Restructuring Gutters

Transformation of the Graphic Novel *The Engineer and the Gardener*

into a New Media Experience

Jutta Suksi
Restructuring Gutters

Transformation of the Graphic Novel *The Engineer and the Gardener*

into a New Media Experience

Jutta Suksi

Department of Media

Master’s Programme in New Media, New Media Design and Production

2019

Supervisor: Markku Reunanen

Advisors: Kai Lappalainen, Peng Cheng Yuan
Author  Jutta Suksi

Title of thesis  Restructuring Gutters – Transformation of the Graphic Novel The Engineer and the Gardener into a New Media Experience

Department  Department of Media

Degree programme  New Media Design and Production

Year  2019  Number of pages  87  Language  English

Abstract

The thesis identifies how the story structure of a linear story changes when new media is introduced into the storytelling. It underlines the importance of understanding the structure of storytelling when telling stories with the aid of new media.

In the thesis, the production The Engineer and the Gardener served as a tool to investigate storytelling in new media. This gives the reader a concrete example of a practical application of the theories relating to storytelling. The thesis analysed The Engineer and the Gardener through three structural approaches, the concepts of story track and gutters, and through the affordances of transformation, agency, and immersion.

Telling a story is defined in the thesis as an activity that is formed of sequences built by the story track and gutters and that takes place between the author (designer) and the audience (experciencer) for the purpose of creating emotional arcs through mental participation. The thesis focuses on two major elements of storytelling being in constant tension with each other: the story track, meaning the forward pushing storyline consisting of chosen events of the story, and the gutters, term used in comics for the white space between the frames, meaning the deliberate absences within and between those chosen events. The thesis reveals the role they play in a new media –based storytelling experience.

The division into the elements of the story track and gutters assists in making the reader, the viewer, the user or the participant – whichever the role of the experiencer is in the storytelling – visible. It emphasises the mental participation of the experiencer in the storytelling. This is especially important for new media storytelling because, in new media, the forms of participation of the experiencer are more diverse and more shattered than in traditional linear storytelling. The increase of storytelling components in new media emphasises the systemic structures based on which stories are constructed. This system operates in several fields of science and art.

New media stories and storytelling should be viewed from a user experience perspective, instead of just focusing on the forward pushing narrative. This underlines the importance of the gutters and the first-person narrative, through which the user actively participates in creating the story. With the aid of new media, the storyteller becomes a virtual conductor of multiple storytelling experiences, each being live and personal.

Keywords  storytelling, user experience, first-person narrative, gutters, absences, story track, story structures, transformation, agency, immersion
Tekijä  Jutta Suksi

**Työn nimi** Tyhjyksien uudelleenrakentaminen – Graafisen novellin *The Engineer and the Gardener* muuttaminen uusmediallisesti kokemukseksi

**Laitos** Median laitos

**Koulutusohjelma** New Media Design and Production

**Vuosi** 2019  **Sivumäärä** 87  **Kieli** Englanti

**Tiivistelmä**
Opinnäyte osoittaa, kuinka lineaarisen tarinan rakenne muuttuu, kun sen tarinankerrontaan lisätään uutta mediaa. Tämä korostaa tarinankerronnan rakenteen ymmärtämisen merkitystä uusmediallisessa tarinankerronnassa.

Tuotanto *The Engineer and the Gardener* toimii opinnäytetyössä työkaluna uuden median tarinankerronnan tutkimiseen. Tämän avulla lukijalle annetaan kourintuntuva esimerkki tarinankerronnan teorioiden käytännön soveltamisesta. Opinnäytetyössä analysoidaan teosta *The Engineer and the Gardener* kolmen rakenteellisen lähestymistavan ja käsitteiden tarinapolku (story track) ja tyhjydet (gutters) eli sarjakuvissa käytetty nimitys kuvien välissä olevasta valkoisesta marginaalista) kautta sekä affordanssien (transformaatio, omistajuus ja immerso) avulla.

Tarinan kertominen määritellään opinnäytteessä tarinan tekijän (suunnittelija) ja yleisön (kokija) välillä tapahtuvaksi toiminnaksi, joka koostuu tarinapolun ja tyhjyksien muodostamista jaksoista ja jonka tarkoituksena on tunteisiin vaikkattimen psykykkisen osallistumisen kautta. Opinnäyte keskittyy kahteen toistensa kanssa jatkuvassa vuorovalmistuksessa olevaan tarinankerronnalliseen elemenntiin: tarinapolkuun (story track), jolla tarkoitetaan valituista tarinatapahtumista muodostuvaa, eteenpäin kuljettavaa juonta, sekä näiden valitettujen tapahtumien sisällä ja niiden välillä olevia tarkoituskellisia tyhjyksiä (gutters). Opinnäyte osoittaa näiden elemenntien roolin uusmediallisessa tarinankerrontakokemuksessa.


Uuden median tarinoita ja tarinankerrontaa pitäisi tarkastella käyttäjäkokemuksen näkökulmasta eikä keskittää ainoastaan eteenpäin vievään narratiiviin. Tämä korostaa tyhjyksien (gutters) ja minämuotoisen tarinankerronnan merkitystä, koska näiden avulla käyttäjä osallistuu aktiivisesti tarinan luomiseen. Uuden median avulla tarinankertojasta tulee virtuaalinen kapellimestari, joka ohjaa useita, reaalialaisia ja henkilökohtaisia tarinankerrontakokemuksia.
Thank you world, it is finished!

# RESTRUCTURING GUTTERS

Transformation of the Graphic Novel The Engineer and the Gardener into a New Media Experience

## Table of Contents

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Table of Contents</td>
<td>8</td>
</tr>
<tr>
<td>List of Figures</td>
<td>10</td>
</tr>
<tr>
<td>List of Videos</td>
<td>10</td>
</tr>
<tr>
<td>1. PROLOGUE</td>
<td>11</td>
</tr>
<tr>
<td>2. OVERVIEW OF THE PRODUCTION OF THE ENGINEER AND THE GARDENER</td>
<td>17</td>
</tr>
<tr>
<td>2.1. Storyline</td>
<td>18</td>
</tr>
<tr>
<td>2.2. Production Process</td>
<td>18</td>
</tr>
<tr>
<td>2.1.1. First Stage: Graphic Novel</td>
<td>19</td>
</tr>
<tr>
<td>2.1.2. Second Stage: Scriptwriting</td>
<td>20</td>
</tr>
<tr>
<td>2.1.3. Third Stage: New Media</td>
<td>21</td>
</tr>
<tr>
<td>3. THEORIES OF STORYTELLING</td>
<td>23</td>
</tr>
<tr>
<td>3.1. Storytelling as an Activity</td>
<td>25</td>
</tr>
<tr>
<td>3.2. Sequences built by the Story Track and the Gutters</td>
<td>26</td>
</tr>
<tr>
<td>3.3. Emotional Areas</td>
<td>27</td>
</tr>
<tr>
<td>3.4. Audience Participation</td>
<td>30</td>
</tr>
<tr>
<td>3.5. Summary</td>
<td>33</td>
</tr>
<tr>
<td>4. STORY TRACKS</td>
<td>35</td>
</tr>
<tr>
<td>4.1. Story Structures</td>
<td>36</td>
</tr>
<tr>
<td>4.1.1. Tragedy Structure</td>
<td>36</td>
</tr>
<tr>
<td>4.1.2. Dramatic Structure</td>
<td>38</td>
</tr>
<tr>
<td>4.1.3. Structure of the Monomyth</td>
<td>39</td>
</tr>
<tr>
<td>4.2. From Storyline to Story Tracks in The Engineer and the Gardener</td>
<td>42</td>
</tr>
</tbody>
</table>
5. GUTTERS IN STORIES 49

5.1. Participation through Absences 50
   5.1.1. Gutters as Sequential and Spatial Elements 50
   5.1.2. Gutters as Threshold Elements 52
   5.1.3. Varying Forms of Gutters 53
   5.1.4. Experimenting the Limits to Find the Gutter 56
   5.1.5. Gutters in New Media 57

5.2. Gutters in The Engineer and the Gardener 59

6. NEW MEDIA STORYTELLING IN THE ENGINEER AND THE GARDENER 61

6.1. Kaleidoscopic Transformation 63
   6.1.1. Story Track and Gutters 64
   6.1.2. First-Person Narrative 67

6.2. Agency 68
   6.2.1. Sensory Participation 69
   6.2.2. Limiting the Agency 71

6.3. Immersion 72
   6.3.1. Encyclopedic Extent 73
   6.3.2. Spatial Navigation 75
   6.3.3. Visual Immersion 76

6.4. Remarks 78

7. EPILOGUE 81

References 86
List of Figures

1. The basic storyline of *The Engineer and the Gardener*. Page 18.

2. The first-stage-story of *The Engineer and the Gardener* mapped to the Aristotelian structure of tragedy, to the structure of drama by Freytag and to the monomyth by Vogler. Pages 40–41.

3. The modular structure of *The Engineer and the Gardener* in the third stage. Page 44.

4. The storyline of *The Engineer and the Gardener* evolved to a circular structure in the third stage. Page 45.

5. The gutters of *The Engineer and the Gardener* in the third stage. Page 60.


7. The gutters of *The Engineer and the Gardener* divided into four categories. Page 66.

8. The multidimensional grid of the new media experience *The Engineer and the Gardener* squeezed in between the sheets of this linear presentation. Page 85.

List of Videos

1. Experiencing *The Engineer and the Gardener*. [https://juttasuksi.portfoliobox.net](https://juttasuksi.portfoliobox.net)

   *Module 1*: Using the Cover.

   *Module 2*: Reading the Booklets.

   *Module 3*: Exploring the Cards.

   *Module 4*: Playing the Game.

   *Module 5*: Interacting with the Base.
1. PROLOGUE

This thesis is the result of my need to understand storytelling and the structures of stories in the concurrent new media environment. My journey to studying this started after I finished the graphic novel *The Engineer and the Gardener*. Despite being finished, the story kept bothering me. The story did not want to stay in a book format in between the covers and I started wondering why is that. I decided to examine this question in more detail, and as a result, the graphic novel transformed into a new media experience. Along with that transformation, I gained understanding about the essence of storytelling: the battle between the story track and the gutters.
This thesis will identify how the story structure of a linear story changes when new media is introduced into the storytelling. The thesis addresses two major elements of storytelling being in constant tension with each other: the *story track*, meaning the forward pushing storyline consisting of chosen events of the story, and the *gutters*, meaning the deliberate absences within and between those chosen events. This thesis will reveal the role they play in a new media based –storytelling experience.

New media stories and storytelling should be viewed from a user experience perspective, instead of just focusing on the forward pushing narrative. This underlines the importance of the gutters and the first-person narrative, through which the user actively participates in creating the story.

