Digital Narratives – Three experiments on the Kalevala

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The Kalevala is an epic poem compiled by Elias Lönnrot based on Finnish oral folklore and mythology. It is divided into fifty songs that deal with issues such as youth and wisdom, male and female, the old and the new as well as life and death. Throughout the years, the stories from the book have become widely known - particularly in the Nordics - and characters such as Kullervo and Aino have influenced popular culture and the arts[1]. The Kalevala is also said to have helped shape the Finnish national identity during the country's past.

During the past year, with interchanging collaborators, I have used digital media in order to experiment with the various ways to represent the narrative of the epic poetry book – the Kalevala. The choice of word 'represent' over 'present' is deliberate, since 'representing the epic' implies the transformation happening on account of the artist / designer.

These experiments were never meant to present the whole narrative of a book or replace it. Each medium chosen has its function; therefore it is futile to compare the digital experiences in relation to the book experience. One can however get some insights on the process of representing an existing narrative to a digital artifact and experience.

I find the Kalevala is an interesting example book to base these experiments on, since its story is well known (at least in the Nordics/Finland) yet it is also standardised. Meaning that it is not an oral fairy tale (like little-red riding hood) that has been transcribed/compiled by many authors[2]. There is only one book 'Kalevala'

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[1] Some examples are Sibelius' opera Kullervo, Aleksi Gallen-Kallela paintings, Aaltonen's scultpures, but also Sampo pankki (Finnish bank), Lemminkäinen construction company etc.

[2] Even a lot of the ancient Greek mythology is compiled from many different sources.

that is compiled from Lönnrot through his traveling and if two Finns where to read it they would read the same text. Unfortunately this trait is more or less lost for me since I am dealing with the English translations. Nevertheless, from those (the English translations) which are 4-5 altogether: I have studied one (Friberg, 1988) quite closely and have used another (older) one that is available openly to the public for the artworks (Crawford, 1888).

Story - Narrative - Drama

According to Mieke Bal (Bal, 1997, p.5),

> **Narrative text** is a story 'told' by an agent in a particular medium (such as language, sound, imagery etc). A **story** is a fabula that is presented in a certain manner. A **fabula** is a series of logically and chronologically related events that are caused or experienced by actors. **Actors** are agents that perform actions.

This implies that there are at least two agents in a narrative: one describing/telling the story and one receiving it. Also even if not explicitly mentioned the series of events (therefore the story) have a beginning and an end (an element of time) as well as a place (which can be fictional or real).

In addition, I especially liked Marie-Laure Ryan's more abstract explanation of the role of the narrative that makes it fluid enough to adapt to different types of structures. According to her the narrative is a 'mental representation of casually connected states and events that captures a segment in the history of a world and of its members.' (Ryan, 2004, p.337)

So a narrator, or the first agent (who is telling the story) is aiming to recreate his own mental representation of the events to the other agent(s) through some medium. Therefore, one might say that classifying a narrative as good or bad is a matter of how effectively someone succeeds in doing this.

Now before talking about interaction in narrative, it might be useful to define the

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differences of modern narrative structures to traditional ones as exposed by Manovich in his article 'Database as a symbolic form' (Manovich, 1999). According to Manovich, new media objects are indeed merely databases: a collection of individual items with no sequential, thematic or hierarchical organisation to them. This means that by definition, a new media object is not a narrative medium as such (even though it can contain a narrative: one trajectory of the database is the narrative that makes sense / but there are more than one trajectories possible). However a new media object may also consist of a way to present, utilise or even create this database i.e. an algorithm. In my opinion, algorithms can be perceived as having narrative abilities. For example Wand defined narrative skills as 'the art of omission and the art of good timing' (Wand, 2002) both of which can be managed through an algorithm. Obviously when talking about an algorithm it should be noted that it is created by a human therefore its behaviors are predefined.

