



**KTH Numerical Analysis  
and Computer Science**

# **Once Upon a Time... – Interactive Storytelling in a Context-Dependent Mobile Game**

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# ABSTRACT

## Once Upon a Time...

### - Interactive storytelling in a context-dependent Mobile Game

Recently the arena for mobile games has started to grow rapidly as technology has improved. To link roadside objects to a game and to use the sense of motion while travelling to enhance the game experience has been done in the Backseat Gaming projects at The Interactive Institute. Evaluation showed that the children seemed to enjoy the stories in the game. The overall objective with this project that is called Backseat Gaming III, was to investigate how roadside objects and places along a road can be used for storytelling using Backseat Gaming. The outcome was a design recommendation where a design approach to design for storytelling is presented. The most distinctive results in this project were: 1) that end user involvement is important during the whole design process, 2) that the story structure to be used is a basic line with branches leading out from it, 3) that one author probably is not enough in order to design choices of equal value and 4) that to shift between storytelling based on fragments and detailed stories work if the beginning and ending are well-prepared with no interaction possibilities for the player. I used a comprehensive literature study on Janet H Murray's aesthetic categories for interactive storytelling, dramatic arcs and a perspective in which the beauty of the road were presented. The theoretical background resulted in the creation of a workshop in which different ways to tell a story were tested. The purpose of the workshop was to generate ideas for interactive storytelling. The results of the workshop, together with the theoretical background, formed a base for the design for storytelling. A suggestion for future work would be to evaluate a prototype based on this design recommendation.

*Keywords: Interactive Storytelling, Mobile Games, Design Recommendation*

# SAMMANFATTNING

## Det var en gång...

### - Interaktivt berättande i ett kontextberoende mobilt spel

Nyligen så har marknaden för mobila spel börjat växa allteftersom tekniken förbättrats. Att kombinera objekt längs vägen i ett spel samt att använda rörelseuppfattningen när man åker bil för att förstärka spelupplevelsen har gjorts i Backseat Gaming-projekten på Interaktiva Institutet. Utvärderingen visade att barnen verkade tycka om historierna i spelet. Det övergripande syftet med det här projektet som heter Backseat Gaming III, var att undersöka hur objekt och platser längs en väg kan användas för berättande i Backseat Gaming. Resultatet var en designrekommendation där utgångspunkten var att designa för berättande. De mest framträdande resultaten är: 1) att slutanvändaren är viktig under hela designprocessen, 2) att berättandestrukturen ska vara en grenad baslinje, 3) att *en* författare antagligen inte är tillräckligt för att kunna skapa interaktivitet med val av lika värde och 4) att växla mellan berättande baserat på fragment och berättande baserat på mer detaljerade historier fungerar bra om början och slutet på spelet är väl förberett och utan interaktiva inslag för spelaren. Jag använde en omfattande litteratur studie av Janet H Murrays estetiska kategorier för interaktivt berättande, dramatiska kurvor och jag redogjorde för ett perspektiv där vägens skönhet beskrevs. Teorin resulterade i en workshop där olika sätt att berätta en historia testades. Syftet med workshopen var att generera idéer för interaktivt berättande. Workshopens resultat tillsammans med teorin utgjorde basen för design rekommendationen. Förslag till framtida arbete är bland annat att utvärdera en prototyp som skapats utifrån designrekommendationen.

*Nyckelord: Interaktivt berättande, mobila spel, designrekommendation*

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This project was carried out during the fall of 2003 and winter 2004 at The Mobility Studio at The Interactive Institute in Stockholm. The Mobility Studio focuses on research concerning mobile technologies and roads. During the project I have had a wonderful opportunity to work in a creative research environment at The Mobility Studio. I would like to thank all the members of The Mobility Studio for giving me the opportunity to be a part of their team during this project.

I would especially like to thank my supervisor, Ann Lantz at The Royal Institute of Technology, for valuable inputs on my work during the whole project.

I would also like to thank all the people I met when studying Interactive Media at Dramatiska Institutet for all the interesting discussions we had on interactive storytelling, which definitely have been a source of inspiration in this work.

## PREFACE

*Once upon a time* there was a young girl and a two-year younger sister sitting in the back seat of their parents' green Volvo. The girl gazed through the window and saw a beautiful landscape passing by. She could also see, when the landscape outside was darker, the reflection in the window which showed the contours of a young girl in the back seat of that car. That young girl was me.

It was the early eighties. No cellular phones and one Donkey Kong game that I had played so many times that it was even more thrilling to tease my sister until she burst into tears. Madicken and Robin Hood tapes had been played over and over again and we already knew the lines. Lacking anything more interesting to do, we started interacting with the other cars; that is, my sister and I had notebooks where we wrote down the registration number of the cars we met on the road. That kept us busy for a short while, until that became a past time as well.

*If only it had been twenty years later...* *If only* we had been travelling in that car today! Then we might have had a different opportunity to play with each other and to interact with other cars via *Backseat Gaming*, a computer-based game developed at the Interactive Institute in Stockholm used to entertain while travelling on the road.

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Appendix C - The Associations-based Story

Appendix D - The Concept

# 1 INTRODUCTION

This project, Backseat Gaming III, concerns storytelling using context-dependant technology in a mobile game on a conceptual level. The overall objective with this project was to investigate how roadside objects and places along a road can be used for storytelling using Backseat Gaming in a larger scale. It was of interest to investigate how stories are to be told using the specific features of the previous Backseat Gaming projects that are described in the next chapter. Then it was of interest to investigate if the stories that then came out made sense at all or if they would be surreal to the extent that they were of no use. I used a comprehensive literature study to investigate storytelling from different perspectives. I also arranged and led a workshop using focus groups where different ways to tell a story by using chain-writing described in the chapter about the workshop, were tested. The outcome of the workshop together with the literature study formed the design recommendation. The design recommendation focused on: the story structure to use, the interaction possibilities, how to author or create a game and how the design process should be carried out.

## 1.1 Disposition

So far, the *Introduction* will continue with this section and will be followed by a section on definitions of useful terms for the reader of this report. The continuing chapters are presented below.

## 2 Background

Previous Backseat Gaming projects and related work are described in this chapter.

## 3 Problem Definition

The problem definition is stated here.

## 4 Interactive Storytelling

The outlines for interactive storytelling presented are based on Janet Murray's aesthetic categories. This section also briefly touches upon theory on drama. Different structures for storytelling are explored.

## 5 The Beauty of the Road

A perspective in which the road is seen as a social space and a community is presented. The interaction inside the car as well as the road and the surroundings are discussed.

## 6 Story Structures in Backseat Gaming

The previous chapters form the base for the work done in this chapter. I form structures for storytelling on Backseat Gaming.

## 7 Workshop on Storytelling

In this chapter the workshop and the results are described.

## 8 Design for Storytelling

The workshop results together with the theoretical background are combined and form the design recommendation.

## 9 Discussion

This chapter presents a summary of the project, including a discussion of the method, its results, as well as suggestions for future work.

## 1.2 Definitions

In this section I will define central terms and notions for this report. Definitions of these terms vary greatly, depending on whom I ask or which book I read. I will clarify what the terms mean in this report.

### 1.2.1 Game

I would say that a *game*, be it *Monopoly*®, *Trivial Pursuit*® etc, focuses on the interactivity and usually involves achieving some kind of goal by interacting; i.e. solving puzzles, scoring points and winning.

A *computer game* is a game that uses a computer. Likewise, a *Playstation*® *game* is a game that is played on a Playstation® console and since a Playstation® is a computer, when I refer to a computer game I also include games played on consoles like Playstation®, Xbox®, Game Cube® etc.<sup>1</sup> When I use the term *mobile game* I refer to a game that is played on a mobile/portable computer device. It could be a 3G cellular phone, a GSM cellular phone, a Palm Pilot or a Pocket PC. A mobile game is also a computer game.

All these consoles require an initial action taken by the player. The player needs to turn on the computer, cellular phone or TV in order to play. Recently, there has been increased focus on games that run twenty-four hours a day, every day, and use many channels to pull players into the multiplayer environment. They are called *pervasive games*. They don't wait until the player chooses to sit down at the terminal and play. They phone, fax or e-mail the player demanding attention and making it clear that the player must take immediate action to compete successfully. The game environment never stops running.<sup>2</sup>

What has been described above is actually part of a new discipline called Ludology.<sup>3</sup> It mainly concerns the study of games, computer games in particular. The field is mostly focused on the historical development of games or on developing taxonomies for different types of game. It does not typically address the question of designing new games and not at all new games using new technologies.<sup>4</sup>

### 1.2.2 Narrative and Storytelling

The definitions of narrative and storytelling are crucial for my work. However, it is not entirely simple to define these terms. Below I will

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<sup>1</sup> Eladhari, M. (2002), Objektorienterat berättande i berättelsedrivna datorspel

<sup>2</sup> <http://www.analysis.com> (Last visited 2003-10-03)

<sup>3</sup> Ludology, <http://www.ludology.org> (Last visited 2003-10-03)

<sup>4</sup> Lundgren, S., Björk, S (2003), *Game Mechanics: Describing Computer-Augmented Games in Terms of Interaction*, p.47

present the way I will use the terms in this report. I do not claim that this is the universally correct use of the terms, but I hope it creates a basic understanding for the reader of this report.

Both a story and a narrative are accounts of events. An event could be, for example, that Fatima starts walking towards the door. Another event is that Fatima opens the door and leaves the room. Putting these events together forms a story. When someone accesses the story, i.e., reads it and therefore processes it mentally, it becomes a narrative.

A narrative can also be with narrating events after they have happened, which can be confusing. I will therefore do as Tosca and use the term storytelling instead, in order to avoid mixing up different meanings of the term narrative. Storytelling doesn't necessarily imply narrative, but it can also be a predisposition of elements.<sup>5</sup> In order to understand the complete perspective of storytelling, *story* and *plot* are also discussed below.

### ***Story and Plot***

A story is a piece of fiction that combines different events. An event consists of actions and events that are based on their agency and on their relative importance.<sup>6</sup>

The plot in a game makes the combined stories interesting by adding temporal, causal, spatial, functional and manipulative events.<sup>7</sup> The plot implies an end, it is the desiring dynamics that moves the player and story towards the ends, while simultaneously delaying that end.<sup>8</sup> The plot makes the story interesting and creates the desire for creating narratives.

Although the definitions of plot and story are rather similar, they are not to be interchanged. In this report the difference is not crucial, and therefore I will leave the discussion about these terms here.

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<sup>5</sup> Tosca, S. (2003), *The Quest Problem in Computer Games*, p. 70

<sup>6</sup> Eskelinen, M., (2001), *The Gaming Situation*

<sup>7</sup> Eskelinen, M., (2001)

<sup>8</sup> Nath, S. (2003), *Story, Plot and Character Action: Narrative Experiences as an Emotional Braid*, p. 11

### 1.2.3 Interactive Storytelling and Games

I think the difference between an interactive story and a game is rather fuzzy. There are games where the storytelling is a major part of the experience, and there are games where the interaction is the most important thing, and there might not even be a story at all. However, I am not going to make a distinction between games and interactive stories because, to me, they are basically the same as they only have shifted focus. In a game you achieve something, and in an interactive story what you achieve is an interesting story.

## 2 BACKGROUND

Earlier Backseat Gaming projects form the base for this project. Therefore I will, in this section, describe the previous Backseat Gaming projects along with mentioning projects that in some respects relate to some of the ideas upon which Backseat Gaming relies. It is important to highlight the fact that so far, there are no other prototypes that support interaction between players in different cars.<sup>9</sup> That is also one of the reasons that it is of interest to work with Backseat Gaming.

### 2.1 Backseat Gaming

Backseat Gaming is a research project carried out between autumn 2001 to spring 2002 in the Mobility Studio. A prototype called Backseat Gaming was developed as a context-dependent mobile game. It uses the changing scenery and sense of motion when travelling in order to create a compelling game experience. The most distinctive feature of this prototype is the linking of roadside objects to a computer game.

The game device recognizes its angle and tilt through a digital compass, as well as its geographical position by a GPS-receiver. The player has to attend to stories given at certain locations, and manipulate the direction of the device toward things they pass along the road, in order to make virtual objects appear on the screen.<sup>10</sup> The target group is children sitting in the back seat of a car, (see figure 1a).