In this thesis, the production *The Engineer and the Gardener* serves as a tool to investigate storytelling in new media. In conjunction with the theoretical research, the thesis explores and analyses the production *The Engineer and the Gardener*. This will give the reader a concrete example of a practical application of the theories relating to storytelling. The story and storytelling aspects of *The Engineer and the Gardener* is revealed and analysed in different contexts throughout this thesis. To set a basis for the reflection of the production *The Engineer and the Gardener* to the research, in Chapter Two, the reader is given an overview of the production and its main storyline.

In Chapter Three, the thesis continues with exploring the theoretical background relating to storytelling and its elements to the extent it is necessary to understand the focus and perspectives taken in this thesis. This part covers the basic structural theories by the Russian
Formalists and McKee (1999). Additionally, it addresses the role of the audience studied by Howard and Mabley (1996) and Tamiko Thiel (2017).

Research to storytelling theory continues throughout the thesis. To analyse how stories are constructed, Chapter Four covers three major story structures: the structures by Aristotle (Butcher Version, 2000), by Freytag (2015), and by Vogler (2007) and Campbell (2008). Chapter Four will reveal to the reader how the story pushes the reader forward and how a linear storyline transforms into several possible story tracks when new media is introduced to the story. Thereafter, in Chapter Five, this thesis addresses the balancing component for the story push: the gutters, the absences in the story, based on the insights of McCloud (1994) and Moulthrop (2017). To understand how gutters are present in all kind of storytelling, this thesis examines existing storytelling formats and identifies the way gutters represent themselves in these formats. This examination includes new media and the concepts of Klein (2017). Finally, Chapter Six of the thesis investigates the production *The Engineer and the Gardener* from the perspective of new media affordances, as laid down by Murray (2017).

All Chapters Four, Five and Six contain analyses of the production *The Engineer and the Gardener* from the perspective of the above-mentioned research. Based on the analysis, this thesis demonstrates how the storyline of *The Engineer and the Gardener* evolved towards several possible story tracks and it describes the different forms of gutters present in *The Engineer and the Gardener*. 

13
The method for the generation of this thesis was an iterative process using art as a tool for research and, vice versa, using research as a tool for art. In the design of the new media elements, I applied the findings of the research. Thereby I was able to learn what the theories meant in practical terms. Additionally, the insights I got from the production of *The Engineer and the Gardener* lead me further in the world of research. Because of this practice-based iterative research method, it was easy to find relevant new areas to investigate both from the perspective of the research and the perspective of the production. In other words, the thesis observes the production of *The Engineer and the Gardener* from a research perspective and the production *The Engineer and the Gardener* experiments with the research findings.

Storytelling is an art form connected to many fields of science. This thesis is linked to narratology, philosophy, psychology, cognitive sciences, human physiology – in addition to the many fields of art and design. Due to these multiple links to a variety of fields, it was challenging to limit the scope of the thesis. I had to let go deeper studying of emotions, the activity of playing, film and theatre, to name some. I realise that I have only touched the very first surface of these fields. The holistic approach taken in the thesis has the challenge of being superficial and not specific or profound enough. On the other hand, this kind of approach allows to combine research findings from a variety of perspectives and reveal similarities and underlying common features or phenomena in several fields of science. In the context of the thesis, exploring and experimenting storytelling from a broad angle provided points of views that helped me further in the iterations between research and the production of *The Engineer and the Gardener*. Ultimately, despite (or aided with) the holistic approach, the core focus of the thesis crystallised in the area of user experience. The combining factor in all of the above-mentioned fields of science and art is after all the human aspect, and that is
in the core of this thesis. The thesis explores the human aspect from a user experience perspective in the context of storytelling. This thesis is not an objective assessment of storytelling that could be measured with quantified analysis. Nor does it need to be. Storytelling is always a personal experience.

Due to the iterative method used, it was challenging to express the findings in a linear format in this thesis. I have decided to present the production *The Engineer and the Gardener* piece by piece throughout the thesis in connection with the research findings relating thereto. That might give a small glimpse of how the research and the practical work were intertwined. With this prologue, I welcome you to join the quest for gutters in new media.
2. OVERVIEW OF THE PRODUCTION OF THE ENGINEER AND THE GARDENER

For the readers to be able to follow the transformation process of *The Engineer and the Gardener* from a traditional print format to a new media experience, this chapter shortly describes the main storyline and the production process. The production process is of importance to the reader as the methods used were quite diverse in different stages and the overall process was highly iterative. The process alternated between uncontrolled intuition and structured design. Both were essential to the story and the storytelling in *The Engineer and the Gardener*. 
2.1. Storyline

The core of the story remained despite the changing media formats – the core of the story simply being a man sitting on a bench. The slightly more detailed storyline could be written as described in Figure 1.

The story starts with a city scene turning into a flashback to the childhood of the Engineer, the protagonist of the story.

He is sitting on a bench and remembering a strange summer when he met a friend, the Gardener.

In the flashback, the Engineer meets his friend in the yard at the sandbox. The Gardener does not like to play in the sandbox, he just sits with a woollen knit cap on the bench and listens. The Engineer, too, starts listening and finally hears a silent buzzing noise.

One day the yard cracks open and plants invade the yard. Men with white coats march to the yard, weed the plants, restore the yard and start looking for the guilty ones. One day the Engineer and the Gardener sit on the bench waiting for the plants to reappear. That does not happen and the Gardener reveals his knee, on which something plant-like is growing.

One day the Gardener does not come to the yard. Instead, the men with white coats tell the Engineer that the guilty one has been caught.

The flashback ends, and the Engineer is seen sitting on the bench, contemplating what happened that summer.

Figure 1. The basic storyline of The Engineer and the Gardener.

2.2. Production Process

The work was done in three stages during a six-year-period of 2013–2019. The first format for the story was a graphic novel. The next stage was to continue the storyline from the perspective of scriptwriting. The final stage was to transform it into a new media format. The
graphic novel, in print format, was part of my minor studies on comics at the Aalto University. The second phase was done on the Aalto University course on screenwriting for comics and film. Some years later, I decided to reshape the story as part of this thesis. As the outcome, the final story was formed as a result of three angles to express the story and three very different methods used in generating it.

### 2.1.1. First Stage: Graphic Novel

In the beginning, the process of making the graphic novel was not a structured one. On the contrary, I drew the first images without the slightest idea of what was to happen in the story. This was done on purpose. Instead of a structured design of a story starting from scriptwriting and sketching, I wanted to see to which direction the story was evolving without detailed planning. This way the process became iterative, the visual material created gave input for the narrative and the added narrative was interpreted in the next visual material produced. Even if the beginning of making the graphic novel was random, the rest of the process had bit by bit more structure and design. When the work progressed, I started to notice and also introduce more and more intentional elements to the work.

Technique-wise I used painting with ink and water and drawing with pencil on a plastic plate, and thereafter I took a photograph of the painting. After that, I continued drawing, painting
and erasing the plate and taking additional photographs of these paintings. This way I lost all the originals and was left with only the photographed images from which to compile the graphic novel.

As an example of the iterative process, the first image I drew was a wall covered by a spider web. Inspiration for this image came purely from the spiders I saw climbing on the wall of my house. This drawing ended up in the final graphic novel, however, without the part showing the actual spider web, as in the end, the spiders did not appear in the story in its first stage as a graphic novel.

2.1.2. Second Stage: Scriptwriting

The purpose of the scriptwriting stage was to have a second look at the story, this time purely from a narrative scriptwriting perspective. I hoped I could find answers to questions like: does the story contain the basic elements of a story, what kind of a story it is, what kinds of themes it addresses, and which parts of the story need to be expressed more explicitly.

I had some difficulties to identify a straightforward linear scene structure already at the first stage as the graphic novel. That was probably due to the fact that the production of the graphic novel was not done linearly. This multilinearity kept increasing in the following
stages. After finishing the phase of scriptwriting, the story seemed more and more difficult to be expressed solely in a linear form with images and text. And some parts of the story seemed to suggest a spatial installation.

The added storytelling focused on the themes of the story: the aspect of nature versus built environment and the organisation of societies. These themes were not that evident at the stage of the graphic novel. Even though I tried to do this phase without developing the visual language of the storytelling, it turned out impossible. The biggest change to the visual part was that I decided to use additional photography instead of mere photographed paintings. And interestingly, the insects made their reappearance to the story at this phase; this time in the form of ants. Also, the amount of storytelling in written text increased, including a part of the story in dialogue.

2.1.3. Third Stage: New Media

The process of transforming the graphic novel into a new media experience was much more structured than the stage of making the graphic novel. This phase I would describe as design instead of the more artistic approaches of the earlier phases.
As the story and a large part of visuals existed already, the transformation was about choosing new forms of storytelling in a way that they would best fit into the story. However, inevitably the written and visual narrative kept evolving throughout this phase towards the directions suggested by the chosen forms of new media. One example of this is the visual world merging photography with painted and drawn imagery.

This stage of the production was also deeply influenced by new media research I did for this thesis. I built the final concept and production simultaneously with the research, iteratively in small steps. Ideas expressed in research inspired certain forms of storytelling and visuals in the production, which on their part guided me to further research.

As the outcome of the experimentation, the story is expressed as a prototype of the tangible materials and a demo of the virtual elements. Through these, the experiencer is able to examine the storytelling aspects of *The Engineer and the Gardener*. The readiness of the production is on a level that enables its assessment as an experience. Exhibition or publication of *The Engineer and the Gardener* would most probably require a change of platform into a license-free one, in addition to some adjustments here and there in the visual material and interactions.
3. THEORIES OF STORYTELLING

This thesis defines telling a story as

- an activity
- formed of sequences built by story tracks and gutters
- taking place between the author (designer) and the audience (experiencer)
- for the purpose of creating emotional arcs through mental participation.
The aforementioned definition of storytelling gives the perspective and the focus for analysing the production *The Engineer and the Gardener*. The definition is based mainly on the work of Russian Formalists on the division between fabula and sjužet, the structural components of stories identified by McKee (1999), the points Howard and Mabley (1996) highlight relating to the telling part of storytelling and the new media aspects to storytelling identified by Thiel (2017). In addition, it contains my reflections of the above theories to *The Engineer and the Gardener* especially in connection to the concepts and roles of story tracks and gutters. The current chapter explains these underlying theories to give a solid basis for understanding how the storytelling changed during the production of *The Engineer and the Gardener*. Chapters Four and Five will drill deeper into the role of the story track and gutters in storytelling and demonstrate how these elements are present in *The Engineer and the Gardener*.

