise the child has no one to engage in this risky play with.

Finally, the presence of unfamiliar people can influence risky play possibilities of children. The fear that children might interact with strangers with bad intentions is seen as dangerous by adults, in risky play and independent mobility literature this is referred to as 'stranger-danger' and has a connection with trust in neighbours. Jelleyman and colleagues (2019) describe this:

"Fear of encounters with ill-intentioned adults have also been echoed in a number of studies and may partly stem from a reduced sense of community with family units believing themselves to be more isolated from their neighbours than they used to be" (Jelleyman, McPhee, Brussoni, Bundy, & Duncan, 2019, p. 14).

This fear results in a limit on children's freedom in play and travel through the neighbourhood (Foster, Villanueva, Wood, Chirstian, & Giles-Corti, 2014). With regard to objective social playground characteristics, the possibility of actual stranger danger can be found in the criminality rates of the neighbourhood, especially figures that show how many crimes happen on the streets.

## 2.4 CHILDREN'S EXPERIENCE OF AND PARTICIPATION IN RISKY PLAY

Children are not their adult counterparts. Children live in adult space created by adults for adults where less-than-adults "have the right to a childhood of innocence and freedom from the responsibilities of the adult world" (Holloway & Valentine, 2004, p. 2). This right to childhood is still in terms of what adults deem childhood to be. For that reason, specific children's geographies are required to understand the lived experiences and environment of a child (Skelton, 2009).

In observations of children, a lot of the time they spend is categorised as 'play'. However, children may not make a conscious choice to play, but it is rather their way of existing and way of being (Thomson & Philo, 2004). Children are observed to play in any space they are and may use elements from their surroundings as tools to play with (Skelton, 2009). Play is a construct by adults meant to give meaning and create an understanding of what children occupy themselves with, which is then labelled as 'play'. However, what a child perceives as play differs between each individual. Every child is different. Therefore their experience of play, and consequently of risk during play, is different.

### 2.4.1 Child's perception of risk

Risk is subjective to the perception of the child (Sandseter, 2009). Each child evaluates the risk and their ability to cope with it differently, and therefore the extent of risky play children engage in is unique per child. If a child, for example, is attracted to risks because it exhilarates them, they will be more likely to engage in risky play while a fearful child may be weary of engaging with risk during play. Additionally, as Sandseter (2009) notes in her research, the way in which each category of risky play is practiced also differs between children. One child may not climb a tree as high as the other, while both are taking a risk to climb the tree. Overall, children take a progressive approach to engaging with risks, and therefore gradually master challenges that they face (Aldis, 1975; Sandseter, 2014). They innately know not to do something to far outside of their capacity, which would be a hazard and no longer a risk.

### 2.4.2 Age

Risky play has been observed to take place in many age groups. Sandseter (2007) first researched how to categorise risky play among children aged 4-6. This led to the establishment of 6 (later elaborated to 8) categories of risky play (Jelleyman, McPhee, Brussoni, Bundy, & Duncan, 2019). Coster and Gleave (2008) then did a study evaluating how children aged 4-13 experienced risk in their play. Kleppe, Melhuish and Sandseter (2017) later did research to identify how risky play presents in young children aged 1-3, an age group that had not yet been considered (Sandseter, Kleppe, & Sando, 2021).

Age is considered an important factor in how children engage in and experience risk during play. Research by Boyer (2006) found that the risk taking increasing with age is due to the child's characteristics and their social characteristics. Child characteristics include their level of cognitive development, ability regulate emotion and the psychobiological development, all three of which develop with age. Social characteristics include the influence of parents, peers and environment, all of which allow for more and accept more risk taking in a child as they get older. Around age 8, children are better at estimating their own ability, compared to 6 year olds who had a higher percentage of overestimation of their ability. This shows that risky situations in play allow a child to develop their ability to judge the amount of risk in a situation, improving with age (Sandseter & Kannair, 2011).

### 2.4.3 Gender

Not only does age influence the type of play children engage in, gender may also be influential. A study in playgrounds in Amsterdam by Karsten (2003) found that playground activities are ‘structured’ based on gender. Gender role expectations from society and family can influence a girl’s or boy’s behaviour. Initial observations confirmed gender stereotypes such as boys playing football and girls chatting while on the swings. Upon closer and more long-term observations however, the children and their activities blended and no longer showed specific play per gender (Karsten, 2003).

Similar patterns are found with regards to risky play. One study found risky play engagement to be influenced by sex-differences due to gender roles established in evolution (Sandseter & Kannair, 2011). In a study on the experiences of supervisors of kindergartens in Norway, Sandseter (2014) found that boys engaged more often with risky play than girls. These results are shown in in table 2.4, but most respondents said that both boys and girls engaged in risky play to some extent. This study further asked the respondents how often they allowed children to engage in risk during their play, and found that boys were allowed to do so slightly more (table 2.5), although the difference between boys and girls was not statistically significant (Sandseter, 2014).

*Table 2.4. Supervisor experiences on how often risky play is engaged in by boys versus girls (Sandseter, Early childhood education and care practitioners' perceptions of children's risky play; examining the influence of personality and gender, 2014, p. 11)*

	Once a day or more	Weekly/monthly	Rarely or never
<b>Boys</b>	55%	35%	10%
<b>Girls</b>	38%	46%	16%

*Table 2.5. How often supervisors allowed engagement of children with risky play (Sandseter, 2014, p. 12)*

	Once a day or more	Weekly/monthly	Rarely or never
<b>All</b>	46%	36%	18%
<b>Boys</b>	47%	37%	16%
<b>Girls</b>	44%	39%	17%

Other studies found that among Norwegian children aged 2-3 who had equal risky play opportunities, boys were 17% more likely to engage with the risk than girls (Kleppe, Melhuish, & Sandseter, 2017). An analysis of risky play among children from an evolutionary perspective finds that boys have a higher willingness to engage in risky play than girls, especially when it is physically challenging or rough-and-tumble play (Sandseter & Kannair, 2011). This then leads to boys being more liable for injury than girls because from an evolutionary perspective they had to ‘prove’ themselves as strong and worthy while women had to be caregivers and gatherers (Sandseter & Kannair, 2011).

However, although a recent study by Sandseter, Kleppe & Sando (2021) found boys were more likely to engage in rough-and-tumble play, they found no significant difference between the total risky play engagement among girls and boys. Additionally, a literary review by Brussoni and colleagues (2015) found that gender has not always been considered when observing risky play in children, and if it was, consistent gender patterns were not found.

From this it becomes clear that individual child characteristics do influence risky play, but only to a certain extent. All children engage in risky play to their own liking (Sandseter, Kleppe, & Sando, 2021). There is greater variation in the amount of risk that children take. This variation due to the child’s individual risk preferences (Sandseter, 2009) are relevant to understanding a child’s experience with risky play on their playground. In order to find out more about children’s experiences of their physical and social playground environment, the following methodology was created.

## 3 RESEARCH DESIGN AND METHODOLOGY

### 3.1 RESEARCH STRATEGY, DESIGN AND METHODS

In order to answer the main research questions and sub questions of this study, a multi-method approach was taken. Each method used looks to answer one or multiple research questions. Thereby, the full methodology covers all sub-questions and allows for a comprehensive outcome. The main research question is:

**How do children engage in and experience risky play in the BuurtLAB/Ravottuh playgrounds in Hoogvliet and Crooswijk?**

1. How does the playground influence children's engagement in (risky) play?
2. What are the children's experiences with risky play on their school's playground?
3. How does the child experience the social context surrounding their ability to play risky?

This research question lent itself to qualitative research as it focusses on the 'voice' of the participants and understanding their individual experiences as opposed to numerical data (Clifford, Cope, Gillespie, & French, 2016; McCusker & Gunaydin, 2015). The methods taken to collect results were: first participatory observations before conducting structured-detached observations. After this, mental mapping was done with the participating children, followed by short, semi-structured interviews with the child about their map and playground experiences. An overview of these methods can be seen in figure 3.1.

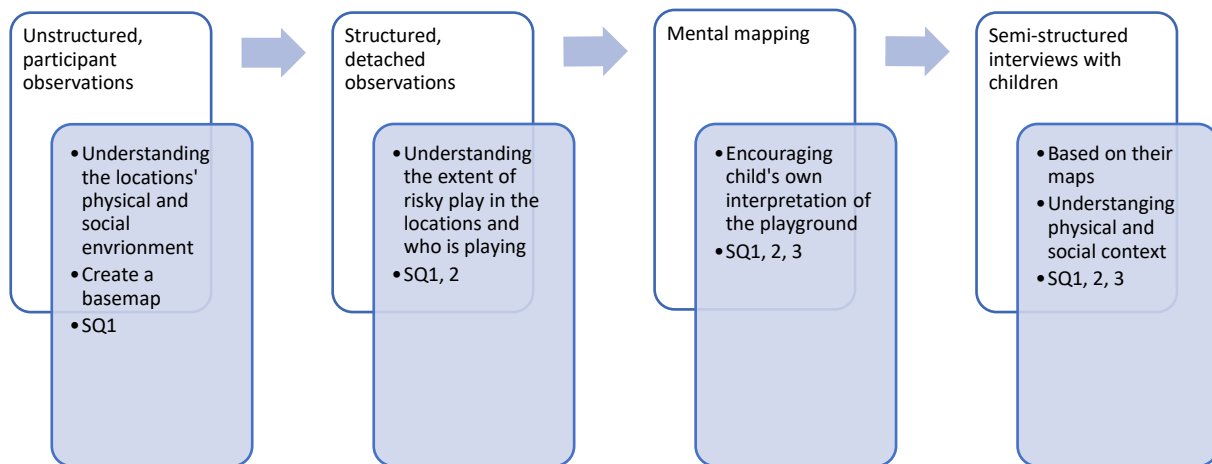


Figure 3.1. Overview of methodology

### 3.2 APPROACH TO OBSERVATIONS

The research approach started with observations, gaining an initial understanding of how children use and play in the space (Mason, 2018). These observations were spread over multiple visits to the playgrounds. At first, the participant observations were unstructured, followed by structured, detached observations.

#### 3.2.1 Unstructured, participant observations and thin mapping

This first round of observations was meant to give the researchers a general overview of the location and understand its physical and social context. Participant observations allowed the researcher to spend time in the place and interact with users being observed (Laurier, 2010; Decorte & Zaitch, 2016).

The researchers spent one entire session with BuurtLAB during their Ravottuh program in both Crooswijk and Hoogvliet. This allowed the researchers to get an initial understanding of the program and the ages and number of children involved. The unstructured and participatory approach taken here allowed the researchers to engage (Mason, 2018) with the supervisors, teachers, parents and children present and ask basic questions about anything that appeared relevant to understanding the nature of Ravottuh. Participatory observations continued with every visit to the playgrounds during the research process, but these later sessions were not documented.

After the planned participatory observation session the researchers created a basemap in order to create a visual of the play area, its borders and main elements. This basemap also provided a canvas on which to annotate the observed types of risky play during the second round of observations (see 3.2.2). These maps are 'thin maps' (Harris, 2015), meant to display the spatial data of where physical elements of the playground are located as to better understand the study area (Tracy, 2019). Based on the elements in this basemap, the researchers generated data (Mason, 2018) by establishing an initial overview of the eight categories of risky play (Jelleyman, McPhee, Brussoni, Bundy, & Duncan, 2019) and the affordances (Brussoni, et al., 2015) for each based on the elements of the playground.

The purpose of these unstructured, participatory observations was to answer, although partially, sub questions 1. This aimed to understand how the physical (and social) environment influenced the engagement in risky play. These observations provided an initial understanding of the physical (and social) environment. The next step was therefore to observe the engagement in risky play within this environment.

### 3.2.2 Structured, non-participant observations

After the first round of observations, the researchers conducted structured observations in which they did not interact with anyone. This non-participant approach meant the researcher was detached which allows the children to play as they naturally would (van Rooijen, 2014; Clifford, Cope, Gillespie, & French, 2016), as the focus was on how the playground is used by the children playing in it. These observations were structured with an observation guide in order to ensure that all facets of the play observed are recorded per session (Mason, 2018).

In order to be able to conduct these observations, the playgrounds were divided into zones. Each zone is such that it was visible in one glance, meaning the researcher did not miss anything while observing. The playgrounds in Crooswijk and Hoogvliet are different because of their geographical location, but these zones highlighted the similarities between both: Zone A being where the children have a football field and a lot of open space, Zone B being where some natural elements and a stream of water have been created, Zone C includes more natural elements but also some open space while Zone D is where the Ravottuh program takes place. The division of these zones can be seen in figures 3.2 and 3.3.



Figure 3.2. The zones in Crooswijk

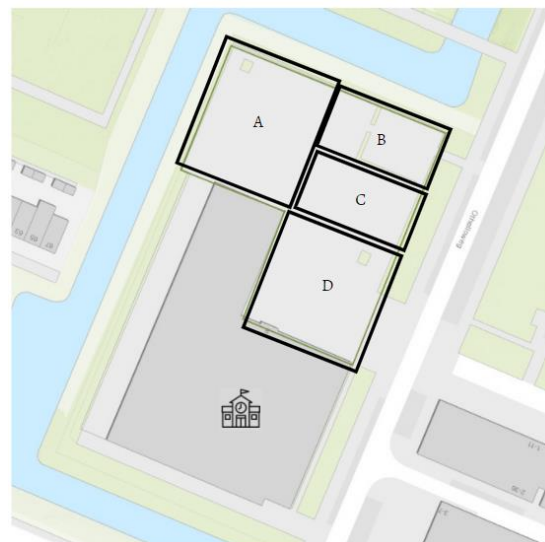


Figure 3.3. The zones in Hoogvliet

Per zone, the researchers kept track of how the play area is used and which types of risky play can be identified. The observations list the type of risky play (1), who was involved (2), where on the playground it was (3) and whether there was any form of supervision or intervention (4). These categories are based on a summarized version of the intervention ladder of van Rooijen (2014). A fifth category ‘additional info’ was added in case anything happened that did not fit the other four categories, such as a form of play that would not fit the risky play categories of Jelleyman and colleagues (2019). These categories are listed in table 3.1.

Each zone was observed during four different times: during a lunch break, during Ravottuh, after school and in the weekend. This was done to see whether there was a difference in the type of play depending on the time of day. Differences may be due to the influence of teachers or parents or the child being alone (not possible during lunch break, but possible in the weekend). Another reason was that the Crooswijk and Hoogvliet locations had the Ravottuh program at different times. Crooswijk had it during school while Hoogvliet’s program happened after school. The observation guide and format can also be seen in table 3.1.

Table 3.1. Observation guide and format

To observe (into recording device):				
1	<b>Type of play</b>	8 risky play categories	Duration: 10 minutes per zone <i>Research sub question: How does the physical environment encourage risky play?</i>	
2	<b>Who</b>	Age, gender, group #		
3	<b>Playground</b>	Elements/toys/structure		
4	<b>Supervision</b>	None, guidance, intervention		
5	Additional info			
	During lunch break	During Ravottuh	After school free play	Weekend free play
<b>Zone A</b>	<i>(note 1,2,3,4,5 for each play interaction observed)</i>			
<b>Zone B</b>				
<b>Zone C</b>				
<b>Zone D</b>				

Each round of observation took 10 minutes and each zone was observed once during the four times listed. During these 10 minutes the observers took an audio note of any risky play engagement into a recording device. A recording device was used because this allowed the researchers to quickly note an observation in 'real time' (Laurier, 2010) while still keeping an eye on the zone, rather than being distracted by a paper and looking down. Voice memos also worked well to minimize the Hawthorne effect, where the observed subjects change their actions because they know they are part of an experiment (Zeisel, 1997, p. 117). Taking voice memos on the phone looked to children as though the researchers were calling someone, rather than observing their play. The researchers therefore kept their influence on the children's behaviour to a minimum, keeping up the study's internal validity.

These field notes were then categorised per type of risky play. Since the observations are be divided by zones (figure 3.2 and 3.3), these results can be linked to the location on the map.

Combining the affordances observations (section 3.2.1) with these structured gave insight into whether the risky play that is afforded by the playground is also engaged in by the children. This therefore served to answer sub question 1 completely. The observations about how children used the space also aided the researcher in preparing the semi-structured interviews. They provided background knowledge about how the playground was used in order to better understand the children's individual experiences (sub question 2 and 3). The methodology to understand these experiences is explained next.

### 3.3 APPROACH TO MENTAL MAPPING AND INTERVIEWS

#### 3.3.1 Mental mapping

In order to 'look through the eyes' of a child at play, and understand how they see their playground, children were asked to create a mental map. This mental mapping technique illustrated the child's perception of their space (Cox & Benson, 2017), allowing the child to drive the data. The visual map provided deeper understanding of the role of the space in risky play (Giesecking, 2013). Each child received an A4 paper with the outline of their playground printed on it. Within those boundaries the children were asked to 'draw their playground'. The activity was explained in the form of a short mapping lesson (as seen in figures 3.4 and 3.7) in which we zoomed in from a continental map view all the way to their school on a map. Then we traced the boundaries of the playground on the screen and identified a few key elements in the playground, helping the children to have a reference of how to approach the mapping. The rest of the mapping and location of the important playground elements was left up to the children. The boundaries were the same for every child, allowing for the end results to be layered over each other to find similarities and differences between the maps. The outlines showed to the children are seen in figures 3.5 and 3.6.

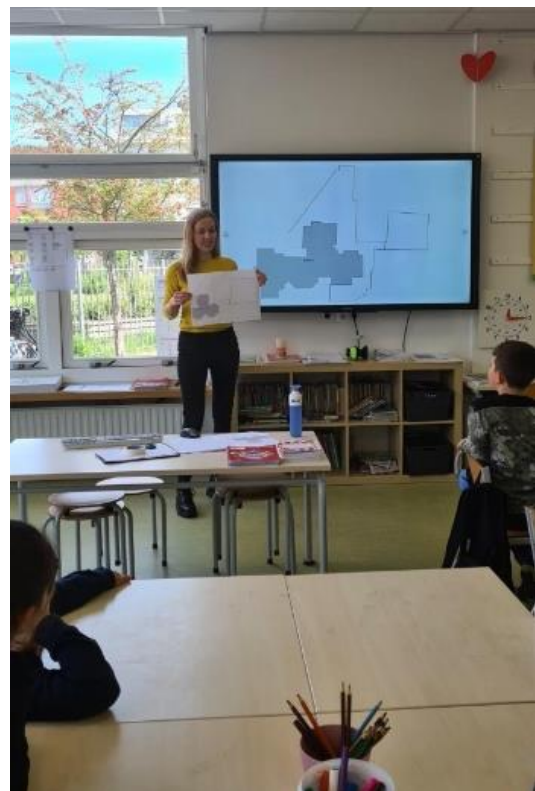


Figure 3.4. The researcher during the mental mapping explanation in Crooswijk



Figure 3.5. The example mental map of Crooswijk

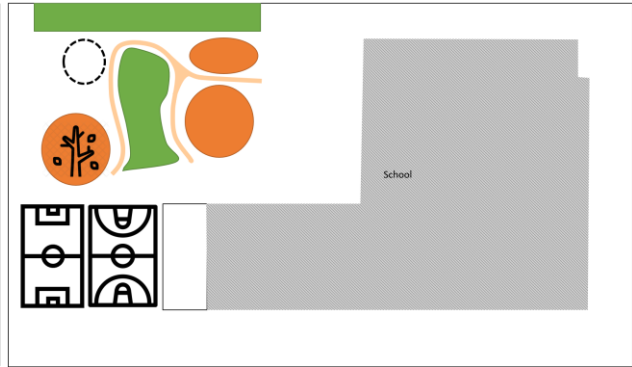


Figure 3.6. The example mental map of Hoogvliet



Figure 3.7. Answering children's questions during the mental mapping in Crooswijk

The activity was conducted with a group of children who participate in Ravottuh's program in Crooswijk. However, in Hoogvliet the children did not participate during school and so a group of the same age as in Crooswijk participated. All children took part at the same time, as if it was just another lesson or activity they had. However, not all children were willing to participate in the interviews afterwards. Therefore the aim was to have at least 10 children (5 boys and 5 girls) per school whose maps can be used for the research. The children were aged 6 and older because from this age they were be able to draw, and later explain, their maps more easily as opposed to the younger children (Greig, Taylor, & MacKay, 2007). After the children created their maps, each child was interviewed individually in order to ask them questions about their drawing and experiences.

