

DESIGNING ACTIVITY AND CREATING EXPERI-
ENCE: ON PEOPLE'S PLAY IN PUBLIC PLACES

Jon Back

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Designing Activity and Creating Experience

On People's Play in Public Places

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To friends and family...

For the support in my choice
to waste my life on play and
games.

Abstract

This thesis deals with the design of play in public places; this can mean both pervasive games and other freer play activities. In these activities (as well as in many other game activities) the same game can spur many different ways to play it, and the same activity can be experienced differently by different players, and even differently on different occasions for the same player. An activity such as playing must be observed as a whole. The surrounding culture, player preconceptions and the emergent mood within the group will affect the experience.

By analysing previous frameworks, and using own design examples, a three level design framework is developed, functioning as a lens towards understanding the design of playful activities. The framework focuses on the player perspective, offering game design as an invitation and encouragement to engage in certain activities. The framework distinguishes between design at three levels: the *designed construct*, e.g. artefacts and rules, the *activity* that is going on within, and the *experiences* created during and after playing.

But it remains to be understood why people engage in the activities that lead to playful experiences. *What* encourages playful engagement? And *why* do people want to play one game, and not another? This question can be split into two parts: *engagement*, how someone starts to be interested in the activity, and *commitment*, actually caring for the experience.

This thesis presents a research problem rather than a solution. The design examples show how convoluted this problem is, in particular in pervasive game settings. A research strategy for future work is presented.

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“Talking it Further: From Feelings and Memories to Civic Discussions In and About Places.” By Korn, M. & Back, J. Presented at NordiCHI 2012. (Korn & Back 2012)

“We are two strong women” – Designing Empowerment in a Pervasive Game” By Back J. & Waern A. Presented at DiGRA 2013. (Back & Waern 2013)

Pre-study presented in *“The challenges of designing a gender-aware pervasive game.”* By Back J., Papadogoula F.A., & Waern A. Presented at CHI 2012 Workshop on "Identity, Performativity, and HCI" (Back et al. 2012)

Introduction

There is a lack of knowledge about designing for playful creative experiences in public places. There is an abundance of research on people in public places (e.g. Benford et al. 2009; Harrison & Dourish 1996), activity and playing in public places (e.g. Benford et al. 2006; Benford et al. 2004; Todd & Scordelis 2009; e.g. Montola et al. 2009)), and descriptions of individual creative processes in public places, such as graffiti and street art (e.g. Akay & Peter 2006; Slinkachu 2008), there is work on street artists (Gardair et al. 2011) and street salesmen (Clark & Pinch 1995), and there are examples of co-creation in virtual space (e.g. Wikipedia 2001), and in private physical places (e.g. LARP (Stenros & Montola 2010), co-created play (New Games Foundation 1976; DeKoven 2002) and improvisational theatre (Johnstone 1981)). However, it's still unclear how the process of engaging users and designing for their experience in creative and playful systems relates to open public places. This can be seen in the way applications such as Gowalla (2007), Layar (2009) and Nokia Point & Find (2010) have trouble activating users to make big contributions, even though there is systems for doing so, while other similar systems succeeded better, including Foursquare (2009), and to some extent Facebook Places (2010). It seems to be left to chance in these, similar systems, who succeeds, who fails, and the reasons behind this.

The aim of this thesis is to establish a theoretical foundation and a conceptual framework for designing to foster engagement in, and appropriation of, playful systems in public places so as to create sought experience.

The goal is to provide concepts and tools that function to scaffold both the design process and the analysis of existing designs.

The aim will be reached through the following objectives:

- To develop a framework for understanding cooperative creative engagement and experiences in a design process.
- To relate this framework to practical examples.
- To build a foundation for how to develop design principles for supporting creative activities in public places.

The scope of this thesis is limited to playful voluntary engagement, and the intrinsic value of play. It is about play for play's sake, as opposed to using extrinsic values such as rewards. The thesis is not just about games however – the design examples are often less structured but still playful activities.

The design examples are based around cooperative, creative play activities, which allow player freedom to create their own experience, rather than around ready-built linear examples.

Method

By researching game design, this thesis falls somewhere in between the research fields of design research as it is practiced in connection to human computer interaction (HCI), and game studies. Both design research and game studies are broad fields with many, sometimes conflicting, practices and ideas. An overlapping problem is that of design for experience, a research topic within HCI (e.g. Benford et al. 2009; Benford et al. 2012; Höök 2010) as well as game studies (e.g. Isbister 2010; Lazzaro 2004; Montola 2010; Stenros et al. 2012). The specifics of experience design for games is better understood within game studies, but game studies does not build such complete models for design as does HCI.

As a design researcher, researching games, my main activity should be to design in a way that informs other designers and design researchers (Zimmerman et al. 2007) To be able to do so requires a firm understanding of game design, and a way to integrate that understanding into a design framework for playful engagement.

The approach taken in this thesis is research *by* design; I create concrete design examples and test them with players in various ways. I call this approach *Game Design Research*, as it is situated somewhere between, and builds upon both, the fields of *Game Studies* and *Design Research*.

Game Studies

Game studies is a young and multi-faceted field with researchers from many different disciplines. The field is kept together through an interest in games rather than a uniform approach to research. All researchers are interested in ‘what makes games tick’, but their methods are very different. Within the field there are researchers from fields as diverse as engineering and computer science, social sciences and the humanities. Where the social scientists focus on social interaction, researchers from the humanities have, to a large extent, a background in literature and media studies, studying games as media messages; finally engineering and computer scientists focus on games as artefacts and interaction devices, looking at technical solutions and effective implementations. Within the field we can find definitions of play and games (Huizinga 1955; Caillois 1961; Abt 1987; Costikyan 2002; Sutton-Smith 2001; Suits 2005; Salen & Zimmerman 2004; Juul 2005), as well as many of

the terms used in design (e.g. Huizinga 1955; Costikyan 2002; Fine 2002; Bartle 2004; Suits 2005; Björk & Holopainen 2005; Salen & Zimmerman 2004; Montola et al. 2009).

However, game studies, first and foremost, *study* games. Researchers investigate them, from different perspectives, to see how they work. In this there is a separation from game design research, as the latter includes actual realisation of new games. Game studies forms the language, and the view of games, and through this the basic toolbox for the knowledge and methods of game design research.

(Interaction) Design Research

Zimmerman et al. (2007) discuss design research in relation to design practice. In this they differentiate between the *right* thing, and the *commercially successful* thing.

“[D]esign researchers continually reframe the problem as they attempt to make the *right* thing. The final output of this activity is a concrete problem framing and articulation of the preferred state, and a series of artefacts—models, prototypes, products, and documentation of the design process [...] [T]he intent going into the research is to produce knowledge for the research and practice communities, not to make a commercially viable product”.

According to Zimmerman et al., design holds “*wicked problems*”; under-defined problems with many solutions and no single best solution. “There can be no expectation that two designers given the same problem, or even the same problem framing, will produce identical or even similar artefacts”. This means that a solution to a design problem is never the only one and that it will be difficult to claim that it is the best. There will never be a complete handbook on how to solve a sufficiently complex domain of design problems. For the same reason, there will also always be room to break the guidelines and still end up with a working design.

They propose four criteria for evaluating design research. Design research should have a *documented process* that others can follow. This is important since the results of the process are not reproducible. Design research should be a *significant invention*. “The contributions should be novel integrations of theory, technology, user need, and context”. It should be judged by *relevance* rather than by validity. “This constitutes a shift from what is true—the focus of behavioural scientists, to what is real—the focus of anthropologists” and finally it should be *extensible*. It should be possible for others to build on the outcomes of the design (Zimmerman et al. 2007).

Fallman (2008) separates design research into three main approaches, describing them as a triangle: ‘design practice’, ‘design exploration’ and ‘de-

sign studies'. He explains the design research approach of 'design practice' as being close to design outside of research, with the main differences the existence of a research question. He says: "When our interaction design researchers work in this area, they must do so with an explicit design research question in mind, or with the clear intent of forming such a question from their activities." It can be reflective or proactive, and the question does not have to be a one-to-one match to the project as a whole. In 'design exploration' the researcher sets out to explore what is possible, rather than to find the usual solution. It is a way of commenting, provoking and testing limits. The third approach is 'design studies', which has most likeness with classic research, looking to describe and understand. Fallman say that researchers do not, or even should not, stay in one approach, but that movement between approaches is part of what creates knowledge, and what makes it design research. He does however not state clearly what is the actual knowledge created by the research.

Explorations and Explanations of Experience in Design Research

There are many examples of design research in HCI. In many modern examples there is a focus on design of (or for) experience. An experience is studied and this is then sometimes connected to design takeaways about how to design artefacts (e.g. Benford et al. 2012; Ferreira & Höök 2011; Höök 2010). This approach is interesting, but in game design it is not really applicable, since the designer is not in direct control of how the game artefact is used, and the experience is created not by the artefact, but in the interaction between the artefact and the players when the game is in use. This means we cannot design the experience, or even directly for the experience, but rather a game design installs the prerequisites for an experience. To some extent this is true for all design, but in designing a game it becomes more prominent.

As an example, Höök (2010) discuss experiential qualities. She describes the experience of riding in beautiful detail and uses this as an example of how we have to describe a bodily experience to be able to use it in design. But even if we are able to describe an experience in great detail, this cannot be directly used to inform game design, not even through the 'transfer scenario' approach that Höök suggests. A description can be used to understand why a certain behaviour or activity gave that experience, but it does not explain how to build it.

