

THE STORY ONLY YOU CAN TELL

Storytelling and design in VR

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Abstract

Storytelling has been a powerful tool in every culture for thousands of years. People have been immersed and still are having enjoyable experiences through tales, songs, books, cinema, television, digital content and what this thesis will focus on; Virtual Reality.

Virtual Reality is part of the shift that both creators and consumers are making as we speak. The industry and designers have to be prepared to make the changes necessary, so people still have enjoyable experiences.

However what is needed? This paper focuses on how designers should re-structure their design and storytelling for VR.

The literature and primary research focuses on how the industry is designing today, what is excellent storytelling in VR and how we can start creating. The insights gathered shows that the industry is still at a stage of exploration and that the market is challenging.

So how do we get more people involved, and get the right storytelling in place so that we are utilizing the strengths of an incredibly powerful medium? This paper examines the fast-paced industry and figures out what new thinking and tools designers need to obtain.

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Introduction

I have always loved to hear and experience stories. Listening to my grandmother recite poems or tell stories from her youth always fascinated me. All throughout my life I have been interested in theater and being immersed in whatever I am doing. Trying to convey and making people feel engaged in what I am presenting have always brought me adrenalin and enjoyment.

Since I was very young, I have also been very interested in all new technology. I can thank my big brother for introducing me to the wonderful world of computers and games. I started creating websites when I was 14 and I have not stopped since.

However, I wanted to dig deeper into the world of 3D and 360. What is virtual reality? What is a good story in virtual reality? And does stories differ? To go from designing for screens and 2D to 3D and all new possibilities is also something to consider. How do you design to make people feel immersed?

**“VR is one giant leap forward in a never-ending march
of technological advances that all point in the same direction:
The consumer, the creator, together – at the center of the story itself.”**

Patrick Falconer – New York Times

The world of virtual reality has fascinated people and still fascinates. Since the early 90's people have been trying to visualize how the future might be when VR takes off. In the 1990s the computers were not powerful enough, so it came to a standstill. In early 2014 something happened. More companies

are now releasing content, and there is a significant investment.

To be sent somewhere else or experience a world far-fetched from where you are, can create amazing experiences and tell a story in a very different way.

So storytelling in general is the oldest form of entertainment, and the genre has been evolving ever since our ancestors were sitting around the fire telling exciting tales. The way to tell stories are always changing. Just as immersive theater has been getting people immersed in the act, virtual reality can make people a part of the scene. They are creating their own story.

So it is an exciting time to create. With the fast-paced movement of virtual reality, it is a real gift being able to create worlds for people to feel and be immersed. The conjunction of the physical and virtual world creates endless possibilities for people to interact in a much more human way and leads the way for a more natural way for people to interact with technology.

When we look back in time seeing how mobile phones have become mini-computers and are ever present in our everyday life. We can just imagine how the world will look like in 10 years time.

“

How might we create stories that are well told and designed so that people stay immersed?

Aims

The Design community is facing challenges when we are venturing into design for 3D and immersive mediums instead of 2D and “looking in” through a screen. Suddenly we are a part of the design.

How do we have to re-think our storytelling, and how should we design to keep people immersed? The aim of the master thesis is to find out where the industry is today, what is needed and helping designers feel safe when they’re now venturing into a new field.

My research questions were chosen to have a critical and wide approach to the field.

Research questions

1. How are companies designing today?’
2. What makes a story great?
3. What are the strengths and weaknesses of VR?

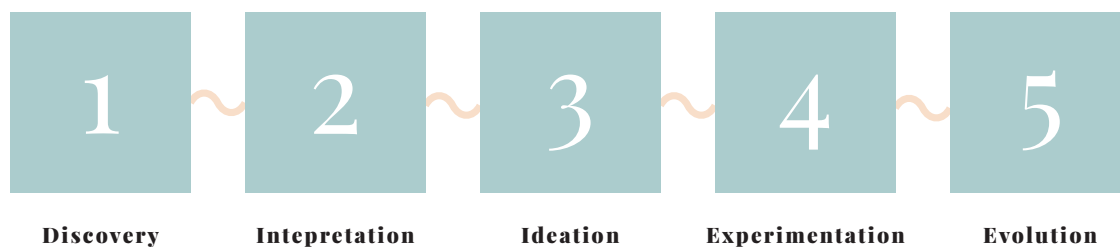
The questions will guide my research and make it easier to create and have better conversations when I interview people in the industry and observe.

