THE VALUE OF PLAY

Inaugural Lectures by
Professor Helle Marie Skovbjerg and
Honorary Professor Tilde Bekker
Presented on 1 May 2018 at
Design School Kolding

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Play Moods – a Language for Play Experiences

Inaugural Lecture
Professor Helle Marie Skovbjerg

Dear colleagues, friends and family. Today is a great day for the field of play research here at Design School Kolding. There are some special people who have made today possible, and without them I would not be standing here before you. Some of you are in the audience today, and I would like to express my gratitude to you for the years of conversations we have had about the importance of play, and for stubbornly insisting that I continue along the path. Thank you.

I also owe a debt of thanks to Elsebeth Gerner Nielsen, Rector of Design School Kolding, and Anne Louise Bang, Head of Research and Development, for the professionalism that they have brought to this whole process, and for the useful feedback they have provided for future development.

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Play is a common human experience that enables participants to explore who they are through their relationship to the world, to other people, and to the materials they have access to. To be in play is to explore what it means to be human.

In Sydney's Martin Place, an 'Intangible Goods' vending machine sells small chests of homemade cards, maps and chocolate bars aimed at addressing spontaneity, connection, imagination and bravery. For two dollars you can get 'Friendship', which has 10 daily activities to keep you in touch with people you used to know. For another two dollars you can get 'Spontaneity', which instructs you to open a bag, blow in it, and then pop it next to someone's ear. 'Imagination', for another couple of dollars, offers you a pencil and asks you to draw impossible objects.

Intangible Goods in Sydney.
Photo: Katherine Griffiths

The machine seems to be inviting you to be in a playful mood, to connect you to your thoughts, feelings and relations to the world, to make you realize your capacity as a human being. It draws your attention to your being, which is the most powerful ability of play. It draws you into a space of human existence and makes you explore everything that a human being is.

In his 1795 treatise 'On The Aesthetic Education of Man,' the German poet and philosopher Friedrich Schiller wrote that, 'Man only plays when in the full meaning of the word he is a man, and he is only completely a man when he plays' (1996, the 16th letter). Schiller believed that man is most human during play, and that it is therefore important for us, as a society, to create the best opportunities for play to take place.

How, though, can we grasp that experience of human existence that emerges in play? And how can we design for that experience?

The prominent play theorist Brian Sutton-Smith highlighted the difficulty of grasping that experience in his book The Ambiguity of Play, when he wrote:

'We all play occasionally, and we all know what playing feels like. But when it comes to making theoretical statements about what play is, we fall into silliness. There is little agreement among us, and much ambiguity' (Brian Sutton-Smith, 2001, p. 1).

As a way to grasp the poetics of play as a human experience, today I would like to present what I term the 'mood perspective'. Comprehending and formulating language that fits the experience of play may lead to new types of design decisions.

To present this perspective, I would argue that several points are of crucial importance:

- Using language that conveys an understanding of the ontological dimension of play, what could be termed 'gentle' language. Imagine holding your hands around a jelly cake, not squeezing it too hard but still holding it, showing it to others, maybe eating it with good friends. That jelly cake is the type of language required here.

- Epistemologically coming up with methods and techniques where we are able to explore, try out, participate in, and play in all sorts of ways, all with the goal of becoming knowledgeable practitioners of play. To understand play, we have to be close to the actual emergence and sharing of play.

The mood perspective has been created that way over the past decade of research – holding a jelly cake while participating in play with others.

I want to present the mood perspective by inviting you into a playful situation. I will give you a bunch of colourful dot stickers. You are invited to put the dots on yourself. You can decide which colour to choose, and where to put the dot on yourself. I will take the green one, and I will put it here. Please get started. I will continue my talk while you apply the dots.

The mood perspective of play – the 'play moods' that I am presenting here – consists of the following (Karoff, 2013):

Play Moods (to be):
Moods that aim to capture that special way of being when you play

Play Media (tools for use):
The types of tools that you use when you are in play

Play Practices (to do):
Your doings in which you participate in order to achieve play moods

Meaning:
Play takes place according to different orders of meaning, which are separated from everyday life. In this context, words, objects and movements have different meanings. When I ask you to join in this small dots play situation, the stickers mean something different than when I use them in a book, or how you place them while participating. I am framing the play situation with the dots, the practices you apply and the colours you chose.

In his article 'Theory of Play and Fantasy', interdisciplinary scholar Gregory Bateson (1972) introduced the concept of framing as a way to understand these methods of ascribing meaning, which can be both different and understood differently during play. As Bateson described it, framing becomes a way to say 'this is play' in order to differentiate an activity from one that is not play. Accordingly, the assigned meaning is valid only in the context of play activity.

Bateson came to this conclusion after watching two monkeys play in a zoo. He describes one biting the other and argues that the bite does not carry the same meaning as it would if the animals were fighting in the wild. It takes on a different meaning because the framework of play creates new perspectives from which the meaning is created. When you join in with me, playing around with the dots, we create a

universe of meaning through our actions and the practices that we perform. Some of you have already put a dot on your shirt, as I have. Others might put a dot on a different piece of clothing. Our shared meaning and meaning creating emerge in relation to what we do and the play media that we do it with, and can thus be understood solely from a specific perspective that does not necessarily refer to practices outside this perspective.