Game Design Research

I call this field Game Design Research and not Design Research, as there is an important difference between other designs, and the design of games. This difference have been described by Salen & Zimmerman (2004) as games being of *second order design*. As a designer you don't design directly, but instead design the prerequisites that will become the game when the user plays it. The game is both the designed artefact, and the performed activity (e.g. Abt 1987; Suits 2005; Costikyan 2002); an activity created by the user, and in this way, to some extent, the player designs their own game each time they play. This is also true to some extent for all design, but in games it becomes more obvious as a result of the focus being on playing rather than on the artefact.

To be able to understand a game, it becomes necessary to study more than the artefact, as participation is necessary for the experience. This means that user experiences must be observed or measured in some way; and more often than not the only possible solution is some kind of participatory method, with the researcher participating in play. While design research can look mainly at the design process, game design research needs to include both design and use, since they are intrinsically connected.

Inductive Reasoning and Constructed Knowledge

As mentioned earlier, design holds what Zimmerman et al. (2007) call 'wicked problems'. There will always be multiple solutions to a design problem. This means there can never be a complete guide, but there can still be an increase in knowledge built upon previous knowledge so as to increase the detail of our understanding. This inductive reasoning ties well in to a constructivist view of knowledge.

According to Guba & Lincoln (1994) constructivist reality is:

"apprehendable in the form of multiple, intangible mental constructions, socially and experientially based, local and specific in nature (although elements are often shared among many individuals and even across cultures), and dependent for their form and content on the individual persons or groups holding the constructions. Constructions are not more or less "true," in any absolute sense, but simply more or less informed and/or sophisticated. Constructions are alterable, as are their associated "realities.'" (Guba & Lincoln 1994, pp.110 – 111)

This leads into an epistemology where "The investigator and the object of investigation are assumed to be interactively linked so that the "findings" are *literary created* as the investigation proceeds." (Guba & Lincoln 1994, p.111)

With a constructivist view and applying it to a social context, there is no absolute truth. The same activity can be experienced in different ways by different people and by different groups. An activity such as playing must be observed as a whole. The surrounding culture, player preconceptions and the emergent mood within the group will affect the experience. Even with the same game construct, the play activity and the play experience will be unique each time.

If there is no absolute truth to find and there is no truth without context, the problem fits well with Myers' (2009) view on interpretive research. Myers discusses access to reality through social constructions such as language, consciousness and instruments. According to both Myers and Guba & Lincoln the researcher and the subject are inseparable, and it is hard, or impossible, to do social science without affecting and being a part of the research.

Myers state that:

“Many social scientists claim that the social scientist does not stand, as it were, outside of the subject matter looking in; rather the only way he or she can understand a particular social or cultural phenomenon is to look at it from the ‘inside’. In other words, a social researcher must already speak the same language as the people being studied (or, at the very least, be able to understand an interpretation or translation of what has been said) if he or she is to understand any data at all.” (Myers 2009, p.38)

In this Myers seem to be primarily talking about language, but in this thesis the concept will be broadened and applied to an understanding of the subject being studied. To really understand a subject you have to, to some extent, become part of it. In this case it would mean that you cannot understand players of games without playing games and experiencing what it is to be a player. In the same way you cannot understand the design of games without yourself designing games.

But Games Still Work the Same Way Most of the Time!

Despite the above, there seems to be some kind of generalisation possible. From experience we know that a game of chess is at the same time a different activity and experience each time it is played, but that this activity and experience also holds many similar traits from one occasion to another. We can usually tell that it was a game of chess that was played. There seems to be something in the rules of the game that encourages the players to act in a special manner created by the game, some emergent properties that create a predictable engagement (e.g. Salen & Zimmerman 2004, pp.158 – 165). From a pure constructivist view of the human nature, it is hard to understand the activity of playing.

One perspective on game design is that the design of an artefact is there to encourage an intended type of engagement. Game design is all about designing this encouragement. It's about predicting what people will do, and building systems and designing activities to influence their behaviour. A good rule system for a game should be able to produce a similar activity each time the game is played, even in different gaming cultures. To be useful, game design needs to, and seem to be able to, determine how the game will be played. Similarly, game studies can compare one play-through to another and find similarities. In its context a (well designed) game can, with great certainty, create a *similar* activity, and maybe even experience, the next time it is played. But the surrounding conditions mean it's only a *similar* activity, and not *the same*. This is what game design research needs to try to describe.

Data Gathering and Data Analysis Inspiration from Related Fields

Action Research

The research in this thesis is described as game design research, with close ties to design research (Fallman 2008; Zimmerman et al. 2007). In this practical approach, the work is closely related to the field of action research (Adelman 1993; Baskerville & Wood-Harper 1996; Kemmis & McTaggart 2005).

Baskerville & Wood-Harper (1996) describe action research as useful for “enhanced understanding of a complex problem”, useful in “particular situation and particular environment” and “expects [...] to generate knowledge which will further enhance the development of models and theories”, which happens through an iterative loop where a change is made, the results are viewed and more changes are made accordingly. The research is implemented in a real world setting, often in close connection to the everyday work. Action research is also explained as political, in that you strive towards a real change in the practical implementation of your research. It is used in organisational development, and, for example, in the development of education where repetition exists naturally in the everyday work.

Lewin's original model of action research is made up of phases:

1. Analysis
2. Fact-finding
3. Conceptualisation
4. Planning
5. Implementation of action
6. Evaluation

(Adelman 1993)

Susman & Evered (1978), as well as Baskerville & Wood-Harper (1996) say that modern action research is not always so strict in the exact form, but say most modern action research consists of, more or less, five steps:

1. Diagnosis – identify or define problem
2. Action planning – specify the courses of action to be taken
3. Action taking – implement the planned action(s)
4. Evaluating – analyse the effects of the action(s)
5. Specify learning – identify what was learned

This is described as a loop, with this as one iteration, very similar to the iterative design process often used for game design (e.g. Zimmerman 2003).

This approach fits well with the game design research approach of this thesis. The included projects are all focussed on designing, implementing and trialling games and playful designs in locations with real users, and the work has been goal-oriented, albeit the goal has been the rather vague one of 'positive change'. The researchers take an active part in the community so as to be able to design for it; there is already an existing community, and even though the research group does not subscribe to an explicit political agenda, they are still part of the change, and have a goal of change in that specific situation. The work is also done in a cyclical iterative processes, of planning, acting and observing, reflecting – a method also well understood in both design research (Zimmerman et al. 2007) and game design (Zimmerman 2003)¹.

There is a difference in that action research solves a problem, and is focussed on documenting a single case. In design research there is an effort to create wider relevance and generalisability, even if there are other goals as well (Fallman 2008; Zimmerman et al. 2007). In this I take a stance closer to design research than action research. I consider it important to achieve a level of general knowledge, and it seems to be possible to design in a way

¹ Using them so close together, pointing to different things, I feel I need to comment that it's different Zimmermen.

that will recreate a similar experience most of the time. I strive to find a way to also document this understanding.

Autoethnography, Sociology and Qualitative Data Analysis

From the literature it is not obvious how to best collect and analyse data in action research. The knowledge emerges from the iterative process, and the systematic iterative testing of the design, but how this best should be documented and analysed is not as clear.

To get to an understanding of what people actually learn and experience (or, in constructivist terms what knowledge they create, or reorganise), it is important to get close to the individuals. In this, the influence is from an ethnographical approach to data collection and interpretation. In ethnography, knowledge is learned directly from people, rather than from studying them, providing the opportunity to go deep into a culture.

“[I]t is the only method that enables a researcher to spend long enough in the field such that he or she can start to discern the unwritten rules of how things work or how they are supposed to work. These unwritten rules are seldom verbalized, but can be discovered by patient ethnographic fieldwork.” (Myers 2009)

To use ethnography-inspired data collection methods means to describe and interpret behaviour. It means direct engagement with participants, and it means that the context is important. With this approach all data sources are good data sources. Interviews, observations, notes from participants and other things that might show up are all considered as input. The user is acknowledged as part of the process, and the study is allowed to be influenced by the user, meaning there is not a clear separation between researcher and researched. (O'Reilly 2005)

This also means that an answer is not always obvious, but can be vague and shrouded in feelings and other thoughts. Sometimes it can be interpreted only through data, at other times it needs the researcher or designer's empathic understanding of the group, as in the case of 'cultural probes' (Gaver et al. 2004). In these cases the iterative process can be useful to see if the interpretation actually leads to a better design.

From Data to Knowledge

In the projects connected to this thesis, a wide variety of approaches have been taken towards both data collection and analysis. From previous chapters it should be clear that this approach to research is qualitative and subjective. It should also be quite clear that I as researcher am willing to, and even

prefer to, let my presence in the research influence the outcome. Still, my ambition is that the knowledge should have a wider relevance than just for the individual project.

As discussed earlier, the results will not be generalizable, and they will not be the ‘one good solution’. Design research can have many different takeaways, both in the design itself and in the methods used. In this research, the main takeaway is through documentation of methods and frameworks, together with thick descriptions of the games and observations of play. The thick description of a documented process, modes of intervention, and player activities and reports is put in place in order for the reader to draw their own conclusions about the applicability of recommendations and conclusions in their own design projects.

There are several ways of documenting and analysing design. The following sections present some of the more relevant methods for this research. Even though none of them have been applied verbatim, they have all inspired the data gathering and analysis process.