Methodology

This project was conducted over 14 weeks. Throughout the project, design thinking and double diamond were used as methodologies to guide the project.

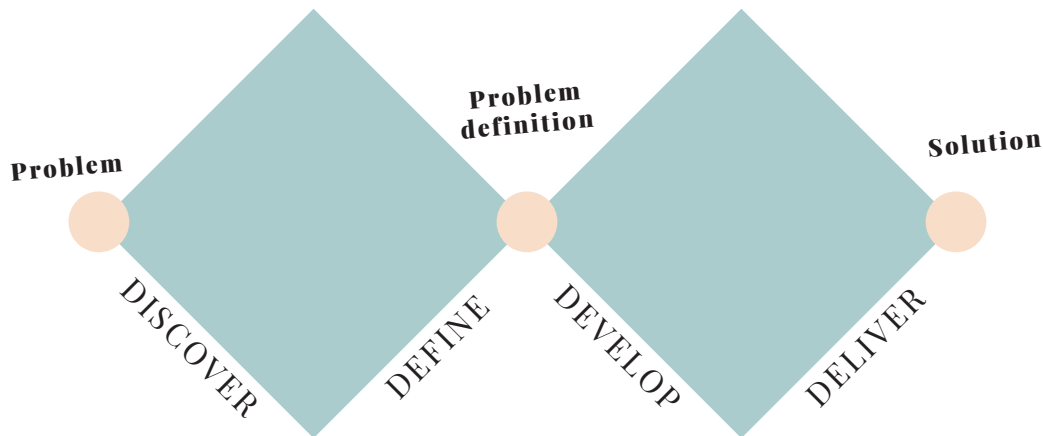
Design thinking is a mindset, and it is been the foundation of my process since I started working professionally several years ago. However after beginning studying at Hyper Island, I got even more convinced that having a human-centered, fail-embracing and collaborative way of working is the right way. Design thinking encompasses all these attributes and has been pushing me forward (Designthinkingforeducators.com, 2018)

To put design thinking into action, I used the five stages of a design process. By having clear steps, it was easier to have a manageable process. (Designthinkingforeducators.com, 2018)



The double-diamond is using these 5 stages, by having a divergent and convergent way of thinking. With the double diamond the narrowing (convergent thinking) happens two times, one time to confirm what is the problem and then to create the solution. Both the creative and development process is it-

erative. This is an important part of good design and make sure that the ideas are tested and refined several times. (Design council, 2015)



Both primary and secondary research was gathered and analyzed. Primary research included interviews, immersive experiences, and observations.

Ideo's mantra is: "You need to get away from your desk, go and meet people in their context, in their homes and offices." You do not have to be perfect as long as you get something out of it, and you get inspired. (Care and Howland, 2017) Empathy is crucial in this work; you can not design anything without knowing the feelings and need of the user.

Ideo believes that to find out what a human wants you need to do two things. (Lanoue, 2017) First is by observing their behavior. We have to understand by observing what they are doing. For example, if you want to know the pain points of a VR experience, look at people being in VR. Second is putting yourself in the user's situation to feel what the users feel. By being in several VR experiences myself, both alone and in groups, I will better understand the positives and drawbacks of the medium per date.

Immersive experiences are invaluable when it comes to testing out new technology in a proper manner. To immerse into an experience can give the team valuable information and empathy on the field you are researching. (Care and Howland, 2017).

Interviews with people give a clear understanding where the industry is at today and where we are heading. (Travers, Gregory, and Boulton, 2013).

I conducted in total seven in-depth interviews, these were:



Dave Raynard
CEO & VR developer



Marta Ordeig
Filmmaking & Innovation



Dylan Southard
Creative Producer



John Foster
Design Lead - VR



Matt Beveridge
Co-founder/Creative Director



Muki Kulhan
Executive Digital Producer



Preston McCauley
Immersive Experience Design &
Development Strategist

Ethics

When conducting all my research activities, it was vital for me to uphold the three key concepts of respect, responsibility, honesty. (Suri, 2015) I was for each person describing for them what the aim and process of my research were. I asked for permission to record the conversation, and they all agreed. I also got signed consent-forms so that I could use their insights in my paper. It was crucial to respect the participants time and if they asked me to refrain from quoting them, for example, something confidential.