The above definition stems from the need to understand what was happening storytelling-wise in the different stages of the production. The initial questions leading to the definition were: what is storytelling made of; why do people tell stories; and how to tell stories in new media. The first question helps in finding the structure of the story, and the structural approach is the dominating one in this thesis. However, the underlying question of why stories are told should be remembered, to keep the goal clear in mind. At all times, the structure should serve this purpose of reaching the goal. Finally, the first two questions should serve as the basis for starting to unravel the final question of how to tell stories in new media.
3.1. Storytelling as an Activity

Storytelling is an activity between the designer of the story, the teller, and the audience. One of the most enlightening concepts for understanding storytelling as an activity is the division between *fabula* (fable) and *sjužet* (plot, sometimes also written for instance as suzet; syuzhet) introduced by Russian Formalists. Erlich (1980) cited the original source of Šklovskij (1923) and explained the difference between fabula and sjužet being that

the ‘fable’ stood for the basic story stuff, the sum-total of events to be related in the work of fiction, in a word, the “material for narrative construction” (Šklovskij, V., Literatura i kinamatograf, 1923). Conversely, ‘plot’ meant the story as actually told or the way in which the events are linked together. In order to become part of esthetic structure the raw materials of the ‘fable’ have to be built into the ‘plot’. (p. 240)

The two concepts – the story in itself and the way it is told – can be found in the distinction between the story and the discourse in narratology or, when looking at game research, for instance in the distinction between fictional time and game time (Juul, 2005, pp. 159–160). To simplify this further, fabula covers the raw materials the story is made of, focusing on the content of the story, and sjužet covers the construction and linking of this raw material to a form that can be communicated by the storyteller to the audience, thus covering storytelling as an activity.

This division sets the basic limits for the thesis. This thesis will observe storytelling from the point of view of an activity taking place between the author and the audience through the
story. This emphasises the telling part of storytelling, sjužet. Looking back to the production of *The Engineer and the Gardener*, most of the changes made during the transformation were made to sjužet.

### 3.2. Sequences built by the Story Track and the Gutters

The act of storytelling is composed of a forward pushing story track and gutters providing absences to the story. These terms have their basis in the definition of the structure by McKee (1999): **“STRUCTURE is a selection of events from the characters’ life stories that is composed into a strategic sequence to arouse specific emotions and to express a specific view of life”** (p. 33). This definition examines sjužet part of storytelling and, on a general level, answers the question of how stories are told.

The definition identifies two central tasks for an author of a linear story. The first task is to select the relevant parts of the raw material of the story and the second one is to use a certain strategy in telling the story. This selection of events and strategy used forms the story track for the story. In the multilinear and participatory storytelling of new media, the task of selecting is partly left for the audience. By leaving some of the telling activities to the audience, the formation of strategic sequences starts to change its shape.

Selecting certain events requires leaving other parts out, and this leaving out creates an absence to the story. All void places demand to be filled in. In storytelling, the filling-in is done by the audience. The activity of filling in the gaps is present in all kind of storytelling. The gaps invite the audience to participate and simultaneously give room for the audience to
add something to the story that resonates with them and their present life. This thesis uses the
term gutters with regard to the absences within and between the events.

The duality in the structure of the story and the storytelling – strategic selection of the events
to be told and the absences between the events – sets the core focus for the thesis. Together
the story track and the gutters form the sequential steps of the storytelling.

3.3. Emotional Arcs

The ultimate goal of the act of storytelling lies in having an emotional impact on the
audience. This and the division to the components of fabula and sjužet are reflected in the
definition of “a good story well told” introduced by Howard and Mabley (1993). With this
definition Howard and Mabley (1993) mean that it is not enough to have a good authored
story, it needs to be told the way it touches the audience.

[T]he essential elements of “a good story well told” are:

1. The story is about *somebody* with whom we have some empathy.
2. This somebody wants *something* very badly.
3. This something is *difficult*, but possible to do, get, or achieve.
4. The story is told for maximum *emotional impact* and *audience participation* in the
   proceedings.
5. The story must come to a *satisfactory ending* (which does not necessarily mean a
   happy ending). (p. 23)
The above elements of somebody wanting something which is difficult relate to the fabula part of storytelling. Later this thesis will refer to these elements of fabula only if they have a wider impact on the whole structure of the story. Instead, the primary focus will be on the elements relating to sjužet. The above definition pinpoints the central element belonging to sjužet and the telling part of storytelling: the emotional impact on the audience (in the above definition under number four). This is why people tell stories. Some of the components this emotional impact is based on are also defined above, namely being empathy (in the above definition under number one) and the requirement of satisfactory ending (in the above definition under number five). Noteworthy is also that the definition includes a reference to the reciprocal participation of the author and the audience by stressing the need to include the audience in the storytelling.

Making an emotional impact is in the core of any powerful storytelling and its components should be understood thoroughly. The element of emotional impact can be traced back to the work of Aristotle. Aristotle (Butcher Version, 2000) emphasised the emotional elements embedded in a plot, describing the arcs of the story being driven by emotions like fear, pity, and surprise:

But again, Tragedy is an imitation not only of a complete action, but of events inspiring fear or pity. Such an effect is best produced when the events come on us by surprise; and the effect is heightened when, at the same time, they follows as cause and effect. The tragic wonder will then be greater than if they happened of themselves or by accident; for even coincidences are most striking when they have an air of design.” (p. 8)
It is easy to omit the aspect of audience emotions in the work of Aristotle because, when concentrating on structural aspects of a story, one tends to think in terms of how, as an author, to construct a story. Therefore it is easy to overlook issues relating to the perception of the story by the audience, even though this is a crucial element in story design.

Most stories enable emotional impact or arousal by creating empathy towards a character. According to McKee (1999), empathy is the phenomenon that connects the audience and the character of the story – thereby the audience becomes involved in the story. This happens because the members of the audience reflect their own desires into the struggles of the character (McKee, 1999, pp. 141–142). Additionally, sympathising – or to be more distinct empathising – with a character is required for the audience to be able to participate in the storytelling through fearing for something to happen in the story and hoping for something else to happen (Howard and Mabley, 1993, pp. 37–39). Empathy is the gateway between the story and the audience emotions.

Another central concept relating to emotional arousal is catharsis that is connected to the requirement of a satisfactory ending – under number five of the above definition of “a good story well told” by Howard and Mabley (1993). Aristotle (Butcher Version, 2000) leaves this term, catharsis i.e. purgation, in other words, purification somewhat ambiguous by stating:

> [t]ragedy, then, is an imitation of an action that is serious, complete, and of a certain magnitude; in language embellished with each kind of artistic ornament, the several kinds being found in separate parts of the play; in the form of action, not of narrative; through pity and fear effecting the proper purgation of these emotions. (p. 5)
The words used, proper purgation, bear a lot of cultural implications and moral value considerations, and can thus be interpreted differently at different times. This thesis will not address this concept in more detail, as for this thesis it is sufficient to note the concept and its existence as a component in the emotional arousal of the audience. To simplify, being touched by a story is evidence of good storytelling and proof of emotional involvement of the audience in the story.

The two phenomena highlighted above, empathy and catharsis, form the basis for audience emotional arcs. There exist several studies on the formation of emotional arcs in linear story formats, which this thesis will not study in more detail. As examples of those studies, Kurt Vonnegut outlined the shapes of stories (Comberg, 2010) and more recent scientific studies on sentiment analysis identified six core emotional arcs in complex narratives (Reagan, Mitchell, Kiley, Danforth, & Dodds, 2016, Abstract, para. 1). To reflect the emotional arcs of linear storytelling to new media storytelling, one central difference is that linearity is often replaced by multilinearity. New media –based storytelling contains possibilities for several altering emotional arcs and indicates that the emotional arcs in new media experiences differ from the emotional arcs of traditional linear storytelling (Thiel, 2017, p. 176). New media reshapes the emotional arcs of the audience.

3.4. Audience Participation

Storytelling is not just a one-way direction by the author. Storytelling requires active participation by the audience, both physically and mentally. The manner the audience is physically included in the process of storytelling through the senses differs considerably
depending on the media used in the storytelling. The role of a member of the audience can be that of a reader, a spectator, a user, a participant or a co-author, all participating in a specific kind of storytelling experience. For instance, when reading a book, a reader is often consuming words alone, immersed in one’s internal, virtual world without any other sensory input than vision. Whereas in a movie theatre, the reader becomes a spectator or a group of spectators as an audience, being bombarded with images and sound. As a third example, in a story created through a computer game, the user or users participate directly in the events of the game using audiovisual input and motion and touch to interact with the game. And finally, in a story-driven game, the focus of the user interaction reverts to the abstract story and the interaction shifts from sensory performance towards mental participation. To describe all these varying roles of the audience this thesis will use the term *experimenter* in case it is irrelevant what kind of a storytelling experience the experiencer is experiencing.

When studying the mental participation in more detail, the findings of Howard and Mabley (1993) and Thiel (2017) are of importance. They focus on the mental and, especially, on the emotional participation of the audience instead of concentrating on the sensory or physical participation. Despite the same focus, they have different perspectives on the mental participation of the audience. Howard and Mabley (1993) studied questions relating to audience emotional arousal through the creation of empathy, and Thiel (2017) examined the first-person narrative. These studies reveal two different aspects on how to address the mental participation of the audience in storytelling.

Howard and Mabley (1993) identified seven building blocks for the traditional emotional arousal creation in the audience. Although they focused on screenwriting practices for film,
the points they highlighted are relevant for any kind of story presented to a human audience. A storyteller should ask herself the following questions: “what the audience knows, when they know it, what they know that one or more characters don’t know, what they hope for, what they fear, what they can anticipate, what surprises them” (Howard and Mabley, 1993, p. 22). These emphasise the link between the audience and the construction of the story, in particular, its characters. In creating this link, the role of empathy, and thereby emotional participation of the audience, is essential. In other words, the character of the story has an emotional arc that the character goes through, and the audience has another emotional arc that it is experiencing through feeling empathy towards the character.

Exploring deeper the mental participation of the audience another way of emotional arousal emerges. The viewer herself can become more directly part of the storytelling with a first-person narrative, not just indirectly through the characters. According to Laurel (2014), a good first-person experience can enhance the cognitive and emotional engagement of the audience in storytelling through new media (Engagement: the first-person imperative, paras. 1 and 7). The first-person narrative has also been studied by Thiel (2017) with her interactive spaces in which she sets the viewer into the very centre of the story. Through her works, she formulated “a theory that shifts emphasis from the classic character-centered narrative viewpoint to a first-person experimental one” (Thiel, 2017, p. 153). According to Thiel (2017), classical narratives centre around a conflict between the protagonist and the antagonist, and in this classical approach, the reader or the viewer projects herself to the emotional stages the protagonist encounters. She has a different kind of approach in her art, and she makes story characters almost obsolete. With this approach, she creates a direct link between the viewer and the virtual world. One crucial issue in achieving this is to focus on
the audience experience and, especially, on the emotions a viewer is feeling at specific stages of the narrative (Thiel, 2017, pp. 158–159). If the viewer is placed in a central role in the story, the empathy link towards the protagonist works differently than in the traditional, one-direction, linear storytelling. The empathy link may be replaced by the direct emotional involvement of the viewer, or the viewer may create the protagonist in one’s mind and start to feel empathy towards this imaginary protagonist. In any case, the experiencer and the protagonist are not that far apart from each other; in any form of a story, the reader and the main character are merging throughout the storytelling.