Strong Concepts

Höök & Löwgren (2012) describe strong concepts as ‘intermediate-level knowledge’ (or ‘generative intermediate design knowledge’), knowledge that plays a direct role in creating new design. They describe this as lying somewhere between theories and individual designs, not aspiring to be one always-applicable theory, but of wider use than one or a few instances and examples. Strong concepts are described as having four main criteria:

1. They are “concerned with interactive behavior”, the interaction with the artefact is key rather than the artefact itself.
2. They are “design element[s] and part of an artifact”, lying in between people and technology.
3. They “speaks of use practice and behavior over time”, and are applicable over many situations and domains.
4. They “resides on an abstraction layer above particular instances”, not talking about one case, but a concept that can be used in several situations.

Höök & Löwgren acknowledge that both design work and fieldwork can generate knowledge. They also acknowledge the problem of how to evaluate design knowledge, giving three academic criteria, based on what they call “general academic criteria”. They say the work should be:

- Contestable. It should be inventive and novel, giving new information.

- Defensible. It should be empirically, analytically and theoretically grounded.
- Substantive. It should be relevant to the community.

These criteria fit quite well with the criteria presented by Zimmerman (2007), ‘significant invention’ and ‘documented process’ matching the two first bullet points, with the third one being described by ‘relevance’ and ‘extensibility’. However, the actual design described by Zimmerman would apply to an individual design rather than present a more generic strong concept.

To address the academic demands, Höök & Löwgren describe kinds of research needs. First, an actual design instance is needed as a source for the concept. Then the design needs to be grounded *horizontally* (related to similar concepts) and *vertically* (finding the concept present in other instances). Finally the knowledge need to be triangulated empirically, analytically and theoretically through reflection, articulation and abstraction, validation that the concept is contestable, defensible and substantive.

The strong concept might be applicable for game design, but as the individual designs are not on that level of abstraction, and especially not shown to be applicable over many fields, it is too generic. Each strong concept is too large to be directly useful for describing and understanding games. The ‘intermediate-level knowledge’ idea is still useful in itself, even if each game design concept would not be that ‘strong’.

Patterns and Game Design Patterns

Within design research aimed at games there are examples of trying to structure game design. Björk & Holopainen (2005; 2006) use design patterns, originally from architecture but more commonly known in computer programming, to document gameplay design in a systematic manner. Similar to the strong concepts it’s an intermediate–level knowledge, and meant to be a tool for talking about design. Their contribution is a collection of different semi-generic patterns and their interrelationships. The concepts are usually based on studying existing games, rather than designing new ones, and rely heavily on design examples. A problem with the approach is that although it succeeds in documenting knowledge of how one can design, it is focused on the artefact and activity within the artefact, assuming an engagement with the system in the intended way. In this it succeeds in describing the rules and the playing activity, but it does not account for player behaviour influenced by outside factors, or experiences brought out of the game.

Background

Before going into the cases studied in this thesis we need to discuss the scope of what we mean by a game within this thesis. Further, we need an understanding of the activities and experiences that are created within those games. These concepts are fundamental to the thesis contribution, and need to be connected to provide an understanding of how design can inspire these activities. Finally we need an understanding of place, as the play activities we target are located, and the physical location in which these games are implemented plays a role in shaping the game activity.

Games and Playful Activities

Many have tried to define both games and play (e.g. Abt 1987; Caillois 1961; Costikyan 2002; Huizinga 1955; Salen & Zimmerman 2004; Suits 2005). This thesis has consciously chosen a very broad understanding of the words. As well as typical games such as Monopoly (Darrow & Parker 1933) and Space Invaders (Nishikado 1978) it also includes more traditional activities such as tag, and hide and seek in its understanding. Instead of focusing on ‘what is a game’ it looks instead at the activity of playing. Within the thesis the phrase ‘*playful activity*’ is sometimes used instead of the word *game* when it is needed to point out the difference and the broader meaning.

Playing

Play has been with us since the dawn of time. Even animals can be seen playing, able to distinguish between play and ‘the serious’. Play is often seen as waste of time, for spare time and an unnecessary activity. Early studies of play often targeted learning effects, or some other more work-related activity (e.g. Piaget 1962), but not play for its own sake.

Over time, play and games have become more and more an accepted research subject. When modern game studies tracks its history, a commonly cited book is Johan Huizinga’s *Homo Ludens* (1955), originally from 1938; a book focusing completely on play for play’s sake. In this book, Huizinga provide an early definition of play, saying that:

1. All play is a voluntary activity. – “Play to order is no longer play: it could at best be but a forcible imitation of it.”
2. Play is not ‘ordinary’ or ‘real’ life. – “It is rather a stepping out of ‘real’ life into a temporary sphere of activity with a disposition all of its own.”
3. Play is distinct from ‘ordinary life’ both to locality and duration. – “It contains its own course and meaning. Play begins, and then at a certain moment it is ‘over’. It plays itself to an end.”

(Huizinga 1955, pp.7–9)

The Magic Circle

This play as distinct from ordinary life is what Huizinga describes as ‘the magic circle’, comparing it to the circle of salt in a magical ritual, and comparing the ritual of play to other rituals:

"Just as there is no formal difference between play and ritual, so the “consecrated spot” cannot be formally distinguished from the play-ground. The arena, the card-table, the magic circle, the temple, the stage, the screen, the tennis court, the court of justice etc., are all in form and function play-grounds, i.e., forbidden spots, isolated, hedged round, hallowed, within which special rules obtain. All are temporary worlds within the ordinary world, dedicated to the performance of an act apart.” (Huizinga 1955, p.10).

The phrase ‘magic circle’ has also been used by Salen & Zimmerman (2004) to describe the special thing that happens when players move into a playing state of mind, and from there spread within the field of game studies. This view of play as something distinct from ordinary life has been criticised (e.g. Poremba 2007; Stenros 2012).

Framed Activities and Activity Membranes

Others have viewed games as outside of ‘the ordinary’ in different ways, without using the term ‘magic circle’. In his article ‘Fun in Games’, Goffman (1961) describe social activities as being separated by ‘membranes’, making the activity something separate, but still letting some values in and out. This is later expanded on in ‘Frame analysis’ (Goffman 1974), where Goffman describes a social frame as being a unit, answering the question ‘what is going on here?’.

The framed activity is described as socially constructed by cultural knowledge and interaction. The frame is constantly renegotiated and this can be visible in interaction and conversation where meta-discussion arises, as well as in frame-saving activities such as laughing about mistakes, and angry outbursts (flooding out) that completely break the frame.

Frames are deconstructed as having a primary frame, the things that actually occur, e.g. a fight. This frame can then be keyed in different ways, re-interpreting the activity as something else, such as boxing being a sports interpretation of fighting. A situation is not only understood from one frame, but several interpretations can be made, and in this way several frames can be ‘laminated’ on top of each other, giving them value and understanding in several contexts at once. According to Goffman, when a frame is interpreted by a participant to have inherent values and meanings, the participant is said to be ‘engrossed’ in the frame. In a gaming situation this can, as an example, be seen where game currency has value only for the limited time of the game being played. These values may later ‘leak’ and in this way values within frames may also be experienced outside the frame, as in the case of winning and losing a board game, which can also be experienced as joy or bitterness outside the game, even though the loss was entirely contained within the frame of the game.

In his work on table-top role-playing, Fine (2002) show how players (as well as others in other activities than games) are able to quickly change their frame of reference between different frames. Players may in rapid succession switch between playing a role, talking about that role, about how the rules affect what is going on, and if somebody should go out for a pizza. There is a constant renegotiation of the frame simultaneously with the actual activity. Furthermore, players understand and cope with these shifts easily, and may even use them in jokes.

“Although perhaps contrary to common sense, people easily slip into and out of engrossment. Frames succeed each other with remarkable rapidity; in conversations, people slip and slide among frames. Engrossment then, need not imply a permanent orientation toward experience.” (Fine 2002, pp.182–183)

Interpreting playing as this fluctuating social frame, where players jump back and forth, meanwhile negotiating and helping themselves and others to maintain the playful framing, is a useful understanding of playing in general, and even more so when studying playing in public places, where the everyday outside of the game is ever present.

Stenros (2012) has in great detail gone into the terms ‘magic circle’, ‘frame’, ‘membrane’, and others. In his article he points out the flaws in Salen & Zimmerman’s version of the concept, but also that the term has filled a purpose as a tool for design. It will therefore be used within this thesis, but take on a broader meaning than the original from Huizinga or Salen & Zimmerman. In this thesis, the ‘magic circle’ explicitly refers not only to the physical, but also social borders, and in full awareness of the fact that these borders are constantly renegotiated, with experiences leaking in and out of the activity.

Pervasive Games and Brink Play

As seen in the previous chapters, the border of the game is not always obvious, but still seems to be a useful simplification for use as a design tool. On one hand this can be used to understand games, but on the other it can be used so as to deliberately design for breaking the border. There are multiple ways and different understandings of what it means to break this border, and within this thesis, two concepts will be considered: pervasive games and brink play.

Pervasive Games

Montola et al. (2009) use the magic circle concept (Huizinga 1955; Salen & Zimmerman 2004) to describe pervasive games as being *expanded*, meaning they break the boundary to expand outside that magic circle. The book mainly discusses spatial, temporal and social expansion, but also states that there may be other boundaries for games (such as economical). Where a game is normally limited to a certain place, time and social group (e.g. on the computer, while the programme is running, with whomever might also be online in the game), a pervasive game deliberately challenges the idea of where the game is played, when it starts and ends and/or who is part of the game. The players play these games in full awareness of their vague boundaries, but still treating their activity as a game.