It is possible to use Bateson´s concept of framing to underline the relationship between what we do, the material we use while doing it, and what seems meaningful to us while we share our activities together.

Practice:
In play, the production of meaning takes place through our activities together: Choosing a colour, applying a dot, passing it along to the person next to us, looking at each other, imitating each other, getting inspiration from each other. Do you choose more than one dot? Do you choose different colours? Where do you put them?

The Danish philosopher Lars-Henrik Schmidt´s socio-analytical framework is a key to my understanding of play doings – or play practices. Schmidt defines practice as follows:

'A practice is an action and a creation, exercised in a particular rhythm' (Schmidt, 1999). All of these actions created in our play situation create our dot play practice. In our play together, there are ways to use the dot stickers, ways to use our bodies, ways to relate to each other, and ways to become motivated, just as there are ways to play war, climb trees or play with dolls.

Practice can be described as a rhythm between repeating the

practice and creating a distance from practice, which can be categorized as the foundation of play. I started by putting the dot on my shirt, and I see a lot of you have repeated that practice. This is the core practice of this playful situation, and if you want to join in, this movement, this practice, is essential if one wishes to participate.

The rhythm between the practice repetition and the distancing practice can be performed in several ways. I see you have already come up with ways to practice that I had not even imagined. I begin the repetition, and I see that you started by practicing my practice by imitating me as closely as possible. When you try things out with the dots, choosing more colours, putting dots on others, starting to try out other things, my starting practice is replaced by more experimental unfolding. The interaction between you and me makes the repetition less efficient. Therefore, further emphasis is placed on the distancing, after which we might return to other repetitions. The rhythm between the repetition and the distancing is therefore different, depending on where we are in the playful activity. It is the degree of difference in relation to repetition and distance that informs us of the constant production of meaning in the playful activity.

When we play with the dot stickers, all of our practices must somehow be interrelated with meanings that are necessary for play to continue in order to provide us with meaning. All our practices are significant for meaning creation and are related to one another in such a way as to continually open up new practices, even though from the outside it might look a bit chaotic.

During this process we will be involved in constantly framing our understanding of what creates meaningful practice, all the while maintaining the rhythm between repetition and distance. As I am sure you will notice, our comprehension of what does and does not have meaning in this play is created along the way and through what we are doing.

And what about the experience of play that you hopefully are in the middle of right now, which I am participating in with you, at the same time as I am giving this talk? In the mood perspective, this exploration of being is conceptualized in the play mood.

According to the German philosopher Martin Heidegger, human beings are always in a specific mood, even if we experience ourselves as being without a mood (Heidegger, 2008). We never merely observe the world, rather we are constantly creating meaning in the world in which we live, through the experiences we have and in relation to whatever future lies ahead of us. In this sense, we do not produce meaning sporadically; instead, our meaning production defines us as human beings. Heidegger underlines this point with his definition of existence as 'Dasein' – that is, being there, always being present and not existing outside of this world. Being in a mood is the way in which humans exist.

Mood is a non-specific way of being in which one is prepared to make sense of something without knowing exactly what it is. In relation to play, we can understand this open attitude as a playful way of being. We are prepared for something to provide us with a particular meaning, without yet knowing precisely what it is. Our attitude is filled with hope and the expectation of something meaningful.

You may have experienced that attitude today, when I asked you to play along with my dot stickers activity. You may have been thinking, 'I don't know what this is all about, but sure, I will go along', hoping for the possibility of exploring the emergence of sense-making of the play situation.

The rhythm between repetition and distance tells us about the degree of openness of the mood, as well as the degree to which an individual is tuned in, thereby indicating how closed or open he or she may be in the production of meaning. Here are several questions to consider about our dot playing:

- How many of you tactfully repeated what I just started?
- How many of you came up with unexpected ideas with the dot stickers?
- How any of you looked at others, thinking about even more creative ways to let play unfold?

As a consequence, the meaning production in our play situation becomes increasingly unpredictable, even though I started by introducing a rather predictable practice. The possibility of this play space, of looking for ways to let play emerge, holds potential for unexpected practices to happen.

Seen in this light, we can understand play practices as a rhythm that is created from repetition and distance to create mood. Based on the extension of Schmidt's theory of practices as rhythms of play, combined with the results of my years of fieldwork in children´s play, I would argue that it is essential for players to be sensitive to rhythms of an interchangeable nature. As much has been

documented in our playful little situation here today.

I therefore would like to make the following observations:

- Moods are important for play.
- Different moods describe different ways in which we are present during play.
- Different moods guide how we can use tools and toys within play.
- Different moods describe different ways in which people are together in play.
- We move between different moods in order for play to continue.
- We move between different moods using various tools and toys to do different things with different people.

Now I want to present four types of play moods which are closely tied to the four types of play practices. We take part in play practices in order to achieve play moods, and specific play practices seem to lead to specific play moods. And in our searching for ways to explore moods through practices, we have used the dots as play media. There are differences in practices and moods – riding a wild roller-coaster at Tivoli Gardens and playing with LEGO bricks at home are hardly the same thing. The point bears deeper examination.