3.5. Summary

As a summary of the above, this thesis focuses on how to tell a story between the storyteller, as a designer, and the audience, as an active participant in the experience, with the effect of emotional impact. Thereby it takes a user experience perspective to the activity of storytelling. It observes how the chosen events and the absences in between form story tracks and gutters in the story experienced. This reveals how storytelling morphs when new media is introduced to the story.
For analysing how the storyline – the chosen sequence of events – of *The Engineer and the Gardener* evolved during different stages of the production, it was necessary to identify the components of the story – fabula – and the role of each component in the storytelling – sjužet. This analysis revealed how the storyline developed towards a circular structure of modules, in which the story is told and through which the experiencers can form their own story tracks to unravel the story.
4.1. Story Structures

This thesis studies the storyline of *The Engineer and the Gardener* through three structural approaches: the tragedy structure of Aristotle (Butcher Version, 2000), the dramatic structure of Freytag (2015), and the monomyth structure by Vogler (2007) based on the structure first introduced by Campbell (2008). After identifying the basic elements in the three basic structures, the thesis will map these to the storyline of *The Engineer and the Gardener* in Figure 2. Finally, this chapter will demonstrate how the storyline develops into story tracks in a multilinear new media environment.

4.1.1. Tragedy Structure

Any investigation to storytelling structures must start with Greek tragedy as analysed by Aristotle in Poetics c. 335 BCE. The basic structure of a story consists of the sequence of three parts – a beginning, a middle, and an end – and a natural connection exists between these parts in a way that only the beginning contains no need for a causal connection (Aristotle, Butcher Version, 2000, pp. 6–7). At first sight, the division into three parts following each other seems self-evident, but looking it a bit closer, it reveals an important emphasis on the causal connections that should exist from the beginning to the end. This is a perfect description of a storyline. Being natural and causal means being natural and causal in the imaginary world of the story. This may differ from the causal connections in the actual worldly world. Consequently, this gives emphasis on the inner logic of the story.
The chosen events in the three-part sequence form the basic story arc in a tragedy. This story arc consists of two parts, Complication and Unraveling or Denouement:

Every tragedy falls into two parts—Complication and Unraveling or Denouement. Incidents extraneous to the action are frequently combined with a portion of the action proper, to form the Complication; the rest is the Unraveling. By the Complication I mean all that extends from the beginning of the action to the part which marks the turning-point to good or bad fortune. The Unraveling is that which extends from the beginning of the change to the end. (Aristotle, Butcher Version, 2000, p. 15)

This thesis takes the above two-part story arc as the basis to which map The Engineer and the Gardener. The mapping can be found in Figure 2.

Aristotle identified also the basis for the emotional arc of the protagonist. The basic events in a tragedy contain the Reversal of the Situation, the Recognition and the Scene of Suffering:

Reversal of the Situation is a change by which the action veers round to its opposite, subject always to our rule of probability or necessity. . . . Recognition, as the name indicates is a change from ignorance to knowledge, producing love or hate between the persons destined by the poet for good or bad fortune. . . . A third part is the Scene of Suffering. The Scene of Suffering is a destructive or painful action, such as death on the stage, bodily agony, wounds, and the like. (Aristotle, Butcher Version, 2000, p. 9)
These events – also mapped to *The Engineer and the Gardener* in Figure 2 – are directly connected to the emotional stages the character is living in the story and mark some of the essential emotional moments the audience is experiencing.

The above Aristotelian structure can be observed in light of the aforementioned definition of structure by McKee (see Subsection 3.2). When Aristotle talks about the division into three parts (beginning, middle, and end), he emphasises the element of sequentiality; and when he talks about the story arc (complication and unraveling or denouement) and the emotional arc of the protagonist (reversal of the situation, recognition, and scene of suffering), he emphasises a certain strategic sequence belonging to the tragedy structure.

### 4.1.2. Dramatic Structure

Second structure to study is the analysis of Freytag from 1865 on the dramatic structure of stories based on Greek and Shakespearian drama, later often referred to as the Freytag pyramid. The work of Freytag seems to confirm the basis laid down by Aristotle regarding the dramatic structure. Freytag gives his update and his emphasis on the story structure that has survived thousands of years by identifying five parts and three dramatic moments in the structure. These parts and moments have been identified in Figure 2. In the definition of structure by McKee the elements identified by Freytag are under the strategic selection of story events (see Subsection 3.2).

Freytag (2015) addresses the emotional arc of the protagonist by asking the question of what is dramatic and what is not and states that dramatic means those strong soul movements
driven by the internal will and external action, willpower that affects the world and vice versa. The dramatic action or the passion in themselves are not dramatic – being dramatic requires a connection between the two, affecting each other (Freytag, 2015, pp. 18–19). The statement of that, from the point of view of the character and the plot, drama is driven by the interplay of internal will and external actions is especially noteworthy. This connects the plot and the character in a meaningful way, almost as a united building block in a drama. This dramatic tension between the internal and the external is extended to the audience through empathy and emotional participation.

4.1.3. Structure of the Monomyth

The third and final structure to explore is the mythical structure – the monomyth – introduced by Campbell in The Hero with a Thousand Faces 1949 and updated by Vogler from 1980s onwards. This mythical structure has also been referred to as the Hero’s Journey. Vogler (2007) updated the structure of Campbell (2008) to a 12-stage-version and identified also the character arc that is connected to the stages (Vogler, 2007, pp. 6 and 205). These stages are identified in detail in Figure 2. In terms of the definition of structure by McKee (see Subsection 3.2), the monomyth also describes one specific strategy to select the events in a sequence of a story.

As with any structure, also the structure of monomyth, can and should be altered. The content of the monomyth structure can be changed infinitely for the needs of the story and the concurrent society as the structure fits into any form of a story – from the simplest to the most multifaceted, from drama to comedy, from romance to action (Vogler, 2007, pp. 19–20). As a
Figure 2. The first-stage-story of *The Engineer and the Gardener* mapped to the Aristotelian
**Story Tracks**

*The Storyline of the Engineer and the Gardener*  
*The Character Arc embedded in the Story*

**Introduction**  
The world in which the main character, the Engineer, lives is introduced: the city, buildings and the sandbox in which the Engineer played as a child.  
The Engineer likes the city he has built.

Then the Engineer remembers a bench, that takes him back to his childhood.  
The bench reminds him of an incident in the past.

**Meeting**  
The story continues with a flashback to a summer the Engineer spent mostly in the sandbox playing. One day a boy, the Gardener, is sitting on a bench nearby.  
The Engineer is reluctant to meet the Gardener.

The Gardener is coughing and looking ill. The boys become friends. The Engineer asks the Gardener to come and play with him in the sandbox, but the boy just sits on the bench. The Gardener seems to be listening and waiting for something.  
The Engineer decides to talk to the Gardener.

After a while, the Engineer starts to sit on the bench with his friend. He starts hearing a silent buzzing sound, too. One day the buzzing noise pauses, the concrete yard cracks open and plants appear all over the place.  
The Engineer gets interested in the world of the Gardener.

**Plants**  
Different plants keep appearing. The Gardener recognises all of them. The Engineer isn’t really interested in them.

**Men with White Coats**  
Men with white coats appear. They govern the city. They start to weed the plants and find out what has happened. The white-coated-men start to look for the guilty ones.  
The Engineer observes the battle between the nature and the men with the white coats.

**Knee**  
One day the Engineer waits for more plants to show up, the Gardener informs that he does not think they will show up any more.

The Engineer shows his knee, on which there is something plant-like growing.  
The Engineer is faced with the ultimate forces of the nature.

**Aconitum Napellus**  
The story hops to the present time, the Engineer sits on the bench remembering the past.

The Engineer has found out that the plant that was growing on his friend’s knee was Aconitum Napellus.  
The Engineer is sitting on the bench wondering what happened to the Gardener.

**Guilty One Caught**  
Flashback to the summer reveals that one day the Gardener did not come out to sit on the bench. In stead the men with white coats inform that the guilty ones have been caught.  
The Engineer is puzzled by the disappearance of the Gardener.

**On the Bench**  
The Engineer sits on the bench. The faith of his friend has remained a mystery for him, but he believes he will come across the friend one day.  
The Engineer is sitting on the bench hoping to see his friend one day and fearing it will not happen.

structure of tragedy, to the structure of drama by Freytag and to the monomyth by Vogler.
well-established structure, it forms a good addition to the other structures mapped to the storyline of *The Engineer and the Gardener*.

The most important intake from the monomyth structure to the analysis was the emphasis on the character arc that is connected to the stages of the monomyth. Just as Freytag (2015) highlighted the dramatic tension between the will and the external action, Vogler (2007) emphasised this with his character arc linked to the stages of the story.

### 4.2. From Storyline to Story Tracks in *The Engineer and the Gardener*

Mapping different story structure elements to *The Engineer and the Gardener* revealed the role of each element in the story. Noteworthy is that, in the monomyth structure, the story arc and the character arc of have evolved to a form with several stages of intense moments. In Figure 2, the changes in the intensity of the story are distinguished by different colour intensity. Despite this difference, it was possible to map the structures and events identified therein to *The Engineer and the Gardener*. Some of the steps of the monomyth structure (numbers 10 and 12) could not be identified in the initial storyline, but interestingly they emerged during the third stage of the production of *The Engineer and the Gardener* when emphasising the role of the audience by use of new media.

The character arc of the monomyth structure was especially useful for understanding the core dramatic events in *The Engineer and the Gardener*. Through this vehicle – looking from the perspective of the protagonist – it was easier to recognise the steps in the story and the changes that took place in the story during the production. One reason for this is that the story
of *The Engineer and the Gardener* is not driven by action, and therefore it is easier to recognise components through the character and emotions the character faces in the story than through the action of the story. The emotions embedded in the characters can be identified through investigating the Aristotelian notions of the recognition and the scene of suffering, continuing with the moments identified by the Freytag pyramid – the exciting moment, the tragic moment and the moment of final tension – and ending to the steps of the monomyth character arc. These steps also crystallize the connection that starts from the plot and the character and ends to the audience through the vehicle of empathy.

The most interesting part of the analysis was to observe how a single storyline in the first stage of *The Engineer and the Gardener* developed into several possible story tracks in its third stage. Figure 2 above mapped *The Engineer and the Gardener* in its first stage to the story structures by Aristotle, Freytag and Vogler. At the third stage, the story of *The Engineer and the Gardener* is told in five Modules: the Cover, the Booklets, the Cards, the Game, and the Base. The module of the Booklets contains the storyline of the first stage of *The Engineer and the Gardener*, meaning stages 1-9 and 11 identified above in Figure 2. The rest or the Modules introduce novel parts to the story and are identified as steps A–H in Figures 3 and 4. Figure 3 shows the visual material of *The Engineer and the Gardener*, identifies the basic structure of the five Modules and lists their basic functions. To understand the changes that took place, Figure 3 should be observed together with Video 1 on the use of the Modules.
The third Stage of *The Engineer and the Gardener* entails five Modules using a variety of storytelling media (see Video 1, [https://juttasukai.portfoliobox.net](https://juttasukai.portfoliobox.net)):

**Module 1 Cover (Steps A and H):**
The story has three introductory animations, embedded in the cover of the box, triggered by augmented reality.