### 3.3.2 Semi-structured interviews

The individual conversations with the children were done in the form of short, in-depth interviews with a semi-structured format in order to ensure that certain topics were covered in each interview (Adhabi & Anozie, 2017). These interviews asked the child to explain their map, in terms of what they had drawn and where and why they like to play there. This visual approach aided in the transference of data that was shared and provided insight into the participating child's relationship to risky play (Cox & Benson, 2017). Speaking about the map was then followed up with more general questions about the child's favourite activities to do in the playground, how freely they felt they are able to play, and how they evaluated their play opportunities. The specific topic list of questions is simple, but the aim was to talk with children about taking risks during play and how they experience this in their playground. The topic list, and the reason behind each question, are listed in table 3.2.



Table 3.2. Interview questions and substantiation

Question	Substantiation
<b>Basic introduction</b>	
Hello, how old are you and how long have you been in this school?	<i>Basic child characteristics noted: age, gender, time at this school (to know how long they have played here)</i>
Can you tell me what your favourite activity at school is?	<i>Making the child feel comfortable, and if their favourite activity is break, this will show their interest in playing</i>
<b>Understanding the map and physical context, and individual evaluation of (risky) play</b> (Sandseter E. , 2007; Jelleyman, McPhee, Brussoni, Bundy, & Duncan, 2019; Brussoni, et al., 2015)	
I see you worked hard on your drawing, can you explain your map to me?	<i>Asking the child to explain what each element on their map is</i>
How do you like your play area? Why?	<i>Understanding the overall appreciation of the playground</i>
And where do you like to play, according to your map? Why? And where don't you like to play? Why?	<i>Understanding the child's favourite element of the map is and the places they do not like, and why</i>
And what kind of play do you find exciting? Why?	<i>Enticing the child to talk about risky play</i>
Do you ever play in a way that you find a bit scary? Can you give an example? And why is it scary?	<i>Understanding how the child evaluates risk</i>
<b>Understanding the social context</b> (Yalcin & Erden, 2018; Little H. , 2015; van Rooijen M. , 2014; Morrongiello & Lasenby-Lessard, 2007)	
Do you ever play a game because your friends are doing it? How does that come about? What is the game you play? And why do you join?	<i>Focussed on playing, understanding the influence of other children</i>
What are the games you wish you could play but the teachers do not let you? Why is this? Do you mind this? Would you do it anyway? Why?	<i>Understanding the influence of teachers</i>
How you like the Ravottuh program? What do you like about it? What don't you like?	<i>Understanding the appreciation of an environment that encourages risky play</i>
How are the Ravottuh teachers different to your own teachers?	<i>Understanding the social context of Ravottuh</i>
How do your parents let you play? What are you not allowed to do? Why? Do you still do it?	<i>Understanding parental influence and the child's response to this</i>
Do you play here after school too or do you go somewhere else? Why somewhere else?	<i>Understanding the importance of the playground after school times</i>

These maps combined with the interviews serve to completely answer the second and third sub questions. The interviews are be semi-structured, allowing for flexibility in asking the child to elaborate an answer that seems relevant (Adhabi & Anozie, 2017). The maps, to some extent, provided an understanding of how the children feel the physical environment is shaped and what stands out to them. The interviews then built on this and went deeper to understand how the child evaluates the (risky) play opportunities here (sub question 1 and mostly sub question 2). The interview also covered how the child experienced the social context in the playground, and how this influenced their ability to play (sub question 3). Because the basic characteristics of the child are listed, some conclusions may also be drawn about how individual characteristics of a child influence their answers, although this is not the focus of the research.

### 3.3.3 Interview response and participation

For each location, at least 10 children participated in the interview (appendix 7.1), but the entire class created a playground map. These maps are added in the results chapter to illustrate the children's view of the playground. These children are pseudonymised with a number, only their age, gender and duration at the school were recorded. This was similar between the children and so does not lead to an individual child (Mukungu, 2017). The children's numbers also ensured that their map and interview

were kept together. The respondents of this research are primary school children who participate in the Ravottuh program. In Crooswijk, children only participate in Ravottuh until group 4, while in Hoogvliet Ravottuh is an after school activity and therefore children of any age join. For this research, group 4 (aged seven to nine) from Crooswijk participated while in Hoogvliet, the children from group 3/4 and two from group 5 participated (aged seven to nine). Permission and consent from the teacher was required before the research could be conducted, as explained in section 3.5.

### 3.4 ANALYSIS METHODS

The collected mental maps were scanned and included to depict the relevant playground features according to the children (Gieseeking, 2013). The audio recordings of the interviews were transcribed shortly after the interview had taken place. They were then loaded into Nvivo, in order to code the transcripts digitally. This enabled cohesive coding and therefore simple data analysis (Maher, Hadfield, Hutchings, & de Eyto, 2018). Quotes from these transcripts could be used in explaining the results, making sure to only use the respondent number, age and gender as a reference.

The analysis of the interview transcripts was done with cross-sectional coding, consisting of open, axial and lastly selective codes (Mason, 2018). The open coding applied general labels to text, which were then categorised (axial codes) and lastly selective codes were created of the more specific elements to the core issues that answer the research questions. An overview of these codes was summarised into a code tree, as seen in appendix 7.2.

### 3.5 ETHICS OF THIS RESEARCH

Most respondents for this research are children. Therefore it was vital to conduct this research ethically and with the best intentions for the child. The research activities did not take longer than needed, and questions that were not relevant to the research were not asked. Additionally, this research will use minimal personal information, only gender and age, in order to compare between respondents. The topic of this research, play experiences, was not particularly sensitive subject for children. Nevertheless, the research should not result in emotional distress or feelings of discomfort for the child. If this was the case, the mental mapping or interview would be stopped (Farrell, 2005).

All results were recorded and processed pseudonymously, removing any sensitive personal details that could link back to the individual child (Mukungu, 2017). Any names the children had written on their map were covered. All faces of images used to illustrate play in the playground were also covered. The research location and play organisation are not pseudonymised as they provide relevant case study context. Any recordings made during the interviews were deleted once no longer needed for research purposes. Due to the young ages of these children active consent was asked from their gatekeeper, in this case their teacher (Jason, Pokorny, & Katz, 2001). If the deemed it necessary by the teacher, they sent an email with an explanation of the research (written by this thesis' author) asking for passive consent from the parents (Carrol-Lind, Chapman, Gregory, & Maxwell, 2006). No parents made it known that they did not want their child to participate in the study.

## 4 RESULTS

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The following chapter outlines the results from the research after it was conducted as explained above. The results are categorised into four sections. First the context of each playground is explained, followed by an analysis of risky play affordances and observations in the playground. The third section outlines children's experiences with risky play in their playground and the last section covers the children's experience of the social context during risky play. After each section, sub conclusions are drawn in order to summarise the results and link them to previous studies.

### 4.1 PROVIDING CONTEXT: NEIGHBOURHOOD, SCHOOL AND PLAYGROUND

This section provides the contextual information about the playgrounds and their neighbourhood, as well as an analysis of the playground attributes. First the neighbourhood characteristics are outlined followed by a map of the school in relation to the neighbourhood. The Ravottuh activities are discussed and then the playground's attributes are analysed.

#### 4.1.1 Crooswijk

##### 4.1.1.1 *Neighbourhood characteristics*

The first Ravottuh playground was situated in Crooswijk, more specifically Oud-Crooswijk. According to the Rotterdam municipality, Oud-Crooswijk is known for its typical Rotterdam urban character. Where there used to be a cattle market, slaughterhouse, and Heineken brewery there are currently hundreds of houses which combine old and new Rotterdam. The working-class culture is deeply embedded in the neighbourhood and its residents (Municipality Rotterdam, 2021). In 2016, the Netherlands institute for social research declared that a postal code located in Oud-Crooswijk was the poorest of the Netherlands. However, with the arrival of new young households, incomes are rising, and in 2017 this zip code already moved down on the list to number eight (van Hulst & Hoff, 2019). The composition of the population is changing, as other residents have joined the neighbourhood. Meanwhile, 59% have a non-western immigrant origin of which, in 2016, the largest group was of Moroccan origin (21% of all inhabitants). The mean value of houses (Dutch: WOZ) is 131.000 euros compared to the mean value in Netherlands of 248.000 euros and 91% of the housing are rental properties (Centraal Bureau van Statistiek, 2019). The municipality strives to improve the liveability, social-economic position of residents, variety in housing and public space and promotes active participation of residents and entrepreneurs. The most important target group is youth (Gemeente Rotterdam, 2016). The presence of Ravottuh in Oud-Crooswijk fits this policy.

##### 4.1.1.2 *Ravottuh*

Ravottuh is active at the Marnixdwaarsstraat in Oud-Crooswijk. They work together intensively with the Oscar Romero elementary school. During and after schooltime, Ravottuh provides a green play environment for children. During schooltime Ravottuh organises different lessons every Thursday, during which the children are stimulated to play freely and explore their senses. Figure 4.1 provides an overview of school's playground and attached Ravottuh garden.



Figure 4.1. An impression of the Ravottuh location in Crooswijk (Esri, 2021)

Four years ago (in 2017) there was a piece of wasteland next to the school, belonging to a housing association. The director of the Oscar Romero school reached out to this association and received permission to use this land as playground. He contacted an acquaintance from BuurtLAB, which resulted in the realization of a green and wild play garden next to the schoolyard (in the top right of figure 4.1). Over these years the school also transformed the rest of their playground into a greener and more varied environment. The play garden is threatened by the development of new houses in the future, which was expected since the land is still in the hands of the housing association. However, the open space to the north of the school might provide a possible new place for a play in the future. For now, the near future of the garden holds a treehouse rather than real houses (Director of Oscar Romero school, 03/06/21).

#### 4.1.1.3 Mobility

The playground is surrounded by small walkable streets. The streets consist of a 30 km/h road for cyclists and motorised traffic and footpaths on one or both sides. Furthermore, there are no public transport connections within a circle of one hundred metres around the playground. A tram line with a bus lane lies 150 metres to the north, west and south. To the east the Crooswijkseweg is located, a busy avenue because there are many local shops, such as a baker and a supermarket (Google Maps, 2021). An overview of the playground in the neighbourhood is seen on 4.2.



Figure 4.2. a satellite image of Crooswijk's school location in relation to the surrounding neighbourhood (Esri, 2021)

#### 4.1.1.4 Playground features

In order to give a general overview of the playground characteristics, the playground has been compared to the playground features of Czalczynska-Podolska (2014): uniqueness, contrasts, curiosity, variety, challenge/achievement, enclosure, and continuity. The table in appendix 7.3 gives a broad overview of the different features per area, this paragraph summarizes these findings for Crooswijk.

The Crooswijk location provides very different atmospheres for the children to play at. All in all, the playground consists of most required playground features. Regarding uniqueness, the area contains thematic elements such as nature and educational features. What stands out is the overall diversity (contrasts) of the playground with many different attributes and atmospheres: ranging from old fashioned play racks to a play garden that consists of only natural elements. This also relates to the variety of the place. It has a multi-activity setting, with play, chill and sport areas, different routes and undefined settings. Furthermore, curiosity is an abundant feature in Crooswijk. Due to the presence of the play garden, children are challenged to interact with natural elements that can be changed, such as a vegetable garden. The garden also contains of many interactive objects such as branches, buckets and scoops, insect collecting material and pallets that can be moved.

The garden is dynamic and ever changing due to seasonal and weather changes. The activities offered by Ravottuh increase the curiosity features, by offering programs whereat children are challenged to explore natural elements, such as making fire from sunlight. The challenge/achievement feature overlaps with risky play features such as great heights offered by playing racks and horizontal tree trunks. Regarding enclosure, the area has clear boundaries and clustering of the playgrounds. Finally, the continuity of the area is minimal since it lacks integration with surrounding zones and an inviting access. The playground is hidden behind fences, housing, the school and as of spring bushes fully cover the play garden. All the different elements that allow for these features in the schoolyard can be seen in figure 4.3, the result of thin mapping. Based on these findings on the playground features by Czalczynska-Podolska (2014), the combination of a schoolyard and garden allow for great variety, uniqueness and contrasts, fostering the children's curiosity. This may excite the children to play and combining this with the variety of attributes may result in children being enticed to play risky (Sandseter & Kannair, 2011). However, the challenge and risky play opportunities of the playground may be used minimally due to the lack of accessibility after school.

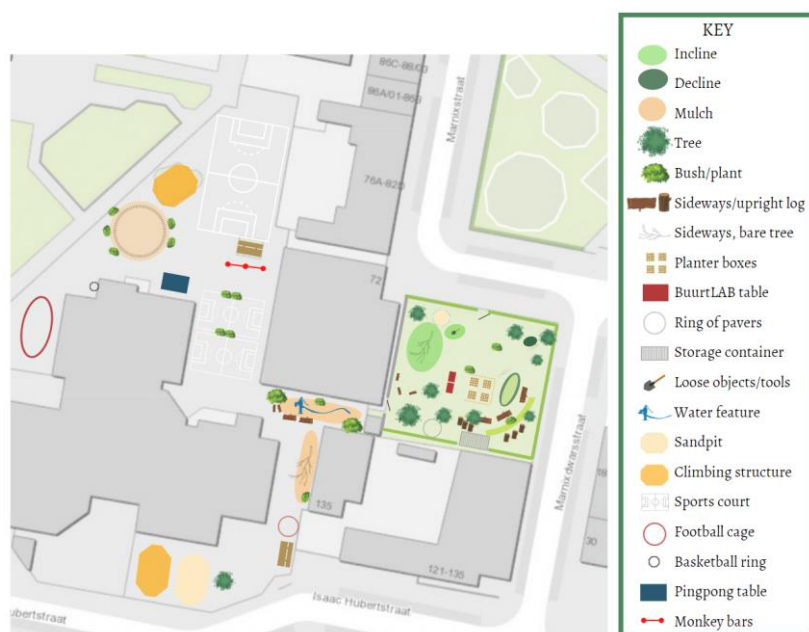


Figure 4.3. The main play elements of the playground in Crooswijk (Esri, 2021)

## 4.1.2 Hoogvliet

### 4.1.2.1 Neighbourhood characteristics

The second location of the research is in Hoogvliet, Hoogvliet-Noord specifically. Hoogvliet is a relatively independent suburban neighbourhood. From 1968 onwards the area has ended up in a downward spiral due to lack of variety in housing, competition from other growth cores and the disappearance of jobs. However, recent restructuring of the neighbourhood has brought more variation in the area. The residents consist of mainly native (66%) middleclass families, with a lower education (van Dantzig, Renooy, & Krop, 2016). The mean value of housing (Dutch: WOZ) in Hoogvliet-Noord is 168.000 euros and 46% of the housing stock is rental housing (Centraal Bureau van Statistiek, 2019). Mostly due to the demolition of flats there is an abundance of green open space in the public areas, as can be seen on figure 6. Overall, the area is described as quiet, green and having a village-like character. On the downside there is little liveliness on the streets with, according to residents, lack of spaces to interact and meet (van Dantzig, Renooy, & Krop, 2016). Ravottuh provides activities to increase interaction and stimulates children to play in these public spaces.

### 4.1.2.2 Ravottuh

In this location, Ravottuh works together with different parties such as elementary school de Notenkraker and SBO Hoogvliet, a school for children with special needs. The programme used to take place in a public garden across the road, but this was removed during landscape redevelopment by the municipality a few years ago. To compensate for the removal, the government aided in providing a natural play space for the schoolyard. A cooperation between the school, the municipality and Ravottuh helped the nature playground into existence (Principal of De Notenkraker, 12/04/21). Ravottuh organises their activities after school on Wednesdays (BuurtLAB, 2019). During those free activities all neighbourhood children are welcome, and the playground becomes more than a schoolyard: “the fact that BuurtLAB is here is only possible because of that play garden, it attracts children, and so it becomes much more of a place where children feel at home. Where more happens than just the maths lesson” (Principal of De Notenkraker, 12/04/21). Figure 4.4 shows an impression of the play area.



Figure 4.4 Overview of the Ravottuh location in Hoogvliet (Esri, 2021)

#### 4.1.2.3 Mobility

The area around this playground consists of much green open space. The road to the west of the school has been closed off for motorized traffic to increase the traffic safety around the school and playground. Furthermore, to the north lays a 50 road with a bus lane. An overview of the school in its neighbourhood is see in figure 4.5 below.

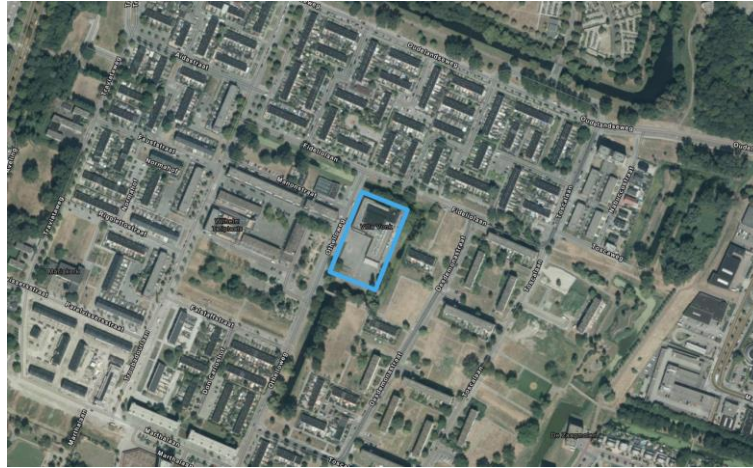


Figure 4.5. A satellite image of Hoogvliet's school location in relation to the surrounding neighbourhood (Esri, 2021)

#### 4.1.2.4 Playground features

The Hoogvliet playground is more straightforward than Crooswijk in its layout. Unlike Crooswijk there is not an additional garden that allows for unobstructed free play, but there are natural elements on the playground. This area covers about half of the playground, with the remaining half left for two sports courts and an entrance to the school. In terms of uniqueness, this has left the playground with a green appearance from the street and a soft groundcover with vegetation and varying heights. This greatly contrasts the paved sports courts and paved area by the entrance of the school. The natural elements allow for curiosity of the children to be acted upon in discovering all the different play zones and attributes and how this variety can be used for play. This challenges the children, to some extent, although the heights are low and a lot of activities are controlled by the supervising teachers, leaving little room for personal achievement.

When Ravottuh organizes activities, they encourage children to use loose parts and challenge them with tools they have not used before. This allows more room for the child's own curiosity although the activities are of a calm nature with mild physical exertion. The playground overall is enclosed on three sides and although there is a large opening, it is rather separated from the bordering street and therefore not used much outside of school hours. An overview of all the physical elements in the schoolyard is given in figure 4.6. Based on this, the Hoogvliet garden meets many of the requirements for a valuable playground by Czalczyńska-Podolska (2014). The area has contrasts and encourages curiosity through variety. However, the playground lacks in challenging features which may be a reason for the lack of usage after school. This lack of challenges may also influence the extent to which risky play is practiced (Mijland, 2011).