Part-time work

I worked as a part-time UX designer at Sopra Steria London at their Digilab during my master thesis. The team there is working on innovation, horizon scanning and design thinking and had already made several experiences in AR/VR. Thanks to them I could test out several different technologies quickly. I also tested out different concepts, had discussions and got feedback that was invaluable.



The team after our group VR experience

Litterature review

Introduction

This literature review will cover virtual reality as a technology and as a story-telling platform, as well as looking into what makes a story great and the history in the field. I will include how professionals are designing for the medium today, good VR experiences as examples and where the industry is heading.

At this point, there are more questions than answers when it comes to story-telling and design for VR. Most companies are trying out different methods, and there still is not one killer experience for VR.

There are also many opinions on the technology:

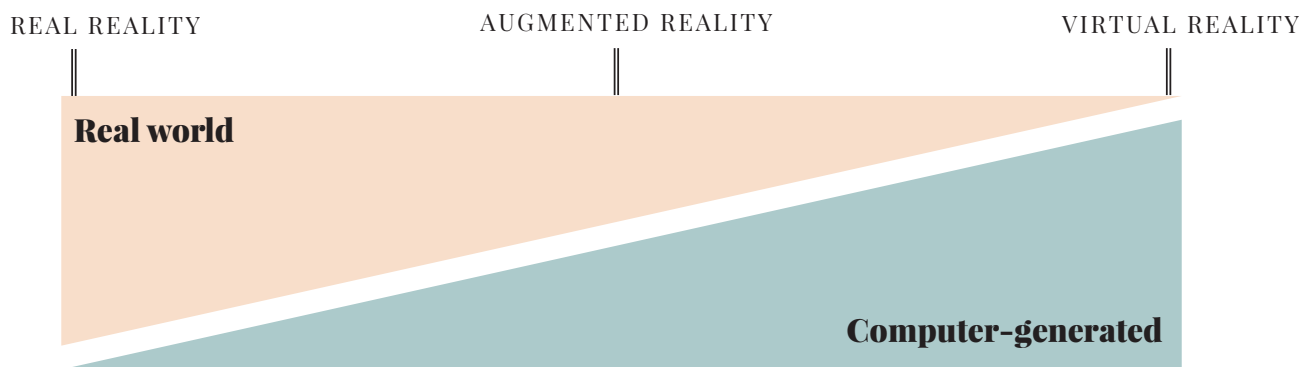
“VR will someday replace reality; VR will never replace reality; VR challenges the concept of reality; VR will enable us to rediscover and explore reality; VR is a safe substitute for drugs and sex; VR is pleasure without risk and therefore immoral; VR will enhance the mind, leading us to new powers; VR is addictive and will enslave us; VR is a radically new experience; VR is as old as Paleolithic art; VR is basically a computer technology; all forms of representation create a VR experience; VR undermines the distinction between fiction and reality; VR is the triumph of fiction over reality; VR is the art of the twenty-first century, as cinema was for the twentieth; VR is pure hype and ten years from now will be no more than a footnote in the history of culture and technology. “ (Ryan, 2015)

I will look at some of these assumptions and hopefully make some reasonable grounds for my research into the field.

What is virtual reality

Virtual Reality (VR) is a very technologically-based medium. So to try to understand storytelling in VR without understanding how it works would be “trying to study a movie without comprehending what a camera, screen, or film is. Examining the technological foundations of VR also helps establish it as a new narrative form, akin to theater or television.” (Gardner, 2016)

Virtual Reality and is one of the technologies on the immersive computing spectrum. VR is a medium-specific, user-focused, engagement with time and place. Stories often play out in real-time, in a specific location (real or imaginary), and/or in combination with real-life physical objects. (Dooley, 2017)



The immersive computing spectrum

A variety of technologies is used to conspire to create the illusion of being somewhere else. 3D displays, motion tracking hardware, input devices, software frameworks, and development tools. (Parisi, 2016)



Samsung VR headsets (Credit: RoadtoVR.com)