*Figure 1a* Backseat Gaming player

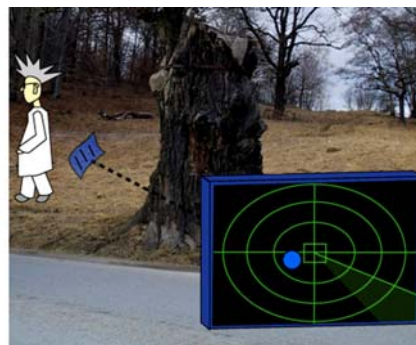


Photo: Lisebet Brunberg

*Figure 1b* The manipulative event

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<sup>9</sup> Hulterström, K. (2003), Witches, Warlocks and Traffic Encounters – Designing the Interaction for an Ad Hoc Multiplayer Gaming Experience, p. 12

<sup>10</sup> Brunberg, L., Juhlin, O. (2001), Movement and Spatiality in a Gaming Situation – Boosting Mobile Computer Games with the Highway Experience

Children usually play with each other while travelling, i.e. counting red cars or teasing siblings. Backseat Gaming creates the opportunity for children to explore and play with the vast landscapes, the magnificent cottages or the attacking mummies they pass or imagine while sitting in the car.

Backseat Gaming tells the story on three levels. The first thing the user experiences is the *framing story*. It starts when the user enters the game and is provided with necessary information for understanding the goal of the game. When driving along a road a *local story* is triggered. The story is presented with an animation consisting of a sequence of pictures of the particular roadside object, overlaid with animations and a narrator voice. The story provides information about the upcoming *manipulative event*, (see figure 1b on the previous page). That is important since the player is present at the game location for a very short time. A manipulative event is initiated when the player approaches the game location. The device automatically changes so that the player can sight at objects in the physical environment that have been described in the local story. It is important that the player positions the device in the correct direction, or else the virtual objects will not appear. Backseat Gaming has a traditional relationship between player and computer, similar to a simple combat game in the way the player manipulates the device to grab an object.<sup>11</sup>

The game was tested and evaluated by the assigners of the project at the Mobility Studio. During the test the children were filmed and their facial expressions, general appearance, movement of device and gaze, aiming, firing behavior and spontaneous comments at each event in the game were studied. As a result of the study it became apparent that the children generally understood and enjoyed the concept, if they were not too young to understand the connection between the game and the roadside objects. An especially interesting behavior that was noticed was that the players enjoyed the stories in the game, even though the narrative or storytelling hadn't been a focus for this prototype. It was also concluded that storytelling is most fun with roadside objects that in themselves evoke interest, such as places that display activity or dramatic places.<sup>12</sup>

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<sup>11</sup> Brunenberg, L., Juhlin, O. (2001)

<sup>12</sup> Brunenberg, L., Juhlin, O. (2001)

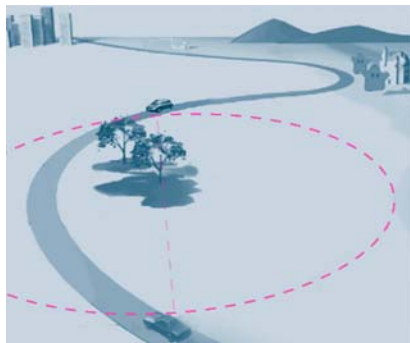


## 2.2 Backseat Gaming II

This part of the project was carried out during the spring and summer 2003. It was focused on the highway experience from a multiplayer perspective.

Meeting other people while travelling along a road occurs quite often in various forms, such as two cars travelling in different directions, traffic jams, red lights, etc. The project resulted in a prototype, Backseat Gaming II, which has been tested. The focus was to enhance the social interaction between the passengers in different cars on the road, rather than interacting with objects along the road, as in the previous project. In order to make the social interaction more interesting, a tangible interface was chosen. The digital compass that in the previous prototype was connected to the pocket PC was detached and used as a separate item connected through a longer cable to the pocket PC.<sup>13</sup>

When two cars come in proximity of each other, (see figure 2a), the players will receive a sound feedback of the other player's presence. The interaction is implemented as a choice of different weapons, (see figure 2b). To follow up the theme of the game, the tangible interface can be used as a magical wand, a magical hover and squeezer. The wand is intended to enhance social interaction by gestures.<sup>14</sup>



**Figure 2a** Meeting cars with players



Photo: Liselott Brunenberg

**Figure 2b** The squeezer

Later this autumn a field evaluation of this device will be carried out at the Mobility Studio by the assigners of the project.

## 2.3 Related Work

Together with the introduction of *Nokia games®*, the game world has to accept the challenge of embedded technology and pervasive gaming on a larger scale. I think it has received wide publicity outside the game world

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<sup>13</sup> Brunberg, L., Hulterström, K. (2003), Designing for Physical Interaction and Contingent Encounters in a Mobile Gaming Situation

<sup>14</sup> Brunberg, L., Hulterström, K. (2003)

and the academic world, which is what to expect since Nokia is a multinational company. There are several other projects focusing on bringing the digital, virtual world closer to real world. However, the gap between now and when my sister and I played the Donkey Kong game is huge. During this period of time there have been many changes, i.e., Playstation® consoles installed in cars, and the prestanda of the computers have been greatly improved. Playing computer games while travelling in a car is not a new thing. The unique feature of The Backseat Gaming projects is the link between the virtual world and the physical world. The road the car drives along *does* matter in this context!

### 2.3.1 Physical Space

Not only it is of interest to investigate previous computer games within a car, but also the use of physical space, this since The Backseat Gaming projects, as mentioned above, mix the real world with the virtual world.

*Pirates!*<sup>15</sup> is a wireless multiplayer game focusing on social interaction in physical space. The game takes place in physical space and the distances between different locations are used as events in the game. The game is implemented on handheld computers connected to a wireless network.

*Can You See Me Now?*<sup>16</sup> is a game using positioning of other players outdoors. Three runners were physically located on the street and up to twenty people logged on to the Internet and played. The runners' goal was to physically get to the place where an online player's avatar was and catch it. In a setting like that it works, but when it comes to Backseat Gaming, that kind of setting would be too slow.<sup>17</sup>

### 2.3.2 The Game Industry

So far, the most successful designs of computer games have been developed within the private sector. As shown in the previous sections, academic research is being done and is also a rapidly growing industry. However, the gap between the commercial game industry and the academic research on games is still huge. The commercial game industry is far beyond the academic projects. Some commercial projects are therefore worth mentioning:

Nokia games® is already mentioned above.<sup>18</sup> There are other game-developing companies specialized in mobile games. Worth mentioning is

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<sup>15</sup> Björk, S., Falk, J., Ljungstrand, P. (2001), *Pirates! Using the Physical World as a Game Board*

<sup>16</sup> Anastasi, R., Tandavanitj, N., Flintham, N., Crabtree, A., Adams, M., Row-Farr, J., Iddon, J., Benford, S., Hemmings, T., Izadi, S., Taylor, I. (2002), *Can You See Me Now? A Citywide Mixed-Reality Gaming Experience*

<sup>17</sup> Hulterström, K. (2003), p. 12

<sup>18</sup> <http://www.nokiagames.com> (Last visited 2004-01-30)

especially *It's Alive™* and *Jadestone™*, both Stockholm-based companies. However, none of these have come up with a mobile game based on storytelling yet.

There are not only game developers, but also games that are of special interest, since storytelling in the games is emphasized. In *Black Out*<sup>19</sup> the interaction possibilities are affected by the actions the player has taken. The structure behind is four different bars. The individual states together decide the player's mood and also the interaction possibilities.

In this section my intention was to describe Backseat Gaming projects and related projects in order to position the underlying work for this report.

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<sup>19</sup> *Black Out* (1997), by Michael Valeur and Deadline Media

### 3 PROBLEM DEFINITION

In Backseat Gaming it was concluded that the children seemed to enjoy the stories in the game. The concept that uses roadside objects for generating stories obviously worked!

As you travel along a road, you pass an enormous amount of objects and places. Some of these places already have an interesting story to tell; they could, for example, be well-known monuments. Some places or objects are nothing special at all. The overall question is: How can these objects and places along a road be used for storytelling using Backseat Gaming on a larger scale?

To test different ways to tell a story, chain-writing that is described in chapter 7, is used. It will be of interest to investigate storytelling and narratives and discuss the following: What kind of story structures will be suitable for storytelling in Backseat Gaming in a larger scale? Will the stories that come out make sense at all?

These questions will result in a design recommendation that can be used as a basis for future implementations, though not to be confused with a technical specification. The way to create the design recommendation will be a comprehensive literature study together with a workshop on storytelling with participants who have been studying storytelling. During the workshop, the chain writing forms the basis for discussions about ways to tell a story, and on the concept in general.

## 4 INTERACTIVE STORYTELLING

There is a huge amount of literature written on various ways to tell a story in a computer game, some of them good for their specific usage, see for example the website <http://www.gamasutra.com> and the website <http://www.games.com>. What I find a disadvantage is the lack of design patterns for game developers. The technology and the basic conditions for the media are still rapidly developing. The media is now where television was in its early days. So far I have seen only a few attempts to formalize the creative process in creating a game and the most articulated have been carried out at the Nokia Research Center.<sup>20</sup>

Before I describe different models for storytelling I will discuss Janet H Murray's way to analyze interactive story experiences. I will connect it to Brenda Laurel's theories about drama within computer science. These theories will form a base for what I would like to achieve when it comes to the player's experience in this work.

### 4.1 Murray's Aesthetic Categories

Murray introduces three categories for analyzing an interactive drama experience, namely *immersion*, *agency* and *transformation*. She has written that: "[these] three aesthetic principles [...] are not so much current pleasures as they are pleasures we are anticipating as our desires are aroused by the emergence of the new medium."<sup>21</sup> I find these categories very useful when it comes to the discussion of what notions are important for creating a compelling gaming experience. Bearing them in mind was useful for me when I designed the study, analyzed the results and created the design recommendations that I will present later in this report.

#### 4.1.1 Immersion

Immersion refers to the feeling of being present and engaged in a game play. It means that you learn how to do the things that the new environment makes possible.<sup>22</sup> It defines the role the player has to accept. It could be that the player enters the fictional world as a visitor or with a mask. The different forms for being present in a fictional world raises several questions that are yet to answer: How to enter a fictional world without disrupting it? Who is entering the world? Is it a character the player has chosen or does the avatar not have any characteristics at all? If

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<sup>20</sup> See <http://www.gamedesignpatterns.com> (Last visited 2003-10-16)

<sup>21</sup> Murray, J. (1998), *Hamlet on the Holodeck*, p. 181

<sup>22</sup> Murray, J. (1998), p. 99

we enter the world as ourselves, not as a character with defined traits, we do risk draining the world of its mystery, its *otherness*.<sup>23</sup> Another question is to what extent a player can become immersed in a game, without becoming too immersed.

### *The Boundary between the Virtual and Real World*

The fourth wall is the boundary between the virtual world and the real world. Imagine a theatre where three walls are the stage and the fourth wall is where the audience is. The fourth wall can take many different forms; i.e. in a screen-based game it is the screen and the keyboard that is the wall between the virtual world and the real world. In role-playing games the wall is within each player since every person represents a character. Murray states that a part of the early work in any medium is to explore where the virtual and the physical world meet.<sup>24</sup> Therefore the thoughts about the fourth wall as a part of Murray's immersion category are relevant to The Backseat Gaming projects. I think the strength in using immersion as an aesthetic category lies in emphasizing the fourth wall. By doing that I point out the advantages Backseat Gaming and pervasive games have compared to screen-based games.

If you become paralyzed with fear while playing a game, the game will become more interesting to a certain extent, but when that limit is reached, it's not entertaining anymore. Playing a screen-based game or a game where the limits of the fourth wall are obvious reduces the act of surprise in the game. If the game is pervasive, the player doesn't know exactly where the border between the real world and the fictional world is. When participating in a pervasive game the player doesn't know for sure whether that strange-looking man on the bus is a participator in the game or not. The border is fuzzy and that *is* the game play!

I think that there are certain disadvantages with pervasive games, but those do not lie within the actual game play, but rather, when the game meets the real world. An example is if a player in a pervasive game starts to overemphasize the impact of the real world and starts to interact with people around, who are not a part of the game. If it is an action game or "shot'em up" game the intrusion of the fictional world into the real world could have harmful effects on people.

For Backseat Gaming, the beauty lies in passing roadside objects that might be linked to the game. In that case, the border is unclear and that is a big part of the immersion in the game play.