**Module 2 Booklets:**
Part of the story is told linearly as a graphic novel in four booklets.

**Module 3 Cards (Steps B–E):**
Other parts of the story are told in four sets of cards, in total 24 cards, containing augmented reality.

**Module 4 Game (Step F):**
In addition, there is a game-type-of-component embedded in one card, triggered by augmented reality.

**Module 5 Base (Step G):**
This entails two possibilities for closure in the end, embedded in the base of the box as interactive augmented reality.

*Figure 3.* The modular structure of *The Engineer and the Gardener* in the third stage.
Figure 4. The storyline of *The Engineer and the Gardener* evolved to a circular structure in the third stage. The storytelling is observed from the perspective of the experiencer. Numbers refer to the 12 stages of the monomyth structure (see Subsection 4.1.3). Stages 1–9 and 11 are told in the Booklets. The novel Modules (the Cover, the Cards, the Game, and the Base) are introduced in A–H.
All of the structures analysed above in Subsection 4.1 are constructed for linear storytelling formats. Whatmultilinearity does to the story structure can be observed in Figure 4. It demonstrates how the storyline evolved as a consequence of the introduction of new media into a story-circuit type of structure consisting of several possible story tracks to follow. It is dispersed to parts that can be explored in several orders and in a repeating manner. Figure 4 is a graphic expression of the structure of *The Engineer and the Gardener* at its third stage as it appears to the experiencer of the story. It identifies new parts of the story, identified as steps A–H in Figure 4, from the perspective of the experiencer by introducing the experiencer as one of the main characters in the story.

From Figure 4 the reader can monitor how a single storyline becomes split in slices and breaks into several sequential or simultaneous modules. With the possibility to examine the pieces of the story multilinearly and in a circular mode, the storyline disperses into several possible story tracks. Along with this change, a single sequence of selected events becomes a set of sequences to be built by the experiencer. Some novel modules of *The Engineer and the Gardener* broaden the aspects and themes of the story. In Figure 4, these are represented by blocks on the outside circle of the original 10-step storyline. Other modules of the story require the experiencer to participate more actively in the storytelling. In Figure 4, these are placed in the inner circle of the graph. Interestingly the modules requiring the most participation of the experiencer, numbers 10 and 12 in Figure 4, are steps of the monomyth that were not identifiable in the original storyline at the first stage. These steps concern the rededication to change and the final mastery of the problem. In *The Engineer and the Gardener*, taking these steps is left for the experiencer.
The evolvement of the structure of *The Engineer and the Gardener* can be assessed based on the 10 architectures of interaction identified by Ryan (2015, pp. 165–176). The overall structure of the story has transformed from a linear storyline into a form of a directed network. In addition, when examining the individual modules, the story contains also the following structures either within or in between the modules:

- The vector structure in the *Booklets*
- The complete graph structure in the *Cards*
- The hidden story in the *Game* and the *Base*
- The tree structure between the *Game* – the *Base* – the *Cover*

The changes in the architecture of *The Engineer and the Gardener*, modularity and the circular structure, made the absences in the story more visible and even tangible. The gutters gained force.
Chapter Four described how the push of the story evolved from a single storyline to several possible story tracks – in other words, it identified how a sequence of selected events changes to several possible sequences of selected events. This chapter concentrates on the absences between the selected events – the gutters. These absences reveal the interaction taking place between the authored story and the audience.
5.1. Participation through Absences

The focus will now shift from the authored story towards audience participation. Here the thesis refers specifically to the definition of a “good story well told” as presented by Howard and Mabley (1993) and its element number four on the need of maximum audience participation in storytelling (see Subsection 3.3). This chapter starts by exploring the ways the absences represent themselves in different storytelling media, the role they have in the participation of the audience and thereafter analyses the gutters of The Engineer and the Gardener.

5.1.1. Gutters as Sequential and Spatial Elements

One format in which absences are very clearly present in the storytelling is comics. In comics, the absence even takes a concrete form as a clear visual element. Comics are “sequential art” (Eisner, 1985, p. 5), and in more detail “[j]uxtaposed pictorial and other images in deliberate sequence, intended to convey information and/or to produce an aesthetic response in the viewer” (McCloud, 1994, p. 20). In both of these definitions, the central defining factor is sequentiality – and creating a sequence requires more than one image (McCloud, 1994, p. 9). Thereby, in comics, this sequentiality of images reveals directly the absence, the gap to be filled, as an empty space between the images. In comics, this absence is called the gutter.

The gutter takes two roles in the storytelling of comics. It acts as the sequential transition between the images and as a simultaneous spatial element. In sequential sense, there are six
types of transitions offered by the gutter: “MOMENT-TO-MOMENT”, “ACTION-TO-ACTION”, “SUBJECT-TO-SUBJECT”, “SCENE-TO-SCENE”, “ASPECT-TO-ASPECT” and “NON-SEQUITUR” – in other words, the gutter is used to express change, for instance in time, motion, place or even changes of aspects on a more abstract level (McCloud, 1994, pp. 70–72). In addition to these linear sequential transitions, the gutters on the spread of a book create room for simultaneous spatial storytelling. Comics is about the interplay between spatial simultaneity and succession of sequences as the reader scans the page and the grid formed by the gutters and also focuses the attention to the images in between the gutters (Moulthrop, 2017, pp. 287 and 289). Comics is not the only medium in which this sort of spatial storytelling is present. Throughout centuries, visual stories have been told for instance in paintings and frescos in church ceilings, but this kind of spatial storytelling has been constantly in decline with the emergence of linear modes of storytelling, like novels and film (Manovich, 2001, pp. 322–323). The gutter as an element in the transition between scenes and as a visual, spatial element can thus be observed in other storytelling formats than comics, as well.

The gutters give room for the phenomenon of closure to take place and a way for the reader to participate in the storytelling. Closure means observing of fragmented parts with the senses and still perceiving the whole; and apart from comics storytelling, this closure is present constantly in our everyday life and in other media formats, such as in the continuous closures of a film (McCloud, 1994, pp. 62–65). To find out the forms gutters may take in new media, the following subsections will examine absences and gutters in other formats of storytelling than comics and the way they operate as narrative elements enabling the audience mental participation.
5.1.2. Gutters as Threshold Elements

Storytelling as a threshold experience is the key factor to understand the essence of storytelling. A narrative is a threshold experience taking place between the external and internal of the experiencer, the story written by someone else (external) and our own thoughts and feelings (internal) with which the story resonates (Murray, 2017, p. 125–126). In game research, the same threshold emerges in the form of “half-real zone between the fiction and the rules” (Juul, 2005, p. 202) – the fiction referring to the internal and the rules referring to the external. Both of these notions emphasise the existence of two poles – the external and the internal. In addition to finding these two poles of internal and external in the storytelling activity, these poles can also be found within the drama of the story, as pointed out by Freytag (2015) and Vogler (2007) (see Subsections 4.1.2 and 4.1.3). These poles are present in different storytelling formats in different intensity and form.

Threshold experiences are directly dependent on both the abstract elements of the story and on the concrete objects present in the experience. This again reveals the role of the absences in storytelling. For instance, the fourth wall in theatre or the screen with a controller in computer games can be identified as such a threshold element or a threshold object (Murray, 2017, p. 134). In comics, one can find the external in the storytelling within the frames of the comic and the internal emerges from the gutter. In the case of comics, a book is a threshold object and the gutter can be considered as a threshold element in it. In the media of film, one has a wide range of editing techniques used for creating montage within the minds of the viewers. And in visual arts, it is present for instance in the level of abstraction and as an essential part of certain art movements, for instance, cubism and dadaism. In all these cases
the absence in the story acts as a threshold element, and the external is connected to the internal through these gutters.

Being in between the external and internal gives the gutter special powers. It is in the gutter that “the magic and mystery” (McCloud, 1994, p. 66) of comics storytelling happens. The gutter gives proper place, space and time for the reader to fill in the gap. If the gap is in the wrong place, the rhythm of reading is affected. If it is too short in time or does not give proper space to the reader, the reader does not have the best possibilities to take part in the storytelling.

5.1.3. Varying Forms of Gutters

Even if gutters do not exist in the same kind of sequential and spatial sense in other media formats compared to comics, other media formats have varying forms of gutters, too. Gutters exist in all forms of storytelling. This thesis will study how gutters express themselves in film, play, and theatre. These forms of media are the most relevant in light of The Engineer and the Gardener. When introducing new media to a book format, the focus should be on what kinds of changes in the form of expression take place in the transformation: still images are replaced wholly or partially with moving images; linearity paves way for multilinearity; and there will be an increase in the interaction with the audience, both in a physical and a mental sense.

In the media of film, several techniques enable the insertion of gaps in the storytelling, one of the most enlightening being the Kuleshov-effect. Kuleshov used a shot of the face of a man
and edited this same shot to three other shots: a plate of soup, a girl, and a child in a coffin, and depending on which shot the face of the man was connected to, the meaning of the joint shots changed (Kuleshov, 1974, p. 200). The Kuleshov-effect shows clearly the power of absences in this storytelling format.

In addition to the technique of Kuleshov, there are a lot of other editing techniques of film that provide for a transition between shots in a film. Gutters can be seen for instance in flashbacks and techniques used to accelerate time. For instance, Eisenstein & Leyda (1977) identified five methods of montage – transitions between the shots in a film; those being the metric montage, the rhythmic montage, the tonal montage, the overtonal montage and the intellectual montage (pp. 72–83). Even if the gutters are not directly visible on the screen as a spatial element, gaps are used as transitional elements between scenes as part of the editing of a film.

The realm of play and game are good examples for examining non-linear gutters. The modes of play may vary from Paidia, meaning free and uncontrolled play, to Ludus representing games that restrict players with rules (Cailllois, 2001, pp. 9–10 and 13). Paidia-type of play leaves total freedom to the player to make up the story that the player wants to enact. In this form of play, the absences in the story are wide; gutters are totally open. An example of an object relating to this kind of playing would be a wooden stick that can be used as a weapon, a walking stick or whatever the player chooses it to be. Adding details to the objects of play narrows the absences bit by bit. Take for instance a doll. The ways for the player to freely play with it remain quite open. When you put the doll into a dollhouse, the setting is fixed, and that limits the choices a player can make. Further, taking a lego character living in a
defined story world limits freedom even more. The gutters are diminishing. At the same time the gutters diminish, the players get help in generating the story that they can enact. The push of the story tracks gains force. In the other extreme in Ludus-type of play, the player performs predetermined actions to play the game as skillfully as possible, as is the case for instance in a shoot-out game or tetris. In Ludus, the gutters have been reduced to the minimum and the player follows simple pre-determined storylines or story tracks.