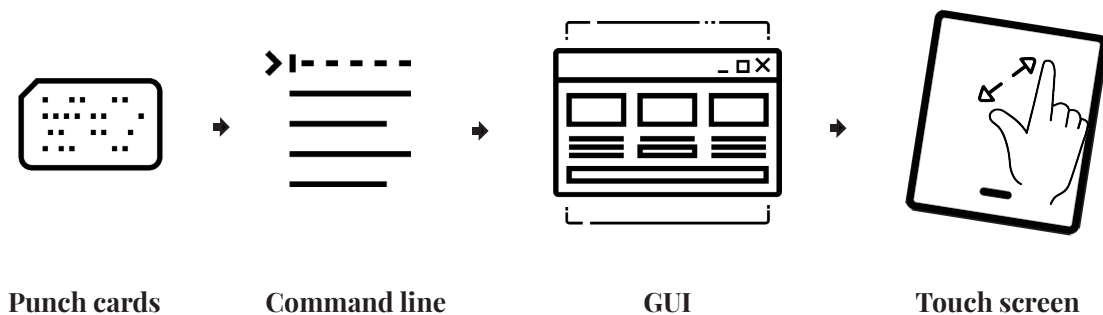
There are two main approaches today in the market.

The first is concerned with live action video filmed using 360-degree cameras, where you are pointed in one place. You can move your head around and look in different directions. The action plays around you, however there is no interactivity. This is what is called “360 video”.

The other end is a more interactive experience where you can “observe three-dimensional, fully computer-generated imagery that features interactive choice-points similar to those found in video game design.” (Dooley, 2017)

VR shuts you out from the real world. All the technologies on the immersive spectrum make you experience computing the way we experience the real world. Clay Baylor, the Vice President of AR/VR at Google said at the conference “Google I/O 17” that this is a BIG idea. Computing now works more as we do. It also shows that things do improve.

We have gone from



What is next?

“VR/AR will push this even further; they open us up to an entirely new information; experimental information, or information that’s anchored psychically to the real world. ”

Clay Baylor – Google

At Google, they think this progression is going to be powerful. With time this is going to change how we work, learn, play and live. (Bayor,2017)

So Virtual Reality is a medium with tremendous potential. To be transported to other places, and be fully immersed opens up to “previously unimagined ways to interact and communicate.” It has one goal: convince you that you are somewhere else. (Parisi, 2016)

However even though the “potential is tremendous,” VR still has several drawbacks. (Jerald, 2016) Since the medium has been around since the 90’s, it is a lot of skepticism if it ever is going to “take-off.” Will people ever feel comfortable putting a screen on their face? When companies like Google and Facebook are praising the technology, are they doing it because they have made financial investments, and need it to succeed? (Iwaniuk, 2017)

Research of who the typical Virtual Reality user is in the US shows that there are mostly males, at 60%. However the age group 18-34 is leading when it comes to using VR for both females and males. However, the user groups are mainly concentrated of people having a strong interest in VR. (StartApp, 2017)

One of the big drawbacks of VR is that there are not enough big titles for the medium. (Iwaniuk, 2017) The big question is how to get enough people to buy headsets, so companies feel it is worth developing for the medium. (Ackerman,2017) Pictures being released advertising headsets shows people in big living rooms with plenty of space. However the reality is very different for most people. Maybe people will have their first VR experience in an arcade? VR arcades are opening up all over the globe, and this will make it easier for people to try it out before they buy it. “People are seeing the business opportunity [in virtual reality arcades],” says Frank Soqui, general manager of VR and gaming at Intel. (Stone, 2017)

“It’s a space currently reserved for people who are willing to shell out a ton of money to live on the bleeding edge of technology — a really cool space, but one that’s tremendously limited. “

Gilbert, 2017

Since there is not a lot of money in VR yet, a lot of small studios are not hiring UX designers when they are making their experiences. (Esser,2017) By not investing in this a lot of the game’s lack of great user experience.

Nick Esser explains it like this trying out a new game at a meet-up; he felt like he sucked at life, he knew people were watching him playing and failing.

“Then I watched the next few people play – everyone looked like they were sucking at life! The enemies kept on coming, and people kept on unsuccessfully flailing to fend them off. Users felt embarrassed and dumb.” (Esser,2017)

When people try out VR experiences for the first time, they might feel immersed at the start however because it is poorly designed they feel inadequate soon after. That might put them off the entire medium. (Esser,2017)

“Bad UX makes websites annoying; bad UX makes VR impossible.”