Brink Play

Poremba (2007) coined the term ‘brink play’ to describe games where the recognition of the boundary between game activity and non-game activity is foregrounded. These are games that may be uncomfortable to play because the game activity feels ‘too real’ – the kind of game which you may be persuaded to play with the phrase ‘come on, it’s just a game’. Brink games often play on social taboos. Some common examples include games such as Twister (Foley et al. 1966) and Spin the Bottle (Traditional 2013), where the activity within the game is never completely unreal, even if the game says it is. Touching and kissing is allowed, because ‘it is just a game’, where this activity might not be appropriate outside of the game context. This is to some extent the opposite of pervasive games, where the game is brought out into the everyday.

Enjoying Games: Activities and Experiences

Many, both in industry and research, have tried to explain the activity of playing, and understand why we play, and what drives play. Among the early examples, Caillois (1961) differentiates between *paida*, a *mindset*, and *ludus*, a *set of objectives*. Where *ludus* is the structured play of a game, striv-

ing towards a goal, paida is the child's play happening in an unstructured manner.

Similarly, Bernard Suits (2005) focuses on the activity of playing, and the willingness to play, calling it the lusory attitude:

"To play a game is to attempt to achieve a specific state of affairs [prelusory goal], using only means permitted by rules [lusory means], where the rules prohibit use of more efficient in favour of less efficient means [constitutive rules], and where the rules are accepted just because they make possible such activity [lusory attitude]." (Suits 2005, pp.54–55)

Game designer Ralph Koster (2005) frames his thinking around the question 'what is fun in games'? He sees games as learning machines, where the player learns to complete a task better and better. As long as the task is not impossibly hard, or too simple it is fun to become better. This view might be inspired by the concept of flow (Csikszentmihályi 2008) and is also related to frame engrossment (Goffman 1974). But the challenge of learning is not necessarily the only kind of fun that games offer.

Others have focused on the types of fun found in games. Lazzaro (2004) identify four types of fun in games:

1. The *hard fun* of emotions developing from meaningful challenges, strategies and puzzles. This includes the joy of overcoming obstacles and beating the game. Finding joy in strategy, rather than in luck.
2. The *easy fun* of exploring, adventure, about figure things out and feeling like the character of the game.
3. Experience of *altered states*, generating emotion through perception, thought, behaviour, and other people. To think or feel something different.
4. *The people factor*, player competition, cooperation, performance, and spectacle. Finding the fun in playing with others rather than from the game itself.

Similarly, Bartle (1996; 2004) identified four, overlapping types of players in MUD (multi user dungeon), sorting them by playing style, saying they all play because they find it fun, but noting that they find fun in different styles of play. The four types are plotted on the two axes of: acting – interacting, and player – world, see Figure 1. The

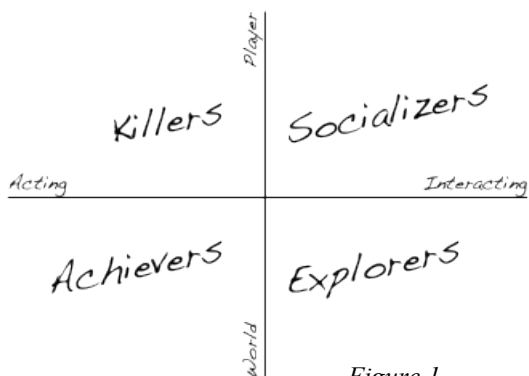


Figure 1

four types have later been applied to other types of multiplayer games:

1. *Socialisers*: “Socializers have fun interacting with other players” (Bartle 2004, p.132). “Players use the game’s communicative facilities, and apply the role-playing that these engender, as a context in which to converse (and otherwise interact) with their fellow players.” (Bartle 1996)
2. *Killers*: “Killers have fun acting on other players” (Bartle 2004, p.132). “Players use the tools provided by the game to cause distress to (or, in rare circumstances, to help) other players. Where permitted, this usually involves acquiring some weapon and applying it enthusiastically to the persona of another player in the game world.” (Bartle 1996)
3. *Explorers*: “Explorers have fun interacting with the virtual world” (Bartle 2004, p.132). “Players try to find out as much as they can about the virtual world. Although initially this means mapping its topology (i.e. exploring the MUD’s breadth), later it advances to experimentation with its physics (i.e. exploring the MUD’s depth).” (Bartle 1996)
4. *Achievers*: “Achievers have fun acting on the virtual world” (Bartle 2004, p.132). “Players give themselves game-related goals, and vigorously set out to achieve them. This usually means accumulating and disposing of large quantities of high-value treasure, or cutting a swathe through hordes of mobiles (i.e. monsters built in to the virtual world).” (Bartle 1996)

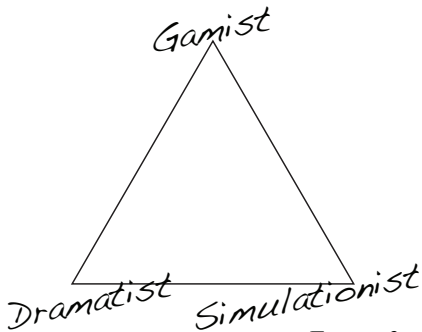


Figure 2

A third model of types of interactions with the game is the ‘threefold model’, originally an online discussion in rec.games.frp.advocacy, and later turned into an FAQ by Kim (1998). The model focuses on role-playing, and splits players into three types in each corner of a triangle, placing players somewhere in between, with a higher focus on one or two of the types of preferred interaction with the game (see Figure 2).

There are several similar versions by various people, each naming and separating the categories somewhat differently. The version documented as the original on Kim’s web pages separates them as follows:

1. *Dramatist*: “is the style which values how well the in-game action creates a satisfying storyline. Different kinds of stories may be viewed as satisfying, depending on individual tastes, varying from fanciful pulp action to believable character drama.”

2. *Gamist*: “is the style which values setting up a fair challenge for the players [...]. The challenges may be tactical combat, intellectual mysteries, politics, or anything else.”
3. *Simulationist*: “is the style which values resolving in-game events based solely on game-world considerations, without allowing any meta-game concerns to affect the decision. [...] [S]he will resolve actual in-game events based on what would “really” happen.”

Game designer Marc LeBlanc has long claimed that there are eight kinds of fun in games (e.g. Hunicke et al. 2004; Costikyan 2002; LeBlanc 2013), every now and then changing details in naming and explanation:

1. Sensation: Game as sense-pleasure
2. Fantasy: Game as make-believe
3. Narrative: Game as unfolding story
4. Challenge: Game as obstacle course
5. Fellowship: Game as social framework
6. Discovery: Game as uncharted territory
7. Expression: Game as soap box
8. Submission: Game as mindless pastime

The categories of all these models do overlap, even though they are not completely the same. Another similarity between the cited works is that they all admit to over-simplifying the matter. All models state that no player finds their sole enjoyment in one type of fun, but that players move between different types of activity and find various sources of joy in playing. The models are made by designers for designers, and simplified to be useful as design tools.

None of these views make a clear separation between player *behaviour in* the game, and player *experience of* the game. Most of them rather try to understand what is ‘fun’, without clearly defining what they mean by fun. Fun is often described as both an activity and an experience.

Activity

In the cases where games are treated as an activity, the separation is often between activity and artefact, rather than between activity and experience. For example, when Stenros & Waern (2010) explore the area of activity, they come to the conclusion that game studies tend to treat games as an artefact that players use, and don’t treat the actual activity as the game. They argue that this is largely due to the focus on digital games in current game studies. They propose a view where games are treated as an activity first, rather than a system first, and thus seeing digital games as a special case of games rather than the other way around.

Others that have discussed the activity of playing, including Salen & Zimmerman when they described games as second order design (2004, p.168). When building the artefact, the designer designs the prerequisites of play, not play in itself. The players later create the game when playing it, interpreting the rules of the designer, and the social situation required to play the game they want to play. Even if they touch upon the subject they do not however discuss how the activity influences the experience.

Experience

Experiences are hard to measure in any objective way, since they are personal and subjective. Stenros et al. (2012) build upon studies of their own previous systems (e.g. Waern et al. 2009). They discuss that the subjective and ephemeral phenomenon of experiences are hard for users to report during the experience, since the reporting would change it, and after the experience it might also have changed. Memories might also change over time.

In earlier articles they also speak of games as *enacted experiences*: “what we experience is not ‘the game’ but a play session, and that session does not exist unless we actively create it” (Stenros & Waern 2010). In this, they are making a very strong distinction between the artefact (the game) and the activity that creates experience (the play session).

Enacted experiences can be found in many situations outside of games, a common example is how one learns to appreciate the physical as well as social experience of bathing in a sauna. Another example can be found in Beckers’ article ‘Becoming a marihuana user’, where he explores how someone becomes a user and appreciates the drug. As in learning a game, or learning to bathe sauna, and many other previously unknown activities, it first needs to be learned, the effects needs to be recognised and user needs to learned to enjoy it. The user has to learn to “answer “Yes” to the question: “Is it fun?”” (Becker 1953). This shows that experiences are personal and subjective, but also that since they are learned, they may change over time. This makes them hard to measure or describe in a clear manner.