The final example to demonstrate the role of the gutter is the experiments of epic theatre by Bertolt Brecht.

[Bertolt Brecht] challenged Aristotelian assumptions, developing practices and theories of how acting could consciously make spectators critical observers and active participants in the creation of meaning on stage and in the audience. Through the actor’s use of “alienation” and Gestus, the playwright’s use of “epic” structure, and the spectator’s consequent active filling-in of the links between parts, Brecht reoriented twentieth-century understanding of performance away from the authority of the playwright to the circulation of meaning among playwright, actor, and spectator. (Martin and Bial, 2000, p. 1)

The concept of epic theatre is often misunderstood – the purpose of alienation in epic theatre is not the alienation of the audience; quite the opposite as it means that the audience should be actively thinking, reflecting and also feeling the story, not only observing the play, living the emotional arcs through its characters and waiting for a catharsis (Gorelik, 2000, pp. 29–30). With the help of Brechtian tools, the emphasis is given to the audience as an active
participant in the storytelling. The experiments of Bertolt Brecht express one of the ways the gutters can be used in theatre.

To conclude from the above: gutters vary from small and short visual disruptions to areas of spatial vacuum invading the environment around us. The forms of gutters and how they can be used in storytelling vary from one medium to another.

5.1.4. Experimenting the Limits to Find the Gutter

Exploring how experimental forms of a medium restructure the gutters of the medium may reveal emerging forms of gutters. Each medium has different kinds of technical boundaries, which the experimental forms of the media try to break. For instance, the computer-based media has introduced spatial montage with several windows on the same screen instead of the traditional film-form one-screen-presentation (Manovich, 2001, pp. 324–325). The same kind of development can be observed in experimental film, which often uses split screens and several windows. Additionally, experimental film can be described as hypermediated as it makes the viewer aware of the medium instead of aiming for direct immediacy (Bolter & Grusin, 2000, p.154). Experimental film has explored the computer media and tested its own boundaries by adopting new means of presentation.

Another enlightening example of how gutters are constantly restructured by the medium itself is examining how experimental film tries to break one of its biggest technical boundaries, namely the linearity of storytelling. Experimental film is often deeply connected to the time the film is experienced by the viewer. It uses references to other films, giving an instant
feeling of flashback in the viewer’s own life. Also by using references to the society, its political events and concurrent phenomena it addresses directly the viewer living in that society. Additionally, experimental film often borrows from the archives of history and brings these events to the time of the viewer and thereby into concurrent context.

The first-person narrative described above makes experimental film a difficult format. Experimental film floats between telling the story from the point of view of an external protagonist and the point of view of the viewers themselves. Following the observations of Murray (2017) on the importance of the threshold state in storytelling, in experimental film, the viewer is often put into that fragile threshold. The film needs to resonate with the viewer and additionally the exact moment of time the viewer is living. By placing the viewer in the centre of the storytelling event as an active participant in the storytelling, experimental film can succeed in presenting a new type of flow of time. A crucial element in achieving that is the active use of absences, gutters, in experimental film for instance in the form of editing techniques, split-screens, and cross-references.

5.1.5. Gutters in New Media

In new media, the increase in the participation of the audience is often clearly present, and the role of a reader or a viewer evolves into the role of a user and an interactor. This requires special attention to the absences of the story as they enable the participation of the audience from a first-person narrative perspective. There are several examples of how the Kuleshov-effect is used in new media stories; how stories are given new kind of multiform; how stories are enacted, and; how stories are reshaped into new kinds of storytelling units in trans-media
story worlds of games and fan-fiction (Murray, 2017, pp. 43–44, 117, 201 and 212). These new ways of storytelling give a glimpse of how the forms of physical and mental participation of the audience are changing and how the gutters are being restructured. The absences in the overall story increase and the leaps between parts of the story widen. In other words, the role of gutters gets emphasis.

A good source of reference is the work of Norman M. Klein, who concentrates in his storytelling on the viewer and has used the absences as a core element in his work. Based on his own work, Klein (2017) created a seven-point-list to be used as a tool for database novels:

- New points of origin: The book as Renaissance computer
- The aperture
- Bleeds
- The space between
- Wormholes
- Streaming and gliding
- The picaresque (p. 139)

When talking on these seven points, Klein emphasises the mental interaction occurring between an authored story and the viewer and underlines the most important thing that makes this mental interaction possible: the absences in the narrative, which operate as tools for mental leaps, acts of navigation, definition of the space, time and rhythm, as shortcuts between extremes, even as representation of movement (Klein, 2017, pp. 139–151). Despite its somewhat cryptic nature, the above list introduces a good crystallisation of the forms in
which gutters may exist in new media. An ambiguous and vast variety of gutters exists out there.

The author is in charge of placing the gutters. But instead of just placing the gaps within the story sequentially and linearly in time, a new media author may place them spatially and simultaneously, as well. The placing is not limited just to a two-dimensional space, like in comics. The gaps between different scenes or parts may even be placed three-dimensionally into the environment of the experiencer. Additionally, an author may design a story to be told multilinearly, and thereby placing different sizes and forms of gaps into the story. As the story becomes multilinear, also the gaps become to be experienced multilinearly. This allows more room for the experiencer to participate in the storytelling and more varied ways to reflect the story to the life of the experiencer.

5.2. Gutters in The Engineer and the Gardener

Figure 5 demonstrates how the gutters present themselves in the third stage of The Engineer and the Gardener. Figure 5 presents the five Modules introduced in Figure 3 and expresses how gutters may look like in new media. As a result, the gutters, expressed as white and gray space linking the modules of the story, have become diverse in shape and they are scattered in space. For the purposes of this thesis, Figure 5 merely tries to illustrate the gutters in a form that can be printed on a sheet of paper. In fact, these gutters are multidimensional and not easily given a form in two dimensions. The gutters of The Engineer and the Gardener will be categorised and analysed in more detail in Subsection 6.1.1.
Figure 5. The gutters of *The Engineer and the Gardener* in the third stage.
6. NEW MEDIA STORYTELLING IN THE ENGINEER AND THE GARDENER

This chapter will assess *The Engineer and the Gardener* and the aforementioned research from a new media storytelling perspective. There are three characteristic pleasures new media brings to the user; those being the experiences of agency, immersion, and transformation, which describe the affordances that new media gives to storytelling (Murray, 2017, pp.114–119 and 195). Thus, this chapter will describe in more detail the question of how the story of *The Engineer and the Gardener* is told using the aforementioned three affordances of new media.
Module 1 Cover (see Video 1):
This module contains sensory participation of the experiencer in the form of watching the animations embedded on the cover of the box through a mobile device. There are three introductory animations focusing on setting the mood: the default and two other animations. In the beginning, the default animation is shown and the actions of the experiencer in playing the Game determine which of the other animations is presented in the end when closing the box. The experiencer is unaware that the decisions she makes in the Game trigger different animations in the Cover. This is to emphasise the unexpected effects of actions. It also gives the emotion of surprise and acts as the point for re-entering the story.

Module 2 Booklets (see Video 1):
This module contains four booklets, numbered from one to four. Each of them is in a different form; some of them are booklets, the other ones folding structures. This module is the most traditional one in its sensory interaction. With booklets, the story can be read in a traditional, linear order. As the modules of the Cards and the Game are constructed to be multilinear, this module tries to balance the storytelling and introduces the main storyline.

Module 3 Cards (see Video 1):
The module of Cards is distributed in four groups, suggesting an order of reading, but giving full freedom to read multilinearly, as well.
Group 1: Cityscape and short stories on building. In the narrative, this group investigates the building blocks of the city and refers to the theme of nature versus built environment.
Group 2: Plants, plant names, and short stories of the plants. In the narrative, this group shows the emergence of the plants and refers to the theme of nature versus built environment.
Group 3: Dialogue between the men with white coats. These give the experiencer a possibility to peek into the theme of power structures in a society.
Group 4: A narrative of an organised society of insects. This group gives depth to the societal theme of the story.
This module is designed to give depth to the story, and here the sensory interaction is at its widest. The experiencer uses his hands to explore the physical, printed cards in the surrounding environment. In addition, the experiencer may explore the augmented reality content on the display. Here the experiencer acts simultaneously in the physical and the virtual environment.

Module 4 Game (see Video 1):
This module operates only on the screen and is just triggered by augmented reality. In the Game, the player fights against herself. Touching the left side will reveal physical elements in a built environment and, touching the right side, chemical elements of nature. Depending on which side the reader chooses to use more, a related text is revealed. The player is thanked for participation addressing the player directly as an active participant in the story. Visually, playing the Game provides a different way of reading an image bit by bit. This module gives depth in the theme of nature versus built environment.

Module 5 Base (see Video 1):
In this module, the experiencer interacts with the hand with augmented reality objects. The Base gives two possibilities for the end of the story, and the way the experiencer has played the Game dedicates which possibility she gets. This emphasises the experiencer being an active part of the storytelling as a co-author restricted however by her own actions.

Figure 6. The detailed description of the five Modules of The Engineer and the Gardener.
At the final phases of the production, I realised giving a different level of emphasis to the three affordances of new media. I had put the affordance of transformation on the very first level, and transformation was the justifying principle for most of the choices I made in the production. On the second level, I had concentrated on the agency and had given the last priority to the aspects of immersion. Interestingly, during the production, the focus had shifted from the initial ideas of immersion towards transformative powers of new media.

As identified above in Figure 3, the final version of *The Engineer and the Gardener* has five *Modules*. For the readers to be able to follow how the above-mentioned affordances of transformation, agency, and immersion appear in *The Engineer and the Gardener*, Figure 6 and Video 1 describe the content of the *Modules* in more detail, links and functions between the *Modules* and the forms of participation of the audience.

### 6.1. Kaleidoscopic Transformation

One pleasure Murray (2017) offers is the pleasure of transformation, meaning the possibilities offered by the computers to the users for reshaping themselves. The possibility for the user to morph into someone else or something else fits well to narratives and storytelling as it gives rise to a novel type of kaleidoscopic and fragmented narrative; it gives new ways for presenting simultaneous actions, multipositional views and intersecting stories, using story environments under constant change, enacting stories and constructing closures (Murray, 2017, pp. 196 – 223). This affordance was the most difficult one to grasp, however, it turned out the one that *The Engineer and the Gardener* gives most emphasis on.
In a virtually real world, one can act in ways that would not be possible in actually real environments. This suits to storytelling, as stories may entail all imaginative actions, irrespective of what would be possible in actually real life. Additionally, as any story, a new media story invites the experiencer to take part in the story as one of the characters, to live the life of someone else for a while.