Sliding for devotion
Picture: Mette Norrie

The first practice is 'sliding', which has a strong repetitive rhythm of play. You are primarily orientated toward repetition, mainly in order to continue what I have already started, with only small changes made. I started the sliding practice by putting the dot sticker on my shirt, and then passing the stickers to you and inviting you to do the same as me. With a little variation, you try to follow my path. The same actions are repeated, and you continue the trajectory of our play, devoted to the repetition of the rhythm of play. Sliding is characterized by fluidity and continuity. There is little discussion regarding the play practice, and you do not expand the possibilities of the practice, but instead follow the rhythm that I started.

The mood created through the sliding practice is devotion. It is characterized by the feeling of being in flow, of continuously being in the moment, a feeling that is accompanied by a sense of lightness. There is no sense of hardness, merely concentration and focus. The body is often quiet or feels as if it is moving in slow motion, without surprises. What I have started is not being destroyed or confronted. Our openness towards new practices was first and foremost a wish for continuity and confirmed what is already meaningful to us.

Shifting for intensity
Picture: Mette Norrie

The second play practice is 'shifting'. Like sliding, this has a strong repetitive rhythm, but over time the rhythm shifts.

Usually shifting is related to physical movement of the whole body, such as changes in speed, height or direction. The rapid shift from a strong predictable rhythm to a fast and changing pace with living the rhythm is characteristic of a shifting rhythm of play. The mood is intensity. A rush to the head or 'butterflies in the stomach' can characterize this mood. One might have an intense bodily experience of being excited and ready for more. In contrast to the mood devotion, changes are expected in this mood and the practices can change in unexpected ways.

Displaying for tension
Picture: Mette Norrie

The third practice is 'displaying', which is characterized by constant changes of play prac-tices over time. Displaying refers to play events involving any kind of informal performance in which skills are demonstrated through activities such as dancing, singing, taking photographs of others or dramatic role play. Examples from our little play situation here include looking at others while they put stickers on their heads or shirts and then laughing, trying to change the way the dot stickers have been put on, and involving yourself in others' expressions. It is both being an audience and expecting others to be audiences. It involves being on the stage for a while, letting other players look at you, learning from them, being sceptical and commenting on their performances. In comparison to the sliding for devotion and shifting for intensity, displaying for tension has a weaker beat and the play

practice is actively changed over time. As with shifting there is an element of unpredictability, but displaying also includes an expectation of change.

In this sense, displaying is not unpredictable. If change does not happen, the players will become disappointed and eventually the play practice will cease to be displaying. The mood achieved in displaying is tension, which is characterized by being ready to show yourself and also by being a way for others to show themselves to you. You might look for inspiration, or wait for others to look at you for inspiration. The sharing of moods through this sharing is characteristic for this type of mood practice. You are looking for styles, knowing that they are only watched if they display good style. You might see new ideas for how to put on your sticker, and you expect others to look at you for ideas – showing your style, and looking at others showing theirs. The tension in the mood lies in that questions 'do you like it' or 'do I like it', testing your taste for play together with others.

Exceeding for euphoria
Picture: Mette Norrie

The creative transformation of the play practice 'exceeding' is central for play to continue. This sits in stark contrast to sliding, as in this practice you expect transformation. Expecting the off-rhythm while creative interpretation is an important dimension, it becomes even more important in exceeding, combining unpredictable ideas

into what creativity researcher Margaret Boden (2004), termed 'combinational creativity'. In our activity here today, that could mean combining the dot stickers I gave you with a book or a wallet in your bag or surreptitiously putting stickers on other people's bags. Boden called this type of activity 'explorative creativity'.

And the crazier it gets, the better it is. Children bend their dolls into all sorts of shapes. They throw water at each other. They sing songs of gibberish, or utter profanities. In other words, they explore what Sutton-Smith termed the 'frivolity of play' (Sutton-Smith, 2001).

The mood related to this practice is called euphoria, and is characterized by an intense expectation of silliness. You are ready to do silly things, and you expect others to not only accept those silly things, but to come up with even sillier things. When children laugh they often do so unrestrainedly; once they start they find it difficult to stop, and usually have no interest in stopping. This mood might come across as manic, and these practices are indeed used in unpredictable ways that are often difficult to control. The players have to maintain real openness toward moving beyond earlier practices in order to continue exceeding. Whereas devotion is quiet and safe, euphoria is about surprise and uncertainty.

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Epistemological considerations
We must epistemologically come up with methods and techniques that allow us to explore, try out and participate in all sorts of play. We must become knowledgeable practitioners of play, make sense of the moods of practices, and take part in them. To understand play, we must be close to the

unfolding, sharing and emergence of play.

For several years now I have been working with the concept of a 'ludotorium' as a method for coming closer to the unfolding, sharing and emergence of play. I define a ludotorium as an explorative space in which I, as a researcher, do and think together with participants. The inspiration for this concept comes from Sarah Pink's sensory ethnography (Pink, 2011), scholarly research into childhood in Scandinavia, and my own experience as a fieldworker. In a ludotorium we set up different types of play activities that we would like to explore together. It might be role play using materials from a kitchen. Or it could be games in which we explore practices related to fighting.