So far we have seen that narrative is a mental representation that can possibly be created through an algorithm but we are still missing an important ingredient of the digital narrative mix i.e. the interaction. Interaction is an inherent property of modern media such as computers; therefore it adds to digital narratives the element of enactment. Brenda Laurel very well explained this in her article 'The six elements and the casual relations among them' (Laurel, 1991), from which I will be borrowing the terms in order to better analyse my experiments with the Kalevala. More specifically, I will be using the elements of drama and their correlation to human-computer interaction (HCI) that are Action, Character, Thought, Language, Pattern, and Enactment.

The experiments

In the following pages I will describe the three experiments on representing the Kalevala myth using current digital technologies. When analysing each I will be referring to the afore mentioned theoretical foundation, that of narrative being the mental representation of a series of events according to Ryan, new media consisting of a database - algorithm symbiosis according to Manovich and (human-computer) interaction as including elements of drama as suggested by Laurel.

Factors such as interaction methods, presentation places and user acceptance from each experiment will be noted, continuing with a short analysis of the medium's ability to represent a narrative. Nevertheless it would be beneficial to state that each of the digital representations/ experiments served a separate function and had a different angle to the basic storyline. Therefore it is not possible to make an absolute comparison between them, where one is found superior to the other in representing the same story. They can however give insights at an individual level and possibly all together can generate some conclusions as a whole about digital narratives.

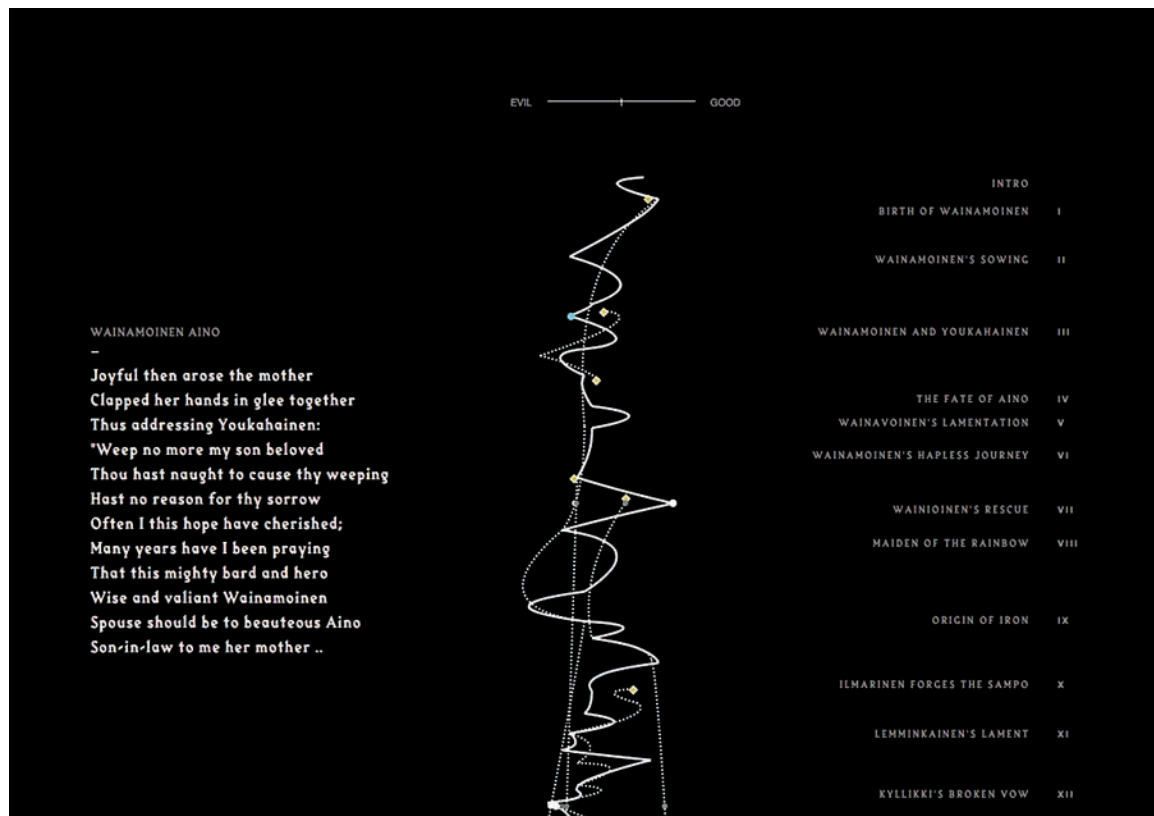## 1. Kalevala Book Visualisation (kalevalavis.com)