Even if not explicitly stated, it seems from these sources that the experience comes from the activity, and not from the artefact, and that they together make up what is ‘fun’. However, as this separation has not been clearly explored, there also seem to be mix-ups and uncertainties about what is actually the activity and what is the experience. This is most obvious in the use of this unspecified word ‘fun’.

Design Frameworks for Games as Experience Machines

There are many examples of design frameworks for game design, some of them research oriented, others with more of an industry perspective. These frameworks take many forms, and are built on many levels.

As should be obvious from the previous discussion, this thesis places less focus on the game as structure and more on how players interact with these structures. The focus will be on how the rules, and how the use of the rules encourage players to engage in particular ways, and thus potentially obtain an intended experience. Four previously suggested frameworks have inspired the approach.

Trajectories

Benford et al. (2009) describe their design using ‘trajectories’, or ‘interactive trajectories’: “journeys through hybrid structures, punctuated by transitions, and in which interactivity and collaboration are orchestrated”. They use them as a boundary object between HCI and performance studies. A trajectory is a way to describe the experience of interacting with the design as a line through time and space: “a lens to reflect on published studies of complex user experiences that extend over space and time and involve multiple roles and interfaces”.

The framework describes players as being on journeys, each player taking one personal trajectory. This trajectory can meet with other player’s trajectories, and possibly be compared to a designer’s intended ideal trajectory.

“It is interesting to reflect on which comes first, the experience or the trajectory. Does the artist create a trajectory to shape a subsequent experience or do participants bring coherent meaning to experiences by reconstructing trajectories?”

For the trajectories to be useful there needs to be one main path through the experience. In a lot of play and games this is not the case, and in situations where this is the case it is often discussed as something negative. Within role-playing games and LARP (Live Action Role-Playing) linear play is referred to as railroading (e.g. Wizards of the Coast 2011; TV Tropes 2013; Vi åker jeep 2013) and most discussions are about how to avoid it, or make it invisible if needed, rather than how to use it in a positive way.

For the purposes of this thesis, the trajectory concept is a bit too closely linked to performance studies, and very dependent on narrative structures. If there is no one clear line of action that should be followed, the model is less useful. It is also dependent on building the trajectory for each player, or at least each game role or group of players.

A Framework for Understanding Social Play

Isbister (2010) focuses on social play in her framework. She describes social play as “active engagement with a game [...] by more than one person.” In this she, like Benford et al. (2009), takes a step away from the artefact. But where Benford et al. look at experience, Isbister rather focuses on the activity. This focus outside of the artefact is visible in how the focus is on social interaction, and not only between players, but also between involved non-players.

In her framework, focused on *understanding* social play she looks at:

1. Contextual factors: The gaming platform. Every platform gives something and takes other things away. Different platforms promote different types of play.
2. Motivational factors: The composition of the group. How and why they play, and prior relations within the group, and its effects on playing.
3. Conceptual and theoretical grounding: A broader chapter, with no one clearly preferred, but leaves this to the user of the framework. Some mentioned groundings are: Social learning, gain of knowledge through observation of others; emotional contagion, and people’s susceptibility of each other’s moods; and conceptual frameworks and taxonomies, what types of feelings are there.

The framework would be useful for a social understanding of a finished game (or a played prototype), and a focus on the interaction and activity (and to some extent experience) instead of the artefact would be useful in the context of this thesis. It is, however, not a design tool, and does not help us to understand *how* to design with the intention of encouraging a certain experience.

Game Design Patterns

Game design patterns (Björk & Holopainen 2005; Björk & Holopainen 2006) have already been mentioned in the methods section, but fall also under frameworks for design. Inspired by patterns in other areas, such as architecture and computer programming (e.g. Alexander et al. 1977; Gamma et al. 1995), they are made to be a design tool, useful for solving design issues. Unlike patterns in other areas however, they are not only for solving problems, but used also as inspirational building blocks even before a problem arises.

The patterns are an ever growing collection of design elements (Björk 2013), related to each other, which through examples show how different design patterns can affect each other, and the players. As the patterns are

closely related to both rules and the artefact, the focus is on interaction and activity, and not the experience of the game. Because of this focus, and because they suppose an engrossed, or engaged player and focus on the activity within the game, it succeeds in documenting how to design, but fails in creating meaningful structures to differentiate between player behaviour and game mechanics.

MDA

The MDA (Mechanics, Dynamics, Aesthetics) (Hunicke et al. 2004), is a design framework created by designers from industry rather than research. It was taught, discussed and developed mainly at the Game Developers Conference (GDC 2013). It is described as a formal approach to game understanding, bridging game design, development, game criticism, and technical game research.

The idea behind MDA is that it should be a framework for translation between game logics and rules (mechanics) and player fun (aesthetics):

“Seemingly inconsequential decisions about data, representation, algorithms, tools, vocabulary and methodology will trickle upward, shaping the final gameplay. Similarly, all desired user experience must bottom out, somewhere, in code.” (Hunicke et al. 2004)

The framework splits the game into three components:

- **Mechanics:** “Mechanics describes the particular components of the game, at the level of data representation and algorithms.” (Hunicke et al. 2004) This is the actual programme code, or rule system in the case of a board game.
- **Dynamics:** “Dynamics describes the run-time behaviour of the mechanics acting on player inputs and each others’ outputs over time.” (Hunicke et al. 2004) This is the actual behaviour from the system when it’s interacted with. The behaviour within the game depends on the player input (pushing controls in a computer game, moving pieces in a board game), and the reactions to this from the game.
- **Aesthetics:** “Aesthetics describes the desirable emotional responses evoked in the player, when she interacts with the game system.” (Hunicke et al. 2004) meaning feelings, actions, and reactions, or as it is described in the article: ‘what is fun with the game’.

When separating a game like this, the mechanics give rise to the dynamics, which in turn give rise to aesthetics. This also means that a design decision

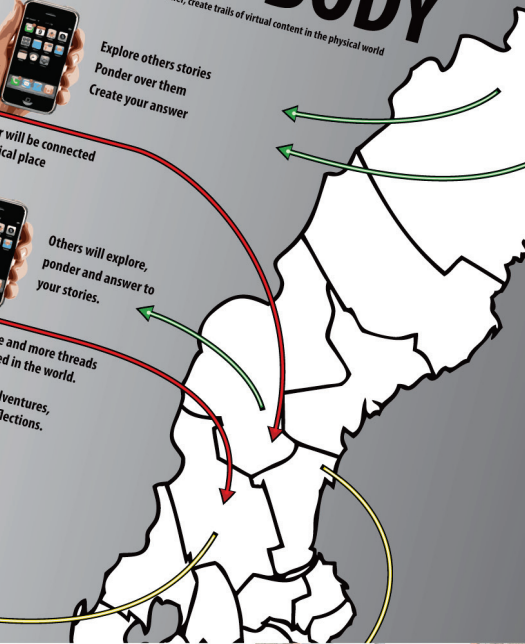
on any level will affect the other levels and changes need to be made to incorporate this into the game.

MDA steps away from previous frameworks used in the game design industry in its focus on the artefact, as opposed to many other models that are based more on media and story. MDA proposes to use an iterative design process, using M, D & A as different perspectives of the design during that process.

The MDA framework provides an understanding of how to design on multiple levels, and how design on one level affects other levels. However, it is still artefact-focused, rather than player-focused, probably to a large extent due to its computer game origin. It also ends at the level of the aesthetics of the game and the player's interaction with the designed artefact, and does not clearly create an understanding of the differences in player activity, experience and 'fun'. It also leaves player engagement outside its scope. Further it is based on tacit designer knowledge and not well grounded in neither empirical data, nor previous design research.

Cases

The questions of how to design for certain activities and experiences in public places have been explored during multiple design projects, all with somewhat different views, goals, people, and research approaches. The biggest differences between the projects concern the goals of the cooperation partners, the amount of time available for testing within the project contexts, and how these factors have influenced the iterations of design solutions. Sometimes there have been multiple small iterations; sometimes the project has been more of a one-shot. The biggest similarity between the projects is that all have had as their overarching goal to create a positive change in the situation. The meaning of this ‘positive change’ has been defined in the project, either by us or by our cooperation partners. The methods of data gathering have largely remained the same, gathering qualitative data through observations, informal interviews, logs in the games, and to some extent questionnaires. When other data has been available it has been used, inspired by modern ethnography’s idea of all data being good data (O’Reilly 2005). In this thesis the two main projects are presented.



I'm Your Body

Presented in:

- *"Talking it Further: From Feelings and Memories to Civic Discussions In and About Places."* By Korn, M. & Back, J. Presented at NordiCHI 2012. (Korn & Back 2012)
- *"I'm Your Body" book spread in "Plei Plei"* (Back & Gustafsson Fürst 2012), not included.

The project was produced in Mobile Life VINN Excellence Centre together with Kista Teater, who were the main stakeholders, and in cooperation with Stockholm Stad and Stockholm City Museum.

Description

I'm Your Body is a tool for cooperative, locative storytelling and story experiencing. Technically it's a location-aware web application for most modern smart-phones, but it's also meant to be an interactive artwork with, among other things, a sculpture artist listening in on the conversation and, in cooperation with local youths, responding to the discussion in the form of physical sculptures in the landscape. In this way the activity turns into an iterative loop of thought and physical manifestation.

The idea behind *I'm Your Body* is to let participants write and collect their stories about the place they visit, and about reading stories from others about that same place. Although the tool is generic and focuses on story generation and sharing, the project as a whole was defined by its connection to one particular area, Järva.