In this space our attention is on how play is felt, affectively and sensorially, beyond cognition. Exploration with participants in a very concrete way is the point of departure for wanting to understand and explore play as an epistemological phenomenon. I intend to explore the possibilities of the ludotorium in future research and link it more closely to the exploration of design. A ludotorium is a space for play situations, but it is also a space for designing play situations.

Let me give you an example from a school in Aarhus. My colleagues and I had a meeting with staff at the school and began planning with materials, spaces, people, and ideas for how to create the setup for play situations. We explored the role-play inspired by all the types of moods and practices. We designed six types of play situations, and the children tried out several design iterations with us. They had an influence on the actual emergence of play,

and made us a part of it through involvement.

It is possible to understand the idea of the ludotorium as a design exploration about play that favours and explores unsettled and imagined possibilities that make it possible to draw a productive line of connection between participation, ethnography and design. The underlying assumption in this scenario is that it is crucial to participate in play in order to understand play, with a strong emphasis on the relationship between doing and knowing. It is through experience with the practices of play that it is possible to understand what play is.

Today the core ethnographic virtues of empathy, openness and attentiveness to situatedness were combined with designerly ideas of planning through concepts of play, materials and spaces to explore specific aspects of play. We explored in a concrete way how emergence and uncertainty can be a transformative force that offers different routes and forms that enable us to reconceptualize what play can be.

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In my talk today I have aimed to show the strong relationship between practices and the experience of the world we are given with these practices. In combination they frame the quality of play and point to the importance of always looking at the value of play from the perspective of the players and at specific play situations.

So what does all this mean for design?

I would argue that this perspective makes it possible for us to explore new types of design decisions when designing for

play. What would happen if we always asked ourselves when we designed, 'Did I make the exceeding practices possible in my design using uncertainty and emergence as a force? How would I make the exceeding practices possible'? To what extent did I support the open-endedness, as honorary professor Tilde Bekker explores in her research, in my designs for play?

These are among the most important design questions related to play. Why? Because exceeding practices make the design intention into a space of uncertainty, allowing players to explore the design intentions in radical ways. It might be that the whole design changes, and the design intentions, as they were in the beginning, are lost. Exceeding practices allow for the emergence of practices that cannot be predicted, a space in which we trust in participants' ability to come up with ideas and practices, to bring the design into contexts that we had not expected.

Designing for exceeding practices opens up a space for the power and value of play, and here at Design School Kolding I aim to continue in cooperation with honorary professor Tilde Bekker and Eindhoven Technical University and the idea of open-ended play, designing for that specific space. Designing for exceeding practices encompasses the power of players´ imagination and the magic of play lives in that space.

How, then, do we get there, to the place where we are able to design for exceeding practices and euphoric moods?

First and foremost, we need to have knowledge of the value of play, the dynamics of play, and the phenomenology of play and with that knowledge a

greater sensitivity toward all the expressions that play can have. With that knowledge we might realize the hoped-for designing for exceeding practices. And, of course, we need to share that knowledge with others through a language that fits the experience of being in play – we need to share our jelly cake.

Thank you for being here today, for letting me present the mood perspective and for exploring with me the concept of a ludotorium and the great potential it has shown for furthering play research.

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Designing for Open-ended Play

Inaugural Lecture
Honorary Professor Tilde Bekker

1. Introduction

Dear friends, family and colleagues. Welcome to my inaugural lecture on designing for open-ended play.

I am a designer who works at Eindhoven University of Technology in the Netherlands. I do design research and one of my main research interests is designing for play. I am interested in how to design for playful interactions and also in creating design knowledge to help other designers and design students to design for play. Furthermore, I study how theoretical knowledge can inform design decisions in designing for play. I have always been interested in how theoretical knowledge about human behavior, for example about child development can help make design decisions.

When designers creates products for children, do they know enough about what children can do at different ages, do they know enough about play? I have seen in my own teaching and design practice that that is not always the case. Having knowledge about for example child development and play as a designer can be very inspirational, however no easy accessible information exists. A lot of theoretical knowledge exists, but it is not presented in a manner that is easy to apply. This is the challenge that I am addressing in my work: examining how relevant theoretical knowledge can be presented to support creating digital playful solutions.

At Industrial Design (TU/e), we focus on the design of systems with emerging technologies in a societal context. There, I examine how to design playful solutions, which are sometimes digital, for diverse contexts of use and design intentions.

In my role as honorary professor at Design School Kolding, I will collaborate with the Lab for Play and Design in education and research and contribute to developing knowledge about how to design for playful activities. We obviously feel that play is important.

Play

Why are we working on play? Why is play interesting? Play has powerful properties, it is a self-propelling activity. Play is often motivational and it can provide a safe environment to try out all sorts of things. If you are playing, what is your goal? There is no goal. Children can play with almost anything: a stick, a chair, a blanket, coins. Somehow, the properties of play support the intrinsic motivation of the players engaging in the play activity. Intrinsic motivation means that people are internally driven to engage in an activity and that they do not need an external reason or reward (Deci and Ryan, 2000). In this sense play is not goal directed, but rather the path of exploration is what is important in a play activity.