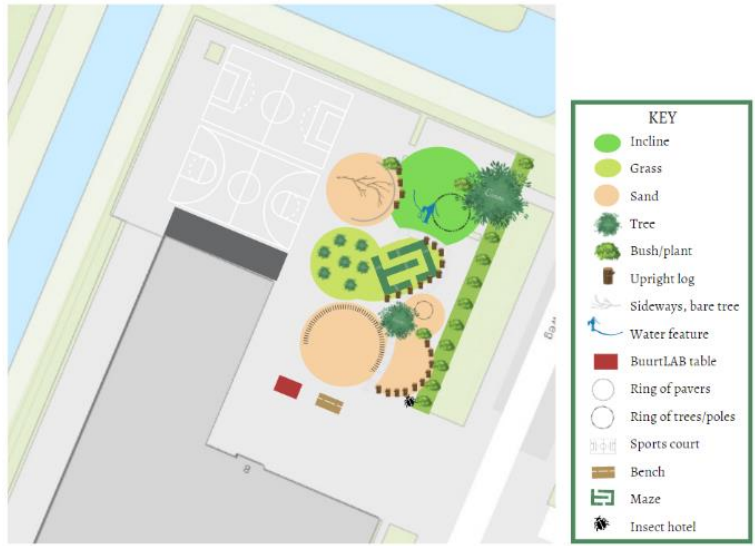


Figure 4.6. The main play elements of the playground in Hoogvliet (Esri, 2021)



## 4.2 RISKY PLAY OBSERVATIONS

Now to outline the risky play affordances and practices that were observed. As argued before, and supported by literature, the more the playground promotes and encourages risky play, the more children are inclined to play as such (Sandseter & Kannair, 2011). First Crooswijk is discussed, subsequently Hoogvliet receives attention. Before this though, the affordances for risky play at each location are identified and compared. An overview of this comparison is seen in table 4.1. From this it becomes clear that both playgrounds offer a variety of elements that afford play at great heights, high speed and messy play. However, opportunities to play with adult tools and loose parts, which are present in Crooswijk, appear minimal to non-existent in Hoogvliet.

Table 4.1. Overview of affordances for risky play at each location

Category	Risk	Elements Crooswijk	Elements Hoogvliet
Great heights	Danger of injury from falling	Climbing (trees), jumping from inclines, tree stomps, balancing, hanging	Climbing (tree/fences/goal), jumping from inclines, tree stomps, balancing, hanging
High speed	Uncontrolled speed and pace that may lead to collision	Slides, bikes, open space for running/sports	Open space for running/sports
Adult tools	Potential for injury/wounds	Shovel, scissors	Scissors
Dangerous elements	Risk of injury from falling into or from something	Tree, holes in ground	Tree, pavement
Rough and tumble	Children may harm each other	Play-fighting, wrestling, fencing with sticks	Play-fighting, wrestling, fencing with sticks
Disappear or get lost	Children are unsupervised, alone or lost	Hiding places	Hiding places, maze
Loose parts	Danger of injury from sharp or heavy objects. Use of dirty objects	Sticks, pallets	-
Messy play	Illness from unsanitary environments	Mud, tree shavings, dirt, sand, water, (insects)	Mud, tree shavings, dirt, sand, water, (insects)

### 4.2.1 Crooswijk

During school hours the schoolyard is (zone A, B, C) intensively used during breaks. The play garden, zone D, is visited every hour by individual classes on Thursdays, when Ravottuh lessons take place. Observations during the weekend showed that the terrain was not actively used. However, bad weather could be a distorting factor. From personal conversation with Ravottuh supervisors it appeared that children do use the terrain in the weekends. The added objects such as pallets are proof of this situation.

#### 4.2.1.1 Supervision

The researched playground is divided into a public play garden (D) with two or three Ravottuh supervisors on Thursdays, and the schoolyard (A, B, C) with teachers as supervisors during schooldays. Compared to the ladder of van Rooijen (2014), the supervision during schooldays is mainly step 3: consciously watching over the children with a limited number of interventions. The Ravottuh supervisors explicitly let the children figure out the environment themselves and limit their interventions due to their risky play policy (personal conversation with Boele, E & Klevering, M, 25/03/21). The teachers only intervene during play fighting and when specific areas get too messy. For

instance, when the water tap overflows and pieces of chopped wood spread everywhere (p. Conversation, director of Oscar Romero). After schooltime, some parents remained on the terrain together with their children, in area A, B and C, after an hour the schoolyard was completely empty. Interestingly, parents that were observed intervened more than the teachers and Ravottuh supervisors. For instance, they called their children back to stay calm, ‘behave normally’, not go too far, or watch out for heights (in the climbing rack of zone A). Which is step 11, 12 and 13 on the intervention ladder: get involved, direct the activity and intervene (van Rooijen, 2014).

All in all, the playground provides a safe place for children to play at, wherein they can take risks under supervision of teachers and Ravottuh supervisors. When parents are present after school, the interventions increased. This supervision may help the child feel safe to take risks, resulting in more risky play. On the other hand, it may also prevent risk taking if they feel they are being watched too closely (Tovey, 2007; Brussoni, Olsen, Pike, & Sleet, 2012). Part of the attraction of risky play for children is that this can be engaged in away from ‘adult presence’ (Allin, West, & Curry, 2014), which Crooswijk may have too much of when the parents are there.

#### 4.2.1.2 The risky play practices

The Crooswijk playground has multiple zones that provide risky play practices. The risky play observed is summarised in figure 4.7. The total overview of observations is added in appendix 7.4. The descriptions and sum up the risky play practices in the different zones.

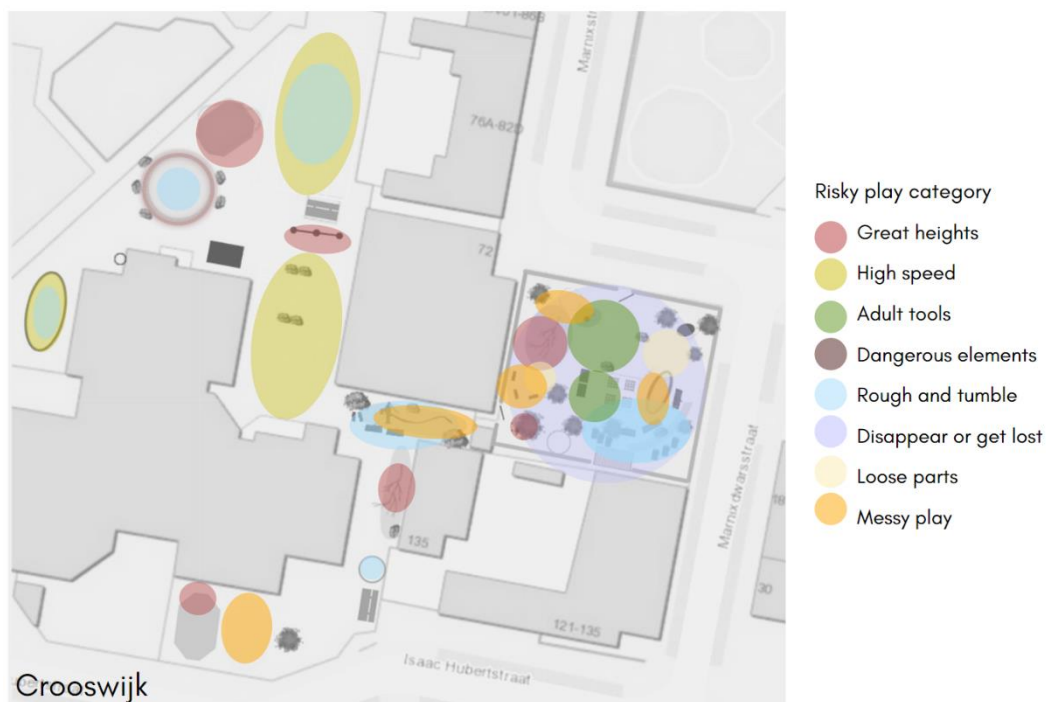


Figure 4.7. The location of the observed risky play practices in Crooswijk

Zone A: The climbing structure provides great heights. Children balance on wooden balks and hold onto a rope. They also sit on these balks, to ‘chill’. A slide with two iron tubes and without middle part offers risky heights. Children do not slide off this part, they do hang on the tubes. The area around the playing rack has a safe substrate. At the ring of pavers children jump on and of the tree junks.

At the football area children run around and reach high speeds. Mainly boys play football, now and then a girl joins the group. Furthermore, diverse groups play tag or dodgeball while running over the terrain. Which leads to some rough and tumble play. This also happens in areas where there is mulch.

Boys playfight and push each other to this ground. This also leads to children covered in mulch, which is messy play.

Zone B: In this zone, messy play is often practiced. When the watering tap is on, children collect water in cans and buckets and throw it towards each other. This sometimes leads to rough and tumble play, when they chase each other with water and buckets. Also, an imaginary game is played, whereat children run around with sticks, playing knight, crossing between the play garden (A) and terrain B and running through the water. The football cage is used the way it was designed for but is also used as climbing rack, which is great height.

Zone C: During the observations in zone C, little risky play practices were observed. The practices that did occur were mostly messy play in the sandpit. Furthermore, the 'kitchen sink' allows for messy play as well.

Zone D: The play garden offers multiple risky play options, of which great heights, messy play and adult tools are most practiced. During Ravottuh activities on Thursdays, children roam through the garden, climb on self-built structures, and dig holes with big shovels in the dirt. Figures 4.8 and 4.9 show the children during the Ravottuh activities.



Figure 4.8. Ravottuh gardening activity



Figure 4.9. Children using adult tools (shovels)

#### 4.2.1.3 Additional observations

During multiple visits at the Crooswijk playground, changes in the environment and type of play were visible, these events however, could not be described during the structured observations since these appeared over a longer period of time. These changes indicate that the playground, especially the garden, offers the children great variety as the environment can be transformed and manipulated for risky play by the children (Czalczyńska-Podolska, 2014). One such example is that of the dug-out circle in the garden. This is described in the format of a vignette, explaining the researcher's perception of this change:

*While visiting the garden today it seems a part has been substantially modified compared to a previous visit. Not by maintenance workers, but by children from the neighbourhood. In conversation with one of the Ravottuh supervisors it becomes clear that during the weekend, children from the neighbourhood have dug holes on the site. This is allowed since it is a public place. However, the supervisor makes clear that he would have partly reversed the adjustments if the holes would have crossed the whole terrain, to provide sufficient walking and activity space. The adjustments may remain, since they do not disrupt the whole play area. During the Ravottuh activities from that day onward, children actively enjoy the modifications. The elevations allow for new types of play: running in circles, further digging, playing trench after history class, and jumping in and out. (Personal observation, 15/04/2021)*

This change was observed to be structural and the ‘trenches’ remained till the end of the research. Therefore, these were added to the map of the garden shown in figure 4.3. Another change that was clearly visible over the course of the research was that of the effect of weather conditions and the seasons. During observations in March and April, rainfall allowed for worm searching and puddle stamping. The following month the sun remained hesitant; May only had three sunny days. Therefore, spring activities were delayed or did not turn out as expected. For instance, an activity of finding ladybirds resulted in finding nearly no ladybirds. One week later, the sun shone brightly, and ladybirds covered the terrain in abundance. In June, the play garden fully bloomed. This resulted in a more secluded terrain, surrounded by green trees and bushes, not visible from the streets. The activities changed slightly, wherein playing with water from the tap around the corners emerged as a new possibility. Furthermore, hiding behind bushes, collecting plants, flowers and small insects and wandering through the small forest-like surrounding were popular activities in June. The bright sun also allowed for an activity whereat children could make fire by shining sunlight through a magnifying glass on a small piece of wood. Weather is a factor that cannot be avoided in outdoor play, and so it worked to support risk taking in a way that the weather conditions influence the play affordances and practices of the environment. Outdoor play is naturally conducive to risky play (Sandseter, Kleppe, & Sando, 2021) and these examples highlight one reason why.

Lastly, changes were also observed in the loose parts of the garden. Loose elements such as two wooden pallets or a beer crate were brought into the garden outside of Ravottuh and school hours. Once the children arrived in the garden during their play session, they would find these and use them to their own liking. The Ravottuh supervisors checked the pallet on protruding nails or big splinters and chips. The pallets however, were not sandpapered. The supervisors trusted the children that they could handle these elements without injuring themselves badly. The pallets were left where they were originally put. Hereafter, children relocated them on the terrain, one next to a dug hole and one against the laying branch, which together formed a new climbing and hiding structure. The beer crate is an example of something normally not found on playgrounds, especially not in a school environment. The Ravottuh supervisors chose to leave this element on the terrain as sort of loose playing object. The children were allowed to play and relocate it, jump on and off from it. In This object itself might not be risky, the association related to it: kids playing with alcohol related objects, could be. This is what the supervisors also mentioned, but they considered this to be a fine toy that allowed for creativity. In this way the supervisors of Ravottuh allowed the children to choose their own play direction and allowed risky play to be an option, therefor the supervisors supported the children’s risky play endeavours as indicated by earlier research (TED, 2016; Jelleyman, McPhee, Brussoni, Bundy, & Duncan, 2019).

#### 4.2.2 Hoogvliet

The playground was intensively used during the breaks, just as in Crooswijk, allowing children the opportunity to run around for half an hour and physically exert themselves. This resulted in a lot of tag and children chasing each other. The many obstacles in the playground allowed the children to take multiple paths while running, making the chasing routes appear endless. During the observations however, groups of children were restricted to their own locations of the playground. After school, children were able to play and run over the entire schoolyard, although there were fewer children present. During the weekend observations, no children were seen in the playground.

##### 4.2.2.1 Supervision

Due to COVID and school policy the classes played separately. The restricting of groups of children to certain areas of the yard was enforced by teachers. The division of the playground into multiple zones was clearly visible during the break, however the teachers themselves came together to chat with each other. This resulted in them not watching the children and therefore children sometimes came up to

the teacher to ask for guidance or tell on someone who did something wrong. On the ladder of intervention this was mainly step 2: letting the children figure it out first (van Rooijen, 2014). On the other hand, it is school policy to stimulate good behaviour through stating the desirable actions rather than saying what is not allowed (p. conversation with the principle of De Notenkraker). This matches step 12 on the intervention ladder: directing the activity. The way this presented itself in practice is that teachers said the activity children would be allowed to engage in during the break, and then children had to find their own way and enjoyment within these boundaries.

#### 4.2.2.2 The risky play practices

Figure 4.10 summarises the observed types of risky play in the playground. This is partially elaborated per zone during the observations. The full observations are seen in appendix 7.5.

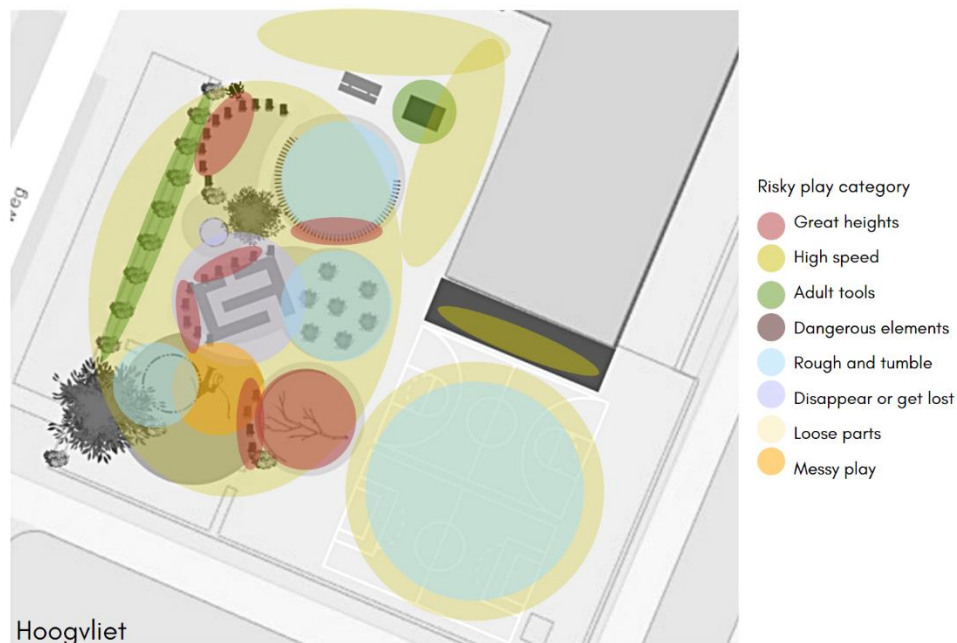


Figure 4.10. The location of the observed risky play practices in Hoogvliet

Zone A: Area A is allocated to older groups during breaks. Here the children play basketball and football, mainly allowing for great speed, although the children switch between running and walking during the game. Children are able to use the stairs attached to the building to play at great heights. These stairs are used in a variety of ways. Firstly, children simply run up and down them (sometimes chasing each other) or jump down from each step. One boy was observed to climb up the outer side of the railing, although he stopped halfway and went back. Play at heights was also achieved using the football goals, where a few girls were seen to climb on it and hang off it. Lastly, rough and tumble play was observed during the football game, and after school when boys caught each other during tag.

Zone B and C: Great height is again the main play activity that is observed. This happens on the tree trunk, where children climb and walk up and down it or jump off. Children are also seen using the tree as a balance beam. The upright tree logs are also used by children to climb on, keep their balance and then jump off. Sometimes during the climbing children trip or lose their balance and fall a bit, but no child seems hurt and each one easily gets back up. The children also use the rings of pavers and the wooden fences to climb on and jump off. All throughout the observations children are running and playing tag at great speeds. This sometimes also results in rough and tumble play, where children pull each other onto the ground once they are caught. Other physical acts are observed during children playfighting, although this did once result in a girl falling backwards over the paver edge and getting

slightly hurt. Lastly, a little messy play is observed with children playing with the mulch in the various circles and a few children are seen to be using adult tools when they help the concierge trim the hedge.

Zone D: During the school break and after school children are seen running across the front of the school, playing tag at great speeds. Again, this is sometimes combined with rough and tumble play. Children also play at great heights when they climb on the paver ring and planter. During the Ravottuh activity after school the observed risky play is different. The activity is contained in this zone and takes place in the mulch circle. Children are observed using all sorts of loose parts and adult tools that have been provided by Ravottuh. They congregate around the table that is set up and are seen hammering nails into wood, sanding rocks and using clay to create shapes. This also results in messy play from all the dust that flies around and clay that sticks to the children's hands. Figures 4.11 and 4.12 show the children during Ravottuh.



Figure 4.11. Children in the playground during Ravottuh



Figure 4.12. Play with adult tools during Ravottuh

#### 4.2.3 Sub conclusion of the playground's influence on observed risky play

In terms of playground characteristics as defined by Czalczynska-Podolska (2014), both playgrounds offer many of the features required to provide play value. However, with Crooswijk's garden addition this playground offers more variation. This variation also translates to more affordances for risky play, through which the playground in Crooswijk may encourage children to engage in risky play more (Sandseter & Kannair, 2011; Brussoni, et al., 2015). This was verified during the observations where the garden was observed to allow more play with adult tools and loose parts, categories that were barely observed in the more traditional playgrounds of both schools.

Getting lost and dangerous elements were not observed risky play categories. Elements that afforded this were mapped but they were not used by the children during the observation. The affordances for play at great heights were higher in Crooswijk than in Hoogvliet, which also resulted in more play at height in Crooswijk. However, both playgrounds had a sideways tree meant for climbing, of which that of Hoogvliet was used much more than in Crooswijk because its branches were better suited for sitting. Both playgrounds afforded play at great speeds and this was readily observed. This play at great speeds was always observed in groups of children, mostly during a game or when going from one location of play to the next. From these findings it becomes evident that the extent of affordances available in the playground influences the risky play activities children engage in, just as literature by Brussoni and colleagues (2015) suggested.

Prior research suggested that children would look for ways to take risks even if their physical environment did not promote this (Sandseter, Kleppe, & Sando, 2021; Sandseter & Kannair, 2011). This was observed as the lack of obvious risky play affordances for great height resulted in children using alternative playground elements for this play. Examples of this during the observations were that

children were climbing in and up the football goal and climbing up the side of the stair railing. Children looked for risks they could take and were not afraid to make their own risky play opportunities.

Children's attraction to risky play opportunities became especially clear during the Ravottuh sessions. Normally, children in Crooswijk and especially Hoogvliet have little to no access to loose parts and adult tools. However, during the Ravottuh sessions these elements were provided by the supervisors which resulted in risky play with loose parts and adult tools being greatly observed. In Crooswijk the children would eventually switch over from this play to the other types of play they usually engaged in (such as high speeds and great height), while in Hoogvliet the children remained with their risky play activity until they went home.