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<sup>23</sup> Murray, J. (1998), p. 101

<sup>24</sup> Murray, J. (1998), p. 103

## 4.1.2 Agency

Murray writes that “The more realized the immersive environment, the more active we want to be in it”.<sup>25</sup> As written above, Backseat Gaming is likely to create immersed players and therefore active players. This has also been shown in an evaluation of the Backseat Gaming prototype where the focus of manipulation was to relate roadside objects to the game. “[...] The children [...] showed varieties of emotions in exploration of the journey. In general, they displayed amusement with many of the stories, including the framing story.”<sup>26</sup>

Agency as one of Murray’s aesthetic categories is the feeling of empowerment that comes from the player’s ability to take actions in the world and the effects related to her/his intention.<sup>27</sup> Different ways to interact in a fictional world gives different possibilities for agency. It does not relate to the interface, but how the player uses the interface. When a player starts playing a new game, a contract between the player and the game is created within a short span of time. This contract concerns, among other things which actions are allowed in the game. Not only the actions that are allowed, but also which actions are actually taken must be considered: “Agency is the satisfying power to take meaningful action and see the results of our decisions and choices.”<sup>28</sup>

If the contract is unclear, the player might start to desperately click around on various objects and if something happens, it won’t be possible to discover the causal relations: which action caused what event? If clicking around doesn’t add anything to the game experience there is no agency. Aarseth stresses the importance of true agency, not just imaginative agency as is the case in the game *Myst*.<sup>29</sup> *Myst* uses the sense of false spatiality to deceive the player that s/he has more options than s/he actually has.<sup>30</sup> But as Murray has written: “But when things are going right on the computer, we can be both the dancer and the caller of the dance. This is the feeling of agency.”<sup>31</sup> Connecting it to the game creator: “In the computer game the interactor is the dancer and the game designer is the choreographer.”<sup>32</sup>

### *The Open Space*

According to definition, agency might have important implications for Backseat Gaming. Though the freedom in space is much greater in

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<sup>25</sup> Murray, J. (1998), p. 126

<sup>26</sup> Brunberg, L., Juhlin, O. (2003)

<sup>27</sup> Mateas, M. (2001), A Preliminary Poetics for Interactive Drama and Games, pp. 140-152

<sup>28</sup> Murray, J. (1998), p. 126

<sup>29</sup> *Myst*, Ubisoft, <http://www.ubisoft.com> (Last visited 2003-10-17)

<sup>30</sup> Aarseth, E. (1998), Allegories of Space – The Question of Spatiality in Computer Games.

<sup>31</sup> Murray, J. (1998), p. 128

<sup>32</sup> Murray, J. (1998) p. 144

Backseat Gaming than in screen-based games, the interaction is slightly different. The player doesn't choose when to interact. The driver chooses the path and the player is just a passive passenger in the back seat. However, as stated above, the freedom in space is much greater in Backseat Gaming than in screen-based games. A player in Backseat Gaming can look in any direction and still meet the game basically anywhere on the road. Still, the objects or other players in the game are predefined, so although you might feel that you have total freedom, it is the same case as in *Myst* where the player believes that s/he can affect the world with an endless amount degrees of freedom. This leads to the conclusion that we don't have sufficient Artificial Intelligence (AI) capabilities *yet*. If there had been endless intelligence in computers and no hardware limitations, it simply wouldn't be a design challenge to create a new game – the computer would create one itself without human involvement at all. As Manovich states it: “The history of new media tells us that hardware limitations never go away: They disappear in one area only to come back in another.”<sup>33</sup> We are still on the way to the holodeck, yet capable of creating complex AI systems. I would rather like the focus of the current AI capabilities to be seen as a *design challenge* in rapidly developing new media than as a lack of sufficient technology. In implemented computational drama systems, the predominant approach is to describe storylines using the representational formalisms of AI planning systems, typically as hierarchical or partially ordered operator sequences. The main reason for doing that is that the system can easily be integrated with previously existing AI systems.<sup>34</sup>

### ***The Player is The Author***

In interactive storytelling, I believe that there has to be agency in order to create a compelling game experience for the player. By true agency I mean that the player has to be able to walk on new paths in the game and sometimes create paths while playing. In computer-based storytelling, the author has to be less visible than in other media forms. Compare it to the film industry where everybody know when they have seen a Tarantino movie because that is shown on the movie poster, in the beginning and in the end of the film. That is the way it is and probably the way it will be. People go to see a Tarantino movie because they liked Tarantino's other movies. The actual story to be told is not the only crucial point when choosing a movie. The director directs it all and the passive audience takes on a voyeuristic perspective.<sup>35</sup> In interactive storytelling the author doesn't have the same possibilities to direct the audience. The audience is no longer a passive spectator, but an active participant in the process of storytelling. The creation is procedural and the author takes the role as the

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<sup>33</sup> Manovich, L. (2001), *The Language of New Media*. p. 316

<sup>34</sup> Gordon, S., Iuppa, N. (2003), *Experience Management Using Storyline Adaptation Strategies*. p. 23

<sup>35</sup> Mulvey, L. (1975). *Visual Pleasure and Narrative Cinema*, pp. 6-18



choreographer.<sup>36</sup> Brenda Laurel states it slightly differently, but it still means the same thing: “People who are participating in the representation aren’t audience members anymore. It’s not that the audience joins the actors on the stage; it’s that they *become* actors – and the notion of *passive* observers disappears.”<sup>37</sup> I believe that both Murray and Laurel means that the change to a participatory medium allows the person who defines the settings for the play to form a base for a participator to continue developing storytelling into a unique experience.

In a pervasive game the player has to feel that s/he is a participant in the creation of the game. That raises the question of how stable the surrounding environment has to be in order to make the game possible. To what extent can the story rely upon roadside objects? Are they mobile? Will the objects change when the snow melts away, or will it disappear when the snow falls down?

### 4.1.3 Transformation

Murray’s third category refers to the player’s ability to transform. It could be transformation as a masquerade. The player plays a character that is very different from the player in the real life. This transformation lasts through the game play. Transformation could also be as a variety. As a player you are able to shift your characteristics or maybe go into other characters’ minds and explore their thoughts.

The third definition of transformation is at a spiritual level where the player enjoys the game in various ways to the extent that it affects the ordinary life. These different types of transformation can dynamically affect each other.

#### *Kaleidoscopic Storytelling*

Murray has written that “[...] the communications media of the twentieth century are mosaic rather than linear in structure, as compared to the printed book.”<sup>38</sup> Newspapers are comprised of stories that try to attract people to a single page and soap operas try to attract people to a single episode. A single piece of news is often covered in various media forms such as television, radio, in newspapers and sometimes in films, like in Pearl Harbor. There are various ways to tell the story of that single event. In that way the storytelling has taken the form of a kaleidoscope.

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<sup>36</sup> Murray, J. (1998), p. 153

<sup>37</sup> Laurel, B. (1993), *Computers as Theatre*. p. 17

<sup>38</sup> Murray, J. (1998), p. 156

In a pervasive game the nature of the storytelling has to be kaleidoscopic; there is no better way for the moment. While participating in the game you are likely to get input from various different media forms and you can never be sure whether it is part of the game or not. At the same time, through the use of a computer the possibilities to manipulate various parameters, we get the opportunity to study, enact, modify, control and understand processes involved in interactive storytelling, as we have never been able to before.

## 4.2 Dramatic Arcs

Murray's categories describe the experience I would like the players to achieve within themselves when playing a game. The categories do not describe the structure involved in storytelling, the way to *keep* the player immersed. What will happen if a player starts playing the game and then suddenly realizes that there is no point to continue playing because there will be nothing unexpected or interesting happening – it is simply boring. To keep the immersion in a game play it is important to know what strings to pull. In the western world of today, the history of film making and telling stories in films have had a major impact on the way westerners perceive a story. We have certain expectations of what is likely to happen in a film. We *know* that the hero will almost die or not handle the situation until the very last few minutes in a film. We *know* that the film will be very exciting in the beginning, then there will be a section which is not that thrilling, but the act of immersion gradually rises until the last few minutes where the hero almost will die, but in case of a Hollywood movie, the hero will survive and live happily through the rest of her/his life.<sup>39</sup> An analysis of the excitement on the vertical axis and time on the horizontal axis will result in a *dramatic curve*, *story arc* or *dramatic arc*. I have found that the names for this analysis varies, still the words seem to mean almost the same thing. Therefore I will use the term dramatic arc since the use of that term is presented in the most recent publication I have found on storytelling and narratives.<sup>40</sup>

A closer look at many Hollywood movies will result in almost the same curve. That is not as much of a coincidence as a result of the western way to create drama that stems from the old Greeks, from *Aristotle*. Not only Aristotle but also Vladimir Propp has analyzed stories, though in a slightly different manner.

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<sup>39</sup> See *Titanic*, *Pearl Harbor*, *The Usual Suspects* or any Hollywood film!

<sup>40</sup> Rawlings, J., Andrieu, J. (2003), Player-Protagonist Motivation in First-Person Interactive Drama. p. 31

### 4.2.1 Vladimir Propp's Basic Stories

An approach to analyzing drama has been designed by the Russian formalist Vladimir Propp. He analyzed a body of Russian oral narrative in order to create morphology of the folktale. Propp studied 450 fairy tales and even though they were very different on the surface, he found that they were uniform in the way the plot had been constructed. He found that all of the fairy tales were constructed out of twenty-five basic plot events. Not only did Propp identify the elements, but he also tried to establish rules for how these plot events were combined together. He found that some of the events were more likely to appear together than others, they formed pairs. He also noticed that the order of the events didn't vary in different stories, even though some of them didn't always appear in every story. Propp's analysis also shows that the underpinning of a story is uniform.<sup>41</sup>

### 4.2.2 The Dramatic Arc

There are many different angles from which to discuss interactive drama in terms of the *dramatic arc*. The purpose of developing structures is that in interactive storytelling that is to be created in Backseat Gaming, the greatest challenge will be to tell a story without losing the player's interest. Pulling the right strings will make the player eager to continue and to see the next step in the game play. Rawlings and Andrieu state that the following are important when considering the dramatic arc: a) it is first-person in the sense that the player is also the principal character, b) the player has wide-ranging freedom of action, and c) the player experiences one or more well-structured dramatic arcs.<sup>42</sup> There have been attempts to create automated interactive drama in which a director agent or drama manager monitors and influences the progression of the story. One attempt is Mateas' and Stern's *Facade*<sup>43</sup> that is an interactive drama about a couple the player meets. The more the story progresses, the more the player gets to know about their relationships and their problems. According to Rawlings and Andrieu, they still forget about the player being the main character and therefore the player's motivation. Instead, they address the problem at having too many possible endings.<sup>44</sup>

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<sup>41</sup> Murray, J. (1998), p. 195

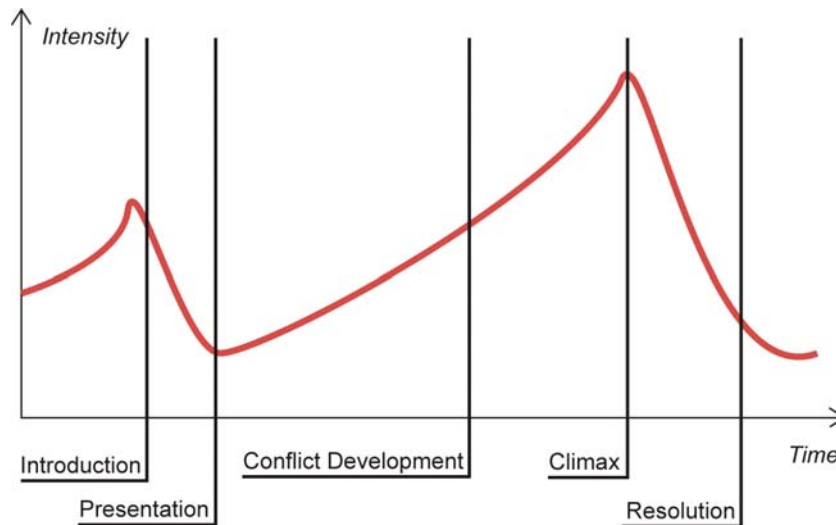
<sup>42</sup> Rawlings, J., Andrieu, J. (2003), p. 32

<sup>43</sup> *Facade* <http://www.interactivestory.net> (Last visited 2003-10-30)

<sup>44</sup> Rawlings, J., Andrieu, J. (2003), p. 32

### Sections in an Aristotelian Dramatic Arc

Below I will briefly go through the simplest parts of the Aristotelian Dramatic Arc as described by Breum.<sup>45</sup> A typical dramatic arc is also presented in figure 3.



**Figure 3** The dramatic arc and its different sections. The duration of each section varies depending on the context, but the proportions shown here seem to be common.

The first part of the story arc is the *introduction*. The introduction is when the game begins or when the film starts. In the end of the introduction, that is where the peak is in figure 3, the *inciting incident* is the start of the plot. In a film that could be that the audience sees someone commit a murder or steal something. That is the start of the conflict. It is usually very dramatic and overwhelming. The introduction is followed by the presentation of the characters and the world. These events are then followed by a less dramatic part, with low scores on excitement, yet gradually increasing excitement. It increases to the extent that it reaches a *climax*. That is when the murderer almost kills the good guy. When the good guy has survived s/he meets his love and everything goes back to normal again. The action is falling and eventually the resolution finishes off the film or game play.