More specifically, *I'm Your Body* used the GPS locations from the phone of its users to locate their virtual stories in the landscape. The artist then placed physical sculptures in the locations, inspired by these stories.

It was created as an exploration in cooperation and creation within a system. The system was created by building the basic structure, without deciding on its content, and users finding their own reason and ways of using it, then filled it with content.

Background

The fundamental motivation for the design of *I'm Your Body* lies in people's willingness to share. People are willing to share location (e.g. Foursquare, and the now closed Gowalla (Foursquare 2009; Gowalla 2007)) as well as reflections and experiences (e.g. Facebook, Twitter (Twitter 2013), and personal blogs). We wished to build on this sharing to create webs of narratives over an area. This could form a basis for collaborative storytelling, connecting routes through the landscape to experiences that are simultaneously created and experienced by the participants. Through physical connection to a politically challenging place, Järva, we explored the use of collaborative storytelling as a political and artistic instrument. As an art project, *I'm Your Body* was about empowering the inhabitants of a fragmented and partly low status area by giving them a voice.

The practical work and collaboration with Kista Teater originated in earlier projects by Kista Teater, who were already working in close cooperation with people living in the area of Järva on the outskirts of Stockholm. Järva was built in the 1960s and 1970s to counter the housing shortage as part of the 'million homes program'; the rebuilding of the Stockholm suburbs. The programme had many problems related to social development and stability in the areas (lately seen in news on the Husby riots (e.g. Megafonen 2013; Wikipedia 2013)), as well as suffering from segregation between native born and more recent immigrants. As a response to these problems there are many projects in these areas, such as the "Vision Järva" initiative. (Vidén 2013) Kista Teater entertained the opinion that Vision Järva was merely focusing on a physical redevelopment of the area, where they believed that the issues were much better addressed on a social level.

Artistically, a large inspiration is Debord and the Situationist International movement (Wollen 2001), where free walks (*dérives*) and personal subjective maps (psychogeographical maps) create a collective experience, mapping the city from feelings and opinions rather than direct street lines. In this way the city is experienced rather than just used. The stories and maps are also used as data gathering, creating a subjective and rich tapestry of stories in the landscape, treated as feelings, acknowledging that own values must be added to get to an understanding, in similar ways as cultural probes (Gaver et al. 2004).

Design Ideal

I'm Your Body was a way of exploring open playful engagement without a clear game goal. Instead of focusing on game rules and how to play, the focus was on story creation, and the rule system was there as a basis for help. From a game design perspective, the question we were asking was what kind of game mechanics we could use to support collaborative story telling.

Methods and Implementation

I'm Your Body was developed in an iterative design process with designers, the artists and some selected users involved in the whole process. The iterations were at the beginning clearly separated, but became more and more vague as the users became more and more involved, and the design started to take on its final form. Towards the later part of the project, design iteration went hand in hand with content generation, and a similar process was progressing in the physical sphere by continuous installation and movement of physical sculptures. This way, we could get close to the use as we had designed it, and, step-by-step, evolve both the design and our understanding of the use and the users.

Data gathering was mainly done through workshops, where the design was tested in its current form at the time of the workshop, and all involved giving feedback afterwards on what was good and bad about it. Workshops involved end users and content creators as well as the artists from Kista Theatre and the system designers, and all were observed and recorded while using the system, to further inform the decisions.

Kista Teater and the design research group at Mobile Life developed the system in design iterations from a basic idea. In early iterations the design was built with only this group, and later tested on external users, using the ideas from these tests to further develop the prototype. As the prototype reached maturity the design workshops moved from development to content creation without separating the first task from the second. Several different test groups were used to give a broad input to the understanding of the system and the activity, among them, early on, a group of LARPerS focussing on story-telling, and later several school classes from the area who gave input on how they experienced their home environment. During the final phases a small group of three game-testers, local to the area but not previously known to each other, were involved over several weeks, working with the Mobile Life group on development in parallel with creating content with Kista Teater.

Content later continued to be created in workshops, mainly with artists from Kista Teater. The users also continued using the system in their spare time between and after workshops.

The created content inspired physical sculptures around Järva, created by the sculpture artist, Johanna Gustafsson Fürst, from Kista Teater and was also used in an in-location theatre performance produced by Rebecca Forsberg from Kista Teater.

Findings

The findings from the project are reported in Korn & Back (2012). This article focuses on the material generated within the digital system. What we saw was that users not only talk about one place in a single conversation, but also direct the conversation to other places as well and thereby expand their emotions and opinions geographically. Having each individual comment geo-tagged with its own place of creation, instead of only at the first location as similar systems, at least in citizen dialogue usually do, allowed users to explore, comment and connect places together, mimicking 'normal' conversations where we also divert and make reference to other places. In this way the place is enhanced by the conversation, making the system and the space bleed through and inform each other, changing not only one place, but also other related places.

In the discussions with Kista Teater it became obvious that they wanted *I'm Your Body* to be a political comment, showing change in civic discussions. In the article there is a focus on the citizen dialogue perspective. The analysis indicates that memories, feelings, and attitudes are the prime means of expression for young contributors to the system, and that those expressions sometimes lead to civic discussions, and these discussions in time expanded over geographic areas in the neighbourhood. In the article we argue for civic engagement systems with a vantage point in emotions for better understanding what lies behind people's opinions and arguments.

Even though the system promotes comments on personal thoughts that turn into quite concrete discussions on change, we also saw that the openness and flexibility create tension and uncertainty about how to use the system, and it was hard for the users to know how to engage in this previously unknown activity. Only after someone's initial use did others build upon it to do their own thing. This points towards a need for bootstrapping the activity from the start. In *I'm Your Body*, the workshops functioned as such a bootstrapping process.

I'm Your Body succeed in creating playful engagement, as well as in eliciting participant experiences, and to some extent also to create discussion for change. It was however not entirely successful in promoting engagement in the first place, and was intentionally not designed to force any particular use of the system. It became clear that this reluctance to explicitly form the activity of the users made it hard to engage, and to consistently promote civic discussion. Only once the participants had decided themselves what to use it for, outside of the workshop activity, did they fully and playfully en-

gage with it, showing us how playfulness does not arise until it has a frame to arise within.

Codename Heroes

Presented in:

- “We are two strong women” – *Designing Empowerment in a Pervasive Game*” By Back J. & Waern A. Presented at DiGRA 2013. (Back & Waern 2013)
- Pre-study presented in “The challenges of designing a gender-aware pervasive game.” By Back J., Papadogoula F.A., & Waern A. Presented at CHI 2012 Workshop on “Identity, Performativity, and HCI” (Back et al. 2012)

The project was produced in the Mobile Life VINN Excellence Centre.

Prototypes and cases can be viewed at: www.codenameheroes.org

Description

Of the design examples in this thesis, *Code-name Heroes* is the most typical pervasive game example. It is a persistent, multiplayer, crowd-sourced pervasive game that uses a phone’s Bluetooth and camera to enhance the world around someone.

In the game, people play a secret agent with magic superpowers. They complete missions sent through a secret messaging system on their mobile phone, and they deliver messages to other agents on their team. They can share superpowers by creating artefacts and hiding them for their teammates to find.

The artefacts can be created by the players themselves, and are enhanced by the use of QR-codes. By scanning the codes with a mo-



mobile phone running the game app it ‘invokes’ the artefact’s magical power through the app, and in this way the artefacts can contain powers, without being technologically enhanced themselves, meaning anyone can build them.

It is a pure ‘play for fun’ kind of game, but with a deliberate design for empowerment, in that it is especially aimed at young girls. The design is informed by ethnographic studies of young women as well as by gender studies. It is the most recent and the longest running project among the examples in this thesis.

Background

As stated in Back & Waern (2013), games today are to a large extent designed in an environment where men dominate, this tends to reflect and reinforce values that are normative for a male-dominated society. When designing *Codename Heroes* the approach was to be aware of this, designing a game targeted at young girls. We call this approach ‘gender aware design’, as it takes into account the wider situation and aims to design in a positive way, but without being explicitly challenging current norms. This is different from other approaches, such as those we call ‘pink design’, which form games as cute, and for girls-only in a conforming discourse of femininity (Ambjörnsson 2011; Butler 1993; Cassell & Jenkins 2000), and ‘gender agnostic design’, where the player can choose whatever gender they wish, but the game still often depicts typically male attributes, forcing girls into a tomboy role (Bergstrom et al. 2012), rather than showing that female attributes are also positive.

Goal

In designing *Codename Heroes* the goal was to make a game that would speak to young girls’ interests, while still being relevant for their everyday situation. It should not force female players into male roles of being strong, while at the same time not drive off male players by being overtly designed for girls.

The design of the game strived for solutions that could be expanded to a large user base. In particular, this affected how game mastering functionalities were designed and implemented.

Methods

The game was iteratively designed, first in internal design cycles and later on with external players in a more and more finished state. Many different kinds of data were gathered. The game went from pen-and-paper prototypes and game balancing up to a full working prototype with players, artefacts and mobile phones. The game tests are described in Back & Waern (2013). The

information from previous iterations was used to inform the redevelopment of the next, while also gathering knowledge for a final write-up of the complete project. In this way design development could be done through small changes in each stage, leading up to a final fully-tested prototype, even though it sometimes is hard to document every single small decision in the process.