The supervision by teachers in both playgrounds was minimal, both locations had little teacher intervention during play (van Rooijen, 2014). Although some instances occurred where children hurt themselves from running or rough and tumble play, the children mostly engaged in their risky play safely. Important to note is that the types of risky play that the children engaged in during the teacher supervision is what they were used to playing, while during Ravottuh supervision the children were encouraged to try new types of play. This encouragement of risky play resulted in the Ravottuh teachers being more involved with the children at the start of the activities, although once the play had started the supervisors took more of an observing role. In this way, the Ravottuh supervisors increased risky play through positive experiences (Yalcin & Erden, 2018; Little, 2015), while teachers only regulated the play (Kytta, 2004). Parents were only present after school and seemed to limit their children's risky play practices by calling them back and intervening in their children's play. This is in line with findings from Little (Little, 2010).

Though both playgrounds are located in busy neighbourhoods, their fenced off demeanour, even more so in Crooswijk than in Hoogvliet, seems to discourage children from playing here after school. The accessibility of the areas, a playground quality mentioned by Czalczyńska-Podolska (2014), was lacking. This minimises the amount of risky play that actually takes place in the playground because children simply do not use it as much. Reasons for this lack of after school play become clear in the further conversations with parents and children, which along with their overall experience of risky play in the playground, will be the next section.

### 4.3 CHILDREN'S EXPERIENCES WITH RISKY PLAY ON THEIR PLAYGROUND

Through a mental mapping exercise and a semi-structured interview to discuss the map and the playground as a whole, the experiences of children in Crooswijk and Hoogvliet were collected. The relevant results from these conversations are summarised below, along with the children's maps to annotate the story. This section is set up to cover the types of play and elements that children considered to be the most risky (dangerous elements). After this the findings are discussed in order of risky play category that was mentioned the most to the least frequently. Within these, the results are summarised per playground element or in terms of what was considered the most, or sometimes not, risky during play.

The quotes of the children are sourced in a code consisting of their location (Crooswijk/Hoogvliet) and their respondent number (#), their gender (Girl/Boy) and their age (#). For example, the first respondent from Crooswijk, a boy aged 7 is: C1-B-7.

#### 4.3.1 Dangerous elements are risky

When discussing the truly risky and scary elements of their school's playground, these would mainly fall under the category of 'dangerous elements' from Jelleyman and colleagues' list (2019).

In Crooswijk, a common danger was getting a ball in your face or hit you in the head while playing football. One girl describes: “I find it scary to play football because some people are really good and they kick the ball hard and then it hits you in the face. So I don’t play, just with my class” (C8-G-8). This explains the risk, but also how the child manages the risk for themselves. Another child mentioned that during basketball you could also get a ball to the face “which hurts a lot, but the ball is in the shed” (C9-G-8). In this case, the risk is managed by not playing because the ball is not available. Another typical playground activity, besides football, that poses a risk according to children in Crooswijk is their slide: “sometimes you fall through it, especially because I am skinny. It happened twice before, but luckily didn’t hurt” (C11-G-7). Their slide does not have a typical bottom, but rather consists of two metal pipes that children straddle in order to slide down, leaving a gap between the pipes. A girl from Crooswijk mentions that “it is important that the slide be different because people can slide through it” (C8-G-8), drawn in figure 4.13. In order to manage this risk, C11-G-7 says: “I do it a bit more carefully now, but I do still slide down”. There is concern for the younger children though: “it is not fun for them, there needs to be a place they can slide and play too” (C8-G-8). A different slide would be another way to manage the risk.

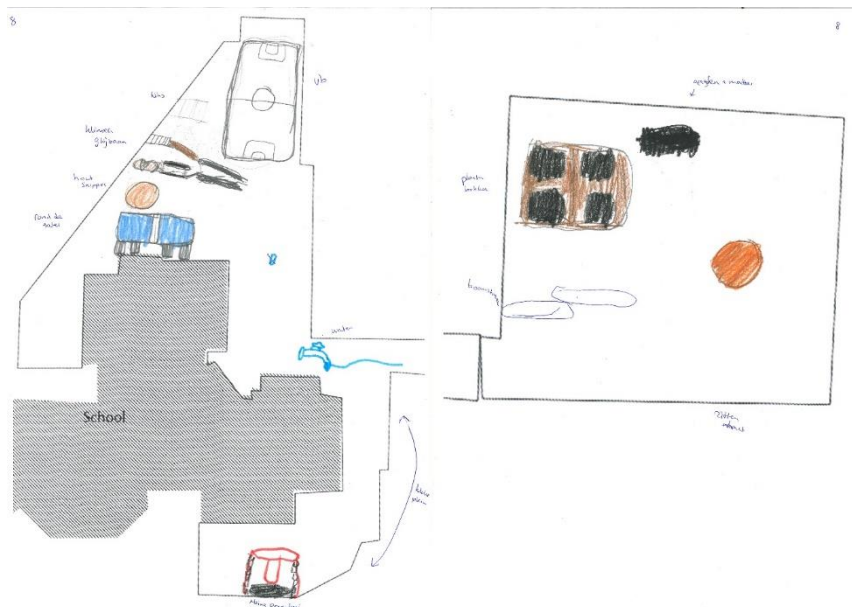


Figure 4.13. Mental map showing the the slide made of two bars (C8-G-8)

Other risks that children mention all concern nature. In the garden of Crooswijk, children can find a lot of insects, but some find these scary (C4-B-9, C9-G-8). However, although children mention they are scared of them they also say they do not actually find them in their playground: “I saw a spider in the classroom, but not in the garden, it’s okay there” (C10-B-8). Another says that the spiders he finds scary are “only in other countries, those big spiders I mean. On the playground nothing is scary” (C4-B-9). Therefore this risk is avoidable. Another natural element in the playground has to do with vegetation. In Crooswijk, one child mentions the risk of stinging nettles in the sandpit of the garden “so we don’t play there” (C6-G-8) is her response to this risk. The fact that children do not play there was also strengthened by the lack of sandpits in the children’s maps of the garden. One girl did draw the sandpit, seen in figure 4.14.



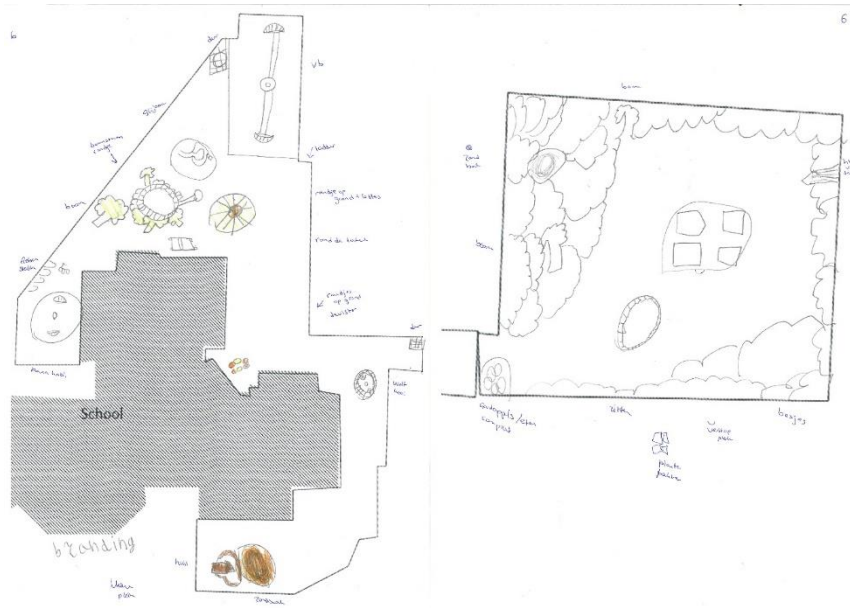


Figure 4.14. The sandpit in the garden (C6-G-8)

Other nature related risks involve the tree trunks. In Hoogvliet, these are lined up to create a border around the different sections of the playground and sometimes children walk on them. One child says these pose a risk because “they can be a bit crooked and then I’m scared to fall off them” (H12-G-8), nevertheless they “do walk on them” (H12-G-8). In Hoogvliet, one child mentions a rather unique risk in the same section of the garden, on the grass between these tree trunks. He says: “near the tree trunks I run on the path, not on the grass, because there can be dog poo. So I do not play there” (H10-B-7). So the overall method of dealing with risk seems to either entail being more cautious or avoiding the risk that scares the children. These tree trunks can be seen in figure 4.15 and the grass in figure 4.16.

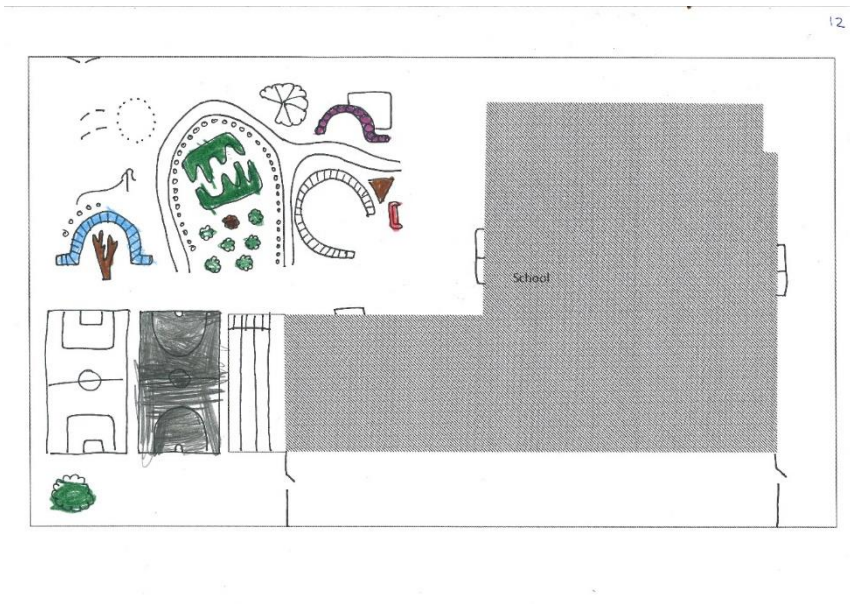


Figure 4.15. Ring of tree trunks in Hoogvliet (H12-G-8)

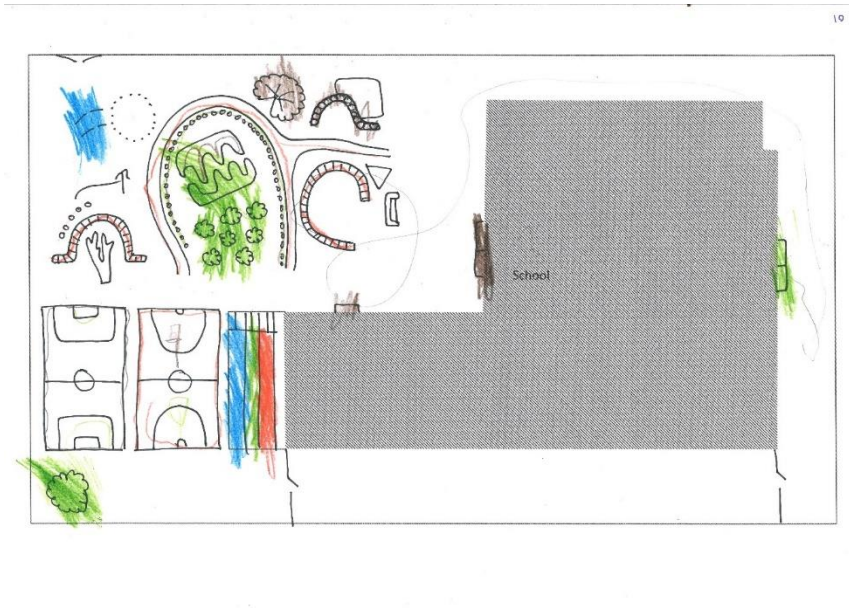


Figure 4.16. The grass in Hoogvliet (H10-B-7)

Other elements of the playground that children considered risky and scary can be traced back to past experiences. One girl mentions she is afraid to fall off the little house at the front of the Crooswijk playground because you can fall off it since it is “not that sturdy” (C6-G-8). Another girl says she finds it scary that the garden can sometimes be a bit dark “because someone scared me there yesterday” (C7-G-8). A boy says the rocks near the water are risky “because I jumped on them and I fell on the ground” (C3-B-8). Another found the tree trunk in the garden risky because he had fallen off it before too “so now I don’t dare to go on it” (C3-B-8). Yet another finds riding his scooter on the pavement of Hoogvliet risky because he had fallen there before “and I hurt my head. I couldn’t break on time and someone else rode into me” (H8-B-9). From these past experiences that now relate to risk awareness, most had to do with falling and pain from this.

### 4.3.2 Great height is a regulated risk

One could conclude that the risk associated to past experiences of playground elements has the most to do with great height. Most children however associated playing at heights as an activity that was mainly fun. In Crooswijk, height is easily played with on the climbing structure (as seen in figure 4.17 and 4.18) that many of the children drew. In this one girl says “my friends will lie in there and I will jump and my friends will move. We’re not scared to fall” (C11-G-7). Children also jump off this structure because “that’s fun. And if you can jump from there you can jump from higher objects too. I do that sometimes, at two meters high from a roof, but not here, at home off a roof. I just do it, it’s not risky or scary” (C16-B-7). In this sense, the children practice taking risks that they do not find scary. With this practice then comes experience that leads to more risk taking ability.

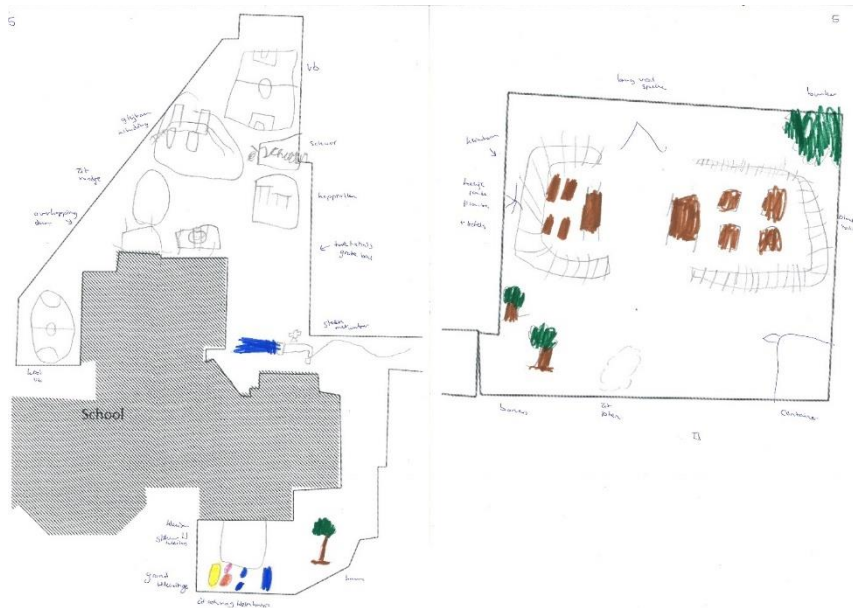


Figure 4.17. The climbing structure of Crooswijk (C5-B-8)



Figure 4.18. The climbing structure prominently drawn (C9-G-8)

In Hoogvliet the main climbing opportunity is the tree trunk. This has more sturdy and higher branches than in Crooswijk, as well as a more prominent spot on the playground. This may explain why it is used more and visible in almost all maps (see figure 4.19 and 4.20). Here too most children actually do not find climbing risky but rather fun. “Playtime outside is most fun on the tree because climbing and jumping is fun” (H2-B-9). One fun element seems to be the climbing, but another relates more to imagination, where a group of girls pretends the tree is a horse so they “sit on the branch and pretend to ride the horse” (H6-G-9). They say they can “climb all the way to the top, that is not scary” (H7-G-8), they just go up “because it is not too high” (H7-G-8).

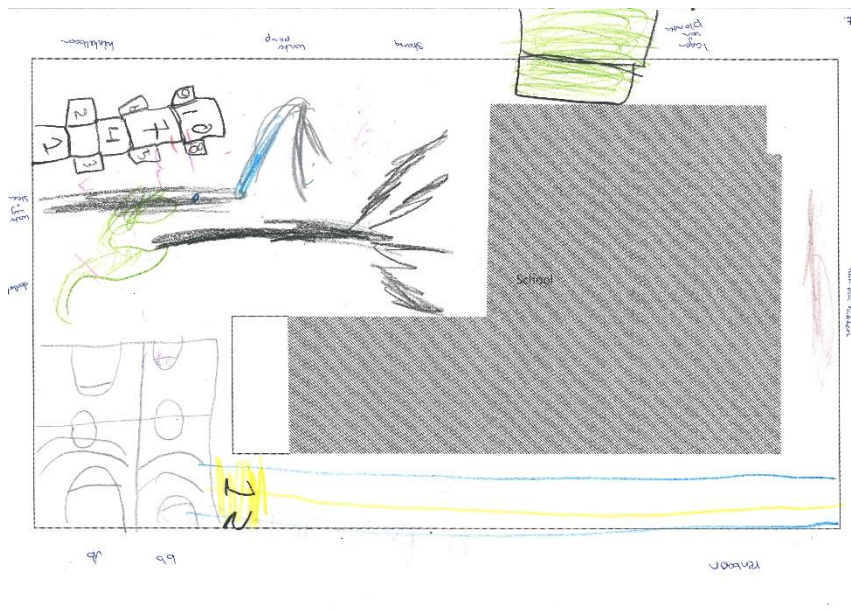


Figure 4.19. The climbing tree in Hoogvliet (H7-G-8)

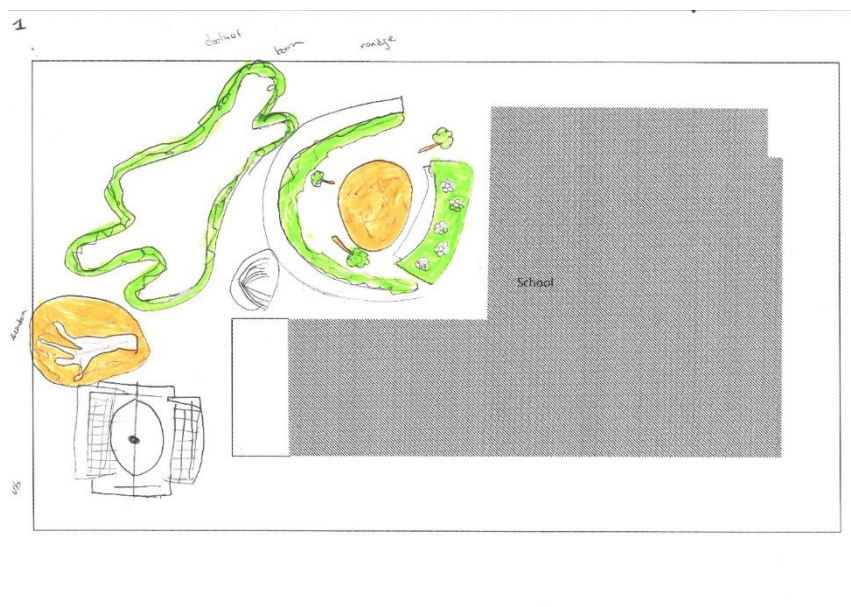


Figure 4.20. The climbing tree with wood chips around it (H1-G-8)

In both main climbing opportunities, the height seems to be reasonable resulting in most children seeing minimal to no risk. However the lack of risk and danger experienced by the children can also be due to their ability to regulate the amount of risk they take. With regards to great height this can take multiple forms. One girl mentions that they are not scared to fall because “we hold on tight” (C8-G-8)

while climbing Crooswijk's play structure. Others evaluate the strength of the objects they intend to climb. In Hoogvliet, for example, there are also some small trees in the grass, but "you can't climb there because they are skinny and weak" (H7-G-8). Children evaluate the risk of climbing in them anyways, "but if you do it will break" (H9-B-8). They therefore gravitate towards climbing in the larger tree next to school, although some "find the tall tree next to school scary. So [they] have not climbed there yet" (H10-B-7). Avoiding the risk altogether seems to be another method to regulate risk. A combination of taking and avoiding risk to decrease the total risk children take is described by a girl in Crooswijk. She takes what could be described as intermittent risk, for as long as she feels comfortable, and then takes a break when it gets scary. She does so when hanging off the monkey bars (figure 4.21): "sometimes it does feel like I'm going to fall, but then I stop for a bit before going again" (C11-G-7), thereby regulating the risks she takes.