## 4.3 Storytelling Structures

When composing an interactive drama or interactive storytelling, the creator is most likely to use a structure for organizing the different events. In this section I will explore different basic structures for creating storytelling.

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<sup>45</sup> Breum, T. (1996), *Berätta och förför med film*. Translated by Wohlfart, E.

### 4.3.1 Linear - and Interactive Storytelling Structures

I would say that a player always experiences linear storytelling in a specific game play. The choices the player has made result in a linear experience for the player. However, the underlying structure might not be linear at all. In a movie the scenes are put together on a timeline, in a linear structure. By that I mean that the creators predefine when in the movie a scene will be played. The creators are in total control. There are a few examples, however, where linear media is conceptually non-linear. In *Pulp Fiction*<sup>46</sup> the story is not presented in a linear structure since it actually begins with a scene that takes place after the end scene. In *Memento*<sup>47</sup> or *Mulholland Drive*<sup>48</sup> the actual time structure is never completely revealed for the audience, even though there have been many attempts to edit the scenes in *Memento* so that it becomes a linear story. Searching Google with *Memento Nolan* shows the amount of work that has been done.

Interactive storytelling also has beginnings, middles, and ends, even though each user may experience those differently. According to Garland there is nothing unplanned in interactive storytelling.<sup>49</sup> I do not think that expresses the whole truth. If we had had unlimited computer capabilities and sufficient AI, we would have created the next events in real time in order to make the best experience for each player every time. Since we are not at the holodeck yet, we will have to be content with Garland's point of view, which is interactive storytelling has to be planned, and that the creators have gone through every single part of the story.

### 4.3.2 Branching

A branching structure in a movie is commonly used in interactive movies or computer games. By branching I mean that every important choice a player makes within a game play will direct the player to a new branch. The linear story the player experiences will be the path the player has walked in the game play. Depending on what kind of branching structure the game uses, the number of important choices to be made will vary.

A basic form of branching structure is to be seen in an interactive piece of art called *Ceremony of Innocence*<sup>50</sup>. The plot in *Ceremony of Innocence* consists of a man who starts to receive postcards from a woman he doesn't know. The game starts when a postcard is shown on the screen. The player has to interact with this postcard in order to make the story continue or else nothing will happen. The rules are simple but yet

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<sup>46</sup> *Pulp Fiction* (1993), by: Quentin Tarantino

<sup>47</sup> *Memento* (2000), by Christopher Nolan

<sup>48</sup> *Mulholland Drive* (2001), by David Lynch

<sup>49</sup> Garrand, T. (1997), *Scripting Narrative for Interactive Multimedia*. p. 67

<sup>50</sup> *Ceremony of Innocence* (1997)

appealing. It is not an action game, but after having played it for a while I got quite curious even though there are no options but *continue* or *quit*.

A similar structure to that in Ceremony of Innocence is when there are a number of events needed to have been carried out in a game in order to reach the next level, or to have the plot revealed, but the order of the events carried out doesn't matter. This branching structure can be created in a more complex way, which I think is very common, especially in adventure games today. In Silent Hill II<sup>51</sup> there are many branches existing side by side and in different layers. In one room the player picks up a wax candle and several actions later the player finds matches. Several events after that, the player has to use the matches to melt the wax candle and create a door handle to get out. Using branching structures in this way, numerous of different layers will be created, adding a complex game engine for the player to explore.

Another branching structure is used in networks, which are a series of possible interactions for the audience, but some of them are crossed links. At first, the number of important choices can seem to be overwhelming, but after playing a while the structure is often being seen as quite limited.

Branching structures are a common basic foundation for creating interactive storytelling. There are several different structures to use, not all of them relevant to my project. An overview is presented in appendix A.

### 4.3.3 Communities

In communities everybody contributes to the creation of the story. Crucial in this kind of games is to arrange the settings or the theatrical properties in an appealing way, in order to engage the participants in the story and make them act with this story in mind. The interaction possibilities are often huge. The games called live-action role-playing (LARP) are very popular today. LARPs are often based on everything from Tolkien to space operas, and the participants assume the roles of the characters in the original stories or make up new ones within the same fictional universe.<sup>52</sup>

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<sup>51</sup> Silent Hill II (2002)

<sup>52</sup> Murray, J. (1998), p. 42

#### 4.3.4 Linear with Nested Interactive Subparts

The story in a game can be presented as having a linear structure with interactive subparts. Playing the Matrix game will result in a section with game play where the player has to shoot, pick up items and escape. After finishing a section or level there will be scenes where interaction is not possible, that is cut scenes. The story progresses in these moments. The advantage with this kind of structure is that the underlying story can be basic, and the elements of the story not that obvious.

#### 4.3.5 Storytelling Systems

There are several attempts to create storytelling systems these days. A story engine is a computer application that generates a story from certain inputs, e.g. phrases, verbs or actions taken by a player.

Many people want to get to the Holodeck and this is work in a direction trying to get there. I don't know if this is the right way but it is at least interesting work. I have found IDtension<sup>53</sup> and Mimesis<sup>54</sup> from Liquid Narrative Group that I wanted to explore.

##### *IDtension*

IDtension is a dynamic system focusing on producing meaningful events and allowing players to interact with the system. It consists of a *narrative logic* that manipulates certain events in the world such as goals, tasks, obstacles, actions and characters. The structure is created using a *narrative sequencer* as being a simulated user. This part is responsible for expressing the need for surprise or conflict. The interface is displayed at the *theatre* that also manages the interaction with the user.

I think this story engine tries to combine several important parameters, such as keeping the player immersed. However, I don't know what the results are since have not had the opportunity to try it out.

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<sup>53</sup> Szilas, N. (2003), IDtension: a narrative engine for Interactive Drama. pp. 187-203. See also IDtension, <http://www.idtension.com>, (2003-10-27)

<sup>54</sup> Young, R.M., (2001), An Overview of the Mimesis Architecture: Integrating Intelligent Narrative Control into an Existing Gaming Environment. See also Saretto, C.J., Young, R.M. (2000), Mediation in mimesis Liquid Narratives. The project's website: Mimesis, <http://mimesis.csc.ncsu.edu>, (Last visited 2003-10-27)

### *Mimesis*

The purpose for the Mimesis project is broader than in the case of IDtension. Still, they address the same issues. It focuses on how to make a player be an active participant in the creation of computer-based narratives. The approach taken in the design of the Mimesis architecture is to exploit a well-founded, declarative model of action and intention. This, in combination with new computational models of narrative structure, represents Mimesis.

Mimesis acts as a story generator that determines the narrative elements within the virtual world as well as communicating it to the player. The agents in use also generate the story.

The purpose with this section was to describe different models and structures for storytelling. In chapter 5 I will therefore emphasize the settings around Backseat Gaming.



## 5 THE BEAUTY OF THE ROAD

The purpose of this section is to give an introduction to a perspective in which the road is seen as a community and the roadside as a social space – a melting pot. I think that perspective will be useful and also necessary when designing the storytelling structures in Backseat Gaming even though this way of thinking about the road had already been explored when the previous devices were invented.

The road is usually thought of as for transportation use only. The road is often seen as no place for social interaction, no place for entertainment unless you are one of those that enjoy complaining about another driver's behavior on the road. The people on the road also differ in their purposes; taxi drivers or truck drivers use the road as their working space together with people driving for fun and for transportation.

Appleyard et al. states that “[...] road watching is a delight, and the highway is – or at least might be – a work of art. The view from the road can be a dramatic play of space and motion, of light and texture, all on a new scale.”<sup>55</sup> It is the vision rather than the sound or smell that is the main sense that is in focus on the road itself. With the vision in mind, the highway is also reversible in the sense that it is traversable in different directions.<sup>56</sup> What is interpreted in one direction might be perceived slightly different in the other direction. If travelling both ways, the second round from the opposite perspective is likely to be filled in with the previous experience rather than interpreted as a completely new experience. The presence of roads and cars, however, do not completely merge with the surroundings; there are limitations.

### 5.1 Filtered Presence

Although present in the landscape the travellers in the car pass, there are still several filters between the people in the car and the surrounding environment, be it an urban or rural landscape. One filter is the vision. It is rather limited and also affected by the speed of the car; the faster the more limited are the visual possibilities. The field of vision and the view of the surroundings are not only affected by the speed, but also by the number of obstacles in the traffic. The more complex the road environment is, the more focus has the driver to put on the road and less attention to surroundings that are not a part of the actual driving.

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<sup>55</sup> Appleyard, D., Lynch, K., Myer, J.R., (1964), *The View from the Road*. p. 3

<sup>56</sup> Appleyard, D., Lynch, K., Myer, J.R., (1964), p. 5

Not only is it the vision that is limited, but also the feeling of closeness with the surroundings. A highway does not blend in with the landscape in the same way as that of a narrow gravel village road that has been created for the locals' needs, over a hundred years ago. Commonly, a highway is an intrusion in the landscape rather than the wish of the people living next to it. Sometimes a highway splits a piece of arable land and an estate into two separate parts. Then the highway is more like a wall built in to the landscape than something being welcomed by the community around it. The highway is an isolated stretch of land that splits a landscape and can therefore not be a part of the surrounding community. The isolation of the highway opens up a space for a highway community with landscape and social interaction. Even though the highway is separate from the community around it, the advantage of being on the road still is that the travellers get the opportunity to have a look and therefore also briefly visit the landscape that is being passed and yet, the driver is inactive in that sense.<sup>57</sup>

I think the experience is slightly different for passengers even though the same tendencies still exists. A passenger doesn't have to be attentive to the traffic but will still be affected by it since the actions that are taken by the driver affect the whole car. Being a passenger in the back seat of a car opens up for new possibilities to interact with the surroundings or other cars, as previously described in the section on the Backseat Gaming projects. For the purpose of exploring storytelling in Backseat Gaming, it is not only the roadside environment that is of interest, but also the social interaction of the community created on the highway.

## 5.2 Social Interaction

Social interaction on roads is not limited to angry gestures in traffic jams or policemen directing traffic. It is neither a matter of using the horn, at least not in Sweden, nor flashing with the lights on the car. It is both a matter of cooperation, e.g. warning drivers in the meeting cars of a speed trap and that of a competition, e.g. being the fastest among cars when the red light turns into green. A phenomenon for interaction on roads is the use of *bumper stickers* that was very popular a few years ago. Their purpose was a form of identification, or to show solidarity with other cars by expressing an opinion, be it political or provocative in general.<sup>58</sup>

In urban environments the space is more compact, which causes the interaction to be more visible. At an open level crossing a pedestrian crosses the road after having had eye contact with the driver to be sure that the car will decrease its speed. Therefore, my conclusion is that on the

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<sup>57</sup> Appleyard, D., Lynch, K., Myer, J.R., (1964), p. 4

<sup>58</sup> Endersby, J.W., Towle, M. J., (1996), Tailgate Partisanship: Political and Social Expression through Bumper Stickers. p. 307

highway, where the possibilities for interaction are less, the greater the opportunity to develop new ways for interaction both with other cars and with the surroundings. This has been done separately in the previous Backseat Gaming projects as seen above, but it has not yet been combined with focus on creating games based on storytelling, for which I will develop a structure in the next section.

In this section, I wanted to show the work that has been done, in order to open up for another way of thinking about roads that raises the potential and also the possibilities to see the road (with its social and spatial environment) for something other than strictly transportation use. That is part of *the beauty of the road*.

# 6 STORY STRUCTURES IN BACKSEAT GAMING

In this section I will use the theories in the previous sections to create design implications for storytelling structures in Backseat Gaming. This structure will form a basis for the next section where I will form a workshop.

## 6.1 The Road as The Story Structure

The first thing I noticed is that travelling along a road doesn't allow many options for choosing the path to go. Either the cars continue on the road or they don't. They can go in two ways only. If a car travels one way it sometimes goes in the other direction as well. There aren't many options when following the traffic rules, basically only two or three: a) continue on the road, b) choose the first possible exit, and possibly c), to turn the car around and go in the opposite direction that will cause the three options just mentioned, again. There are other possible events that could happen along the road. A few examples are when a car breaks down, the road is icy and slippery and of course different accidents related to driving. In order to discuss the general underlying story structure for Backseat Gaming I have chosen not to further analyze these events since it is not an active choice of the player.

It is not only the problem with limited interaction possibilities but also the problem that different cars might start at different places. It is therefore hard to specify a common start of the story, as well as a common end of the story.