Findings

Compared to *I'm Your Body*, *Codename Heroes* was much more clearly designed to offer a certain experience to players. In the papers we describe our approach to this design as one that could not happen through design of the look, or 'on the surface', but had instead to be designed at the rules level. By avoiding to design the surface of the game female coded and instead focus on making the rules comply with what is perceived as female values we could make the activity within the game attractive to that audience, and in extension give the players a positive experience of the value of those female coded activities. From interviews and observations during player workshops we grew gradually more confident that the approach could indeed invite players to the kind of experiences we aimed for (Back & Waern 2013).

Among other findings, not reported in the articles, we can see how an understanding of the structure of the game, and more specifically the goal of the game seems needed to engage playfully in the activity. In game tests at the Ung'08 youth festival a shorter version of the game (about one hour) was run multiple times, and the explanation of how it worked evolved as the facilitators became more and more familiar with how people understood the game. In the game, the final goal was revealed during play, and while an explanation along the lines of 'come and play with us' spurred the counter-question 'what am I to do?' to which an answer of 'you will see' did not seem good enough, if the original presentation included 'avoid the guards' the follow-up question was not raised.

Discussion

The Concept of Playful Engagement

As seen in the background chapter, there are many different views of engagement in a playful activity. Emotions, experiences and activities are usually mixed up. By separating the experience from the activity it becomes obvious that the concept of ‘fun’ is problematic. The limits of the experience become unclear, as in LeBlanc’s eight kinds of fun (e.g. Hunicke et al. 2004; Costikyan 2002). Similar examples of trying to map playful experiences can be seen in, for example, the PLEX model (Lucero & Arrasvuori 2010), which maps the playful experience in such a broad way that even the authors, in conversation, ask themselves if they are mapping playful experience, or all of life’s experiences.

To understand playfulness, we need to instead look at *how* people engage; we need to look at *playful engagement*. There seems to be no specific thing that is a playful experience, instead it’s about attitude towards a situation, about the way in which the user engages. If people accept a situation, and the ‘rules’ of that situation as playful, they can make it a playful engagement, even if it’s a ‘bad situation’. It seems possible to experience any feeling in a playful mindset. A mundane example would be that films, or more obviously within the domain of play, a rollercoaster (Benford et al. 2012), can be frightening. There are also more extreme examples; games such as ‘Fat Man Down’ and ‘Gang Rape’ (Wrigstad 2008; Berg Østergaard 2009; Montola 2010) can be played ‘for fun’, to get the experience, and the emotions, of a terrible situation, even if the emotions they invoke are very difficult to conceive as playful. It seems possible that any feeling can be targeted by a game design.

Game Design for a Broken Circle

As stated earlier, ‘the magic circle’ (Huizinga 1955; Salen & Zimmerman 2004) is a debated term and most see it as an oversimplification. It is still a good metaphor by which to understand the play context, and by adding Goffman’s (1961; 1974) concept of framed social activities, it readily extends to being not only a physical, but also a cultural and social border. This makes it useful as a design tool.

While engaging playfully in an activity, there might well be a magic circle around play, but it's not as distinct as Huizinga described it. The game context seems to both reflect and transform its surrounding culture (e.g. football supporters also being fans outside the game). The experience within the game is 'not real', it can be disregarded as 'just play', but it still creates a reflection that can affect everyday life. This can be done directly by changing behaviour, or feelings, during game but it can also be long term by providing new ways of thinking about things from the game in the future. Play has an impact that can be designed for. It is possible to design not only for behaviour during play, but also to deliberately influence the feelings and experiences that arise from the game, and how they leak into 'the ordinary world'. This leakage from the magic circle should be possible in both traditional games, as well as in pervasive (Montola et al. 2009) and brink games (Poremba 2007) in which designers deliberately aim for a boundary transgression.

Playing in Public Places

Based on concepts from architecture, Harrison & Dourish (1996) introduced the term 'place' to HCI and interaction design research. Earlier, and to some extent still, the focus for location design was on the three-dimensional structure, 'space'. Harrison & Dourish instead pointed to the social and cultural location: "Space is the opportunity; place is the understood reality".

Space is a structure something can be located in. It is useful for orientation and proximity, and in extension through understanding of those, understanding if action is possible, to understand closeness or distance as participation, and to express presence or feel awareness of others. As an example, standing close to someone makes a conversation possible, since the voice can be heard, while distance naturally removes that possibility. Similarly, you need to be within a room to be able to see what's there.

Place on the other hand is invested with understanding. It is where you can act, and where an action has meaning. It is (usually) located in space, and one space can be several different places for different people, or for the same people at different times. Place is cultural. As an example, students do not sit in a classroom listening to a teacher because they are in that room, but rather because they are in a certain situation in that room, a lecture. If the classroom was borrowed for some other purpose, say a game session, sitting and listening to that game while taking notes would seem unnatural. This can be tied back to Goffman's (1974) understanding of frames as socially constructed, and in extension to the magic circle, in the meaning in which it is used in this thesis.

We noted in the frameworks section of the background that Isbister (2010) proposed a social understanding of games, rather than just programming and hardware. Similarly, a social understanding of space (or rather,

place) would help in the understanding of physically located games. As the players enter into the magic circle, they enter into another social frame, and this changes their understanding of that situation, and also of the place. In this way they reform the space into *another* place, using the game frame to transform it. With this understanding of how a game changes the place, as well as with our understanding of how the magic circle is not rigid, as in the case of brink (Poremba 2007) and pervasive games (Montola et al. 2009) we can use this to design specifically for transforming place into what we want it to be.

Seed the Engagement

In this thesis, activity and experience have been explored, but how people choose to join in these activities has only been touched upon. As in many games it has been tacitly assumed that people want to engage, and that they want the experience.

Suits (2005) used the term ‘lusory attitude’, to describe this voluntary engagement in a game, or a playful activity. This voluntary engagement is necessary to be able to design the activity. But *how* is it encouraged, or created? And *why* do people want to play a certain game, and not another? This question can be split into two parts:

- *Engagement*: starting to be interested in the activity
- *Commitment*: actually continue caring for the experience

In this the area becomes a question about how the playful frame is deliberately created, who can create it and who can control it. From a designer perspective, in short, how to ‘get them in, and keep them there’! While this may be a simple issue for most computer and board games, given that buying (or downloading) the product in itself is creating the first engagement, it is a critical issue for pervasive games, especially if they don’t have a fixed starting point.

A good illustration of this issue can be gathered from the game tests of *Codename Heroes* at the Ung’08 youth festival where the short version of the game was run. As the explanation of how it worked evolved from game test to game test, from ‘come and play with us’, answered with ‘what am I to do?’ to a more detail game pitch describing how to avoid the guards of the game, players more and more easily engaged in the activity.

It is interesting to note that the question ‘what I am to do?’ seems to be aimed at understanding the strategic goal of the game, while the answer of ‘avoid the guards’ is actually just a tactical goal on the way to the real one. While the strategic goal of finding out how to win is still hidden, it seems as if the presentation of the tactical goal was enough for the players to be satisfied enough to engage in the game and start playing, and then later find out

the strategic goal. In this way the encouragement to engage can be created without creating a full understanding of the activity.

FATE: From Activity to Experience, Three Levels of Game Design

As has been shown in the background, most design frameworks do not distinguish between player activity and their experience. But neither experience, nor activity can be directly designed. While the experience is created from the activity, the only thing that can be designed is the prerequisites: the artefact that suggests that activity.

A game seems to do, more or less, the same thing each time it's played. This seems to happen because the player voluntarily engages in a game because they will typically *want* to experience what the designer set out to create for them. This is playful engagement; the player is within the magic circle of playing. As Suits (2005) has rightly described 'lusory attitude', being within this magic circle of play means following the rules and striving towards the goals set up by the game. This voluntary engagement with the structures of a game is the key to why it is possible to design the artefact of a game to create an activity, and also why that activity can be said to give rise to an experience.

To understand *how* this works I propose a framework focused on the player activity, rather than the artefact's creation of those activities. The framework begins in the designed construct, and moves through activity, to experience. The framework was inspired by, among other things, the MDA-framework's idea of choices trickling from one level to another (Hunicke et al. 2004). However, this new model focus on the player rather than the artefact, and includes a clear separation of the activity: what you *do*, and the experience: what you *feel* and *learn*. The latter extends to both attitudes during the experience, and the long-term experience. The experience is also dependent on previous knowledge and experience forming your current one, but this has not yet been fully explored in this context.

As seen in the background, there is an unclear separation between *activity* and *experience* (often commonly referred to as 'fun'). By clearly separating the two, and still keeping a view of the underlying game design, a three level model is created. I call this model 'from activity to experience', or for short: FATE.

To create an *experience* means to *design* an *experience*. But experience happens within the user, because of the activity. Therefore to *design* an *activity* means to create an *experience*. But the user performs activities. Only the *prerequisites* of an *activity* that creates an *experience* can be *designed*. As the *prerequisites* can be designed both as a tangible artefact, or intangible

rules, this leaves us with a *designed construct* that is understandable through previous experience of playing, and leads to certain *activity* and through that in extension certain *experiences*.

This presents us with a three level model of thinking for designing games:

1. *Designed construct*, that in use create...
2. *Activity*, that create certain...
3. *Experiences*

When designing a game experience I argue that we need to look at all three levels (see Figure 3 for a more visual explanation).