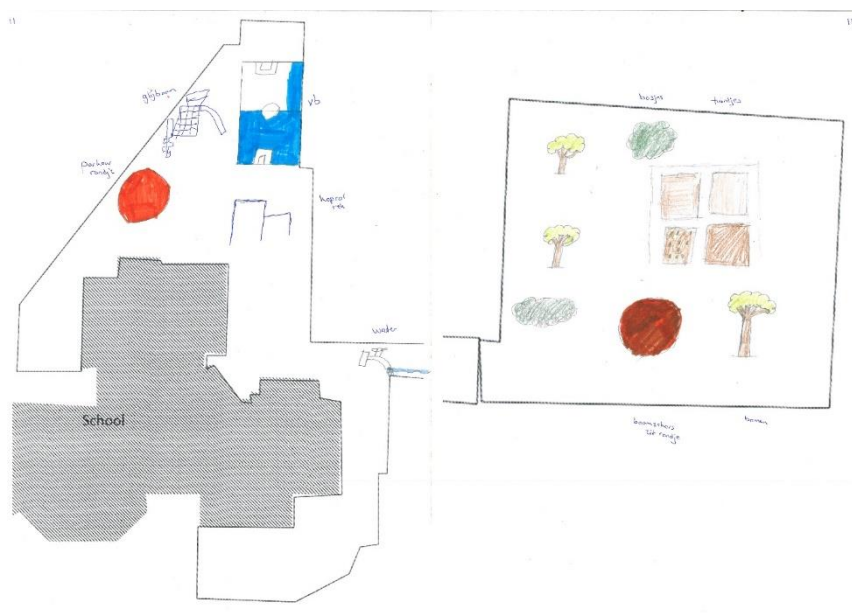


Figure 4.21. The monkey bars in the playground (C11-G-7)

A last finding relating to risk regulation is not the object being climbed, but rather the ground cover below. One boy mentions he cannot really practice freerunning at school because "there is stone ground everywhere" (C16-B-7). He says there is a boy in another class who doesn't care about the ground because he is so good, but "there is a soft place, the circle with mulch, I practice there" (C16-B-7). In Hoogvliet a child mentions they like to use the stairs as a level to jump off and do a flip, "although there are not really mats, so it's not really good and I only do it after school" (H5-B-9). Another stone surface that children mention climbing and jumping off is the ring of pavers "I dare to even jump off them, I do that sometimes" (H12-G-8). Regarding risk with great height, an interesting difference between genders in Crooswijk is that boys call playing with heights "freerunning" while girls have created a game called "parkour". Both are similar although boys often mention 'flips' while girls are more concerned with 'big jumps'. Girls mention they only do parkour in the mulch circle where "my friend does something and then we have to try to copy her. Maybe she will jump or take a big step" (C8-G-8) she mentions that sometimes it is difficult "my friend did a bit step that I didn't think I could do, but I did it." (C8-G-8). Another girl says it is mainly exciting to see who is best: "whoever is first to climb up the border wins. It's pretty exciting and a bit scary who will win" (C6-G-8). This activity is done in the mulch circle of Crooswijk, an element not meant for climbing or great height but actively used as such, which was also observed during the observations.

### 4.3.3 High speed is low risk

After playing at heights, the second most mentioned type of risky play is playing at high speeds. This is however, often in the form of tag. Just like climbing was fun children also say “running is not scary” (H12-G-8), the risk is said to be more in the chance of getting caught than in actually running: “I like a game called Zombie, someone is the zombie and they have to catch you. If they do, you are a zombie too. That is scary and so we run away” (H1-G-8). In Hoogvliet, the children all mention a game called Zombie, where the amount of people tagging constantly increases, thereby also increasing the risk of getting caught. In Crooswijk, a couple children also mention a game with more than one person who is the ‘tagger’, this game is called Police: “Usually I play with the boys and my friends, then we are the police and they are the convicts. Then we choose who we want to go after and do it together, but they always escape afterwards” (C8-G-8). Another version of tag that the children have created in Crooswijk is called Jachtseizoen (translated: Hunting season): “then one person has to catch everyone. It is especially scary if we are allowed outside of the school’s fence too. Then we can go anywhere and they could have to run very fast to catch us” (C1-B-7).

With play at high speeds the environment this is done in determines how well children can run. In both schools children mention that they like to play in the natural areas of the playground. In Crooswijk this is the garden: “In the garden I always like to run around” (C8-G-8). In Hoogvliet: “I like to run with my friends, we run through the entire nature-playground” (H12-G-8). Another child adds that the maze in Hoogvliet makes tag more fun: “If you are the one who has to tag people you can become dizzy in the maze because there are so many different ways to go” (H7-G-8) as seen in figure 4.22. This nature allows for more running routes. In terms of tag, these nature routes allow for more opportunities to escape, such as through the maze seen in figure 4.23. In Crooswijk however, one child also mentions that they like to play tag in a small, enclosed, oval football cage (called “de Panakooi” by the children): “It’s my favourite place to play tag, because they won’t catch you. You just have to keep running in the circle” (C2-B-8).

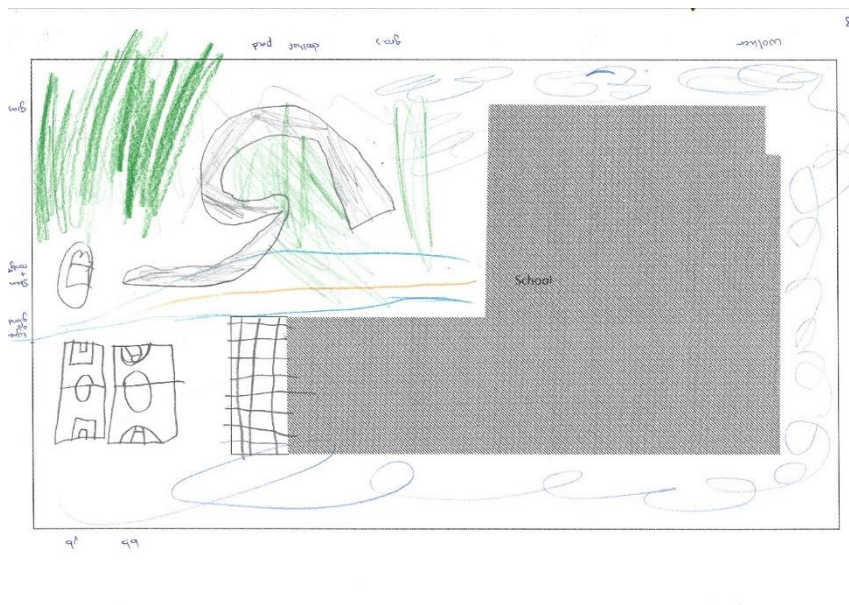


Figure 4.22. The path that encourages different routes during running (H8-B-9)

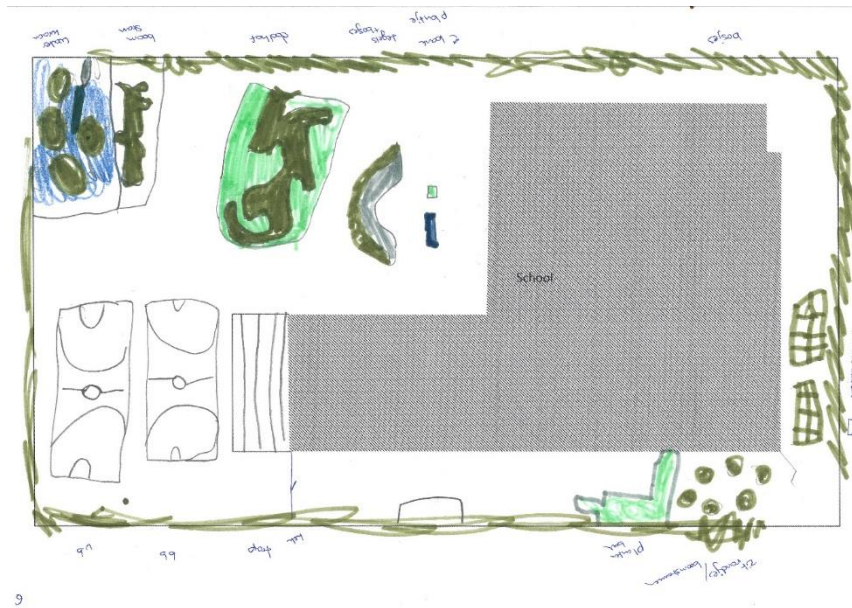


Figure 4.23. The maze in Hoogvliet (H6-G-9)

Although little risk is experienced with play at high speeds, some children do try to avoid running, all who said so were in Hoogvliet. One boy mentions he did not like to run during football “because I did not have football shoes, but now I do so I play more and I like it. These shoes are more strong so they don’t break” (H5-B-9). He made a risk assessment of needing proper shoes to run and play. Another child also avoids running fast because of his feet: “I can run fast but then my feet and legs hurt, which is not fun. My foot hurts now so I don’t run fast anymore.” He later adds: “I find running around a bit scary, but I’m never going to do it again so I’m not scared anymore” (H11-B-8). He avoids the risk altogether now. Another girl also avoids running, mainly playing tag “because it’s a bit scary. I fell on my head, hard, and had to go to the hospital. I almost hit my head on the corner of the paver border. So I don’t play tag anymore” (H1-G-8).

#### 4.3.4 Rough and tumble play is always with others

The third most mentioned risky play is rough and tumble. This finding matches the research of Sandseter, Kleppe and Sando (2021) who found that great height, high speed and rough and tumble play are the most common types of risky play among children. Rough and tumble play mentioned by the children was often in combination with a game of tag in order to catch the person first. In Crooswijk the children had created a game called ‘Politie’ (translated: police) where “once we catch sometimes even use a rope to tie them, but the fun part is that they always escape” (C7-G-8) a girl explains. However another girl mentions that she dislikes this game and finds it risky because “they just catch and push someone around” (C6-G-8), although another girl disagrees and says: “we don’t push but we just catch and take them” (C11-G-7). In Hoogvliet, a boy also mentions pretending to be police and then trying to catch and contain someone, but has invented a strategy to avoid being caught: “If someone holds me by my blouse I will take it off and then run away again” (H9-B-8).

Three children mention regulating their risk during rough and tumble play by choosing a soft space. This is in line with affordances theory where a soft underground allows for rough and tumble play (Brussoni, et al., 2015). A boy explains: “We playfight under the climbing structure because there is grass there, we don’t do it anywhere else” (C13-B-8). During observations, this was also observed (section 4.2.1.2), where the children only engaged in rough and tumble play on the grass and on the woodchips (seen in figure 4.24), although the woodchips were not mentioned by the children.



Figure 4.24. The brown woodchips in Crooswijk (C2-B-8)

Both with catch-and-contain games and playfighting the children mention little or manageable risk. The real risk they see in rough and tumble play is when it involves people with bad intentions, who do not understand it is just a game. One girl explains: “often a boy from my class tries to catch me and my friend. When he does he pushes me to the ground. I tell him to stop and sometimes he does but sometimes he doesn’t, I really don’t like that” (C1-B-7). In this case it concerned children from the same class. Another child mentions that he also observes other classes fighting with each other: “usually the big children from groups seven and eight fight with each other, I find that scary” (C3-B-8). It seems that on the playground, children play mostly with their own classmates which does decrease the risk of engaging in rough and tumble play with older children. The influence of peers and other children on the degree of risky play in the playground is further elaborated on in section 4.4.1.

#### 4.3.5 Mixed options about messy play

In some ways messy play can come from rough and tumble play. Children playing on the ground run the risk of becoming dirty. Also, similarly to rough and tumble play, children can entice each other to participate in messy play, although mostly in regards to messy play with water. “Children will grab a bottle which they fill with water and then chuck the water at each other, that is a lot of fun” (C5-B-8) the child then adds that when they run, they do run the risk of losing the water they have collected. Overall, many children have positive experiences with messy play using water, but “only if it is warm” (C14-B-7). In this way, becoming wet is not an issue because it provides some cooling during warm weather: “it doesn’t matter if I get wet because it is super hot outside” (H12-G-8). Becoming wet during cold weather is a risk that the playgrounds discourage because “when it is cold the water pump does not work” (H7-G-8).

With water comes mud, and this poses a greater risk to become dirty. Children have mixed opinions about becoming dirty from the watery mud. Some children do not mind it: “it doesn’t matter if I get dirty because my mom will wash my clothes” (C7-G-8). However, many children say they try to avoid becoming dirty, saying they are “scared to be dirty, I don’t like that feeling” (C8-G-8). Other children avoid becoming dirty because “I’m not allowed to be wet or dirty from my parents” (C15-B-7). Mud also presents itself in the garden, here one child explains they “put on old shoes” (C8-G-8) when they play there so it does not matter if their shoes get dirty. The risk of dirty shoes is something that the children say they try to avoid, therefore mentioned a main reason for not playing in the sandbox



anymore: “the sandbox is no fun for two reasons: no one plays there and your shoes get full of sand” (C1-B-7). Nevertheless, sand and mud seem to be less problematic when children like to dig, possibly because the risk of getting dirty is expected: “I like to dig, I am always dirty. I fall sometimes and that also makes me dirty. I just like to dig holes” (C12-B-8).

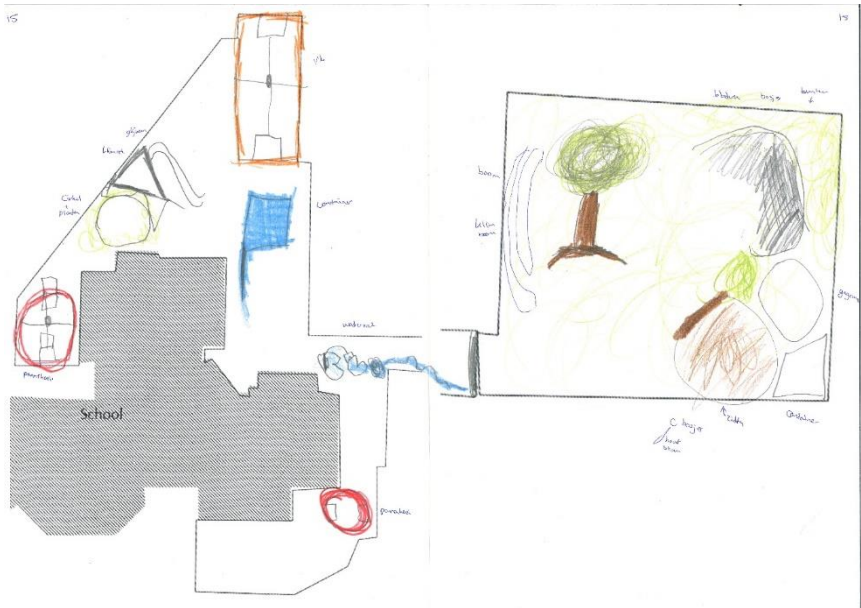


Figure 4.25. The water pump in Crooswijk (C15-B-7)

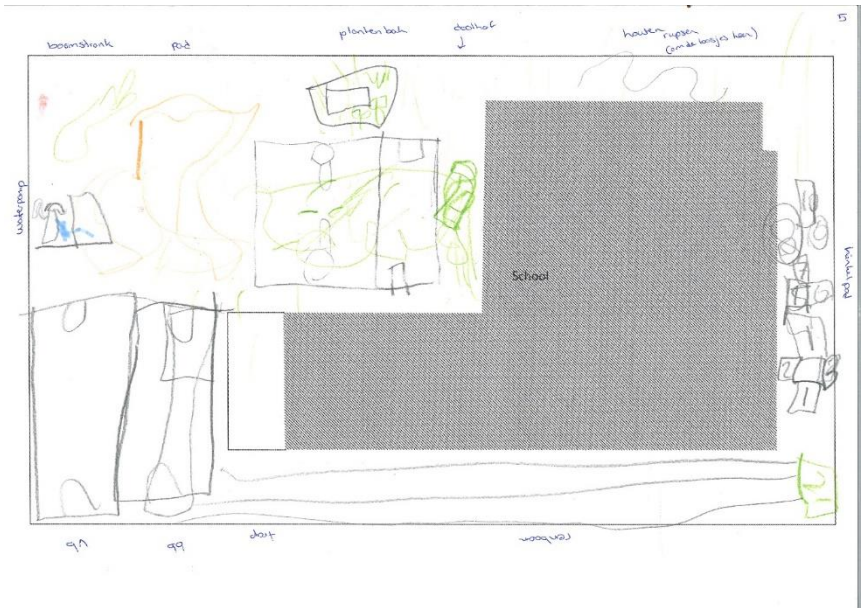


Figure 4.26. The water pump in Hoogvliet (H5-B-9)

Messy play with water was mentioned in both schools, since both have a water pump (see figures 4.25 and 4.26). Messy play with mud and dirt was only mentioned in Crooswijk, since it was often experienced in the garden. Although Hoogvliet also has natural elements, it seems the risk of mud only arises when there are no paths or woodchips everywhere. Perhaps Hoogvliet offers enough opportunities for children to avoid becoming dirty while playing, combined with a lack of interest in playing in the mud from the children in Hoogvliet.

#### 4.3.6 Loose parts and adult tools

Other elements that only presented themselves in Crooswijk are references to risky play with loose parts and adult tools. In Crooswijk, these references were in relation to the garden, not the paved playground. In the garden the children reference the loose parts they find on the “big tower” (C1-B-7), a “big mountain of stuff” (C16-B-7), seen on figure 4.27, which they then use according to their own imagination. One child explains he will “use the stuff to fake-hit people, and my friends do too” (C16-B-7) which has a risk because “sometimes I hit them by accident” (C16-B-7) but luckily “I hit very soft” (C16-B-7). Some also use these loose parts to dig “to find insects” (C8-G-8), but this is not considered risky.

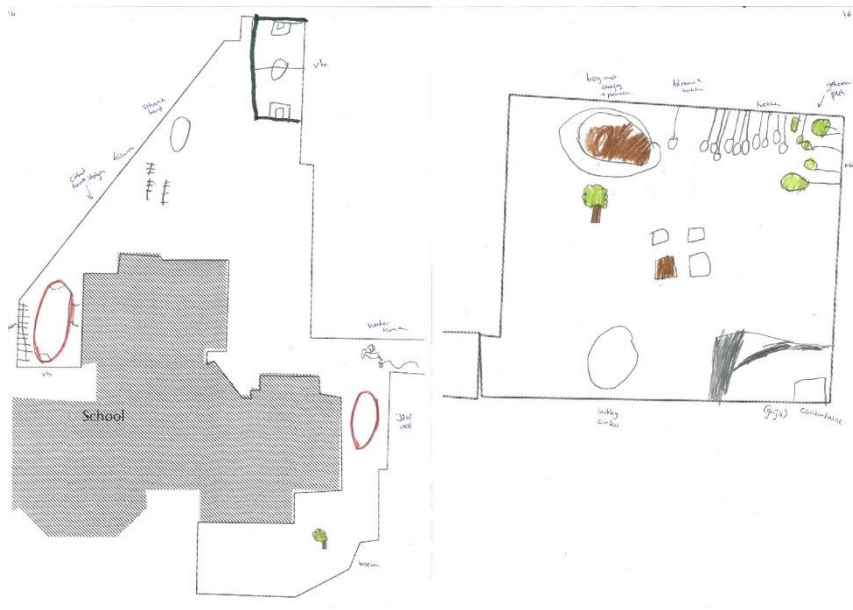


Figure 4.27. The brown circle is the 'pile of stuff' (C16-B-7)

Another child mentions that she has built a hut in the garden. This can be considered a combination of loose parts and adult tools. She explains: “I’ve done it twice with my brothers. We used nails and hammers and also sticks and leaves” (C11-G-7). Her brothers seemed to regulate the risk for her because she “was not allowed to hammer, my brother did that” (C11-G-7). The hut itself was also slightly risky because “one fell because of the wind, but we could sit in it” (C11-G-7). The hut was built after school.