Using only the road itself will not be suitable for creating the story in Backseat Gaming, but it could be used as a basis for the story generation and for creating different interaction possibilities.

## 6.2 Inside the Car

The roles of the passengers in the back seat differ from that of the driver and the other person in the front seat. The driver of the car is, at least most of the time, in total control of what is going on outside on the road. The vision from a driver's perspective is restricted, but for the purpose of driving, it is naturally the best place in the car. Sitting in the back seat of the car is slightly different. People in the back seat have no responsibilities for the driving the car, and can therefore look around in different directions or do whatever they want. They can turn their heads around and follow objects and places on the road. They can also turn around and look

at what is going on behind the car. The only thing is that they do not have the same access to visualize what is going on in front of the car, or to predict upcoming meetings and turns and obstacles on the road. Using limited vision as an advantage for a game design can be used to create many things, such as surprise effects, or to hide obvious hotspots along the road.

Passengers could also influence the driver and therefore the car, indirectly. Being a very immersed player in the game could not only be good for the game, but also make the other people in the car immersed, and in some ways, a part of the game. The disadvantage is that it could be a safety hazard as well, if the driver becomes too immersed or stressed out by the passengers. Therefore I would like to claim that the social environment in the car is very useful, but it has to be used in a sensible way.

## 6.3 Other Players

Other players on the road can easily be used to enhance the gaming experience. On the road, you meet many cars and if a player doesn't know which one of the cars that was a Backseat Gaming player it could easily add the sense of surprise and competition to a game experience.

It could be a possibility for other players to leave messages on hotspots they have passed. The messages could be written or chosen by the player leaving it behind. Another option is to let the roadside object change itself using a specified algorithm that will make Backseat Gaming being able to be played over and over again.

It is also possible to let players compete about interacting with roadside objects. Who will interact with it first? Will the object change drastically? What will the effect be on the other player's story? Another option is to use the action event as completely separated from the story itself, something that doesn't have to be obvious for the player.

## 6.4 Using Roadside Objects

In Backseat Gaming I, the story is created using roadside objects. The objects are predefined hotspots that are programmed to contain specific information. The manipulative events (the roadside objects) are not connected to each other.

Using objects that are not connected to each other is a good idea since it is probably quite easy to miss one hotspot if the speed of the car the player is sitting in, is too fast. That should affect the story in the game, but not to the extent that it ruins the rest of the game experience for that player. If a player fails at one hotspot, it has to be possible to catch up that failure later along the road. The possibilities are endless in using roadside objects,

something that has already been demonstrated in the Backseat Gaming project.

I conclude that using independent objects is necessary for storytelling in Backseat Gaming, which has also been done in Backseat Gaming.<sup>59</sup> It is also a great way to test different story structures in Backseat Gaming. There are different opportunities to let the roadside objects be the input in the story creation. Will the stories that then come out make sense at all, or will they be surreal to the extent that they are of no use? One advantage in letting the roadside objects be the input in the creation of the story is that it will be much easier to create Backseat Gaming on a larger scale. If there is sufficient information available on roadside objects, e.g. databases on road signs, then the range in which Backseat Gaming can be played will be basically unlimited within Sweden, and the problems of entering or leaving the road or game will not exist to the same extent. The challenge in creating games in this way is one of following the dramatic arc, rather than its technical conditions.

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<sup>59</sup> Brunberg, L., Juhlin, O. (2001)

## 6.5 Design Implications

From what is presented above I will make conclusions in order to clarify which designs that are going to be tested in the next section.

- Using the road itself only will not be a suitable story structure. However, using a linear structure to form a base for the interactive storytelling is something that has recently been done by Gordon and Iuppa and is therefore an important design implication.<sup>60</sup> They have created a system that uses adaptive strategies when creating the storyline in interactive storytelling. Their approach is to start with a linear or moderately linear story structure with fewer possibilities to choose than in ordinary Chose Your Own Adventure Series.<sup>61</sup> It is worth testing using roadside objects as input to the story and investigate the possibilities to create storytelling systems.
- Being the passenger in the back seat of a car gives the player certain advantages compared to being the driver. From a design perspective it will be possible to use roadside objects that are not extremely visible, since the player will be able to follow the objects with the eyes. It will also be possible to engage all the passengers and the driver inside the car even though the car only has one Backseat Gaming device. Meeting other cars and other players can be used in a similar way as interaction with roadside objects and should also have a similar effect.

In the next chapter I will use the theory described thus far in the report to create a workshop for further development of ideas for storytelling in Backseat Gaming.

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<sup>60</sup> Gordon, S., Iuppa, N. (2003), p. 21

<sup>61</sup> Gordon, S., Iuppa, N. (2003), p. 21

# 7 WORKSHOP ON STORY-TELLING

In this chapter I will describe how I used a workshop to generate ideas on how to create storytelling structures for Backseat Gaming III, not only using chain writing but also a general discussion about the concept and Murray's categories. This section describes the participants, the workshop procedure and the results. In the end of the chapter, I summarize the results in a section called *Conclusions*.

## 7.1 Participants

The selection of the participants is described in this section. Since idea generation was the main purpose for this workshop I have used a method called *Focus Groups* as described by Esaiasson et al.<sup>62</sup> The group was put together in order to generate ideas for storytelling in Backseat Gaming, something focus groups have been proved to be particularly useful for.<sup>63</sup>

I wanted to get an idea on how the participants as a group thought about the different questions for discussion, since I wanted to use the material as design input and for idea generation purposes.<sup>64</sup>

The following is what I took into consideration when inviting participants to the workshop. In order to get design input I wanted people interested in games, and computer games in particular. Not only did I want people interested in playing games, but also people interested in developing games and with at least a basic knowledge of storytelling. I found that the members of Pixelrevolt<sup>65</sup>, an organization focusing on interactive media and arts, or people with a similar background, were a suitable choice. The number of participants in the group was limited to five.

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<sup>62</sup> Esaiasson, P., Gilljam, M., Oscarsson, H., Wängnerud, L. (2003), *Metodpraktikan* pp. 345-350

<sup>63</sup> Esaiasson, P., et al. (2003), p. 347

<sup>64</sup> Esaiasson, P., et al. (2003), p. 346

<sup>65</sup> Pixelrevolt, <http://www.pixelrevolt.se> (Last visited 2003-10-31)



## 7.2 Procedure

The workshop took place at Interactive Institute in Stockholm. I arranged and led a discussion on storytelling in Backseat Gaming. The duration of the workshop was altogether two hours with a short break after one hour. The workshop was divided into five different sections:

- Introduction
- Chain-writing
  - Reading the detailed story
  - Reading the Associations-based story
- The Concept

Below is a detailed description of each of the parts of the workshop.

### 7.2.1 Introduction

The workshop began with a description of the background of the project, and related projects were also briefly demonstrated. Cut scenes from a film showing a Backseat Gaming player perspective were shown in order to give a feeling for how the roadside objects might be perceived while playing. The participants were free to ask questions about the concept and the background of the previous projects.

### 7.2.2 Chain-writing

After having introduced the concept, we moved on to writing short stories, one detailed story and one story consisting only of associations. The procedure was the following: each of the participants got one *story-card*, that is a piece of paper dimensioned for writing only a few sentences. They also received an item and a character description. We used the story-cards in two different scenarios that are described below.

#### *The Detailed Story*

The first task was to write down one object and at least one event concerning that object on the story-card. For inspiration the participants got an item, in this case a map, and a character description that was related to the map, see Appendix B. If the participants felt like writing more than one story-card, they had the opportunity to use as many as they liked.

After having finished the writing for the first scenario, we moved on to writing the associations-based story.

### *The Associations-based Story*

The setting for this part was similar to the one above. The difference was that instead of writing an object and an event concerning that object, the participants were told to write down words they associated with the item and the character description they were shown. In this case, the item was a picture of Santa Clause in front of the pyramids and the character description related to the picture, see Appendix C.

### 7.2.3 Reading The Detailed Story

When having finished writing the story-cards it was time to use them. One participant were asked to shuffle the story-cards and then pick one and read the text on it. Having read the first one, we continued to the next, and so on. When all the story-cards were finished I asked open-ended questions to create a discussion. The questions asked mainly concerned Murray's aesthetic categories, described earlier in this report. When the participants seemed to have said what they wanted we took a short break. The detailed story and the questions asked are described in Appendix B.

### 7.2.4 Reading The Associations-based Story

The procedure was similar to the one described above; one participant shuffled the cards and put one card on the table, reading the words on it. When having put the second card on the table, the participants tried to create a connection between the first and the second card. Reading the third card caused the same discussion, and so on. The questions related to this part concerned the idea of using fragments for storytelling and naturally also Murray's aesthetic categories. The associations-based story and the questions asked are described in Appendix C.

### 7.2.5 The Concept

In the last part of the workshop a discussion about the concept took place. Questions that had come up during the workshop were discussed. I also asked general questions that I had prepared on the concept, relating to what medium is to be used, as well as a suitable duration of one single game, etc. The questions I had prepared are presented in Appendix D. The workshop was finished when there was no need for any further discussion.

## 7.3 Data Collection and Analysis

In this section I will describe the data collection and analysis of the workshop. The workshop was recorded on a minidisk via a microphone. The story-cards were also stored in order to make it easier for me to recall the events during the workshop. I will describe the parameters I wanted to analyze and how I worked with the material.

### 7.3.1 Data Collection

The questions I had formed in advance were related to the theoretic foundation in the first chapters of this report. The following data were of interest for the workshop and were therefore to be analyzed:

- *Murray's aesthetic categories* – the overall question is always to try to create the feeling described by Murray's three aesthetic categories immersion, agency and transformation. In this report that is a measurement of an entertaining game. Almost all of the parameters are in some ways related to these categories. I find it important to analyze them separately anyhow.
- *The Importance of Dramatic Arcs* – the meaning of beginnings and endings.
- *Storytelling using fragments* – the least information needed in order to create a narrative interesting enough to entertain and to be used for storytelling in Backseat Gaming.
- *Interaction possibilities* – ways to enhance the game experience using interaction with the game or other players.
- *Character - and Player Relation* – The way the characters are to be created relating to the player.
- *Medium* – appropriate medium to use to create the best storytelling device.
- *The Concept* – idea generation and interesting ways to develop the concept.

These were the main interests for my analysis. In the next section I will describe how I analyzed the material.

### 7.3.2 Analysis

When the workshop had finished I quickly wrote down some general ideas about the material I had gathered. The purpose of doing that was to make it easier for me to start going through the recorded material.

I started the analysis by listening to the whole workshop. I made initial notes about where the important parts on the disk were to be found. During the second time I listened to the material, I chose only the important parts and made short notes while listening, and also transcribed what I found interesting. The transcribed material focused on ideas, and extra caution was taken where the participants in the workshop seemed enthusiastic or thrilled.

The next time I went through the material I checked that what I had written down seemed to make sense. I also concentrated on parts of the material, in order to get a basic idea of what was being said, related to the data I wanted to collect. When I continue to work with the material I

concentrated the sentences to make them shorter and more substantial and compact, a method commonly used when analyzing interviews.<sup>66</sup>

After having written the section about the workshop, I let some of the participants in the workshop read this chapter to give their opinions on the interpretations I have done.

## 7.4 Results

I will present the results of the workshop here. Using the methods described above made me come to the following results sorted by data.

### 7.4.1 Murray's Aesthetic Categories

The importance of Murray's aesthetic categories is clearly described earlier in this report. I have come to the conclusion that reading the associations-based story made the participants more immersed than reading the detailed story. Reasons for that conclusion is that the tone of voice changed and they came with many more ideas and showed signs of more enthusiasm when discussing the associations-based story compared to the discussion about the detailed story. The duration of the reading of the associations-based story were longer than when reading the detailed story. Yet, the detailed story also caused immersion in other ways. The participants seemed relaxed and laughed at the short stories and also after having combined them.

The feeling of agency was explicitly discussed in terms of freedom for the player. It was concluded that there was not much freedom for a player in the game. However, being a youngster sitting in the back seat of their parents' car wouldn't have given much of freedom of any kind. The player would probably not have been able to decide whether to go with the car or not, neither the duration nor the direction of the ride at all.

When it comes to the signs of transformation, it was clearly shown that the participants were busy during the reading of both the detailed story and the associations-based story. None of the participants showed any signs of having been personally transformed the way Murray describes it, nor did they express having been affected at a deeper cognitive level. To be able to reach to the level of transformation in a game, the player can't be busy processing fragmental information all the time, which clearly was the case in both of the tests in the workshop.

Even though Murray's categories are central when analyzing a game, they are not the only important parameters. Therefore, I will present other crucial data I have collected below.