It seems that even a small change to a game system can have a large effect on the experience of the game. This has been discussed already by Costikyan (2002), comparing the online multiplayer games *Ultima Online* (Garriott et al. 1997) and *EverQuest* (McQuaid et al. 1999), two similar games, with one big difference: in *Ultima Online* you are allowed to kill other player characters. Costikyan discusses how this one difference lead to greater differences between the two games: while *EverQuest* is a friendly environment with players talking, in *Ultima Online* there is a constant threat of being hunted down and killed whenever you were online, resulting in players banding together in small tight teams protecting each other.

Similarly to the MDA-framework (Hunicke et al. 2004), this model could be constructed so that it provides an understanding of how changes on one level lead to changes in the others. We can also revisit frameworks and observations that function at an isolated level or focus on the interaction between two levels, framing them in a bigger whole and understanding what they have chosen to ignore. In this way we can for example pinpoint a situation in a design and trough looking at what gives rise to that situation redesign the right parts; we can separate the play into parts and through awareness of the levels focus on only one part in our analysis; and we can explicitly design on a lower level for a certain goal on a higher level in the framework.

There might well be more fine-grained ways of separating game design (or design of playful engagement) to understand the creation of experience, but in the design examples these seem to be the reoccurring levels. Further, to understand how activities and experiences are created, it seems as if the focus should rather be on the interconnection between levels than on the levels in themselves, resulting in the areas of design construct to activity, and activity to experience.

For most reasonably complex games it might not be possible to achieve a full understanding of the game from artefact to experience. For these it might be enough to be aware of the distinction and choose to look at one level, or the interrelation between two levels to get to an understanding of a certain problem.

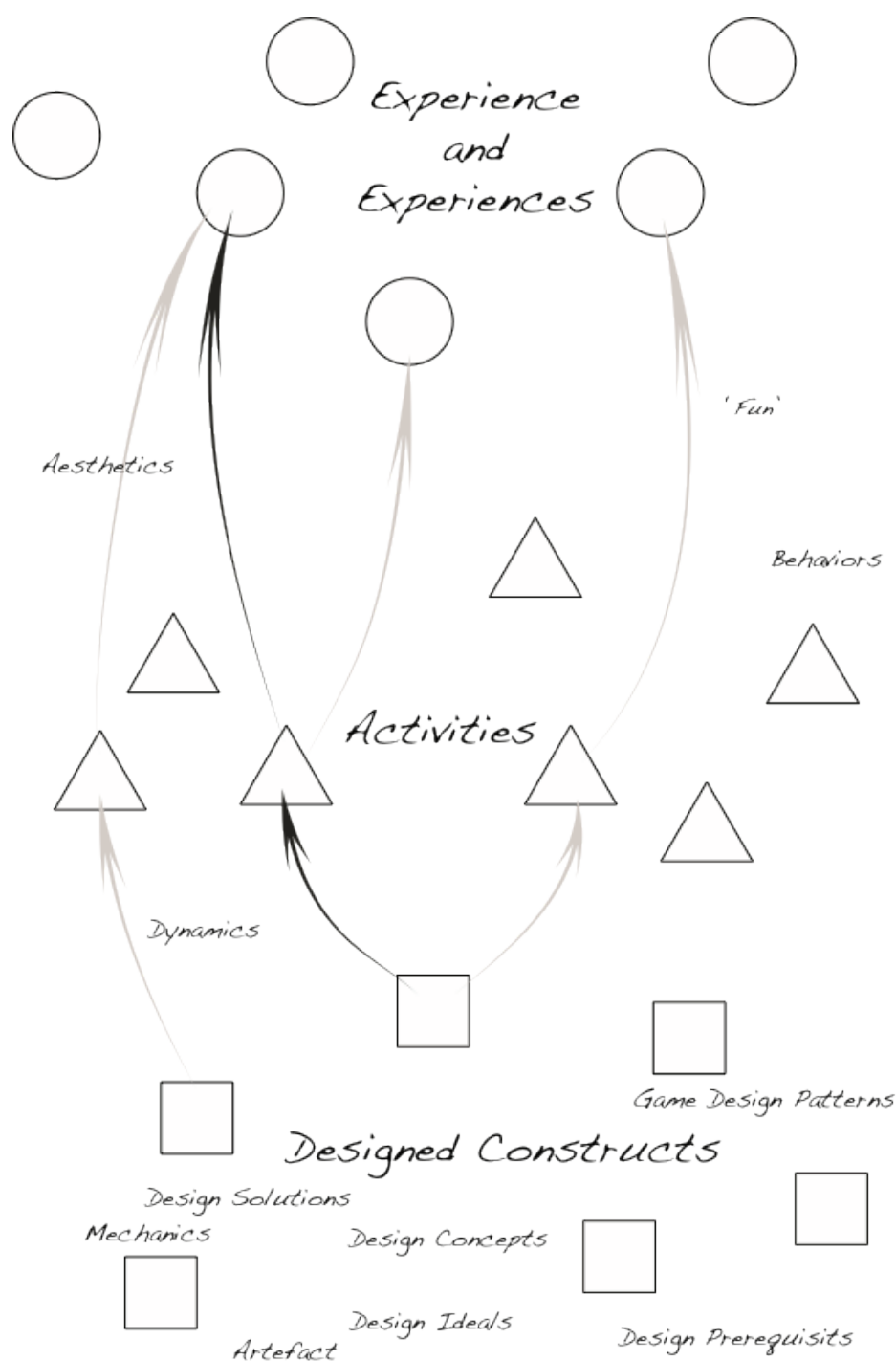


Figure 3

As an example, in the cases we can see how Kista Teater wished *I'm Your Body* to be a tool for citizen dialogue, to create a discussion and give users a chance to gain knowledge about others in the same area, but also not wanting to control what to do within this system. This resulted in a system being there, and a wish for a certain experience, but without a clear view of how the activity should be formed. Not until the activity was formed, and limits were set up in the workshops between participants, and also between participants and workshop, did the experience start to form.

In the other case, as the target group of young women was not clearly stated in *Codename Heroes*, the look and theme of the game could not (and did not want to) be designed to give this away. Instead of what would have been an attempt to design directly for experience, the longer root of actually designing the game rules to elicit the behaviour that would create the wished experiences were created. This seemed to work as in the game, liked by both boys and girls, the players performed the sought after tasks formed to emulate everyday strengths of young girls.

Conclusions

This thesis set out to establish a theoretical foundation and a conceptual framework for how to foster engagement in play and games in public places. The design examples have been based around playful engagement, rather than ‘games’, and they have been physical and in location, or ‘pervasive games’. How this playful engagement relates to public space, has been discussed.

The work took a game design research approach, based on knowledge mainly from game studies and interaction design research. The results are validated through a theoretical background comparing the framework to other related frameworks, in empirical work through two design examples and analysed, relating the results in these design examples to the frameworks discussed in the background.

Regarding the research goal of providing concepts and tools for scaffolding the design process, and analysis, the result is a three level design framework, functioning as a lens towards understanding the design of playful activities. The framework centres on the players’ perspective, offering a game design as an invitation and encouragement to engage in certain activities. The framework distinguishes between design at three levels:

1. *Designed construct* (e.g. artefacts and rules)
2. *Activity*
3. *Experiences*

The framework suggests that players do not always need to understand their full interaction between the three levels. Some design issues occur only at one level and can be addressed at that level. Some emerge in the interaction between two levels, but do not necessarily involve all three. However, even though a designer can only directly affect the designed construct, it seems possible to deliberately design to elicit certain design goals on the other layers by making them part of the design goals.

Significance, Relevance and Limitations

Research quality has been discussed from the four criteria of Zimmerman et al. (2007): documented process, significant invention, relevance and extensibility, as well as the Höök & Löwgren (2012) validation ‘horizontally’ by relating to similar concepts; and ‘vertically’ by finding the concept present in other instances; and finally triangulating the knowledge through reflection, articulation and abstraction.

The framework has been developed during multiple design projects, all with somewhat different views, goals, people, and research approaches. These different views can be a problem in relating projects to each other in a sensible way. It may pose a problem to the reader unless it is clearly stated what ideas lie behind each project. I argue that the diversity of the projects is also a strength, in that the different occurrences of similar problems provide multiple views, being a form of triangulation, fitting with the vertical relation and triangulation in Höök & Löwgren, as well as showing how they can be significant, relevant and extensible in multiple projects. The projects have been documented in articles, as well as in chapters in this thesis and validated ‘horizontally’ in the background and theoretical framework chapters. Finally it has been reflected upon, articulated and abstracted in the discussion.

This thesis is limited to studying playful voluntary engagement, with an intrinsic value of play. However, it is not limited to games, but instead looks at playful activities, focusing on engagement rather than the artefact.

Future Work

The thesis discusses how to design experience when people engage in playful voluntary activities ‘in the streets’, but, as shown in the discussion, the question is opening up as much as it answers, and it still does not explore *how* this voluntary engagement is encouraged or created, or *why* people engage in a certain activity. This question can be further split into *engagement*, as in how to get people interested in an activity in the first place, and *commitment*, as in actually caring for the activity once they are engaged. To fully understand this, I believe that a wider view should be taken, to see how this is solved in other situations, using studies of children’s games, amusement parks, street performers, and/or other playful activities outside of the structured activity of playing games. As much as this is an answer, the contribution of this thesis is also a formulation of a new research problem. In forthcoming work, the continuation of this research will focus on understanding, and developing design principles for, this engagement and commitment and explore how they relate to this understanding of designing from activities to experiences.

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