Professor Helle Marie Skovbjerg already talked about the nature of play*). I will get back to what is interesting about play, later in the talk.

Why is play not only interesting but, also important and societally relevant? Of course, play is interesting in its own right. You can see play as a very natural form of learning diverse skills, such as becoming autonomous and self-directed (Gray, 2015). Also play makes people happy (Gray, 2015). If we can harness the qualities of play, it may be possible to make engaging in certain activities more enjoyable and motivational and also make it easier to bring about behavior change.

**) that lecture was also given by professor Helle Marie Skovbjerg at the same day.*

I am interested in examining how to 'use' the properties for more than 'just play'. I am not exploring ways to make toys, but I want to examine how we can harness the qualities of play for different design intentions, for example for helping people lead healthier lifestyles, or to have a more joyful learning activity. How can we design with an intention beyond 'just play'?

I will give an example to illustrate how play is linked to design intentions.

In the past we have collaborated with the Dutch part of the company Kompan, which develops playgrounds. Together we have created design solutions for different design intentions. For example, they wanted to design a playground specific for teenage girls to motivate them to be physically active. One of the challenges was to support physical activity that would not make the teenage girls sweat too much, because they are very sensitive about that. You can design interactive behavior in the playground in such a way that there are playful opportunities for physical activity that are paced and timed in such a way that the girls will not sweat: a bit of activity, but not too much.

So how can we harness play for these kinds of purposes? How can we create designs that stimulate playfulness? But also, where are the boundaries in designing for play? When does an activity cease to be play? When do we lose the strength of intrinsic motivation?

You may also wonder how designing with playful properties relates to gamification, which is the idea that you can use game design elements in non-game contexts (Deterding et al., 2011). In gamification people examine how to build in game elements

in design. Because there is a relationship between play and games, some of the underlying thinking is similar to our approach to design research. The distinction between games and play is often linked to the definition provided by Callois (2001), who describes 'ludus' or gaming as one pole, and 'paidia', or playing as the other pole of play activities. Deterding et al. (2011) link gamification to the concept of gaming, or 'ludus'. Our starting point is not gaming or game design elements, such as rewards or leaderboards, but our starting point is playfulness and properties of play, such as no clear end goals and freedom to adjust the play activity.

Research on designing for play is still in its infancy. Although we and other researchers have started to examine designing for play [e.g. Morrison et al, 2011], or for playful experiences [e.g. Korhonen et al., 2009], no integrated approach to designing for play exists, as yet. Therefore, more research is needed to generate knowledge about how to use playful properties for different design intensions.

Design Research

In my research on designing for play I have used the paradigm of design research. This paradigm is widely used at the department of Industrial Design in Eindhoven, where it was also partly developed. One of the starting points of design research is that it is essential to conduct design research in contexts, because I want to create interactive solutions that take the needs and values of diverse stakeholders into account. In the case of play, these stakeholders could be children, parents, teachers and companies.

Let me give you an example of one of the early design research

projects on play that was conducted by one of our Master students (Jos Verbeek). In early design explorations we had identified two important characteristics of play: open-endedness and social interaction patterns. Simply put, open-endedness is a property that allows flexibility in using a play object. Social interaction patterns are different patterns that can be used in play and games, for example playing in two teams against each other or working together towards a shared and negotiated goal.

Verbeek explored how to support these two characteristics in his design with the intention of designing for social and physical activity. He created an open-ended play design, called the Colorflare (see Figure 1), with fairly abstract color feedback (Bekker et al., 2010; Bekker and Sturm, 2009).

Figure 1: The interactive play object, called the Colorflare (photo by Bart van Overbeeke).

An example of a design decision related to open-endedness is the choice to keep the feedback information fairly abstract. The Colorflare could detect when it was rolled and it would then change the led-color of the object. The feedback was given in this abstract manner, and not for example in a more precise manner, such as a counter. Children can embed the abstract feedback in their play in different ways and link it to different meaning in their games. A clear design decision related to social interaction is the opportunity to send your color to another child's

Colorflare. Also, the open-endedness of the feedback creates opportunities for social interaction by negotiating about the rules of the play activity.

Verbeek used knowledge about play to make design decisions. Then he evaluated how children played with the play environment. Did they like the open-endedness? Could they create different games with it? Some examples of the design knowledge that resulted from the project were: 1) using open-endedness is possible, children do create diverse games; 2) a balance needs to be found in the number of interaction possibilities that are provided: initially not too many in order to avoid confusion (Bekker and Sturm, 2009; Bekker et al., 2010).

The design research process is organized as follows (see Figure 2). The project is framed by design intentions. Design decisions (social and open-ended) are made informed by theoretical knowledge about playful behaviour. The design is evaluated in context in order to determine how the play objects were used. This in turn leads to initial design knowledge about how to design for playful interactions.