There are especially two elements in *The Engineer and the Gardener* that are strongly connected to the transformative potential it holds. First one is the interplay between the story track and the gutters. The second element is the use of the first-person narrative.

### 6.1.1. Story Track and Gutters

The original graphic novel did not have any traditional gutters, in the form of white space around the frames, as it was presented on a one-picture-per-page-basis. While making *The Engineer and the Gardener*, I imagined the original graphic novel to be exploded to the surrounding space, thereby also reshaping the gutters. In the final work, the gutters are present for instance as sequential gutters, spatial gutters, sensory gutters, and mental gutters. Sequential gutters can be observed within the *Booklets* in varying forms. The 24 *Cards* create
generative spatial gutters that are two-dimensional in case placed on a surface and three-
dimensional in case distributed to the environment of the experiencer. Sensory gutters exist
between different forms of sensory participation by the audience in the five Modules: reading
of the Booklets, watching the animations of the Cover, interacting with the Cards and the
augmented reality content of the Base, and playing the Game. Mental gutters are most visible
in the Game and the Base, in which the first-person narrative is at its widest. In The Engineer
and the Gardener, all of these gutters are meant to give room for the participation of the
experiencer and enable the experiencers to reflect the story to their own life. In Figure 7, the
aforementioned four categories of gutters are reflected to The Engineer and the Gardener and
distinguished from each other by colour.

From a narrative perspective, there is only a restricted amount of generative elements in The
Engineer and the Gardener, as there is only one plot with two possible closures. The truly
generative elements arise from the above-mentioned possibility to place the printed material,
with augmented reality embedded in it, in the space surrounding the experiencer.

The story presents multi-positional viewpoints, with the aid of the gutters. Through these
viewpoints, the experiencer is invited to consider the story from various thematic points of
view. The experiencer may observe what is taking place behind the surface of the plot. This
way, reading of a story becomes more like an active construction of a story and it leaves room
for the experiencers to make their own interpretation on the core elements of the story.
Figure 7. The gutters of *The Engineer and the Gardener* divided into four categories.  
1) Sequential gutters (yellow), 2) Sensory gutters (purple), 3) Spatial gutters (red), and 4) Mental gutters (turquoise).
The interplay between the story push and the absences became a balancing effort. To give some shape and leave some direction to the plot, the basic story can be found in the Booklets. As a contrast to this linearity, the Cards can be studied individually, in altering sets and combinations or as a whole. The experiencers may use the Cards as they best wish. The experiencer can construct the whole canvas of 24 Cards and the Game; or read them in a traditional, linear structure; or throw them in the surrounding environment and study them like parts of the environment. Depending on the way the experiencer decides to use the pieces, the story track the experiencer experiences changes. Also, the visual experiences will differ and so does the story in the mind of the experiencer.

6.1.2. First-Person Narrative

In addition to the design of story tracks and gutters, another element that affords self-reflection in The Engineer and the Gardener is the possibility to enact through first-person narrative simulations. These simulations are present in the roles of an investigator (see Video 1, Module 3), a fighter (see Video 1, Module 4) and a God (see Video 1, Module 5). The investigator role is present especially in the Cards, that broaden the story and reveal different aspects of the story card by card. By this, the experiencer is invited to contemplate what the story is all about and how to derive meaning from it. In the Game, the experiencer acts as a
fighter against oneself, not knowing her role as a fighter. During the *Game*, the fighter makes decisions on which side to choose. This may take place for different reasons. The experiencer might wish to examine both sides, she might want to explore the most interesting visual patterns, or she might try to make sense of the bit-by-bit revealing storyline – or the *Game* could be played by co-incidence solely. The result of the *Game* determines which of the closures the experiencer will be able to explore at the end of the story. The role of God is saved for the final part of the story. In the *Base*, there are two augmented reality conclusions available for the experiencer. The experiencer is put in the place of the protagonist that is sitting on a bench making a choice. The experiencer can influence what happens in the final scene of the *Base* but is restricted by the choices she has made in the *Game*.

All these roles – the investigator, the fighter and a God – are roles that the protagonist also possesses in the story. He wonders what has happened to his friend; he fights internally whether he wishes to be an engineer contributing to the society through structured participation or a gardener relying on the trial and error of nature. And just as the experiencer, the protagonist can decide whether to sit on the bench or to act.

6.2. Agency

One of the most noticeable features of new media stories is interactivity. The experiencer is able to experience agency through this interactivity; in more detail, this contains two design components – the procedural design (shaping of the behaviour of the computer) and participatory design (shaping of the behaviour of the interactor) – and when the affordances embedded in these components fit together, it leads to the experience of agency (Murray,
2017, pp. 111 and 113–114). Exploring storytelling from the aspect of the above design 
components, the focus shifts to the physical and sensory participation of the audience as that 
occurs linearly in time and to procedural design taking into account the various ways the 
participants may interact with the story.

The five Modules of *The Engineer and the Gardener* contain varying forms of sensory 
participation and interaction and it is based on the procedural and participatory design 
structure identified in more detail in Figure 7.

### 6.2.1. Sensory Participation

*The Engineer and the Gardener* investigates the narrow boundary between a traditional book 
and a new media story. On a reality–virtuality (RV) continuum the production is on the 
augmented reality side of the continuum as a monitor based window-of-the-world (Milgram, 
Takemura, Utsumi, & Kishino, 1995, p. 283 – 284). Despite crossing only little the boundary 
of a printed book, issues relating to sensory interaction were clearly present in the production. 
Or perhaps focusing on the boundaries of the book format actually helped to see the basic 
differences better. Mere interaction does not automatically lead to more pleasurable stories as 
the immersion to a story derives from the story itself and the agency of the user in the story

69
(Ryan, 2015, p. 256). When designing for new media, it is easy to get carried away with all the possibilities for sensory interaction. At the same time, it is as easy to forget that the interactions available for the user should be balanced with the procedural design. And first and foremost, both the overall participatory interaction and the procedural design should be well-grounded for the needs of the story at hand.

The sensory interaction is the most interesting in the Cards. With the use of augmented reality, the actual world is monitored through a display and virtual objects are added to the view on the display. To enable a strong connection between the experiencer and the story, I decided to use actual world interaction and introduce part of the story through cards. When the experiencer puts a card in front of the camera, a piece of the story is revealed on the screen. The experiencer may study that part of the story on its own or in combination with other cards and other modules of the story. In the Cards, this sensory interaction happens only in the actual world, and the virtual world content follows what happens in the actual world.

I attempted various modes of interaction in the Game. One of them included constantly moving sprite masks appearing from four directions. The player could stop these at a chosen time. Fortunately, I encountered some technical problems with this approach, and I took a step back to see why the story needed the Game. The central purpose of the Game was to make the experiencer an active participant in the story. Based on this core need, I decided to use the easiest way of interaction through touching buttons embedded in the picture because then all movement inflicted on the screen is explicitly caused by the player. I almost got carried away with the easiness of creating effects that I nearly forgot to reflect the interaction to the needs of the storytelling. The only thing that saved me here was my lousy coding skill.
6.2.2. Limiting the Agency

Breaking the linearity of a book increases the mental interaction with the experiencer. The experiencer is lured into taking part in telling the story. In *The Engineer and the Gardener*, there is a suggested way to experience its modules and components. However, the story can be and should be experienced in various orders. I would like to see that the components are used in unexpected ways and misused as much as the experiencer wants. Thereby, it would be interesting to see how much the interpretations of the experiencers vary from each other depending on the way they decide to use the building blocks of the story.

As a balancing element for the unrestricted agency embedded in the modular structure of *The Engineer and the Gardener*, in the *Game*, the experiencer is not aware of the consequences that her choices in the *Game* have to the story. One might say that the decision not to tell the experiencer the effects of her actions is against giving the experiencer agency. On the other hand, this choice gives emphasis on mental participation in the story told, once the experiencer becomes aware of the fact that she has had an active role in the events by playing the *Game*. Because I set transformation as the main focus in the production, in this *Module*, the experiencer is kept in dark at the cost of direct agency. As important as it is to keep the experiencer in dark on the consequences of his actions, it is also crucial to reveal this to the
experiencer at some point. This has twofold purposes. Firstly this way the experiencer might get a feeling of Aristotelian hamartia, tragic flaw, and secondly it might create the interest of finding out to which direction another decision might have taken her.

In storytelling, the reader reflects her life to that of the protagonist. Some of the actions of the protagonist may be driven by the internal will of the protagonist and some of them based on external forces that the protagonist is not able to control. By depriving the experiencer of the prerogative to make sound decisions based on her internal will, the emphasis is on chance and external forces. The Game is played by the experiencer without knowing it is a game and without knowing the effects it has. Similar external forces are affecting the protagonist in the story of The Engineer and the Gardener. The external forces directed at the protagonist are also targeted at the experiencer directly.

6.3. Immersion

The third and the final feature of new media that this thesis will reflect on The Engineer and the Gardener is immersion. Immersion is experienced when encyclopedic extent and coherent spatial navigation are afforded to the user – in other words, the encyclopedic extent refers to a virtual world full in detail in all shapes and forms, and when a person has possibilities to navigate and explore iteratively in such a world, the media succeeds to provide the user an immersive experience (Murray, 2017, pp. 113–114). An immersive experience is composed of more than just the technical immersion, as it also involves the human component – the experiencer having a sense of being, presence, in a virtual environment (Turner & Turner, 2006, Subsections 2.1 and 2.2). Immersion requires emotional
engagement by the experiencer in the events taking place (Grau, 2003, p. 13). The technology I decided to use, augmented reality, is by its nature immersive as it introduces computer-generated content to the surrounding environment, to be monitored through a display. And a story in itself is also always an immersive work – even if in a different way. In the form of written text, this immersion is purely mental. When new media is added, this immersion broadens to cover more comprehensively our whole sensory system in addition to the purely mental immersion.

6.3.1. Encyclopedic Extent

A good example to start to understand what Murray (2017) means when stating the encyclopedic extent being a crucial part of immersion is studying the media of film at the stage of its emergence. When comparing reading a book and looking at a film, one can see that the sensory input is widened from purely reading text with your eyes to a multisensory experience observing an immense amount of visual information constantly changing in time, simultaneously listening to sounds and possibly reading a text as well. The audiovisual immersion of a film contains visual and sonic details that were not present in books. In these respects, the increase of immersion was encyclopedic at that point in time. Now, looking at this example from the point-of-view of encyclopedic extent, it seems just like a very small
step compared to the overall possibilities that computational powers have afforded us. At our
time, the internet is the source of the encyclopedic extent of information and art forms like
hypertext poetry or user-generated fan-fiction are new media representing the component of
encyclopedic extent.