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<sup>66</sup> Esaiasson, P., et al. (2003), p. 296

## 7.4.2 The Importance of Dramatic Arcs

A dramatic arc is used to describe a way to increase immersion as the game proceeds. In the workshop this took the form of discussing beginnings and ends of the game. The more fragmental the story being told is, the heavier the burden on the beginning. To compensate for a fragmental story the introduction to the game could be more richly described. It was also suggested that some objects could be fragmental, whereas others could be richer in context relating to that specific game. Some objects on the road could therefore be filled with random objects, and fairly general events in order to match many different games.

To follow a dramatic arc it would be necessary to plan for the ending. In order to make the ending of the game interesting it is therefore necessary to tell in advance the stretch of roads the car will follow. It was also concluded that it could be possible to add a general ending if the stories connected to the objects along the road were independent of each other, and yet kept thrilling enough to entertain even when being put together.

The participants all agreed upon that it was necessary to decide in advance the duration of the game and also the roads to travel on. However, having separated interesting stories might be useful for scaling the game to a wider range of players and different games.

## 7.4.3 Storytelling Using Fragments

One of the main issues that were discussed during the workshop was whether using fragments for storytelling was a good idea or not. While reading the detailed story it was concluded that it was almost too fragmental in its approach. Yet, it was possible to make sense of the different story-cards. The problem was mostly with causality. Some parts of the story were related to a petrol station. If the story-cards relating to petrol stations had been put together, it would have been some kind of story, even though the ending was not specified at all and therefore became disappointing in some ways.

### *The Design Paradox*

The more detailed a story, the stronger connection between the game and the real world. The less detailed a story, the weaker is the connection between the real world and the virtual world, yet the participants showed more signs of being immersed during the associations-based story.

## 7.4.4 Interaction Possibilities

When discussing interaction it was concluded that some players wouldn't probably even notice the landscape or the specified roadside objects at all. They simply wouldn't understand the connection between roadside objects and the game. Therefore, a suggestion was that players should be able to interact with each other in different ways. That could be as in Backseat

Gaming II, combats, or it could also be handing objects, i.e. weapons or cameras to each other. It was also said that it would be interesting to leave messages to other players. Another way to interact was to give possibilities to take imaginative pictures by using the device. The actual pictures taken would be predefined. One possible scenario was that there are trolls in the story and the player is told that in this forest there are trolls, but the trolls are very difficult to get within sight for a normal person (i.e. a player). Then suddenly the player is asked to take a picture of a troll and clicking a button on the device would make a picture of a troll appear on the screen. Notice that the participants stressed the importance of that the choices a player has, have to be of equal value. If the troll is not captured with the “camera” it has to be possible to get a story of equal value in the game.

### 7.4.5 Character – and Player Relation

The relationship between the characters and the player is important for the feeling of being immersed in the game. There are different possibilities for creating that relationship. The player could be acting as her-/him self and then a closely related character in the game could be useful to lead the player in a certain direction in the game. Another way to do it would be to let the player get specific traits and along with those, specific interaction possibilities.

### 7.4.5 Medium

The participants agreed that to experience the road and the surrounding landscape, they thought that sound would be the best medium to begin with. It doesn't necessarily need to be a voice reading a text. It could be environmental sounds, or other kinds of sounds, to enhance the experience. In case of environmental sounds I claim that it could actually be perceived as fragments.

### 7.4.6 The Concept

During the workshop, the concept in general was discussed. There were some interesting thoughts about the concept of using roadside object to create a mobile game. Some parts of the discussion concerned the possibilities to commercialize the game. Today it is widely known that restaurants along the road put signs saying i.e. “Hungry? The next restaurant is reached in 30 minutes”. Instead, the game could be programmed at specific locations to tell the player to tell the driver to stop the car. If the car stops at that specific place, the player would be rewarded in the game. At a petrol station, the reward could be a small gift or a special discount in the store.

It was not only the roadside objects that were discussed, but also the lack of roadside objects and creating an atmosphere where something or someone is present, even though never ever actually visible in the game. I

would especially like to highlight parts of the discussion during the reading of the associations-based story. It concerned the use of non-visible media, preferably audio. Using imaginary characters such as trolls would work even though that character is never visible for the player. It could be, for example, that the player is told that there are many trolls in the area, and after a while, if having had looked in the other direction, a troll would have been visible among the trees. Playing with non-visible yet present characters will be a great way to enhance the gaming experience.

## 7.5 Conclusions

This is a summary of the results presented in this chapter. The main focus of the workshop was the writing of two scenarios in order to simulate a possible Backseat Gaming III scenario. The first was a detailed story using short simple sentences and the second was a story based on associations using fragments of sentences.

The parameters used and the results regarding those are presented here:

- *Murray's aesthetic categories* – different signs of immersion were shown, both in the detailed story and the associations-based story. The feeling of agency was limited, yet it is important to remember that the children playing the game probably wouldn't be able to decide whether to go in the car or not at all. The transformation category seemed to be blocked since the players were occupied processing the fragmental stories.
- *The Importance of Dramatic Arcs* – the importance of a rich beginning and ending was stressed. However it was concluded that it would be possible to use fragments on some of the objects and richer stories on others. The more fragmental the objects along the road, the richer the beginning and ending.
- *The Design Paradox* – The more detailed a story, the stronger the connection between the game and the real world. The less detailed a story, the weaker the connection between the real world and the virtual world, yet the participants showed more signs of being immersed during the associations-based story.
- *Storytelling using fragments* – fragmental stories were difficult to process but the most obvious problem was caused by causality.
- *Interaction possibilities* – interesting ways to interact would include the possibility to leave messages or hand over virtual objects to other players as well as using the device as a “camera”.
- *Character - and Player Relation* – the player could either be an actor or be closely related to a character in the game.
- *Medium* – initially sounds in different ways were appropriate to use.
- *The Concept* – ideas such as how to commercialize the game, were presented.



# 8 DESIGN FOR STORYTELLING

In this chapter I will use the results from the workshop and the theoretical background to create a design recommendation, as was the purpose of this project.

The following sections will include the different parts of the design recommendation. The last section is a summary of this chapter.

## 8.1 The Game Design Process

Every project develops throughout time. The direction of the progress may differ, but hopefully it is successful! Even though Backseat Gaming is already a developed concept, I would like to add ideas when designing storytelling in a mobile game for children. These recommendations are not only useful for Backseat Gaming developers, but also for game developers in mobile games for children in general. The term *design process* refers in this context to the process of developing a game using a specified platform for mobile games. I am not going to describe the whole process, but I will add ideas, since I think it is necessary to keep the project as detailed as possible.

### 8.1.1 The Design Team

I believe that it is important for a design team to consist of experts in different areas, since the development of a game is interdisciplinary in nature. Gulliksen et al. even go as far as to state that in Nordic design traditions “the general assumption is that the users should not only be involved, but in control of the analysis and design process.”<sup>67</sup> In developing games for children, it would therefore be natural to involve them, at an early stage, as representative users, along with being equal members of the design team – although I do not advocate this as much as Gulliksen et al., did. In the KidPad<sup>68</sup> project, storytelling rooms for children were developed and when developing them, children were an equal part of the design team. Both children and adults are presented as having had a good time.

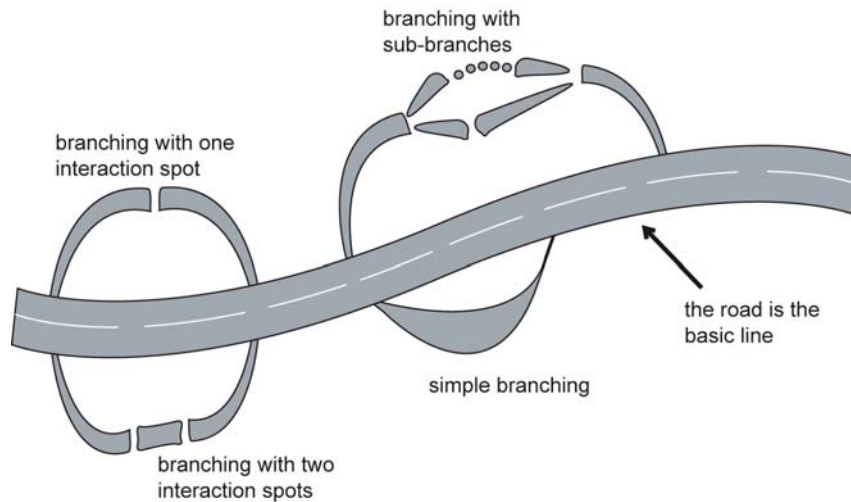
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<sup>67</sup> Gulliksen, J., Lantz, A., Severinsson-Eklundh, K., Oestreicher, L. (2000), Design versus Design – From the shaping of products to the creation of user experiences

<sup>68</sup> Hourcade, J., Bederson B., Druin, A., Taxén, G. (2002), KidPad: Collaborative Storytelling for Children

## 8.2 Story Structure

According to the theory presented in this report, I concluded that it would be suitable to use a simple underlying branching structure for the stories being told. The structure would therefore be linear with branches leading out from it. Since each choice will have to be of equal value, that is leading the story forward, the branches have to come back to the basic line in some ways. Figure 4 shows the basic story line and possible returns to it.



**Figure 4** *The road is the basic storyline and the possible returns are the branches leading out.*

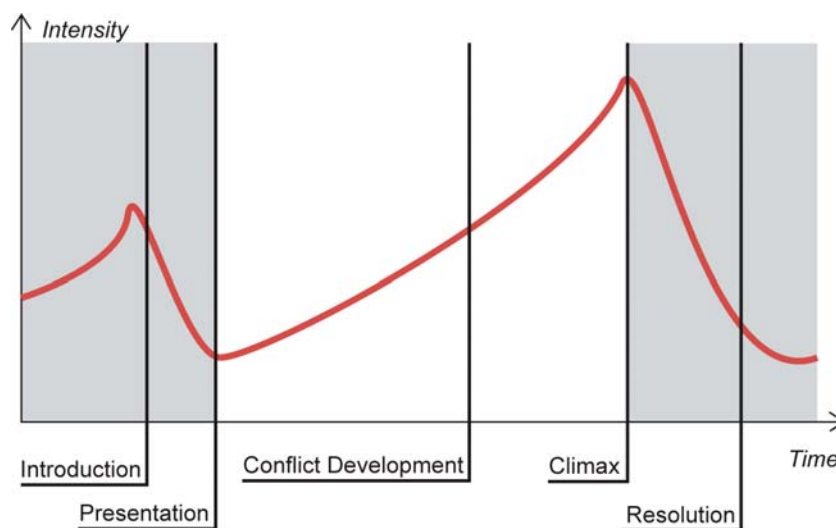
The underlying structure is of great importance, but less technical aspects are also important when creating the game. In the workshop it was concluded that storytelling with fragments will not work by itself, but to let some roadside objects contain fragments would work if the other roadside objects contain stories that will bring the story forward. Mixing fragments with richer stories will work. The fragments could be general and fixed to that specific roadside object and be a part of every story on that road, in order to limit the amount of work for the story-designer, which will still be enormous.

In the workshop it was concluded that beginning and ending the game is important, especially when using fragmental parts in the story. In the next section I will discuss the beginnings and the endings related to the author of an interactive story.

## 8.3 The Author and The Choreographer

As written earlier in this report, the author of a book decides all the actions that are to be taken in a film or a book. From a technical perspective, the only degree of freedom the reader has when it comes to reading a book is to continue reading, to go to another page or stop reading. From a psychological perspective, even though a reader of a book stops reading, there still might be mental processing of the text that just was read. When designing for interactive media, the player has to feel as though s/he has been given more degrees of freedom and as if the author had toned down its role and let the player have more possibilities to affect the story that is being told. I believe that in order to create an authentic feeling when writing, the author has to think about the player as a co-operator in the creation of the story.

In Backseat Gaming, the beginnings and the endings are important parts of the story. Having a rich beginning in a game will require an active sole author where no interaction possibilities are presented, other than the obvious ways of turning on and off the device. In figure 5 the beginning and ending are mapped on to the dramatic arc. The introduction and presentation of the dramatic arc was covered by the pre-written beginning. The desire to continue to explore and experience the interactive story is already created when the actual game begins. The player in the back seat of a car passes different roadside objects. Some of them are fragmental and do not explicitly relate to the game itself, but since taking the form of being different types of sounds or fragments of sentences they spice up the experience for the player. The other objects are parts of the story and contain a richer amount of information, written by an author, yet kept open with branching structures.