Nick Esser

It is becoming the classic question about the chicken and the egg for VR. You need a more significant customer base to be financially attractive for studios to make great experiences, however people do not buy the headsets because the content is not there yet. (Boland, 2017)

Where VR is used

VR can be used in many ways. The places VR has been viewed of as having the highest use per now is in violent video games and adult entertainment. (Rundle, 2015)

Violence in video games has always been discussed and debated. However what happens when we are taking controllers away, and the distance goes from some meters in your couch to your television to straight in your face? A lot of developers in VR is saying that death and violence get “too intense” in the medium. (Rundle, 2015) Some companies have decided that it is not going to be possible to kill people in their games or what is being killed has to be supernatural, like monsters, aliens or zombies. (Rundle, 2015)

However as with all other work in VR; developers and designers are threading waters and trying to figure out how far they can push it. However is Michael Rundle is describing it as: “For the big companies putting serious money into the VR revolution, however, the problem of VR games being “too” intense is really just an opportunity to reach a much wider consumer base -- if people are reacting profoundly to VR, that’s a reason to keep developing it, not a reason to hold back”

Since VR is an experience that is strong and intense for the player, they did not need a lot of gameplay to please people.

As Shuhei Yoshida, President of Sony Computer Entertainment puts it:

“I think the order of what we call games and non-game will become blurrier and we will just create experiences that are entertaining.”

In healthcare, VR has been increasingly more used to ease the pain during

operations. A study from 2017 shows that the content displayed to the patient is also critical to better the patient's situation. The people who were watching a coastal VR scene reported having "significantly less pain" than the ones who did not. (Tanja-Dijkstra et al., 2017) It was the calming scenery that helped distract and soothe the patients, not just the VR itself.

This discovery can be used in several places where the content and story is relevant. For example, WalMart now using VR to create realistic shopping situations for their new employees. Here they get to test out stress scenarios like Christmas shoppers in a classroom setting with co-workers. (Feloni, 2017) Another exciting discovery shows that with long-term training people with paraplegia could regain leg movement with the help of VR technology and exoskeletons. (Donati et al., 2016)

When it comes to adult entertainment a perfect quote to sum it up comes from Damon Brown the author of Playboy's Greatest Covers:

"It seems so obvious: If we invent a machine, the first thing we are going to do—after making a profit—is use it to watch porn."

The porn industry has always been at the forefront of using new technology, and VR is not an exception. (Zenor, 2014) 360 video and more interactive experiences are available today from sites like Pornhub. It is also possible to make it more than just sex. Now it is possible to create feelings and interactivity with another human being, even if that person is not real. However, this again is considerable debate and concern amongst commentators and academics. (Virtual Reality Society, 2017) Thus what do you do when the new virtual reality technology is blurring the line between thought and action? What do you do when your thoughts might be illegal. Virtual child pornography is of great concern. Should they be able to act out their thoughts? (Zenor, 2014)

In the future, it is crucial to have ethical guidance when we create stories and designing experiences.

VR and ethics

There are several ethical issues to tackle when it comes to VR. By the arising power of shutting the real world outside, there are aspects designers need to focus and think about when creating experiences.

“VR technology will eventually change not only our general image of humanity but also our understanding of deeply entrenched notions, such as “conscious experience,” “selfhood,” “authenticity,” or “realness.”” (Madary and Metzinger, 2016)

By knowing that VR can have such a grand impact on people; to our very notion of self-identity and – perception, it is essential to take a step back and consider the responsibility creators have.

Desensitisation of VR

An aspect previously mentioned however an important one is the blurring lines of emotions and what is a real world and what is a fake world. (Madary and Metzinger, 2016)

The feeling of desensitization goes for when a person in VR plays a lot of violent games and shows to lose compassion as a result. They are no longer affected by the extreme acts. (Madary and Metzinger, 2016)

Depersonalisation

Depersonalisation can also be named “cyber-addiction” where people get addicted to being in a virtual world . These people will spend more and more time in their virtual life, and lose the boundary between whats real and what not. (Virtual Reality Society, 2017)

People are swayed easily; companies might take advantage of this especially in VR. An example Thomas Metzinger gives is:

“For example, a picture of eyes on a wall above a collection box makes people donate larger amounts. similar subliminal influence in an immersive virtual environment will be easy.” (Ananthaswamy, 2016)

Virtual criminality

Can a person be trialed if the crime he committed happened in VR, or because a group of people was together in VR? Several situations might occur that can create trauma or injury. However, it is also still under ongoing work if a person can might be as harmed in a virtual experience as in a real one.