In *The Engineer and the Gardener*, the element of encyclopedic extent is the least utilised
affordance. The animations are a small glimpse of how the experience of reading a book can
change when breaking the traditional way of reading through computational powers. Another
flash of encyclopedic extent in *The Engineer and the Gardener* is that the whole story is
constructed and revealed in bits and pieces. This kind of structure also bears some risks, like
the user becoming bored to explore, overwhelmed with details or being lost in the story
broadening the thematic aspects of the story became a balancing effort throughout its design:
how to provide enough structure to enable the reader to experience an authored story and at
the same time use the possibilities of broadening the story and deepening its themes in a way
augmented reality affords.
6.3.2. Spatial Navigation

The encyclopedic expansion, in itself, is not enough to create flowing immersion to the story. The other component needed is the possibility for balanced spatial navigation in this wide and deep narrative space. Even if animations are often used in books with augmented reality, sometimes these books lack the component of spatial navigation. If the animations take place two-dimensionally on the surface of the book, not much immersion is added compared to the old media of film.

In *The Engineer and the Gardener*, there are 24 Cards which can be investigated through augmented reality. When using the cards, it is inevitable to move them in front of the camera and the display. The experiencer is in charge of the pace and the order the cards are investigated and of the placement of the cards. The pace the cards are investigated defines the linear time span of the experience; the order the cards are read defines the story track, and; the placement of the cards defines the spatial navigation in the story. All of these taken together form the immersive experience, and, in *The Engineer and the Gardener*, all of these elements are driven directly by the experiencer. An additional element in spatial navigation is that the hand of the user is present in the view when cards are placed and moved. The experiencer can see the act of navigation directly on the display – the real and virtual become
mixed. This emphasises the experiencer as part of the storytelling through the first-person narrative.

6.3.3. Visual Immersion

Exploring books with augmented reality and studying *The Engineer and the Gardener* confirmed a substantial amount of design elements that lead to visual immersion. As an example, even if two-dimensional virtual elements are augmented on two-dimensional surfaces like paper, these elements exist in different worlds. The printed material operates under the rules of the actual world, and its appearance depends on issues like the material of the paper, the ink, the colours used in print and the lighting conditions. On the opposite, the virtual elements live only on the display, from the colours and lighting generated by the computer. As another example, one needs to consider the differences between the three-dimensional environments of the actual world and the virtual world. Even if the target image would be two-dimensional, that piece of paper exists in the actual three-dimensional environment surrounding it, and this three-dimensional world is seen on the two-dimensional display during the use.

The technology enables mixing the actual world and the virtual world to a high degree. Three-dimensional modeling and rendering can be done on such a high level that making
objects to resemble those of the actual world is fully possible. Such visual immersion and immediacy merging the actual and virtual does not need to be the ultimate goal of visual storytelling in augmented reality. One can also emphasise these differences between the actual world and the virtual world instead of trying to get them to mix seamlessly together. As an example, using transparency is an easy way to increase the connection between the actual world and the virtual world. This way, the author can emphasise one world over the other when telling the story. The outcome is not something that resembles actual reality as the user sees these worlds simultaneously on top of each other. Additionally, taking into account the differences of the colour spaces available for different worlds, the CMYK space of the actual world printed items and the RGB space available for the virtual world, using transparency gives interesting new opportunities. The same applies to different lighting available in these two worlds.

The spatial placement of a virtual world object proportionally to the objects or activities taking place in the actual world can create a feeling of actual reality even if that does not follow the laws of the natural world. For instance in *The Engineer and the Gardener*, when moving the *Cards*, the hand of the user becomes visible on the screen. By adding transparency to the virtual object, the movement of the hand becomes more visible, connecting the user and the virtual object more closely together. The user is able to see directly what her hand does. To enhance the spatial feeling of reality, the virtual object is placed a couple of centimetres above the target image plane. This gives room for the hand in between the actual world target image and the transparent virtual world image. In the actual world, one would see the hand on top of the image but, in this case, one sees the hand beneath the image. When the user moves the actual world target image, the top layer virtual world
image moves at the same pace giving the user instant feedback of reality. The experiencer sees her hand moving the objects in the virtual world. The action is not something one would be able to do in the actual world, but it gives a feeling of empowerment for the user. This kind of control, which would not be possible in the actual world, starts to feel easily a natural way of action. Exploring different possibilities to mix the three-dimensional actual reality and the two-dimensional or three-dimensional virtual reality to a coherent whole on a two-dimensional display holds the keys to finding the affordances and constraints of augmented reality immersion in a visual sense. Using transparency and cut-outs in visual immersion gives possibilities for the first-person narrative. This is caused by the surrounding environment and even the readers themselves becoming visible. This is one element in increasing user involvement in the storytelling and the transformative force the story can have in the life of the experiencer.

6.4. Remarks

Addressing a new media production from the above three aspects of transformation, agency, and immersion allows examining the production in detail and finding elements in the production that are in the core of new media storytelling. Additionally, it reveals areas in which the affordances enabled by new media are not utilised to their fullest.

Viewing The Engineer and the Gardener from the above three aspects revealed that storytelling with new media is a balancing effort. For instance, Ryan (2015) has described this challenge as “how to make narrative interactive without losing its proven immersive power” (p. 230). Emphasising one affordance might decrease the experience of the other. The
storyteller may decide to place the emphasis in varying amounts on any of the affordances. At the same time, the storyteller should notice, how the emphasis on one aspect changes the experience of the other and choose a good balance.

In *The Engineer and the Gardener*, deleting the linear storytelling in the *Booklets* would have added agency and transformation to the maximum. As a consequence, the self-reflection of the experiencer would have increased and the push forward that helps the experiencer in finding a story would have started to disappear. In this instance, I decided to limit the level of agency by keeping linearity of the *Booklets*. However, in other parts of the story, I went the other way and increased agency. An example of this kind of emphasis on the agency was the construction of the *Game* in a way that all movement is caused directly by the experiencer.

In all parts of *The Engineer and the Gardener*, transformational forces were given most emphasis because the story itself is ambiguous and leaves a lot of room for different interpretations. Transformation is most visible for instance in the *Cards*, the *Game* and the *Base* in which the experiencer is most clearly and most visibly part of the story in the roles of an investigator, a fighter and a God. The gutters play a strong role in creating possibilities for the transformation. Within the storyline, in the push of the story, the absences affording transformation appear in the ambiguity of the story, its characters, and its closure. In the structural design of the storytelling, absences are present as visual gutters within each *Module* and in the gaps between different *Modules*.

In new media stories, the connection between the characters of the story and the experiencer can be more comprehensive than in traditional storytelling, if the storytelling manages to use
the affordances of the media well. A new media story can become transformative by the invitation of agency and immersion to participate. In other words, a new media story with the potential to transform the experiencer requires empowering the reader to interact with the story coherently through agency, in a way that the experiencer feels that she directs the story towards important closures. Additionally, if the storytelling includes a wide range of senses of the user through immersion – so that the user feels directly connected to the virtual environment and the characters of the story – a new media story enables direct connection between the story and the life of the experiencer.

The most important learning from the production of *The Engineer and the Gardener* is that whichever affordance of new media is emphasised and whatever feature used in it, those should always be closely connected to the story. Transformation is increased if the actions of the experiencer resemble those of the story characters; agency should be placed on similar spots of decision making that the characters go through, and; immersion should be found in the events of the story with most vivid imaginary sensory feelings.
A story is composed of a story track, or story tracks, providing the push forward and of gutters creating deliberate absences in the story. The division into these two elements assists in making the reader, the viewer, the user or the participant – whichever the role of the experiencer is in the storytelling – visible. It emphasises the mental participation of the experiencer. This is especially important for new media storytelling because, in new media, the forms of participation of the experiencer are more diverse and more shattered than in traditional linear storytelling.
This thesis underlines the importance of understanding the structure of storytelling when telling stories with the aid of new media. Firstly, the stories do not need to be tied down to a single linear presentation, stories can be structured using repetition and looping, hypertextuality and interactivity. Secondly, by adding possibilities and freedom for the user, the emphasis is shifted towards the user being an active part in the storytelling instead of the focus being on the narrated plot. And thirdly, responsibilities follow freedom; the user is expected to actively participate in the storytelling to experience the story to the fullest. This requirement of active participation includes also mental participation and emotional involvement in the story.

The storyteller becomes a virtual conductor of multiple storytelling experiences, each being live and personal. For the conductors of virtual experiences, this means that the balance between the push of the story track and the gutters left blank to be filled in by the experiencers needs more attention than before. The task for a storyteller in new media is no longer a mere composition of a storyline. Telling a story becomes an activity of providing alternate story tracks for the experiencer. A continuous flow of a story to be pushed to the experiencer becomes abruptly by gutters in different forms, lengths, and intensities.

Understanding these structural changes in storytelling works as the base for creating new media storytelling experiences. By adding to this base a bit focus by the design of interaction, the virtual conductor can afford the experience of agency. Concentrating on the spatial storytelling and visuals fitting the media, the virtual conductor contributes to the experience of immersion. And last but not least, the virtual conductor should provide a story floating in
the threshold between the external and the internal, thereby giving the story transformative powers for the experiencer.

A good story is like a living organism that has its own mind and that moves as it wishes in its environment – the environment, in this case, being the mind of its experiencer. An organism balances between the external forces and its internal will. Storytelling balances between the external story told by the author and the internal input given by the experiencer to the story. The creation of a story can also be similarly dynamic. It can combine an internal goal-driven design and embrace unexpected external coincidence. Such mode in the creation of the story helps in finding the balance of the external and internal in the story as well.

The theories studied in this thesis are mostly created for traditional, linear storytelling. They apply also to multilinear stories, as an individual experiencer experiences such stories linearly, too. Additionally, linear storytelling also contains multilinearity when looking from the perspective of mental participation of the experiencer. When the forms of participation are broadened by new media it merely brings novel elements and objects to the storytelling and adds variables and actions to the storytelling structures. These novelties exist in our actual and virtual reality and they move and live in the world of the story.

The increase of storytelling components in new media emphasises the systemic structures based on which stories are constructed. This system operates in several fields of science and art. All of them deserve deeper attention than can be given in this thesis.
This thesis has reflected the selected theories only to the production of *The Engineer and the Gardener*. By exploring other stories in depth it could be possible to identify more gutters than the four categories of sequential, spatial, sensory and mental gutters identified in this thesis and specify them in more detail and depth. This could be the subject of further research. Another topic worth researching would be to study how specific, subjective emotions flow along with the story. These could be used for creating new recipes for baking stories.

The gutters provide the grid for the story. In a linear print format, they usually resemble rectangular structures in varying size. In new media based storytelling, the rectangular shape does not express the form of the gutters anymore. Based on the analysis of *The Engineer and the Gardener*, the gutters morph into circular and spatial structures constantly in movement in the imaginary world of the expericner. The story is told in this kind of a multidimensional grid. As the final full stop for the thesis, in Figure 8, this multidimensional grid is squeezed in between the sheets of this linear presentation.
Figure 8. The multidimensional grid of the new media experience *The Engineer and the Gardener* squeezed in between the sheets of this linear presentation.
References