**Figure 5** The grey fields of the dramatic arc shows the mapped beginning and ending.

When the game is to be finished, the active author is welcomed back on the scene again. The approach of the ending is similar to that of the

beginning. When leaving the last detailed object along the road, the player will read the final climax, followed by the finishing of the dramatic arc for this game.

## 8.4 Interaction

The interaction possibilities in the previous Backseat Gaming projects are restricted in Backseat Gaming to be interactions with roadside objects. In Backseat Gaming II, they are to be interactions in three different ways with other players. These forms of interaction are powerful to use in every gaming experience. However, this project concerns storytelling, and therefore it is of interest to develop interaction possibilities that are specifically adapted to storytelling. To develop interaction possibilities there are a few things to consider:

- The underlying story structure informs when it will be possible to interact.
- The story has to be written with equal choices for interaction.
- The actual interaction has to be performed without a decrease of interest in the story being told.

The underlying story structure is described in section 8.2, and it was concluded that a branching structure with sub branches leading out would be used. There will be different layers of interaction. First, there will be a level that consists of the road itself, which is the *basic level*. The interaction possibilities are not present here since the person in the back seat of the car does not drive the car.

### 8.4.1 Agency and Non-Agency

The interaction refers to Murray's aesthetic category agency, as described earlier in this report. Murray talks about the interaction possibilities and the feeling of agency, which is particularly important in pervasive or augmented reality games like Backseat Gaming. The basic level is where the true agency exists. On the story-level in which the game takes place, the interaction is rather *non-agency*, yet appealing in an agency-way. By that I mean, that according to the results in the workshop, a child in the back seat of a car doesn't have any chance to affect whether to go with the car or not, neither can they affect the direction of the car and therefore it is not possible to experience true agency on all different levels. Yet it is important to highlight that the feeling of agency on the story-level is highly present. Interacting with roadside objects *will* peak interest in the surroundings, and not knowing exactly which roadside objects are a part of the game will greatly increase the feeling of agency.

## 8.4.2 Designing Equal Choices

The target group for the Backseat Gaming concept is children. When designing the interaction on the story-level it is important to create choices with equal values from a story perspective. If it is obvious that one of the choices is a good choice, it could be more interesting, more successful etc, then it is not a matter of being an interactive story. It is rather that of trying to mislead the player, as in Ceremony of Innocence, described earlier, when the player has to click “yes” to continue. To make it a truly interactive story, the branches leading out from an interaction possibility have to bring the story forward equally, no matter what the choice being made is. When it comes to the actual game design, the authors or choreographers will have to shift focus from when writing an ordinary story or designing a game where the storytelling is not in focus. The new focus has to be to create a rich context, a world with different characters. If one takes extra caution when doing this I believe that the interaction possibilities are more likely to become equal, since the world itself also tells what is possible and what is not possible relating to the context. It would also be a good idea to be a team working on the development of the story, since when starting with an idea for an interactive story it has to be as many stories as interactions possibilities times the different branches leading out from every interaction possibility. One single person would probably design favorite choices instead of equal choices. Even if it is well done, it is likely to affect the player’s experience in some ways.

## 8.5 The Real and The Virtual World

During the workshop a design paradox was concluded. That was: The more detailed a story, the stronger connection between the game and the real world. The less detailed a story, the weaker the connection between the real world and the virtual world, yet the participants show more signs of being immersed during the reading of the associations-based story. That goes together with the conclusion of rich beginnings and endings, described in the 8.2 story structures. Having a rich beginning with strong connections to the real world would make the player accept more fragmental, less connected middle of the story. That is again, if the ending is also rich in context with strong connections to the surroundings.

## 8.6 Enhancing the Experience

There are many ways to enhance the player's experience in Backseat Gaming. Some suggestions will be presented here. During the last part of the workshop, the general concept was discussed. There are several ways to enhance the user experience and also to involve commercial industries along the road. Since this is an academic research prototype it is of extra interest to receive attention and also to co-operate with organizations and companies outside the academic world.

The experience with connecting roadside objects to the game might also open up for a different way to look at the surroundings when searching for possible interaction spots. The experience would also be enhanced if there would be some pictures from the package or cover of the game planted outside. Even if it would be a hidden sign for non-players, yet obvious enough for Backseat Gaming players, it would contribute to the pervasive feeling expand the playing field.

## 8.7 Conclusions

Below is a summary of the design recommendation that I have created within this project.

- *The Game Design Process* – It is important to involve the target group, that is the children, in the design process at an early stage in the game development process.
- *Story Structure* – The story structure to use for Backseat Gaming III is to use a basic line, the road, and then branches leading out from it.
- *The Author and the Choreographer* – One Author is not enough in order to create a game with many branches.
- *Interaction* – There are different levels of interaction. Backseat Gaming prototypes mostly use interaction in a non-agency way, which means that sitting in the back seat of the car does not provide the player with the opportunity to decide in which direction the car goes.
- *The Real and The Virtual World* – The design paradox where the more detailed a story, the stronger the connection between the real and the virtual world, and vice versa.
- *Enhancing the Experience* – There are many ways to enhance the experience. Playing with characters that are never seen in the game, along with commercializing Backseat Gaming, is suggested.

## 9 DISCUSSION

*Once upon a time ...* presents the project called Backseat Gaming III regarding storytelling using context-dependent technology in a mobile game. The overall objective with this project was to investigate how roadside objects and places along a road can be used for storytelling with Backseat Gaming. The way I achieved that was by using a comprehensive literature study on Janet H Murray's aesthetic categories for interactive storytelling, dramatic arcs and a perspective in which the beauty of the road were presented. The theoretical background resulted in the creation of a workshop. The purpose of the workshop was to generate ideas for interactive storytelling. The results of the workshop, together with the theoretical background, formed a base for the design for storytelling which was described in the previous chapter.

In this chapter I will discuss this project in order to highlight important aspects as well as criticizing the project design, the procedure and the results were I find it necessary. The purpose of doing so is to create a broader understanding of this project and the possible outcomes of it.

### 9.1 About The Literature

The literature for this project was chosen by using recommendations from researchers at Royal Institute of Technology and Interactive Institute as well as using search engines, journals and conference proceedings on the web. Therefore, I find the literature I have used is relevant in the field. Of course it would have been interesting and useful to present a more comprehensive overview of the field; however, that was not a part of my Master's Project.

There are different ways to deal with interactive storytelling in Backseat Gaming. This project is based on theory on drama and interactivity and storytelling, in Janet Murray and Brenda Laurel's work. Another perspective would be to use AI as the starting point. The reason that I have not chosen to do that is mainly because I agree with Manovich, as already written earlier in this report: "The history of new media tells us that hardware limitations never go away: They disappear in one area only to come back in another."<sup>69</sup> These days, there is not an AI good enough to conquer all the research that has been done on interactivity, storytelling and game design.

AI is an important field to study, but it is a wider subject, not specifically connected to interactive storytelling and games. From my point of view I

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<sup>69</sup> Manovich, L. (2001), p. 316

would love to have great AI facilities, but when someone invents the perfect AI it will be widely recognized and most likely used in every computer system in the world. Then I would recommend using it within interactive storytelling in context-dependent mobile games as well. In this project, the hardware limitations have been regarded as design challenges.

## 9.2 About The Method

The theoretical base made it easier to gain a perspective on the empirical data collected in the workshop.

In the coming sections I will discuss the participants in the workshop, the workshop procedure and the results of the workshop. The discussion about the design recommendation will be discussed separately in section 9.3.

### 9.2.1 Workshop Participants

In the workshop I chose participants from Pixelrevolt. On the one hand they are adults, while the target group of Backseat Gaming is children. On the other hand, children do not have the same awareness of story structures as members of Pixelrevolt, since they all had been studying storytelling on an academic level. Since it is story structures I want to develop I found that the members of Pixelrevolt were a suitable choice to participate in the workshop. That did, however, get me into the trouble of generalizing the results. The project concerns storytelling for children and the participants in this workshop are adults. I would like to draw attention to this issue by making an analogy in which adults are seen to represent the *dominant culture* and children to represent *the others*, a few steps down in the hierarchy. One mistake people representing the dominant culture often make is to generalize issues concerning them to every other sub-category without reflecting upon whether it works or not, and often without asking the people representing the sub-category about their opinion. That is a phenomenon that by Kamark Minnich is called *faulty generalizations*.<sup>70</sup> Yet I would claim that it was necessary to use adults for this part of the project since I did not want to test whether Backseat Gaming works from a player's perspective or not, since that has already been proved.<sup>71</sup> The purpose for me was to come up with ideas concerning story structures using roadside objects as input, and as a source for doing that I found that my way is reliable, something that is important to remember when analyzing a material.<sup>72</sup> With the reasoning stated above I claim that that is what I did when it comes to the participants in the workshop. I would like to emphasize how important I think it is to invite the users, in this context

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<sup>70</sup> Kamark Minnich, E. (1990), *Transforming Knowledge*. p. 72

<sup>71</sup> Brunnberg, L., Juhlin, O. (2001)

<sup>72</sup> Esaiasson, P., et al. (2003), p. 342



the children, to be part of the actual game design. I think that working further with this concept will require a group of children to be members of the design team.

### 9.2.2 Workshop Procedure

Since gathering ideas to form a concept was the purpose of this workshop, I found that working in a group was the best way to generate new ideas. Five heads are better than one in brainstorming processes and idea generation.<sup>73</sup> I also think that five participants was an appropriate choice since I wanted to avoid the problem of the participants starting to feel less engaged in the workshop, a phenomenon called *social loafing* which sometimes appears in groups when the feeling of being anonymous increases for the participants.<sup>74</sup> Neither did I find it of interest to discuss the group dynamics within the group, even though that could be a possible source of errors. However, for this study it was not important to analyze the members' group behavior since individual performances did not affect the outcome of the idea generation process.

During the workshop I alternated group work with individual work. The individual work was the chain-writing. The purpose to have a short section in the workshop concentrated on writing was not only to encourage the participants to be more engaged in the issues that were to be discussed, but also to procure a comprehensive understanding of the objectives of this project. I also wanted to shift between tasks performed together in the group and tasks performed individually. I think that is a good way to avoid social loafing, while at the same time show the participants that the individual performance *does* matter. I did not want to end up with five participants thinking that the amount of work to be done is so small that the individual performance as well might be skipped.<sup>75</sup> Yet, I don't think that would ever become a problem, rather that they try to affiliate their own expectations about my needs in the workshop and therefore change their behavior according to that.

Asking open-ended questions led the workshop in certain directions, yet they were open enough not to lead the participants in any specific direction.

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<sup>73</sup> Smith, R.E. (1993), *Psychology*. p. 586

<sup>74</sup> Smith, R.E. (1993), p. 588

<sup>75</sup> Smith, R.E. (1993), p. 588

### 9.2.3 Workshop Results

The data that was collected in the workshop made me wary in some ways. I will discuss it here. The first thing I asked myself was whether I had actually gathered the data I wanted or if I tried to measure something else. Taking a closer look at Murray's aesthetic categories gave me second thoughts. Is it possible to measure something like immersion in a test situation? Wouldn't I rather measure the immersion in that specific situation? According to the results, the participants showed more signs of being immersed when they were discussing the fragmental story than the detailed story. Yet, they expressed that the *detailed story* was almost too fragmental and the associations-based story didn't create much of a meaning at all. Creating something useful out of the fragmental story demanded much more attention than processing the detailed story. In the test situation that might have caused immersion, but then it is not possible to generalize it to the actual gaming situation and therefore according to this project it is not possible to tell whether Backseat Gaming actually causes immersed players. To do that, user tests are essential. One interesting consequence according to the results described seem to be that storytelling using fragments might actually work in collaborative environments, such as the workshop situation. Therefore, it would be of interest to investigate a collaborative prototype of Backseat Gaming in the future.

The discussion about agency was slightly different since I still think it is possible to imagine in a test situation whether the feeling of freedom or not, exists. I did not try to test agency, but we did discuss it. Imagining a feeling in a test situation is not easy, and it might be the case that the emotions actually are stronger in a real gaming situation.

The transformational aspects of Backseat Gaming were not present during the workshop. Personal transformation requires reflection and I think that can take a long time. Therefore those aspects are not possible to detect within this study.

The parts of the workshop results that exactly didn't concern Murray's aesthetic categories however, are interesting results to use to build a design recommendation on. Experienced people in interactive storytelling, such as were the participants, will probably have quite a good idea of what kind of things that actually work in a real gaming situation. Neither did the phenomenon *social loafing* appear, which means that the participants felt engagement in the workshop.