A visual exploration

Image 1 Screenshot from kalevlavis.com

Kalevalavis is an online visualisation of the whole text of the Kalevala divided in paragraphs. These paragraphs are represented with a curve that is oscillated between two extremes depending on whether its (the paragraphs') text contains words that represent good or evil. The division of words to good or evil has been made manually and by ignoring the context. For example 'happy' is considered good whereas 'murder' evil. The actual text is included in the visualisation. In addition to the main curve, there are five dotted ones that represent each character's oscillation towards good or evil.

The interaction in this experiment is relatively simple. By clicking on a point on the curve you are able to read the text at that paragraph in the book. I was considering creating several views (visualisations) based on the same data, however that didn't

seem as necessary or even interesting in the end. The Kalevala Book Visualisation is available online[3] and it has had more than 2300[4] views since its creation (October 2014). It has been presented in the Frankfurt Book Fair (October 2014) and has been featured in visualizing.org, an online community of data visualisations. Overall, out of the three experiments, this has probably been the most 'successful' one in terms of visibility and user feedback.

As mentioned in the subtitle, the function of the Kalevala Book Visualisation was to be an alternative **visual exploration** by taking advantage of the non-linearity of the web (unlike the book). Nevertheless, it is not just never-ending hypertext, there is a visible mental model (a path) for the user to follow and the visualisation has both a beginning and an end (similar to the book).

One might say that the interaction in this project could be compared to opening the Kalevala at a random page. However, on the web, the curve representing the passages from the book gives you clues as to which 'page' or part of the Kalevala you are 'opening' at any given moment. This happens since the designer has already curated those passages into abstract categorisations of 'good and evil'. In other words, I would not call it a random-access visualisation but a semi-informed-access one.

This can be compared to Manovich's role of the database in new media. The database here is not ever increasing as he mentions (even though in technical terms it could be) and yet it highlights the narrative but still gives the over trajectory paths of 'reading' it. When saying narrative here, I mean not that of the Kalevala as such but the fluctuation of the characters in the book between good and evil deeds, situations and thoughts.

So as Laurel compares the HCI to Aristoteles' Poetics, the Action here is user's intention to navigate through the fluctuations of the Kalevala good and evil deeds,

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[3] If interested please check here: kalevalavis.com (best viewed in bigger screens – no mobile)
[4] Counted both from visualizing.org and Google Analytics of the domain.

situations and thoughts. Scrolling down the webpage gives the impression of time and gives the feeling of start and end for the action. The Enactment is visual, the Melody (pattern) is visually coherent repetitions (representations) and the Language both text and visual. Perhaps more interesting here is the Thought that could be the (mental) translation between the visual feedback (the curve) and the actual paragraph (the text) as well as the cognitive realisation in the user's mind of where good and evil is placed (and the interpolation between). Therefore I consider that this experiment contains a digital narrative even if the story being read is not necessarily the same as in the original book.

2. The 3D-printed Kalevala
A visual representation

Image 2 Photograph of 3D-printed Kalevala.

The 3D-printed Kalevala is a digitally fabricated object created based on the text of the epic. It is separated in five curves that reside on the same (wooden) stand which represent the five main characters of the book. The curvature of each character/curve is based on his or her relation to good and evil at each specific point (on the

level of a paragraph) in the book. The 3D printed curves are put in the stand in such a way that the imaginary line between that connects them represents the time in the storyline.