So this is still an ongoing debate. (Virtual Reality Society, 2017)

We can use the same thought process on pornography and especially child pornography as previously mentioned. The ethical issues are severe and complicated.

The few code for the masses

Making a New Reality states that we are now in a defining moment for technology and media. “Code has become a superpower.” What you make and who chooses to make it goes into every aspect of our life. However, most people have no idea how the code works.

VR has been proven to have a direct impact on the psychology of the user. The power of virtual reality lies in its ability to immediately influence behavior and emotion. (Immerse, 2017)

“We run the risk of having about 15% of the world’s population designing the world, through media consumption and media creation, for the other 85% of

the population,” warns Julie Ann Crommett, the vice president of Multicultural Audience Engagement, at The Walt Disney Studios. (Immerse, 2017)

So how can we as creators tackle these challenges? Caroline Scott is mentioning aspects of how to storytell in an ethical manner. She mentions to co-create with your audience, and test as you go. These are key features of design thinking already and important to emphasise, however the approach to undergo a risk analysis is an important asset. She states: “It’s important to make a risk analysis from both an integrity and ethics perspective, and a health and safety perspective.” Having a diverse team can also stem up from people’s unconscious bias. So gather people with different experience, background, age and ethnicity. (Scott, 2016)

Strengths of VR

Natural interactions

“Although creating real-world experiences is not always the goal of VR, it is still important to understand the real world and how we perceive and interact with it in order to replicate relevant functionality into VR experiences.” (Jerald, 2016)

In a 360 environment, we are going away from traditional ways to control the digital realm.

On conventional desktop computers and laptops, we scale an object by either clicking a button or using a scale with our mouse. Thanks to gestures on our mobile and tablets we can scale using our fingers, however it is still on a screen. In a VR environment, we can instead use both our hands to enlarge or make the object smaller in itself. We will have it in our hands. Like how we would do it in the real world. (Computerhistory.org, 2018)

Amazon Alexa and Google Home are paving the way for voice-controlled home

environments. “Analyst Gartner estimated two years that 30 percent of our interactions with technology will be through ‘conversations’ with smart machines by 2018.” (Samuels, 2017)

Both gestures and voice are part of a Natural User Interface (NUI). But what is an NUI? Camille Grade explains it like “relying on intuition and the body movements used daily”. There is a lot of research out on the NUI, the term was coined already in 1990 by Steve Mann. However it focuses mostly on designing user interfaces to make them intuitive, however is that enough for it to be natural? (Ghosh et al., 2017) What do we do now when we do not even have a proper interface to guide the users. Ghosh et al. coins the term NUX (Natural User Experience) to have a holistic approach to designing:

“Our understanding of Natural User Experience (NUX) is derived from the Alben’s classical definition of quality of experience; focused on the naturalness aspect. It included all the aspects of how people use an interactive product, i.e., how it naturally it feels in their hands, how naturally they understand its function from their existing skills, how natural do they feel using it, and how naturally does it fits into their usage context. “

For a designer to focus on more than just the UI that the user will see, but take the holistic approach can be crucial in the future of design for VR.

Empathy

To put yourself in another people’s shoes and get a feeling how it “is” being another person is heightened as one of VR’s core strengths. It is labeled an “empathy machine” (Milk, 2015)

However, Ben Tarnoff is labeling this as a business move by Silicon Valley. By using empathy as the core feature of VR, instead of what it is per date; violence and sex, they can better the reputation and attract a broader audience to

the medium.

To battle this makers of VR experiences have gone broader and turned to journalism, documentary, nonprofits, and international development. You can now travel with the UN to Syria and get a sense of how it is being a refugee. (Sutherland, 2017)

Several commentators like Ainsley Sutherland and Ben Tarnoff is mentioning something important, that it looks like the VR industry does not know what empathy is. Sutherland even calls it: “a muddy, unclear, superficial definition of empathy” Because what is empathy?

Sutherland continues to try to explain it as ” the process of how we go about understanding that other people have minds like our own.” (Sutherland, 2017) In their book on empathy, Coplan and Goldie try to bring together how empathy is being viewed by several theorists. From their perspective, it is an important element in ethical life. It is being viewed a lot of times as a “unique moral outlook.” and for them, it is an essential tool to understand others and decide what the best thing to do in real life situations is.(Coplan and Goldie, 2014)

However, although we know that something happens in us when we observe others and imagine their mental states, we don’t know what that something is. “Empathy is the process, not the outcome. (Sutherland, 2017)

When creating experiences further on for VR, it is crucial to have in mind what kind of feelings we want to achieve and what kind of empathy we want to drive.