During school, children only mention using adult tools during the Ravottuh programme. The main activity they recall is using knives to cut vegetables, mainly potatoes and mushrooms. One child says: “I found it a bit scary when I found out we were going to cut ourselves, I thought I might hurt myself” (C3-B-8). However, most children liked doing it, “it is fun to make food, we were allowed to use wooden knives to cut the potatoes” (C12-B-8). Many children also mention they also cut food by themselves when they are at home: “I do it at home, I cook a lot and then I help with cutting too” (C6-G-8) and so the practice makes it less risky. In Hoogvliet, no children mention playing with adult tools. The possibility to play with adult tools was only observed here during Ravottuh sessions. The children who participated in the interviews had not been a part of this yet, or did not consider risky play loose parts or adult tools relevant to explain their play experiences.

#### 4.3.7 The tendency to hide and disappear

When asked what children like to play in the garden, many mentioned football and tag, but many also mentioned hide-and-seek. No child mentioned the game being risky or scary, the only risk was “being found while hiding” (H1-G-8). What greatly influenced the enjoyment of hide-and-seek was the availability of hiding spots, resulting in the garden and natural areas of the playgrounds to be much more suitable than the open areas: “you can hide well in the bushes of the maze” (H8-B-9) and “the garden has many great hiding spots” (C11-G-7). Another more deliberate hiding spot in the garden of Crooswijk is the bunker that the children have created, seen on MAP. “We have a corner with plants all around it, my friend made a bunker there” (C1-B-7) one boy explains, seen in figure 4.28. This ‘bunker’ is used as “a secret spot” (C16-B-7), allowing the children to feel more hidden from the group (Brussoni, et al., 2015). Few children considered the bunker risky, but one did mention that “it is a dark corner” (C7-G-8), and that her friend had scared her there. In this case, the risk of being scared is associated to the atmosphere and past experiences.

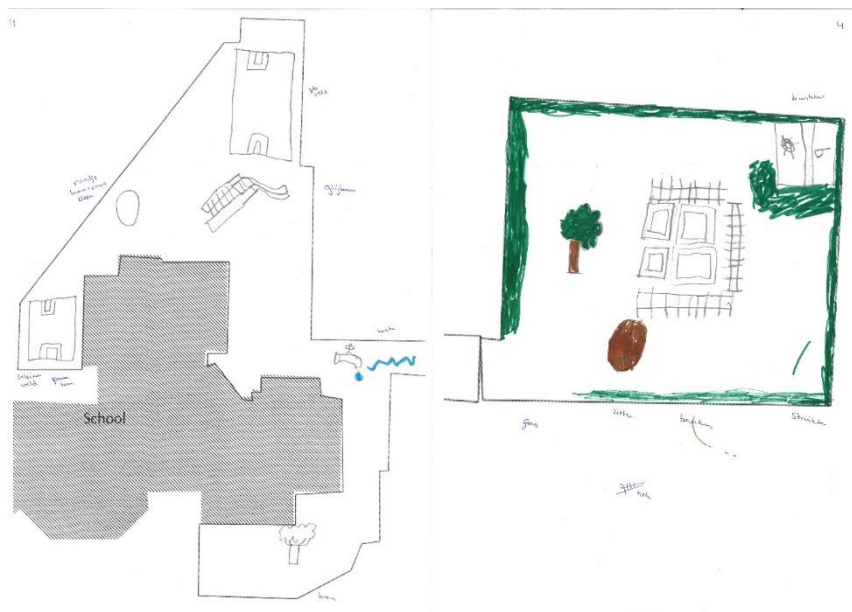


Figure 4.28. The bunker in the corner of the garden (C4-B-9)

Games of hide-and-seek and playing in the bunker were not considered risky. Within the boundaries of the playground the children feel safe to go and hide wherever they please. Outside the boundaries of the playground is where the risk is experienced. This risk was not experienced by the children themselves, but rather by their parents. Many children mentioned having rules about not being allowed to go “too far from my house” (C2-B-8). This version of risky play and the chance the child might actually disappear or get lost was not of concern to the children, but it was of great concern to the parents. This will therefore be elaborated on in section 4.4.3.

#### 4.3.8 Sub conclusion of children’s playground and risky play experiences

During the interviews, the children were not prompted to talk about risky play categories specifically, but of their play in general. What they included in their responses gives insight into what types of risky play children gravitate towards the most. These findings match prior research that the most common types of risky play are, in order, great height, high speed and rough and tumble (Sandseter, Kleppe, & Sando, 2021). These categories were however not what children found the most risky during their play. The biggest risk was found in relation to dangerous elements. These dangers that posed a risk to their play included the design of play attributes (a bottomless slide), footballs that could be kicked outside

the field lines and natural elements such as insects and plants that could sting you. Past experiences of the children contributed to what they considered a dangerous element today.

Besides the dangerous elements category, most risky play was actually deemed rather risk-less by the children, simply fun or exciting. This illustrates that children did not consider everything risky that research does. A reason may be that researchers (adults) created an understanding of risk and play as an activity, while it is an everyday way of being for children. This underlines the importance of children's geographies when phenomena concern children (Holloway & Valentine, 2004; Skelton, 2009). Another reason why the play was considered risk-free may be that the children had already grown accustomed to the risk. From this a conclusion can be drawn that the playground provides little opportunity for gradual increase in risk taking once the child's threshold is met.

Common risky play activities that were not considered risky, were climbing, tag and running, playfighting and messy play. Important to note is that some children did mention a risk in these activities but had created methods to regulate this risk. Examples of this were taking small, intermittent risks while climbing, wearing proper shoes to run, looking for soft ground to tumble on and only getting messy in warm weather and older clothes. The ability of children to regulate their risk points to them being able to evaluate the risk in their play (Sandseter E. B., 2009) and take steps to minimize it, resulting in them no longer experiencing the risk. At the same time, the child has unconsciously grown from this risk evaluation and learned skills to avoid this risk in the future. This is in line with the literature about the benefits of risky play (Graham & Burghardt, 2010; Pellis & Pellis, 2013; Sandseter & Kannair, 2011). These sources however did not highlight the risk regulating methods children had created, which this research does because children are giving their personal experiences.

Lastly, these results indicate that each child is different (Sandseter E. B., 2009). What some considered risk-free play, others avoided because of the risks. This indicates that children cope with risk in their own ways ranging from not seeing a risk, to liking the risk, to regulating the risk, to avoiding the risk. A last way that children dealt with risk during their play is that they went looking for it. What many children appreciated about the Ravottuh activities is that they involved playing with knives and loose parts, although here the risk was regulated by the teachers. In terms of looking for risk children did this together or individually. With great height for example, children explained that they had created a 'parkour' game in which they encouraged each other to try new moves and jumped from objects not designed to climb on. With regards to the ability to get lost children created a bunker or used nature to hide in. Some individual children mentioned climbing on walls not meant for climbing. All in all though, regulating risk was the most common denominator when it came to children's experience with risk in their playground, and many children had created their own methods to do so.

#### 4.4 SOCIAL CONTEXT INFLUENCING RISKY PLAY

The last findings surrounding the ability to disappear or get lost flow well into underlining the importance of not only considering the child's experiences with risky play, but also the social context surrounding their ability to play risky. Although the influence of parents has already been touched on above, this section will first cover the influence of peers and then other children on the playground. Then the influence of teachers and the Ravottuh teachers will be detailed, concluded by the influence of parents on the child's overall ability to engage in risky play.

##### 4.4.1 The influence of peers and other children

When asked whether the children ever participated in game because their friends wanted them to, responses were mostly along the lines of "we always want to play together, so we do something everyone likes" (C2-B-8). Some experienced the opposite, for example when girl suggests tag, her

friends say: “no man, that is not for us” resulting in her saying “they’re just trying to be cool, but I do that too sometimes” (C15-B-7), showing the influence of friends’ opinion on what children participate in. Tag or hide-and-peek were two popular games the children mentioned in relation to playing with friends, but the games are not considered risky, as found in section 4.3.3. The most popular game mentioned concerning play with friends was football. Many children enjoy playing this game: “football with my friends is fun” (C15-B-7). Some children however say “I do not really like football but I play with my friends because I don’t have anything else to do” (C1-B-7), indicating they feel no other choice but to participate. Not all children enjoy football with friends though, one girl explains “it used to be fun but then a boy started to push and shove and then I did not want to play anymore” (H4-G-9). To manage the risk of aggressive peers during football she explains “now I only play with girls” (H4-G-9).

Not only do peers influence the children’s enjoyment of or ability to play football, other children on the playground are also influential. In Crooswijk especially, many children mention that the large football field “is where the older boys play” (C12-B-8). This prevents the younger children from playing here because “sometimes they don’t play fair, or even kick hard so that you can get hurt” (C2-B-8). Because of this, the children choose to avoid the risk of playing in the soccer field and so they “play with my friends in the smaller red soccer cages. But sometimes too many other people come in, and it’s too full” (C5-B-8).

Older children also influence the younger children’s feelings of safety when it comes to their rough and tumble play: “the older children fight with each other sometimes” (C3-B-8). Another child explains that for the even younger children, the presence of older children playing is a risk because “the younger children often get hurt when there are older children playing. The older children do not see them, bump into them and then they cause the younger children to fall” (C8-G-8). To regulate this risk she suggests “the younger children should have their own spot on the playground, and then us older kids have our own spot also” (C8-G-8). During stricter corona measures, the school had a policy to keep groups from mixing on the playground, but with the loosening of these measures, the risks posed by older children to younger children are arising again.

#### 4.4.2 The supervision of teachers

##### 4.4.2.1 School teachers

The teachers play a large role in deciding where the children get to play on the playground. One child explains: “there is a paper that we look on to see which football field we are assigned to play on that break” (C15-B-7). In Hoogvliet, the children simply “have to stay in the assigned playground space” (H4-G-9). The teacher also regulates how long the children are allowed to play, one child mentions: “we are not allowed to play for very long” (C9-G-8). Teachers decide at what times and in what conditions the children play: “it is also sad if it is time to go to the garden but it starts raining, because then we have to go back to class” (C9-G-8).

Another location restriction that teachers place is to stay within the schoolyard. Children mention they are “not allowed to run away from school” (C16-B-7), they “have to stay between the fences” (H6-G-9). Regarding this, one child wishes they would be allowed “to play outside the fences, just a little outside them, not necessarily all the way to my house” (C1-B-7). Within Hoogvliet’s nature area teachers also set restrictions: “we are not allowed go in the bushes” (H7-G-8) because “the sticks are thin and they break easily” (H9-B-8).

Aside from regulating when and where the children are allowed to play, they also have rules regarding what the children are not allowed to do while playing. In Hoogvliet, the playground teachers decide what the children play: “you have to join the game the teachers says we are going to play” (H4-G-9).

In Crooswijk the teachers take a supervising role during breaks. One girl describes: “If it is very risky play, the teacher will look at us, and sometimes something goes right or wrong, but she will just watch us. And if the boys are playing football sometimes one of them gets a ball to the face or falls, and the teacher does not like that” (C6-G-8).

One main thing the children are not allowed to do is climb on items not ‘meant’ for climbing. A child describes: “In the schoolyard we are allowed to play, but not allowed to do anything dangerous. It is dangerous if you climb by the ladder attached to the wall, because then you end up in people’s houses and can climb up on the roof. That is not allowed” (C6-G-8). The large staircase in Hoogvliet is also off limits to the children: “they think it is too dangerous” (H5-B-9). Another child says they are not allowed to climb on the fence: “it is not allowed during school, and I don’t do it, but I would find it exciting” (C16-B-7). Children are also “not allowed to climb on the container” (C15-B-7) or climb on the wooden house in the front of the school, but children say “I don’t do that either” (C1-B-7), while other children mention they enjoy climbing there, with a common response being: “I just do it when they are not looking” (H5-B-9).

Disallowing climbing seems to be to prevent the children from hurting themselves. The teachers also have rules against (play)fighting, in order to prevent the children from hurting others, or themselves. One child describes: “if we are playing we are not allowed to hurt each other, or put each other on the floor for example. I don’t do that, but there is a boy who does and he seems to like it” (C8-G-8). In Hoogvliet, there are also rules about no pushing: “You are not allowed to push someone off the ring of pavers if they are walking on it” (H1-G-8). This suggests that this has happened before since there is now a rule about it. A few boys describe that they know fighting is not allowed, but do so anyway: “I just like it, and sometimes I do it in the schoolyard even if it is not allowed” (C12-B-8). But the teacher says that from playfighting comes real fighting” (C13-B-8).

In Crooswijk, a girl describes that if the children are seen fighting, they are given a maximum of three chances, in the form of cards: “if they are asked to stop but they don’t, they lose one of their chance cards. And if they lose all then they are never allowed to play outside or go to P.E.” (C11-G-7). One child mentions that if he sees the older kids fighting in the schoolyard, “it is scary, so usually I call the teacher, but nobody knows I do.” (C3-B-8). In this way, the teachers regulate the rough and tumble play of children and children follow or disregard these regulations. In Hoogvliet however, one girl explains that when she told a teacher that a boy was teasing and pushing her: “the teacher said I should just forget about it” (H4-G-8). As a result this girl now plans to hit back the next time: “because the teacher doesn’t help me” (H4-G-8).

#### 4.4.2.2 *Ravottuh teachers*

The teachers of Ravottuh are considered to be different from the children’s ‘normal’ teachers. The children describe them to be “very kind, and also kind to nature and animals” (C15-B-7). The children mention that these teachers encourage them to learn about nature because “they give a lot of information about plants and animals” (C16-B-7). The children also say these teachers “let us do creative things like making stuff” (C6-G-8). The children feel more freedom to play and take risks during Ravottuh supervision: “we are allowed to run and jump and do whatever as long as we don’t hurt ourselves or hurt the plants” (C8-G-8), “during school I am not allowed to play everywhere, but now with them I am” (H1-G-8). The children note that the teachers do “say we need to be careful” (C6-G-8), thereby making the children aware that they need to evaluate a risk before they take it. If the children are not sure of their own ability, one child explains: “then the teacher will come to help me, it doesn’t matter what it is” (H1-G-8), “they help me with playing” (H4-G-9).

On the other hand, the teachers are also found to be a bit more strict than their school's teachers. One girl explains that they "are not allowed to be super 'druk' (translation: overly excited and busy) all the time in the garden, which we are allowed when we are on the playground" (C14-B-7). Another adds that: "you have to listen carefully to the teacher" (C10-B-8). It seems the children do respect this supervision of the Ravottuh teachers because they note "the teachers are kind and watch us carefully. I notice that they will tell you if you do something that is not allowed" (C3-B-8). It seems that the children also find the male teacher more strict than the female teacher because "you have to listen to him" (C10-B-8), while "the female teacher never gets angry at us" (C8-G-8). Overall, the children appreciate the Ravottuh supervision, with one noting: "you can tell them anything and they will help you if someone does something you don't like such as pushing you, that is very kind" (C4-B-9).

#### 4.4.3 The constrictions or freedoms from parents

Not only do the children experience limitations and rules on their play from teachers, they also experience these from parents. Although there was variation in whether children had certain rules from their parents, most mentioned some form of rules. These rules can be summarised to concern the child's play, the result of this play on their appearance, and the location of their play. These categories are outlined below along with the children's response to their parents' rules.

Regarding what type of play the children engage in, the first common response was that children were not allowed to climb. With this they made clear that they are "only allowed to climb on structures meant for climbing" (C1-B-7). The no climbing rule of parents was meant to keep their children from engaging in 'freerunning' where the children climbed up walls or onto roofs. One boy mentions that he disregards this rule: "I climbed onto the roof of a building with my friends the day before yesterday" (C16-B-7). However, another children describe that they do listen to this rule: "it's not allowed so I don't do it" (C6-G-8).

Another type of play that parents had rules about was rough and tumble play, especially if it resulted in fighting. For many children, this was the only rule their parents had: "there are no rules, except no fighting" (C13-B-8). For many children this rule was self-evident and "I just don't do it" (C4-B-9). However, some children did mention that this became harder to follow if someone else hit them first or instigated the play. One child therefore had a slightly different rule: "I am not allowed to hit first, but I can hit back" (C14-B-7), thereby still being able to engage in the risky play. Another child mentioned that it was fine to follow the no fighting rule with other people, but that it became difficult if it was with their family: "I am also not allowed to hit my brother, then I have to tell my parents, but that doesn't always work" (H11-B-8).

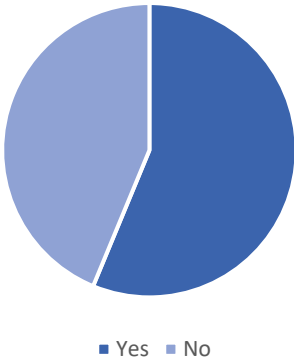
Besides these two popular rules concerning what types of play the children should avoid, many also mentioned they had to pay attention to the effect of the play on their appearance. "During school I am not allowed to get wet" (C15-B-7) one child explained and "if I go to the school's garden I have to keep myself clean" (C12-B-8) said another. For some children this rule only applied during school while for others the rule always applied. One child noted that the found this difficult to follow: "I have a nice black jacket which I can't get dirty, but it does happen sometimes. I just like to play with mud" (H6-G-9). It seems that some of the children therefore do not let this rule of their parents prevent them from engaging in messy play. Other children dealt by consciously wearing attire that they could get dirty: "for the garden I just wear old shoes" (C8-G-8).

Aside from the rules about the type of play and the result of this play, another common remark by children concerned where they were allowed to play. During schooltime they could obviously play on the school's playground, but after school this was different. Some said they were allowed to play wherever they want, "I only have to make sure I do not come home too late" (C7-G-8). Others were

allowed to do what they wanted, “as long as I ask them” (C10-B-8) but this was followed up with “I’m only allowed to play outside if my sister comes too” (C10-B-8). Another child had the rule that “my brother has to come with me, or another older person” (H4-G-9). Both of these rules do not limit where the child can play, only how long and with who. These parental rules therefore do not limit the types of risky play that the children could choose to engage in. Other parents had stricter rules: “I am not allowed to play outside the playground” (C5-B-8) one mentioned. Another was allowed even less, saying: “I have to play inside at home after school because my mother works a lot and she is concerned about me” (H4-G-9). The child added that “I want to play outside with my friends though” (H4-G-9). When the parents limit where the children could play, this also limited their ability to play and the extent to which risky play was possible after school times.

These rules about where children were allowed to play after school also influenced the amount of children that played in the playground after school. An overview of these results is seen in figures 4.29 and 4.30 below. As can be seen on these figures, children in Crooswijk played more in their school playground after school than children in Hoogvliet. This was in part due to the rules of parents as described above. Other reasons that children in Crooswijk gave for not going to the playground were that they had other playgrounds closer to home. On child explained: “This playground is just too far away from my house” (C2-B-8). In Hoogvliet many children has similar reasons, saying the playground was simply too far from their house. Different to in Crooswijk though, the children in Hoogvliet mostly said something along the lines of: “But I would really like to play there more” (H6-G-9). This indicated that the children in Hoogvliet enjoyed the playground enough to want to play there after school why some children in Crooswijk chose not to go to their school’s playground.

Do children play in Crooswijk's playground after school?



Do children play in Hoogvliet's playground after school?