This experiment has limited interaction abilities since the final outcome is comparable to a sculptured artwork. Still, it can be viewed from different angles thus giving different viewpoints to the same 'data' and therefore show a different story. But it does not change its form (or its content) based on its 'use'. Being a physical artifact, it is best experienced when exhibited and currently has been only shown live (not through photographs) in the Frankfurt Book Fair (October 2014). Even if it has not gotten much visibility, it has sparked much more discussion on the storyline of Kalevala (the content) than the purely interactive experiments. However I still consider the responses of the viewers mixed since in order to appreciate its 'digitalness[5]' one must be relatively familiar with the process of creating it (which might be the case with other art forms as well).

There are several issues that I wish to open a bit more with this experiment since it is (in my opinion) a bit more complicated to call it a digital narrative. Firstly I would try to explain why it is digital (and not just a sculpture) secondly why it is (or contains) a narrative.

The goal of this experiment was to create a data-based three-dimensional form representational of the Kalevala storyline (hence a **visual representation**). It is different than a traditional sculpture in that it was sculpted by code. The code is basically the symbiosis Manovich refers to as the compilation of an algorithm (the logic behind it) and a database (a structured collection of data). This same code could be applied in different books and storylines (different databases) and would yield different results yet similar and comparable patterns[6].

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[5] 'Digitalness' is used here to mean 'the quality of being digital'.
[6] One might argue that a sculptor has a similar mental 'algorithm' that defines his or her style. However this discussion is out of the scope of this paper.

I believe that just as the Kalevala Book Visualisation mentioned above this artifact also contains a narrative[7]. As mentioned before, the narrative here is the progression of the characters of the Kalevala through the opposite poles of good and evil deeds / situations and thoughts. I argue that it remains a narrative even if the user experiences it without an evident time element or else he experiences it synchronically.

Firstly, when experiencing a synchronic art piece (such as a painting or a sculpture) the experience itself still contains a level of time. Meaning that you 'read' a painting/sculpture by looking at some details at a time finally connecting the story in your mind. Now, according to Manovich, the linear narrative is only an instance of the database, narrative digital systems contain. Therefore, can we compare the visual reading of a (synchronic) narrative artwork as just one instance of the various interpretations the collection of visual elements has? If so, that probably means that unlike systems (e.g. film, books) that change their content during the passage of time (which define where the attention should be focused on at any given moment), synchronic systems (such as databases, paintings, sculpture) give the freedom (and power) to viewer to decide. In other words, synchronic systems in which the 3D printed Kalevala is part of, give much more loose instructions of where the viewer should focus his attention or how they should be used. They are more forgiving and flexible. As a result the narrative is never the same for each person, but it does exist.

So if we assume that this the 3D-printed Kalevala has a narrative, and does 'tell' a story, do we know how to 'listen'? After describing the algorithm by which the 3D model was made, the mental representation becomes more evident and (some) people can see the story. This is inline with Laurel's comparison of drama to HCI. The user can know and even anticipate the characters' reactions by their traits. If a user knows the behavior of the algorithm they can interpret the results and therefore make the narrative (the mental representation).

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[7] I wish to prove that besides sculpture being a narrative art form, this specific experiment has a more complete element of time, space and actors.

As a conclusion, the narrative is there - even the events are there. However in order to read it one must be familiar with the language that it uses. Due to its limited interaction (and compared to the other experiments) this reading is not so straightforward. Nevertheless I have to admit that out of the three, creating this 3D print was the most inspiring. From the perspective of a developer, the choices that had to be made felt more 'magical' than procedural.

3. Kalevala Dualities – an audiovisual installation
A multi-sensory experience

Image 3 One side of the corridor in the Kalevala Dualities installation

Kalevala Dualities is an interactive audiovisual installation (exhibited in a corridor) playing with the concept of dualities that exist in the Kalevala. However, unlike the other two projects, this installation is curated. Its content is human-processed and does not include all the text (the whole story) but only 4 events. Also, it is augmented with sound.

As the visitor walks through the corridor he is unknowingly asked to pick a side 'Wise or Reckless',' Free (love) or Capture', 'Life or Death' and 'Good or Evil', based on the distance he has from the (left) wall. Following the corridor to its end, the book narrative unravels giving the visitor a flavor of the events and struggles the characters face.