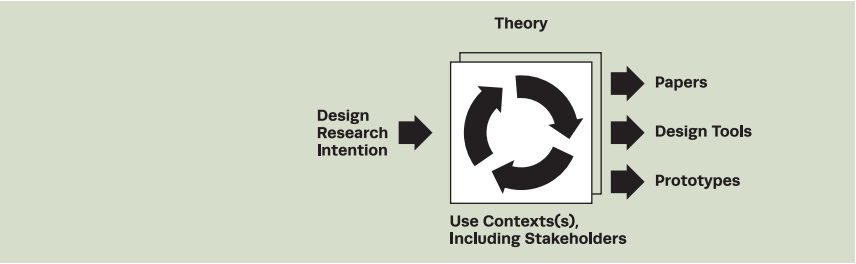

Figure 2: The iterative process of Design Research, framed by a design intention, possibly incorporating multiple design projects and leading to diverse forms of output.

In summary, to create design relevant knowledge we conduct design research, also called research through design (Stappers and Giacardi, 2017). To create design knowledge for designers we develop designs for real world contexts, with input from diverse stakeholders, such as children, parent and teachers. Such as interactive open-ended play objects for a gym class. Then we examine what theoretical knowledge helped make good design decisions (Bekker et al, 2015a).

One of the outcomes of design research is intermediate level knowledge (Dalsgaard and Dindler, 2014). This knowledge is intermediate in the sense that theoretical knowledge has been translated into knowledge that is easier to use by designers, for example in the form of guidelines or design principles. For example, guidelines about how to embed open-ended behavior in the way in which feedback is provided, so that it can be interpreted in different ways and different stories can be created around it. We can show that design knowledge coming out of design research is useful for others by showing that the knowledge can help other people generate innovative designs (Höök and Löwgren, 2012). The outcomes of DR includes papers for other design researchers, design knowledge and tools for designers and design students (which can be used in teaching), and prototypes, which can be developed in collaboration with companies and result in commercial products.

In this inaugural lecture I will explain how design research can address the need for easy applicable knowledge about play, not only of individual play properties, but an integrated view on how playful properties together can make or break a

playful experience. I will illustrate my approach to design research – how to create theory–inspired designs for open–ended play – with a set of examples from students and researchers. I will give examples about designing for different contexts and design intentions, such as designing for physical activity and a healthy lifestyle.

The rest of the lecture is organized as follows: first, I will explain in more detail how the design research on play has developed over a period of over 10 years, and how the ideas about design for open–ended play and playful interactions developed. Then I will discuss some other characteristics of play that can inform design, which were developed in subsequent phases of the design research process (section 2). Finally I will discuss future research and collaboration plans (section 3).

2. Design Research on Properties of Play

If we want to develop design knowledge to create interactive designs that really provide play experiences, we need to understand how to combine playful properties to realize specific design intentions. Imagine that we have an understanding of the play properties and how they are related to each other, that we understand how by tweaking one design decision about a play property, another design decision also needs to be tweaked to create a good play experience. That is the knowledge I want to create.

Stages of Design Research on Play

When reflecting on the DR work conducted over a longer period of time it became clear that DR goes through a number of stages (see Figure 3) that each have a

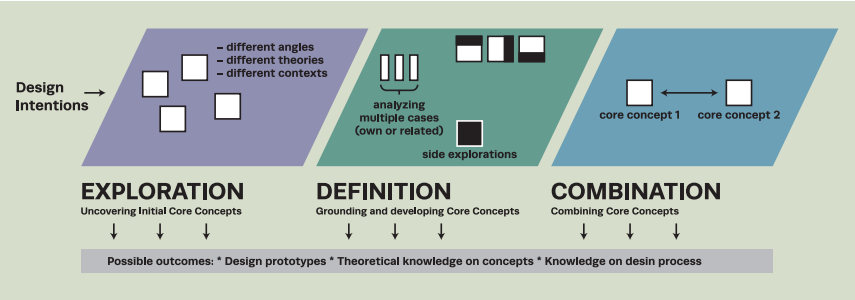

Figure 3: Overview of design research activities in the three stages of the design research approach.

different research focus (Bekker et al, 2015a). In the exploration stage the focus is on design exploration to uncover initial ideas for properties of play. The definition stage is about grounding design knowledge in relation to other existing work. Finally, the combination stage is about examining how various properties of play are related to each other.

Exploratory Design Research on Play

The first stage of the Design Research process was exploratory. When I started about 10 years ago, there was no clear information for designers. There were many definitions; however, it was not straightforward to apply them to our design intentions and context of use. When starting with a design we can look at different information sources: a. knowledge about play, b. knowledge related to the design intention, e.g. designing for physical activity and health, or education and c. existing designs for physical activity and play (see Figure 4).

First, let us look at what is known about play. Play research has

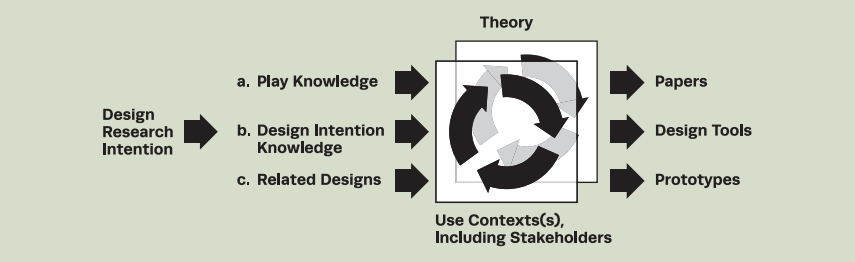

Figure 4: The iterative process of Design Research, framed by a design intention, informed by three information sources, possibly incorporating multiple design projects and leading to diverse forms of output.