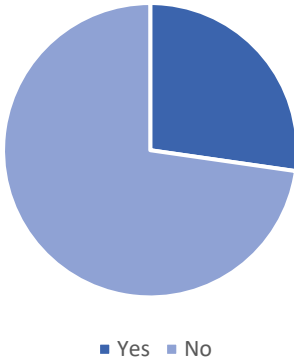


Figure 4.29. Usage of playground Crooswijk after school

Figure 4.30. Usage of playground Hoogvliet after school

4.4.4 Sub conclusion of the influence of social context on risky play

The social context of the playground was divided into peers and other children, teachers and Ravottuh supervisors, and parents. Children often enjoyed engaging in risky play activities and other playground games with their peers and friends. Playing with them posed little risk as they all had similar skill levels and intentions with the games. With peers though, children sometimes felt no other choice but to join in a game their friends wanted to play (Morrongiello & Lasenby-Lessard, 2007). Common games were tag and football. Of these, football posed a risk if the peers were of a different skill level, in that case the game was avoided. Other children in the playground had a greater influence on risk experienced than peers. Older children posed a risk to the children if their play was too rough or too hard. The children themselves recognised they may be a risk to the younger children because they are not always



aware of their presence. To regulate this risk children avoided the older and younger children, with some suggesting zones for age groups so this would be easier to do.

The children experienced that their school's teachers had a lot to say about their play experience. They explained that teachers controlled where they were allowed to play, at what time and for how long. The teachers also had rules about what they were and were not allowed to do, with fighting and rogue climbing being punished. The children noted that the teachers would watch them carefully at times, but not always. In Hoogvliet children mentioned that even if they asked a teacher, they were still not much help. The objectives of the teachers on the playground seem to be to maintain order and keep children safe, sometimes by preventing risks (Kyttä, 2004). The Ravottuh supervisors were said to be much more involved in the children's play. They contributed their knowledge of nature and were stricter about preventing dangerous play. The objective of these supervisors was more to maintain order in play while also teaching the children how to take risks safely. Through this social support the children felt same to engage in risky play (Little, Wyver, & Gibson, 2011; Yalcin & Erden, 2018).

Parents are not present during schooltime in the playground but their rules stick with their children. This indicates the great influence of children's adults (Allin, West, & Curry, 2014). Some children mentioned they had rules about what they could not do (mainly fighting) and what the result of this was (no clothes getting dirty). The main influence of parents after school was concerning where the children could play. Reasons for this were that parents had fears and then limited their children's freedom (Foster, Villanueva, Wood, Chirstian, & Giles-Corti, 2014). Many were not allowed to roam 'too far' away, which prevented some from playing in their school's playground after school. Other children did not mind as they preferred playgrounds closer to their house. The rules about what types of play were allowed and where children can play overall limit the risky play opportunities children have.

Overall, all these results summarise the interviews done with children and aim to cover all their experiences with risky play in their playground. These experiences were analysed in terms of the effects of the physical environment and the social context and could be compared to the observations done by the researchers. The conclusions from this research process as a whole are presented in the next chapter.

## 5 CONCLUSION

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To conclude the research this chapter aims to answer the main research question and sub questions based on the results gathered. These results are linked back to the theoretical framework that this research was based on. Following these conclusions, a discussion of what these findings can mean for further research recommendations to encourage risky play. Lastly the research process and context of this thesis is evaluated.

### 5.1 ANSWERING THE RESEARCH QUESTION

This thesis began by looking to answer the first sub question, which was: *How does the playground influence children's engagement in risky play?*

In order to answer the main question, the two playgrounds of Hoogvliet and Crooswijk were studied on their ability to stimulate play practices, and specifically risky play practices. From these observations it became clear that the two playgrounds do have features that provide play value (Czalczyńska-Podolska, 2014). In Crooswijk the variation in attributes, unique thematic elements and contrasts stand out. The play garden located there, provides an ever-changing environment with interactive elements and moreover, the schoolyard provides attributes for different ages. The playground in Hoogvliet has contrasts and encourages curiosity through variety in natural elements. However, the playground lacks in challenging features. This also emerged when the risky play practices were compared: at the Crooswijk playground risky play categories were practiced more often, such as playing with loose parts, messy play and reaching heights with multiple climbable features. Whereas in Hoogvliet this was limited, less risky play practices were observed but risk at great heights was achieved by using objects that were not designed for climbing such as a football goal or stairs, which could lead to actual hazard (Sandseter, Kleppe, & Sando, 2021; Sandseter & Kannair, 2011). The support of teachers on the playground during play was minimal while the kind of supervision provided by Ravottuh professionals deliberately stimulated children to play risky. This indicated that positive supervision and guidance could encourage children to take risks in their play (Yalcin & Erden, 2018; Little, 2015). However, after school, interventions by parents in the playground increased, which caused children to take less risks. This was expected since parents tend to limit their children in taking risks (Foster, Villanueva, Wood, Chirstian, & Giles-Corti, 2014; Little, 2010).

The next sub question of this research focussed on the children's perspectives: *What are the children's experiences with risky play on their school's playground?*

As found in the theory, children evaluate risk differently (Sandseter, 2009; Aldis, 1975). For this reason, what one child considered risky, the other enjoyed and found easy. The children mentioned many activities of play that matched risky play types from literature but did not experience these as risky. The only type of risky play that was considered risky was that with dangerous elements. The main reason that children considered a dangerous element risk was due to a previous negative experience they had had with it. As a whole, the most commonly mentioned types of risky play that children participated in were great height, high speed and rough and tumble play, matching earlier studies (Sandseter, Kleppe, & Sando, 2021). The children had created a variety of games with these types of play and enjoyed engaging in these with their peers. These activities were considered fun because children saw little risk or had created their way to regulate the risk.

Risk regulation methods were mentioned by many of the children. These methods ranged from regulating themselves and their approach, regulating their environment, regulating who they were around, or avoiding the risk. To regulate themselves, children mentioned wearing clothes suitable to

get messy or run in. To regulate their play approaches some children took only intermittent, short risks during climbing or made sure to hold on well while climbing, or practicing their jumps before jumping higher. To regulate their environment, children for example chose soft groundcover to tumble in and climb above or evaluated a tree before climbing it. Regulating who they were around meant children played with their friends who had the same intentions with the games, making sure not to rough and tumble with someone looking for a fight, or staying away from friends who liked to throw water, thereby also avoiding the risk.

Through this, children showed risk-assessment capacities that helped them avoid dangers and take risks when they wanted to. Risk assessment had also been mentioned in previous literature but the specific risk regulation methods are new. Children however also noted that their playgrounds were fun but boring sometimes, lacking in opportunities to take greater risks. This indicates that the affordances for risky play of a playground can reach a threshold and once children outgrow or outlearn this threshold, there is little opportunity for risky play there. For this reason, some children may go looking for risk in environments not meant for play, such as rooftops or staircases, which could pose hidden dangers. On the other hand, this stimulates children to become creative and innovative with their play.

The last sub question this research aimed to answer was: *How does the child experience the social context surrounding their ability to play risky?*

The social context of the playground entailed children's peers and schoolmates, their teachers and Ravottuh supervisors, and their parents. Peers were found to encourage play and sometimes increase the likelihood to play risky. Other schoolmates in the playground did not influence risky play but rather posed a risk to the children through their types of play. In this, older children at play were a risk to younger children and vice versa. The school's teachers mainly influenced the literal and figurative boundaries surrounding play in the playground, sometimes preventing opportunities to take risk. Contrary to this, the Ravottuh supervisors were experienced to encourage the children to take risks in their play and then hang back to observe if it all went safely. From the latter, children felt supported to play risky, as was expected from previous studies (Little, Wyver, & Gibson, 2011). While parents were not present at the playground during schooltime, their rules were. The children carried rules of what was not allowed with them, and although some were meant to prevent dangerous play, others prevented risky play. The main influence of parents was on the roaming ability of the child, setting geographical boundaries which kept children from playing in their school's playground after school.

Regarding the overall research question: *How do children engage in and experience risky play in the BuurtLAB/Ravottuh playgrounds in Hoogvliet and Crooswijk?*

The largest influence on engagement in risky play was the physical environment. Children could only partake in risky play that the playground afforded. Many children experienced that their school's playground did not afford as much risk as they could handle, leaving some entertained while others searched for new risks. Children were able to enjoy their experience with risky play by regulating the risk they took, indicating the children's risk perception was used during play. The social context on their playground both stimulated risky play or prevented risks deemed too great by adults, depending on the supervision at hand. Overall, there is risky play in the BuurtLAB/Ravottuh playgrounds in Hoogvliet and Crooswijk, some children experience the risk of this play more consciously than others but all partake. The individual, physical and social context are what determine these risky play experiences.

## 5.2 DISCUSSION AND RECOMMENDATIONS FOR CHILDREN'S RISKY PLAY

Risky play is considered vital to child development (Graham & Burghardt, 2010; Pellis & Pellis, 2013; Vanderschuren & Trezza, 2014) and therefore should be supported. The main points that arise from this research are that the playground's affordances influence whether risky play is possible per child and that children are very aware of the social context surrounding their ability to play risky. Both points provide direction for improvements in risky play opportunities at playgrounds.

A straightforward approach to increase risky play would be to increase the risky play affordances. This research however shows it is not simply about the number or risky play affordances, but also about the level of risk that can be taken. As children age and develop, they outgrow the risky play opportunities in their playground and are therefore less able to take risks there. This underlines findings by Aldis (1975) and Sandseter (2014) that children take risks gradually. Playground design could therefore consider the various age groups and skill levels of the children so as to create more gradual risk opportunities. An important note is that this does not have to be through official play structures. As the garden in Crooswijk showed, the presence of nature and natural elements allowed the children to become creative and make their own play, rather than it be decided for them. As such, playgrounds could be improved through implementing more natural elements, but then also allowing children to create their own play here and take ownership of the space. This is a relevant sidenote as Hoogvliet's playground was supplemented with natural elements recently but these all had a fixed position and were neatly categorised rather than being left to grow more organically. If the natural elements are presented in this way, they discourage children from interacting with them.

Allowing children to play in their playground touches on the second point for improvement: the social context in which children play. Children are able to regulate risks during their play, and do so consciously. Therefore encouraging children to consistently take small risk steps could increase risky play effectively. Discouraging large risks is then no longer necessary because the children can evaluate for themselves which risk they can and cannot take yet. Programs such as Ravottuh consistently introduce new play attributes, guiding them in how this attribute could be used for play but then distance themselves, allowing the children to figure it out for themselves. Children mentioned learning to play from this approach while also feeling safe to actually take risks. This should be the goal: creating a social context in which children know the supervision is for their safety, and available if needed. To achieve this, teachers and parents could be educated in how to support their child to take safe risks and what examples of this are. Currently, organisations such as Ravottuh and VeiligheidNL (2021) are doing so, but there is room to increase their reach.

There is much more research to be done with regards to children's experiences of risky play in their playgrounds. Further research into the lived experiences of children from other age groups may increase the understanding of their risky play experiences and aid in creating an overview of the development of typical risky play engagement with age. Another focus of future research could be into a playground with a greater or smaller number of affordances for risky play, or one that is more natural. In this way, the effect of the physical environment can be further analysed and lessons can be learned for effective future risky playground design.

## 5.3 REFLECTION OF THE RESEARCH PROCESS

This research process took place from February to August of 2021. During this time, the Netherlands faced multiple waves of high numbers of Covid-19 infections. Due to this the government imposed a variety of different measures meant to slow the spread of the virus. These measures not only influenced the researcher's ability to meet with teachers and visit the schools (permission was needed

since we were not school staff), but it also influenced the extent to which children were able to play in their playgrounds. Luckily, the research started once primary schools had opened up again and so children were physically at their schools. However, to keep the chances of cross contamination between the children to a minimum, both schools implemented a measure where groups were only allowed to play with their own class on the playground. On the one hand this made the playgrounds less packed, giving the children more space to play, but on the other hand this inhibited children from socialising with many of their peers or schoolmates. This may have influenced the extent of risky play engagement.

Another great influence during the observation stage of the research was the weather. Since both Hoogvliet and Crooswijk had the Ravottuh program one day a week, these days were the only chance to see the program in action. However, due to the rainy and cold nature of the spring and early summer of 2021 the observation sessions were postponed till a week later. This delay was not detrimental because having two researchers during the observations meant more could be observed in the same amount of time.

Being able to work together for the general design of the research, conducting the observations and processing the communal results meant the process as a whole went more smoothly. Encouraging each other and being able to combine ideas or discuss interpretations meant the research process went quicker as mistakes were recognised earlier and each was kept accountable. The teamwork also provided the added benefit of risky play in the playgrounds being covered from two angles at the same time. In this way, the results of children and parents may also be compared with each other as they come from the same case study.

Lastly, the age of the respondents influenced the research process. The children themselves were not familiar with the concept of risky play or always able to articulate their feelings about play, oftentimes it was just 'fun' and nothing special. Although the researcher was familiar with taking care of children, actually interviewing them is something she had not done before. There was a learning curve but the ins and outs to ask the children the relevant follow-up questions were quickly recognised and the large number of interviews meant that each child contributed something valuable to the research. The qualitative methods of this research meant only a small cross section of the children in these playgrounds participated. Nevertheless even with this number of respondents, clear trends were found and so it could be assumed that these translate to other playgrounds as well, especially because the trends matched the literature review.

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**Note:** All images and figures were taken and created by the researchers, M. van Benschop and D.E. van der Ent, unless referenced otherwise.

## 7 APPENDIX

### 7.1 OVERVIEW OF RESPONDENTS

Crooswijk				
Respondent number	Group	Age	Gender	Years at this school
C1		4	7 male	4
C2		4	8 male	4
C3		4	8 male	4
C4		4	9 male	4
C5		4	8 male	4
C6		4	8 female	4
C7		4	8 female	4
C8		4	8 female	4
C9		4	8 female	4
C10		4	8 male	2
C11		4	7 female	4
C12		4	8 male	4
C13		4	8 male	4
C14		4	7 male	4
C15		4	7 male	4
C16		4	7 male	3

Hoogvliet					
Respondent number	Group	Age	Gender	Years at this school	
H1		4	8 female	1	
H2		5	9 male	3	
H3	Respondent 3 was too old to participate				
H4		5	9 female	0.5	
H5		4	9 male	1	
H6		4	9 female	1	
H7		4	8 female	1	
H8		4	9 male	1	
H9		4	8 male	1	
H10		3	7 male	1	
H11		3	8 male	1	
H12		3	8 female	1	

### 7.2 CODE TREE

Open codes	Axial codes	Selective codes
Physical environment referenced	Hoogvliet and Crooswijk	Circle with wood chips Climbing tree Football field Gates Pavement or open area Ring of tree stumps Water way What they miss
	Hoogvliet	Additional items Basketball field Maze Plants and trees Stairs
	Crooswijk	Basketball hoop Climbing structure with slide Monkey bars Ping pong table Red cages Sand box Small climbing structure Garden <ul style="list-style-type: none"> <li>- Climbing tree</li> <li>- Container</li> <li>- Bunker</li> <li>- Mountain of stuff</li> <li>- Plants</li> <li>- Sand box</li> <li>- Sitting circle</li> </ul>
Types of risky play	Great heights	Fun

		Wild child Tree trunks crooked Intermittent risk Soft ground Hold on tight Past experiences Dangerous elements
	High speed	Tag Risk of getting caught Nature Propper shoes Legs hurt Fallen
	Adult tools	Ravottuh Make a hut Use unsharp tools Practice at home Might hurt myself
	Dangerous elements	Insects Slide Ball Plants Tree stumps Past experiences Scared of dark Falling with water
	Rough and tumble	Police game Other people Fights Practice Soft spots
	Disappear or get lost	Bunker Hide in garden Hide and seek Rules of parents Must stay close
	Loose parts	Pile of stuff Random elements
	Messy play	Digging Mud Water is wet Avoid water Wear good clothes Sant pit
Influence of others	Peers or friends	Play games with Sometimes too cool
	Other children	Fighting is risky Children get run over
	Teachers	Rules about where to play Decide what Rules of how long No climbing
	Ravottuh teachers	Teach of nature Help to play Ensure safety
	Parents	Must stay close

		No fighting No climbing No getting messy
	Play after school	Yes No

### 7.3 PLAYGROUND FEATURES

Feature category	Potentially created by:	Crooswijk play area	Hoogvliet play area
<b>Uniqueness</b>	Thematic elements, animal features, fantasy shapes, diversity in topography	<u>Thematic elements:</u> -Nature elements (vegetable and play garden and natural elements spread over the whole terrain) -Educational elements <u>Animal features:</u> none <u>Fantasy shapes:</u> none <u>Diversity in topography:</u> -different kinds of groundcover like pavers, artificial turf and woodchips. -Difference in elevation -Difference in size of play zones	<u>Thematic elements:</u> -Natural elements (e.g. climbing tree, maze, hut of trees) -Sports courts <u>Animal features:</u> none <u>Fantasy shapes:</u> none <u>Diversity in topography:</u> -Varying groundcover (e.g. pavers, woodchips, soil, grass) -Differences in elevation -Differences in vegetation height (e.g. grass, bushes, trees)
<b>Contrasts</b>	Over-scaled or under-scaled elements (miniature, child-sized, colossal) or diversity in scale, texture, color, materials	<u>Over- or under-scaled elements:</u> none <u>Diversity:</u> A broad variation in play attributes and playgrounds provides different textures, scales, colors, and materials	<u>Over- or under-scaled elements:</u> none <u>Diversity:</u> Three main playgrounds are sports court, natural area and the pavers in front of school. Within the natural area there is a lot of diversity in textures, scales, colors and materials
<b>Curiosity</b>	Elements or equipment that can be changed, modified or manipulated, interactive features, dynamic place that is continuously changing or can be modified, place that can be rearranged, plants and animals, flexible materials, elements stimulating senses	<u>Elements or equipment that can be changed, modified or manipulated:</u> -The nature garden allows the children to make changes to it, like planting and harvesting or plucking, or changing the elevation by digging holes and creating piles <u>Interactive features:</u> -The garden contains many loose objects, natural and human made. Such as sticks and shovels and a vegetable garden -Two playing racks, a sandpit and the water tap allow for interaction with the objects <u>Dynamic place:</u> -The play garden changes during the season, with a peak in covert 'hiding' places in summer -Only during hot weather, the water tap is activated <u>Flexible materials:</u> -Multiple trees and one playing rack contains a rope to hold on to <u>Elements stimulating senses:</u> -Two playing racks stimulate physical awareness due to heights	<u>Elements or equipment that can be changed, modified or manipulated:</u> -The stretch of nature could allow the children to make changes to it, but this does not happen a lot <u>Interactive features:</u> -The water feature has to be pumped in order to make the water flow, this allows for interaction with the water <u>Dynamic place:</u> -During the changes of the seasons, the vegetation changes -Only during hot weather, the water pump is activated <u>Flexible materials:</u> none <u>Elements stimulating senses:</u> -Water is accessible when pumped into the stream, stimulates the senses - <i>Ravottuh activities:</i> The program by Ravottuh is meant to stimulate senses. <u>Examples of activities during observations are:</u> making fire with a magnifying lens and a little piece of wood; chopping herbs to make garlic butter; fishing water animals in the nearby pond;