Kalevala Dualities allows for more complex interaction. The location of the whole body (in two dimensions) is used as an input. It was exhibited in Caisa International Cultural Center in Helsinki during February 2014. This installation was site specific, meaning that the constraints of the space shaped the installation considerably (for example the dualities theme was chosen after we were given a corridor-like space). The response was different than the other two projects since it was exhibited in a public space. Even though a lot more people could experience it, very often they only did so accidently. Meaning that they had no knowledge of the work existing before they encountered it and therefore spent less time exploring it.

The goal here was to provide a **multi-sensory experience** to the visitors based on the Kalevala. As mentioned above, this experiment differs dramatically to the previous two in that it does not include all the text from the epic. The emphasis here was given to the interaction and experience rather than the 'data' or the storyline of the book. It also included more people with varying expertise (three in total). The choice of events (parts of the storyline), quotes from the text, musical instruments, music composition, points of view and graphics were all designed to agree with one another in an attempt for an orchestrated composition. This means that the process included more of what the creators see as relevant to show than (algorithmic) data-based inclusion.

Now, when comparing the experiments between them, I discovered that this installation felt much less 'faithful' or 'authentic' to the Kalevala than the other two exactly because it included much more personal points of view. This made me wonder about the separation between the thought process when creating an

algorithm (possibly more like conceptual art or even Fluxus Art movement) and the thought process when orchestrating an experience (possibly more like traditional fine arts).

I believe this happens since the separative level (an algorithm) between my choices and the results is much narrower. I find this interesting since the medium continues to be a computer (the whole installation runs one computer program coded by me) yet the results do not reflect it. Also, unlike the previous two digital experiments, since the audiovisual installation contained only interpreted parts of the Kalevala, it would represent very poorly any other book or story.

This audiovisual installation was asynchronic (closer to the Kalevala Book Visualisation) and the elements and events it included were for the most part sequential. The element of time was very visible both in the animated graphics as well as the sound design and the actors were the visitors that triggered the events (based on their location). I was expecting that due to the aforementioned points that an audiovisual installation would be the best way to represent a book narrative. However in this case I have come to realize that the installation was the weakest of the three projects (this could very well be because of the maestro's skills and not the orchestra's). Nevertheless, I realized that interactive installations (that use code and sound) have better narrative potential and that they provide a more familiar (and therefore accessible) environment for narratives.

Unanswered Questions

During these experiments (and probably mistakenly) I have assumed that the biggest percentage of the viewers (or users accordingly), were familiar with the Kalevala storyline and characters. My assumption was based on the fact that the Kalevala belongs to Finnish cultural heritage. However as it turned out this was quite limiting especially since the Kalevala Dualities installation cannot almost be understood without previously having read the book.

Furthermore, it has been quite difficult to comprehend the extent of the so-called

'wow' factor of these experiments. I have come to realize that somehow it is inherit to new media technologies. However even more surprising (to me) was probably the fact that the audiovisual installation had the least 'wow' factor of all three, despite (or possibly because of) the more natural interface (and the full body tracking).

Conclusions

These experiments have given me a new way of looking at digital storytelling. I have come to realize that if the goal of the project, experiment or even product is to transfer to an agent a clear story/narrative then their senses (such as sight and hearing) should be guided. This guidance does not have to be passive, simple user actions (such as the mouse scrolling in kalevalavis.com and walking in Kalevala Dualities) give (interactive) digital narratives the dimension/element of time. In other cases such as the 3D printed Kalevala even though it is not interactive it still hides the narrative under the algorithm that was used to create it, thus bringing it closer to conceptual art than to a designed experience.

Collaborators

1. Kalevala Book Visualisation – Georgia Panagiotidou and Anne Pasanen
2. 3D printed Kalevala – Georgia Panagiotidou
3. Kalevala Dualities – Georgia Panagiotidou and Symeon Delikaris-Manias, including kantele composition by Sarah Palu.

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