When it comes to me being the inventor, as well as the introducer and leader of the workshop, I naturally did affect the results in the workshop. The question I ask myself, is to what extent, whether or not that damaged the conclusions. I asked open-ended questions and many of them caused discussions. When I worked with the material and analyzed the results, it

became clear to me that even though I transcribed the important sections of the disk, I was probably biased when I did so. It is always easier to accept than reject your own hypotheses and having developed schemata will affect the way you perceive the surroundings in different ways.<sup>76</sup>

The overall purpose with the workshop was to have a discussion and to gather ideas about how to use Backseat Gaming for storytelling. In addition, the results also showed new ideas on the concept, i.e. how to combine it with commercial interests.

## 9.3 The Design Recommendation

The design recommendation presented in chapter 8 forms the result from the workshop and the theoretical studies. It has a main focus on Backseat Gaming III, yet it would be interesting to relate the design recommendation to other game prototypes. In particular, the parts about the interaction, the connection between the real and the virtual world and the design process are useful to generalize.

This project has had conceptual focus that means that the ideas haven't been tested and evaluated in a real gaming situation. It would therefore be necessary to implement the prototype based on the design recommendation in order to see the true potential for this specific design recommendation. However, not being a fully developed concept, there are advantages for the game developers to use their own implementing strategies, since the basic technical issues are being left not discussed within this project.

## 9.4 Problem Definition

This project was initiated in order to investigate storytelling on a larger scale, using Backseat Gaming prototypes. The reason for initiating the project was that evaluation of the first Backseat Gaming project showed that the children seemed to enjoy the stories in the game.<sup>77</sup> One unique feature of Backseat Gaming was to use the sense of motion while travelling in a car together with roadside objects along the road to create a compelling gaming experience. In order to investigate the possibilities for storytelling in Backseat Gaming, the overall question was: What kind of story structures will be suitable for storytelling in Backseat Gaming on a larger scale? Will the stories that come out make sense at all?

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<sup>76</sup> Eysenck, M.W., Keane, M.T., (1995), *Cognitive Psychology – A Student's Handbook*. p. 263

<sup>77</sup> Brunberg, L., Juhlin, O. (2001)

In this report I have, by analyzing the results of literature studies and empirical data in the form of a workshop, fulfilled this project and described the procedure in this report.

In order to continue working on interactive storytelling in context-dependent mobile games I will, in the next section, present my suggestions for future work relating to this project.

## 9.5 Future Work

Having finished this project I have more questions than I had when I started. Some of those are suggestions for future work that I will describe here. Even though I started with a theoretical focus, the empirical parts were important for the outcome of the project. If I were to continue developing this project, the first thing I would do is to test the design recommendation. As I have written in the chapter about design for storytelling, it is important to involve the end user as early as possible in the game design process. I would simply test whether the concept of using this design for storytelling actually works.

The medium used in a Backseat Gaming device is still fairly young. So is the concept of interactive road entertainment that definitely needs a comprehensive study in order to see where it leads. In a few years' time I predict that the technology would have been developed in a completely different direction than now. Maybe everyone will use 3G cellular phones by then? What if all mobile phones will be equipped with a digital compass and a GPS? Could it be that there is no difference between a cellular phone and a pocket computer? The reach of Backseat Gaming games will be enhanced as the technology develops. Maybe game design for Backseat Gaming will be something children do in Kindergarten for each other to create an interesting ride home later in the evening? Studies on children as authors of interactive storytelling have already been done by Albourzi et al.<sup>78</sup> Combining the previously published research on children's storytelling with Backseat Gaming would be an interesting concept for further development. It would also be of interest to compare Backseat Gaming II, the multiplayer prototype with a prototype based on this project, Backseat Gaming III.

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<sup>78</sup> Albourzi, H., Druin, A., Montemayor, J., Platner, M., Porteous, J., Sherman, L., Boltman, A., Taxén, G., Best, J., Hammer, J., Kruskal, Al., Lal, A., Plaisant Schwenn, T., Sumida, L., Wagner, R., Hendler, J. Designing StoryRooms: Interactive Storytelling Spaces for Children.

The concept of road entertainment might be young, but interaction is not a new thing, neither is interaction with computers. It would be of interest to further investigate the choices that a choreographer creates when designing a game, both from a player's perspective and on a philosophical level. The area of games and interaction would improve and new areas of interest would be raised.

Something that is important to highlight at the end of this report is that academic research on games and storytelling has been a rapidly emerging area during the last years. Nevertheless, the commercial gaming industry has been developing games much longer than that and still, the commercially developed games are the most successful ones. The gap between the academic world and the gaming industry is too large. The academic world has much to learn from the gaming industry, yet the gaming industry will gain a wider understanding from academic research, being able to explore ideas that do not normally fit in a commercial game production.

These are some of the questions to be studied in future works, but there are so many more yet even to be asked and discovered. Be a choreographer of a rapidly growing medium and make people dance, as Murray would say!

## CLOSING WORDS

*Once upon a time* I was crossing a street and I saw a young girl in the back seat of a car. She was almost like I had been in my parents' green Volvo almost twenty years ago. Gazing through the window of her parents' car, she saw a beautiful landscape. What she *didn't see* was me standing looking at her, neither did she see the reflection in the window showing the contours of her sitting in the back seat of that car. She didn't have time. She had already turned her head around to look out of the window on the other side of the car. An elf was leading the way now, showing her the way to the ancient wishing well... She was playing Backseat Gaming.

The End.

# 10 REFERENCES

The references are presented in different sections: 10.1 Games and Movies, 10.2 Internet including links to popular science or academic research projects and 10.3 Literature.

## 10.1 Games and Movies

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## 10.2 Internet

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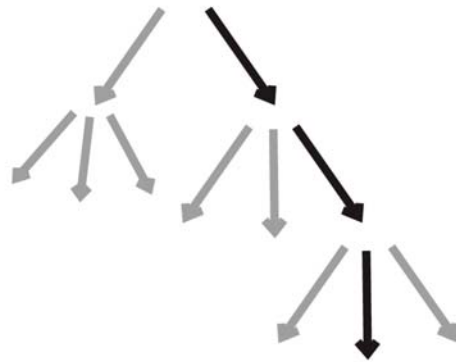


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# APPENDIX A – BRANCHING STRUCTURES

Different branching structures to give an idea what a branching structure is. For more ideas on branching structures, check books on computer networks and modeling networks.

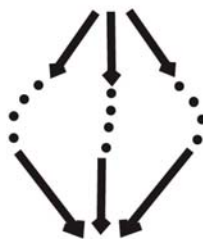
## Tree structure



## Parallell Paths



## Network structure



## APPENDIX B – THE DETAILED STORY

The item the participants were given for the detailed story.



*Figure 1* The item, a map

### The Character Description

Aicha – Aicha är på väg hem till sin hemstad efter en lång och skön semester. På en bensinmack stannar hon för att tanka bilen. Längst in i skåpet med lufttrycksmätare hittar hon en grön lapp.

### The written Story-Cards

The story-cards that were written during the workshop are presented below.

#### Card 1

**Fågelbo** – Det ligger ett guldsmycke i fågelboet. Fågeln flyger iväg & guldsmycket trillar fram till dig.

#### Card 2

Utanför kyrkan går ett medelålders par förbi. Det verkar som om de är på väg från stadens café. De var väl två av dem som nyttjade bullrean.

### Card 3

Hon svår över de inbisilla människor som först och främst äter magnum och sen dessutom tror att lufttrycksmäster skåpet är en sopkorg. Hon dänger igen skåpdörren. Det hörs en kraftig smäll och ett gångjärn går ur led. Dörren ramlar ned med ett brak.

Hon tittar sig generat omkring, tänker till en sekund & slänger sedan snabbt ned dörren i bakluckan. När hon slänger igen bakluckan ser hon det gröna papperat glimma till i skuffen fastklämt i dörrens gångjärn. Hon hoppar in i bilen och kör iväg med en rivstart.

### Card 4

Tydiligen hade de höjt priset igen. De brukade göra det när man vände ryggen till. Ett nytt framhjul skulle tydligen inte bli billigt. Men det fanns ju bara en verkstad inom kommunen.

### Card 5

**Ett stort träd** – Plöstligt, som på ett trollslag lyfter en hel flock med svarta korpar från trädet. De sätter i en enad rörelse iväg åt öster.

### Card 6

Pumpa däcken ordentligt, för i trakten sjö finns ett sjöodjur som inte tycker om opumpade däck. Han kryper upp nattetid och lägger sig på vägen längs sjön för att få en skön massage. Dudunk, dudunk, har du inte pumpat däcken vet man aldrig vad som händer.

### Card 7

**Stubbe** – En murken trädstubbe faller sönder vid passering & lämnar efter sig en rutten stank som sätter sig i hår & kläder.

### Card 8

I skogsbrynet syns något som rör sig. Aicha tror att det kan vara en person, men det är svårt att se på detta avstånd och fönstren i bilen är fortfarande smutsiga.

### Card 9

**Flyttblock på kalhygge** – Den stora stenen rör sig – eller är det betraktaren som rör sig? En stor bit mossa faller av.

### Card 10

**Bildäck** – Fragment av ett bildäck rullar fram.

# Questions

The open-ended questions for the discussion after having read the cards.

## About Immersion

- How did you perceive this story?
- What kind of contract between the player and the game is established?
- How do you think the player's engagement would be in a game like this?

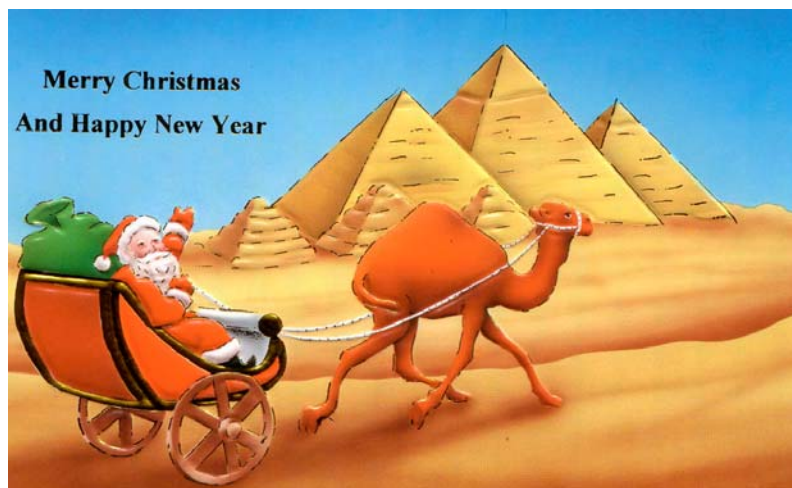
## About Agency

- The interaction is not direct. How does that affect the player's experience of the game?
- Are there any other ways to interact that might be more interesting?
- What happens to the sense of freedom in the interaction? The player is sitting in a car that is moving but one hasn't explicitly chosen in which direction and how.
- Is the sense of freedom important when it comes to interaction in this game?

# APPENDIX C

## – The Associations-based story

The item the participants were given for the associations-based story.



*Figure 1* The item, a picture

## The Character Description

Rudde – Som anställd i tomteverkstan har Rudde ansvar för att planera tomtens resväg. Det här året så är det lite svårare än vanligt eftersom Tomten inte verkar bry sig om den noga uträknade vägen.

## The written Story-Cards

The story-cards that were written during the workshop are presented below.

### Card 1

Vilse, rymdraket, byta dragdjur beroende på miljön, semester, God Hjul, Kortbyxor, Sand ligger djup, Sanden faller, En gulbrun Jul

### Card 2

Värmeslag, inkompetent, kursändring, kontrolltorn, bonuspoäng för flygmil. Varför hjul?

### Card 3

Sand, halka, värme

## Card 4

Panikångest, äkta jul, långa ben, svettigt, svår rullad, fastnar, hål, grav, fylla säcken, skatter

## Card 5

Sväng höger vid pyramiderna, GPS, kaktus, Rudolf med röda puckeln, Allväders kläder

## Questions

The open-ended questions for the discussion after having read the cards.

### Immersion

- How did you perceive this story, is it at all a story?
- Does it make any sense whatsoever?
- Does a story in fragments, like this one, have any kind of function? Is it more appealing to the imagination?

### Transformation

- Is it possible to enter into the story on an emotional level?

*To be asked after each new note on the table:*

- Is it a story now?

### Comparison between the detailed story and this story

- Compare the detailed story and this story. Are there any specific things on your minds?
- Compare the way to enter emotionally into the story.

## APPENDIX D – THE CONCEPT

The questions prepared for the discussion about the concept:

- What kind of stories might be interesting to use?
- What kind of medium is to be used to tell the story?
- What length of the game is appropriate?
- What kind of relation is the player supposed to have with the characters in the game?
- How is the game supposed to handle if passing one single roadside object several times in the same game session?