		- <i>Ravottuh activities</i> : The program by Ravottuh is meant to stimulate senses. <u>Examples of activities during observations are</u> : making fire with a magnifying lens and a little piece of wood; chopping herbs to make garlic butter; collecting worms and little insects from the garden.	collecting worms and little insects from the garden.
<b>Variety</b>	Multi-activity settings, multi-route or multi-spatial experience settings, undefined settings, open-ended places, open area with no equipment, places with plants, natural objects and materials that can be used in own way or can be used to transform place into thematic object, e.g., boat or fire truck	<u>Multi-activity settings</u> : -A division in play, chill, sport areas -The playgrounds are also provided with different elements that promote different activities, such as climbing, balancing, playing with water and sand, running -A division between schoolyard and play garden <u>Multi-route</u> : -There are multiple ways to cross the terrain, no predetermined routing (just a rule not to interfere in ball games) <u>Multi-spatial experience setting</u> : -Different zones with different elements are present, as described before, this provides various experiences for children <u>Undefined settings</u> : -The play garden provides settings that do not direct into a specific use Plants, natural objects and materials: -The play garden provides circa 600 square meters of green play space, with trees, bushes, mud, sand -Next to the play garden, the rest of the playground has green elements spread across the terrain. Such as bushes, trees and a climbing branch. <u>Materials that can be used in own way/thematic object</u> : A 'kitchen sink' where children can play with water, buckets and cooking pans.	<u>Multi-activity settings</u> : -A division in play and sport areas -The playgrounds are also provided with different elements that promote different activities, such as climbing, balancing, playing with water, running <u>Multi-route</u> : -There are multiple ways to cross the pavement, no predetermined routing (just a rule not to interfere in ball games) -The natural area has a path through it, but also allows for alternate routes <u>Multi-spatial experience setting</u> : -Different zones with different elements are present, as described before, this provides various experiences for children <u>Undefined settings</u> : -The playground has green elements spread across the terrain. Such as bushes, trees and a climbing branch. All contained in one area of the playground <u>Materials that can be used in own way/thematic object</u> : -Variou circles of woodchips that have multiple uses
<b>Challenge /Achievement</b>	Places to play above the ground, many heights or levels, moving equipment, "figure out" elements, safe-risk elements, visual completion points, incentives and rewards	<u>Places to play above grounds/heights/levels</u> : -Two play racks provide heights. One for small children that provides balancing 10 cm above ground, with a rope to hold on to. The other rack provides climbing, around 1 till 2 meters above ground, also with ropes for stabilization. -Two tree trunks with branches, horizontally placed, up till 1 meter above ground	<u>Places to play above grounds/heights/levels</u> : -A tree trunk with branches, horizontally placed, up till 1 meter above ground -Tree stumps that afford balancing, in the play garden but also in other zones -Fences made of wood allow for climbing and balancing -Rings of paves allow for climbing <u>Moving equipment</u> :

		<p>-Tree stumps that afford balancing, in the play garden but also in other zones</p> <p><u>Moving equipment:</u> None</p> <p><u>"Figure out elements":</u> -<i>Ravottuh activities:</i> children receive tools to figure out nature and animals in the play garden. Also, to make things without very specific instructions, such as a soapstone and a file, or hammers and wood.</p> <p><u>Safe-risk elements:</u> -<i>Ravottuh activities:</i> provides an area under supervision wherein the children can explore the play garden, play with adult tools such as shovels, climb and play in dirt. Loose objects, heights, branches etc. allows children to explore and take risks. Which are discussed further under the Sandseter (2009) risky play division.</p> <p><u>Visual completion points:</u> None</p> <p><u>Incentives and rewards:</u> -<i>Ravottuh activities:</i> children often make things that they can take home</p>	<p>None, although sometimes bikes are used on playground</p> <p><u>"Figure out elements":</u> -<i>Ravottuh activities:</i> children receive tools to figure out nature and animals in the playground and outside the playground. Also, to make things without very specific instructions, such as a soapstone and a file, or hammers and wood.</p> <p><u>Safe-risk elements:</u> -<i>Ravottuh activities:</i> provides an area under supervision wherein the children can play with adult tools such as shovels, climb and play in dirt. Loose objects, heights, branches etc. allows children to explore and take risks. Which are discussed further under the Sandseter (2009) risky play division.</p> <p><u>Visual completion points:</u> None</p> <p><u>Incentives and rewards:</u> -<i>Ravottuh activities:</i> children often make things that they can take home</p>
<b>Enclosure</b>	Good functional definition of the area, functional clarity, visual and tangible boundaries or walls	<p><u>Good functional definition and clarity:</u> -Play attributes are clustered, with room to move from one to another.</p> <p><u>Visual and tangible boundaries or walls:</u> -The whole area is surrounded by a fence, with three possible ways to enter and leave. -The play garden is surrounded by trees, bushes and a fence. -Two playing ball fields are separated by small bushes to generate awareness to not intervene in children at play, three playing ball fields are secluded by a wooden fence or football cage.</p>	<p><u>Good functional definition and clarity:</u> -Play attributes are clustered in one area, with room within to move from one to another.</p> <p><u>Visual and tangible boundaries or walls:</u> -The whole area is surrounded by a fence, with one possible way to enter and leave. -The natural play space has the fence on two sides and pavers where the natural ground ends</p>
<b>Continuity</b>	Activity loops, good integration with adjacent zones, internal/external linkages, inviting access	<p><u>Activity loops:</u> -possibility to run around and participate in different activities</p> <p><u>Integration with adjacent zones &amp; inviting access:</u> -The playground has a fence and is hidden behind housing and the adjacent school, therefore the area seems hidden -During spring and summer, the play garden is surrounded by blossoming trees and bushes. This</p>	<p><u>Activity loops:</u> -possibility to run around and participate in different activities, if allowed by the teachers</p> <p><u>Integration with adjacent zones &amp; inviting access:</u> -The playground has a wide opening in the fence, allowing easy access from the sidewalk to the playground -The fence along the sidewalk is lower than along the other edges</p>



		<p>makes it unable to see the space from the streets and vice versa.</p> <p>-The play garden has a banner on the wall that says 'Ravottuh', which is readable from the streets, however, it is not clearly stated that this space is publicly accessible.</p>	<p>-The playground is always accessible due to the wide opening, however, it is not clearly stated that this space is publicly accessible</p>
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## 7.4 OBSERVATIONS IN CROOSWIJK

	During lunch break	During Ravottuh	After school free play	Weekend free play
<b>Zone A</b>	<p><u>Great height</u></p> <ol style="list-style-type: none"> <li>1. Three girls climb on the climbing structure</li> <li>2. Four boys climb on and one hangs off</li> <li>3. Children climb up and down the slide</li> <li>4. A boy jumps off the ring of pavers</li> <li>5. Four boys walk over the tree trunks surrounding the ring of pavers</li> </ol> <p><u>High speed</u></p> <ol style="list-style-type: none"> <li>1. Thirteen boys and a girl play football</li> <li>2. Children constantly run over the field playing tag or dodgeball</li> </ol> <p><u>Dangerous elements</u></p> <ol style="list-style-type: none"> <li>1. Two girls are spinning on the monkey bars, and sit up on it</li> </ol> <p><u>Rough and tumble</u></p> <ol style="list-style-type: none"> <li>1. Four/five boys continuously play fight with each other, pulling each other to the ground anywhere there is mulch</li> <li>2. Four girls pull at a boy and make him spin in circles near the paved circle</li> <li>3. A boy pushes another over into the mulch</li> <li>4. Two girls pretend to kickbox in the yard</li> </ol> <p><u>Messy play</u></p>	X	<p><u>Great height</u></p> <ol style="list-style-type: none"> <li>1. Two girls and a boy play on the slide up and down</li> <li>2. A girl runs over the climbing structure but her leg falls through, she gets back up</li> </ol> <p><u>High speed</u></p> <ol style="list-style-type: none"> <li>1. All throughout 7-8 boys play football</li> <li>2. A girl runs over the yard</li> <li>3. One boy teases another and then runs off with his backpack, being chased</li> </ol> <p><u>Dangerous elements</u></p> <ol style="list-style-type: none"> <li>1. The netting within the climbing structure has a girl's leg go through it</li> <li>2. Four boys and a 2 girls have played on the monkey bars</li> </ol> <p><u>Rough and tumble</u></p> <ol style="list-style-type: none"> <li>1. A boy took another's backpack</li> </ol> <p><u>Supervision</u></p> <ol style="list-style-type: none"> <li>1. A mother tells the football boys not too kick too hard</li> <li>2. A father helps a young boy pull himself up on the monkey bars</li> <li>3. A mother calls to her son not to jump of the climbing rack, he does it anyway. The mother is not amused</li> <li>4. A mother calls her daughter and son back, and tells them not to climb on a wall</li> <li>5. A mother intervenes when her son tries to grab a towel from inside the school, through an open window. She tells him to put the towel back. Furthermore, she tells him to 'behave normally', when he yells and runs around together with a friend</li> </ol>	No children were at the location

	<p>1. Four boys play in the mulch underneath the climbing structure</p> <p>2. A boy gets pushed into the mulch and is covered in it</p> <p><u>Supervision</u></p> <p>1. There is not teacher outside</p> <p>2. A teacher walks past but does not look at the children</p> <p>3. One mother has come to pick up a child from school</p>			
<b>Zone B</b>	<p><u>Rough and tumble</u></p> <p>1. Two girls playfight with sticks at the water's edge</p> <p>2. One boy throws a watering can at another</p> <p><u>Adult tools</u></p> <p>1. Children use watering cans and buckets to collect water</p> <p>2. Two boys use a shovel to clear the blockage at the end of the stream</p> <p>3. Together with a teacher, two children help to remove spread wood chips with a broom</p> <p><u>Messy play</u></p> <p>1. Many children throw water at each other</p> <p><u>Supervision</u></p> <p>1. Edward tells the boy not to throw the watering can</p> <p>2. No teachers present during break</p> <p>3. At the end of break a teacher comes to shut the water off and sees how wet the children have become</p>	<p><u>Messy play</u></p> <p>1. Children use all sorts of vessels to collect water and take it into the garden, sometimes they get each other or themselves wet</p> <p><u>Supervision</u></p> <p>1. The supervisor are in the garden, not here</p>	<p><u>Great height</u></p> <p>1. Two girls try to climb up the football cage</p> <p>2. Another girl climbs up later and then jumps off</p> <p><u>High speed</u></p> <p>1. Three girls run around the water playing tag</p> <p>2. Four boys play tag near the water</p> <p><u>Rough and tumble</u></p> <p>1. Five boys playing tag also play fight in the mulch</p> <p><u>Messy play</u></p> <p>1. The boys playing in the mulch get messy</p> <p>2. Four boys try to fix the blockage of the gutter of the water with sticks</p> <p>3. Two girls kick water at each other</p> <p><u>Supervision</u></p> <p>1. A mother tells a child who threw the head of a broom once she got bored with it to put it back where she found it</p> <p>2. Parents are picking up their children from school and tell the children not to go too far</p>	No children were at the location
<b>Zone C</b>	<p><u>Messy play</u></p> <p>1. Two girls play with a watering can in the sandbox</p> <p>2. Two girls play with water and buckets at the 'kitchen sink'.</p>	X	<p><u>High speed</u></p> <p>1. Two boys play tag and run around the tree</p> <p><u>Messy play</u></p> <p>1. A girl is looking for shells in the sandbox</p>	No children were at the location

	<p><u>Supervision</u></p> <p>1. No supervision present</p>		<p>2. Two girls in the sandbox are gathering sand</p> <p>3. Four young children play in the sandbox with their mother</p> <p><u>Supervision</u></p> <p>1. A mother accompanies four kids in the sandbox</p>	
<b>Zone D</b>	X	<p><u>Great height</u></p> <p>1. Two boys jump into the trench and climb back out later</p> <p>2. A group of 6 boys climbs up on the pallet balanced on the climbing tree and jump down one after the other, they practice their landing technique</p> <p>3. One boy climbs upwards two tree trunks with his left foot on one trunk and his right foot on the other. In between he climbs circa half a meter high.</p> <p><u>Messy play</u></p> <p>1. Two girls use soup spoons to dig for worms near the trenches</p> <p>2. Seven girls in the sandbox use sand and mud to pretend to cook</p> <p>3. A girl uses a slanted rain gutter to let water run down and a boy and girl join in</p> <p>4. Two boys near the entrance of the school have dug a hole to find worms but now filled it with water and throw the mud on the adjoining wall</p> <p>5. One of the boys puts his foot in the mud to see what it is like</p> <p><u>Loose parts</u></p> <p>1. A girl walks over a pallet that has been laid over a dug hole, this pallet is not attached to the environment.</p> <p>2. Two boys climb on a pallet that has been laid against the laying tree branch, this pallet is not attached.</p> <p><u>Adult tools</u></p> <p>1. Three boys use big shovels to dig holes in the middle of the trenches</p>	<p><u>Great height</u></p> <p>1. A group of 7 boys comes in and 3 climb up onto the container</p> <p>2. A boy hangs off the sign on the building bordering the container</p> <p><u>Supervision</u></p> <p>1. The boys come in once BuurtLAB is leaving</p> <p>2. Edward tells the boy not to climb on the sign</p>	No children were at the location,

		<p>2. Five girls in the sandbox use pans and watering cans to pretend to cook</p> <p><u>Supervision</u></p> <p>1. BuurtLAB supervisors first start the session but then let it go into free play</p> <p>2. During free play they barely talk to the children, only vaguely answering questions when asked to encourage children to figure it out for themselves</p> <p>3. The teacher of the class is going around and watches what the children do, she sometimes joins in</p> <p>4. The school's principal comes to talk to BuurtLAB and encourages a boy to throw the mud higher</p>		
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## 7.5 OBSERVATIONS IN HOOGVLIET

	During lunch break	During Ravottuh	After school free play	Weekend free play
<b>Zone A</b>	<p><u>Great height</u></p> <p>1. Two girls attached an elastic rope to the goal, they lean into it and hang on this rope.</p> <p>2. Another girl joins them. They climb on the goal and hang on it. Two girls sit on top of the goal and chat.</p> <p>3. Two times a girl does a rollover on the goal.</p> <p>4. Five girls play with an elastic rope. One girl jumps on and into this rope, while the other two girls stretch this rope between their legs.</p> <p><u>Great speed</u></p> <p>1. Two boys play basketball</p> <p>2. Five boys play football. While they are playing they mostly stick to one goal on the field.</p> <p><u>Supervision</u></p> <p>1. Two teachers sit on the side watching their classes play. Overall, they let the children play freely. They intervene twice, namely when:</p> <p>1. A boy and girl are called back when they argue over a ball. They split up here-after.</p>	X	<p><u>Great height</u></p> <p>1. Two young boys chase each other across the stairs and then jump down</p> <p>2. One younger boy climbs up the outside railing</p> <p>3. This young boy then climbs up the stairs and jumps down into his mother's arms</p> <p><u>Great speed</u></p> <p>1. A group of boys plays football, ranges from 4 to 6 boys, sometimes a boy falls over or trips</p> <p>2. Two boys run across the stair levels</p> <p><u>Rough and tumble</u></p> <p>1. A younger boy runs into the football game and pushes the players to get their attention to play with him</p> <p>2. Three boys tease each other and pull on each other</p> <p><u>Supervision</u></p> <p>1. Two mothers watch the boys play football</p> <p>2. A mother with the boys on the basketball field tells the boys not to pull on each other</p>	No children were at the location

	<p>2. A ball lands over the school fence and drops into the water. The children are not allowed to retrieve the ball due to time, the break is over, and since they 'cannot swim', according to the teacher.</p>		<p>3. That mother also tells the boys not to run on the stairs  4. A mother helps the young boy safely of the outside of the railing  5. A mother catches the young boy when he jumps off the stairs</p>	
<p><b>Zone B &amp; C</b></p>	<p><u>Great heights</u>  1. Children climb in the climbing tree, varies from 2-8 girls and 1-2 boys. The children sit on the branches, walk across (balancing) or jump off it.  2. One boy and girl jump from treestump to treestump  3. One boy and two girls walk over the ring of pavers, keeping their balance, two girls jump off it  4. One girl and one boy continuously jump from one side to the other of the balance beam</p> <p><u>Great speed</u>  1. Children run all over playing tag, varies from 2-8 children at a time, boys and girls mixed</p> <p><u>Dangerous elements</u>  1. Once the children are in the climbing tree it becomes a dangerous element  2. The treestumps, balance beam and ring of pavers also become dangerous once children are on it</p> <p><u>Rough and tumble</u>  1. A boy and two girls are playfighting and the boy falls to the ground  2. A boy and girl playfight, but the boy pushes too hard and the girl falls backwards over the paver edge</p> <p><u>Messy play</u>  1. Two girls and a boy play with the wood shavings</p> <p><u>Supervision</u>  1. three teachers watch from zone c but do not interact with the children, just each other  2. One girl who got pushed over walks to the teacher to say what happened  3. One teacher suggests a boy climbs on a different branch of</p>	X	<p><u>Great heights</u>  1. Two boys climb on the tree. One of them sits on the top edge, the other is too small and thus sits on the area near the ground.  2. The older boy tries to climb down the tree but stumbles and trips over. He stands up and starts running.  3. One boy tries to climb on the tree but is too small.  4. One boy and girl climb on and under the wooden balks while running after each other.</p> <p><u>Great speed</u>  1. Children run all over the terrain while playing tag. While they do this they cross elements like the wooden balks which they climb.</p> <p><u>Rough and tumble</u>  Two boys, class 4 or 5, chat with other boys on the biking lane next to the playing area. They challenge each other and walk through the door in the fence, here-after they run after each other.</p> <p><u>Supervision</u>  1. Two parents sit next to the climbing tree, while two kids play on and next to this tree. 2. When the child falls from the tree the (assumed) parent does not intervene.</p>	No children were at the location

	the tree when he is annoyed that the girls are on the branch he wants			
<b>Zone C</b>	<p><u>Great height</u> 1. A girl walks across the border of treestumps keeping her balance</p> <p><u>Rough and tumble</u> 1. Children continuously play tag, ranges from 1-4 girls and 1-4 boys</p> <p><u>Adult tools</u> 1. Three children help the concierge trim the hedge (one is a boy)</p> <p><u>Supervision</u> 1. Three teachers stand on the edge of zone c by the treehouse just watching the children and chatting with eachother</p>	X	<p><u>Great speed</u> 1. Two boys play tag</p> <p><u>Great height</u> 1. A boy walks over the ring of treestumps and another jumps over it 2. Three boys walk in a line over the treestumps 3. A boy tries a couple time to keep his balance while walking over the wooden fence/beam</p> <p><u>Dangerous elements</u> 1. The wooden fence becomes dangerous once on it</p> <p><u>Supervision</u> None observed</p>	No children were at the location
<b>Zone D</b>	<p><u>Great heights</u> 1. two boys jump on and off the ring of pavers 2. the boys cross the terrain, jumping on and of pavers and tree stumps while playing tag. They cross multiple elevations while running</p> <p><u>Great speed</u> 1. eight children play tag 2. they cross the terrain, jumping on and of pavers and tree stumps while playing tag.</p> <p><u>Rough and tumble</u> 1. two boys hide behind bushes while playing tag</p> <p><u>Messy play</u> 1. One boy draws a figure in the wood shaving with his feet 2. The boy erases his drawing</p> <p><u>Supervision:</u> two teachers watch over the play but do not interrupt.</p>	<p><u>Adult tools</u> 1. Six boys sit on the floor using hammers (and nails) and sandpaper on pieces of tree 2. Two boys use the sharp side of a hammer to pull bark off the wood 3. Three boys and four girls play with saws, files and sandpaper on rocks</p> <p><u>Loose parts</u> 1. The children on the floor have gotten a random selection of wood to play with 2. The table has been filled with clay and rocks that the children can use</p> <p><u>Messy play</u> 1. Three boys and four girls work with sandpaper and saws on rocks, creating a lot of dust 2. Five girls and one boy play with clay</p> <p><u>Supervision</u> 1. A female supervisor sits with the children on the floor using sandpaper, and giving children ideas on what to do with the wood</p>	<p><u>Great height</u> 1. A boy walks over the ring of pavers 2. Another boy jumps over the ring 3. Another smaller boy tries to climb over</p> <p><u>Great speed</u> 1. A boy runs after his mom, playing tag 2. Two girls play tag together 3. Two boys play tag together 4. Three boys chase a ball</p> <p><u>Rough and tumble</u> 1. Three boys climb on the paver planter and then try to kick eachother</p> <p><u>Supervision</u> 1. One mother plays tag with her child</p>	No children were at the location

		<p>2. A girl asks the supervisor what she can do and they just say what is available, not what to do, just that they can do whatever they want</p> <p>3. There is no set thing that the supervisors want the children to do</p>		
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