been situated in many different research disciplines, such as psychology, biology anthropology and sociology (Johnson et al., 2015). Many people have given definitions both in the context of fundamental research on play (e.g. Johnson et al, 2015) and in a more applied context of game design (e.g. Salen and Zimmerman, 2003). I will not go into too much details about these definitions in this talk. A number of the core properties often mentioned in relation to play are: self-directed and self-chosen (players are free to guide and change the activity), intrinsically motivated (they play because they want to), guided by rules (there are some rules, but they can be adjusted), and imagination (there is a lot of room for creating stories) (Grey, 2015). Now we need to examine how to translate this knowledge in design decisions when designing interactive play objects. How do we map this knowledge to design decisions?

Second, knowledge can be gathered from research domains related to the design intention. We explored different research domains, including sports

psychology, game design and sociology. But as mentioned before, theoretical knowledge is not presented appropriately for designers. It is unclear what theories are relevant, and exploration is required to discover how theoretical knowledge can be applied to design.

Third, knowledge can be distilled from looking at related products. The initial design explorations focused on designing for social and physical play. The design intention was to create interactive environments that motivated children to engage in physical activity to decrease children's sedentary behavior, and that combined qualities of traditional play with qualities of digital game solutions. We looked at other existing designs at that time, commercial and research prototypes.
Then, after having created a number of designs, a reflection could be made through analyzing the design, the input from the stakeholders and the design decisions. We conducted a design analysis of our own designs, such as the Ledball, the Swinxbee and the Colorflare. When combining the insights from these components – theoretical starting points, analysis of other designs and our own designs – the following three tentative dimensions were formulated: motivating feedback that function as triggers for ongoing play activities, open-endedness which supports flexibility in use and interpretation and social interaction patterns that allow variations in how multiple players play together (for example in teams against each other, or collaboratively for a common goal) (Bekker et al., 2010).

By exploring how to design intelligent play solutions and analyzing multiple designs (our own and those created by others), we realized that

designing for open-endedness could be a very powerful key feature, because it supports a wide range of important qualities of play. It can support creativity, as children can develop their own game goals and rules; it can support social interaction, as children have to negotiate how they want to play, and, if designed well, it can support emergence over time, because children can keep on adjusting how they create meaning and games as they play. The concept of emergence has similarities to the 'exceeding' mood practice that Helle mentioned in her lecture.

Grounding of Design Research on Play Properties

Having discovered an initial set of dimensions of designing for play (motivating feedback, open-endedness and social interaction patterns), we moved into the second stage of Design Research, where grounding and development of the concepts becomes the focus.

So we started examining open-ended play in more depth. Some of our initial design questions were: How do you make something open-ended – not too closed, but also not too open? Do children know what to do with it? Can other designers, or design students design for open-ended play?

An important component of creating design knowledge is positioning your concepts in relation to other published concepts and designs, called grounding (Höök, and Löwgren, 2012). We focused on a more accurate definition of the concept of open-ended play (Valk et al, 2013), by linking it to other definitions about play, free play and games, for example those put forward by Callois (1961), Bateman (2005), Nachmanovitch (1990) and Salen

and Zimmerman (2003). These definitions helped us position open-ended play between games, which provide a lot of guidance and rules, and free play, where no guidance and structure is provided.

This resulted in five properties that helped position open-ended play as an activity between games and free play: 1) the amount of structure, 2) the presence or absence of finite end goals, 3) having fixed rules versus leaving room for improvisation, 4) predefined meaning in interaction versus openness for developing your own meaning and 5) the presence of challenges and competition versus focusing on the experience of play and expression (Valk et al, 2013).

It was also important to investigate how difficult it is to design for open-ended play. We had Master's students design open-ended play solutions, for example for physical play in the gym class, for pretend play of young children, and for social play. We interviewed six design Master's students, who had designed open-ended play solutions for diverse contexts. This resulted in insights into how students interpreted the concept of open-ended play. It also uncovered some design strategies: they first framed the design space by making decisions regarding context, user groups, and the goal or design intention – which shows how the design students iteratively found a design solution balancing between openness and complexity (Valk et al, 2013).

An example of an open-ended play solution is the Glowsteps platform designed by Linda de Valk and Pepijn Rijnbout (see Figure 5). The Glowsteps consist of a large set of interactive pressure-sensitive tiles that can change the color of light and give sound feedback.

The combination of all these explorations showed that the concept of open-endedness could be applied to different contexts of use and for variations of design intentions. It could be integrated into solutions that address the needs and values of stakeholders in different contexts, such as children, companies, teachers and day-care providers.

Figure 5; The Glowsteps is an interactive play environment consisting of a large set of pressure-sensitive tiles.

The Spider Web of Playful Properties

So far, I have focused on how we have developed design knowledge about one property of play: designing for open-ended play. However, as mentioned earlier, play has many interesting properties, and we have also been exploring how to design for some other properties of play. In our design explorations, four more qualities of play were found to be inspirational for design: designing for different forms of play (Bekker et al., 2014), such as social or imaginative play; for different play experiences, such as exploration, challenge or cooperation; for stages of play (Valk et al., 2015), such as invitation, exploration and immergence, and for how play emerges over time (Bekker et al., 2015c).

The focus of the third stage of Design Research is to examine how multiple concepts can inform design, and also how they are related to each other in a sort of dynamic spider web of playful properties of design. That is a new idea that I have started to develop,

the interaction of these properties, with the spider web as a metaphor. The properties are related to each other, and just like in a web, if you pull somewhere and change a design decision about one property, you probably also have to adjust another design decision related to another property. For example, if you make the design too open-ended, the experience becomes less fun, the experience becomes too challenging.
I will discuss one more concept in depth in this talk, namely designing for different forms of play. Looking at child development, it is clear that children engage in different types of play, including constructive, social, physical, fantasy, and games with rules (Bekker et al., 2014). Over the years we have carried out many design projects, with different design intentions integrating different forms of play, for example, if we look again at the design of the Glowsteps it was a design for children to support creativity and fantasy play (Valk et al., 2015).

Forms of play can be a theoretical inspirational source for designers. Depending on the design intention a designer can consider different types or forms of play activities. In natural play, these different forms of play are often combined in a play activity (Fromberg and Bergen, 1998). Play is very dynamic in nature and children can move and switch their play easily. Each of these forms of play can provide directions for design decisions. When designing for social play, a designer can think about how the solution can support different forms of social interaction patterns. Can children play in groups, in teams? Can they easily switch between playing alone and playing with a varying number of children? Flexibility in options for different social play patterns supports flexibility of play behaviors.

Following the DR approach we translated theoretical knowledge into intermediate design knowledge, easily applicable by designers. The information is presented in the form of a card-based design tool called the Lenses of Play card tool (Bekker et al, 2015c). Each card explains a design consideration for one of the properties of play. It provides straightforward and easily accessed information about the concepts and tips for designers.

So, we now have a set of 5 playful properties. However, the set may not be complete. Furthermore, it is unclear how the properties are related to each other and how they interact. How do you combine these different properties when making design decisions?

This is important to examine in our future work. The next step is to develop these individual properties into a play framework or a spider web of playful properties. This allows us to examine how to combine concepts to create playful solutions that provide intrinsic motivations. Having this framework we can ask better questions and formulate better hypotheses, for example, examine when play ceases to be play, we can ask the question: Does this already happen when the design does not support one of the properties?

A relevant example from my own experience is the difference between building a tent in a playful manner as a child and later when it was a task to be completed. When I was young we used to create a tent, by using some chairs, blankets, pillows and clothes pins. I really enjoyed doing that. When I was older and went on a holiday with a friend and we had to put up our tent; that was not playful at all. The main element that was missing, was an opportunity for

exploration, and not having, nor wanting to focus on a perfect outcome. The tent had to be put up, in just the right way, there was no freedom at all.

In a similar manner, if designing for playfulness is done unsuccessfully, or is misused, the powerful properties will not work.

3. Future Research and Collaboration

There is still a clear need to better understand how playful properties can inform design for different contexts and different design intentions. What exactly are the playful properties? How do they relate to each other? And how can they be translated into meaningful design decisions are all questions that need to be researched further. The same holds for questions such as when does a solution really create a playful experience, and when does it stop to feel like play, or feel playful? This requires a back-and-forth movement between embedding knowledge, creating designs and carefully examining how they are used. This is where Helle and I expect to complement each other in our approaches, which will hopefully lead to important contributions to the DR field.

Some of our plans include examining playful properties in different contexts and for different design intentions. For example, how do you design digital interactive solutions for playful learning in schools? This is something I have already started working on in the Netherlands (Bekker et al., 2015b), and I am in process of developing the related stakeholder network. Another plan concerns how to design interactive playful solutions to support the development of social inclusion and social resilience of children, for example in hospitals.

Our design research will lead to further design knowledge and design tools, as well as an understanding of design processes for play. Furthermore, it will lead to design exemplars that illustrate our view of designing for play. We do this work in collaboration with companies, so that the design exemplars can, in some cases, be developed into, or integrated into, commercial products. Furthermore, the work will be done in collaboration with other stakeholder networks involving schools, municipalities, hospitals and after-school care providers. The generated design knowledge and design research methodology will also be communicated to journals and other platforms in the education domain, so it can also be used in education.

To examine how to bridge the gap between knowledge about play and design Helle and I will combine our strengths: carefully examining play, as Helle has done, and creating designs with clear design argumentations. In this manner we intend to create design knowledge on how to design for play.

I am looking forward to developing the collaboration between the Eindhoven University of Technology and Design School Kolding, to further develop the research strategy to work on design for playful interactions. Furthermore, we are making plans to collaborate in terms of education to see how students from the two institutions can work together and share knowledge.

I want to finish by summarizing: Play has powerful properties. We can link these to diverse design intentions and domains and apply them to address societal issues related to for example health and education. More intermediate level knowledge is required to understand how to

harness the properties of play. I hope to work together in further developing the design research methodology for this purpose. Let's work together in providing more clarity on what playful properties are and how to bridge the gap between theoretical concepts and design decisions.

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