“Presence is not empathy, nor is emotion itself empathy. A better working definition might be that empathy arises when we **ourselves** change in relation to an object, person, experience —” (Sutherland, 2017)

Julia Sourikoff also brings up empathy in her talk on storytelling. She mentions embodied resonance as what makes people think of VR as an empathy machine. If the experience is convincing enough, we will go through the process of re-associating; as mentioned by walking a mile in one's shoes. By the process of changing your body; it will also change your mind. She ends with that while storytelling had the power of persuasion; now it is about re-identification. (Sourikoff, 2016)

Immersion and presence

By using a head-mounted display, the user of the experience will have a point of view (POV) of themselves in the story. This POV can create a deep sense of immersion. This is done with help of the technology. However you also need presence; "it is a sense of "being there" inside a space, even when physically located in a different location.(Jerald, 2016) Even though immersion developers and designers can control, the sense of presence is more difficult. Since it is something that is an internal psychological state, it is something that most people have problems expressing with words. You need to experience it. (Jerald, 2016)

"With a VR system you don't see the computer anymore—it's gone. All that's there is you" Jaron Lanier, "Insider's View."

However how can we heighten the sense of just being in an environment? In real life, it is mostly taken for granted. With VR the opportunity lies there to turn it "into a source of wonder and delight.". (Ryan, 2015)

By using the power of the medium a lot of the simulations in the medium revolves around embodiment: "flying, walking through walls, being dismembered (as the user's hand floats in front of the body, apparently disconnected), reaching beyond the physical limits of the body." (Ryan, 2015)

However since immersion is connected to out of the ordinary experiences, if it does not work out the user will lose the immersion and will have trouble getting it back. It is crucial getting this right since that is the main thing we want to accomplish. (Jerald, 2016) When a user loses the feeling of immersion and presence in the space, it is called a “break-in-presence.” This happens when the illusion is broken, and the user realizes where he truly is – in the real world. (Slater and Steed, 2000) These incidents might happen if the technology is faulting, a person speaking in the real world or the user might trip on a cable. (Jerald, 2016)

Weaknesses of VR

Sickness

There are several ways to get sick in VR. Many users have reported this and are maybe the most significant challenge of VR. (Jerald, 2016) Motion sickness is the one who is most well known. Another one is eye strain, in addition to physical fatigue. (Jerald, 2016)

Technology

Since VR is a technology relatively new to the consumer market, it is still a lot of “early adopters” that have been buying it. These are people keen to test it out; these people do have a strong positive response. However, among the people who are not interested in VR, the biggest reason was “just not interested.” It shows that you have to try it out yourself to “get it.” (Artillery, 2017)

Another issue is the technology in itself; the file size, video quality, and resolution. Even though it has been significant improvements, the file size is still big, the quality of the VR is generally in stereo format, and the hardware cannot fully support it, and the resolution still needs to be improved to create

a seamless experience. (Brown, 2017)

Headsets

The headsets for VR are entirely blocking you out from the real world. Both the issues with having a screen inches from your face and the feeling of not knowing what is happening around you makes it difficult using it in small spaces and can make users worried. You can still trip on wires, people and collide into things. However, Vive is trying to solve this by showing you the grid you got available; you still need a space that is big enough for it to work. (Stein, 2016) The headsets are also still big, a bit heavy and clunky, hopefully, in time this will be improving. To have a full immersion and presence, it is crucial that the user feel as safe and comfortable in the reality they are in.

What is VR for?

Patrick Falconer, executive director at the New York Times, put it clear during his talk at VR World in May 2017. He calls VR a “quantum leap in how we engage.” However, it is not for everything. VR is for stories that when presence makes a difference in understanding.

VR is NOT for linear storytelling, plot, directing or editing; which represents a lot of the content NYT are producing at the moment. However, Falconer explains that their TBrand studio has been talking to a lot of companies lately that want to make a VR experience. He comments that they would, of course, want the business and grow. In reality, they tell them:

“We would love to, but what you want to do does not require, and would not benefit from, VR.”

However with the ongoing revolution in how we tell stories, now creators can go beyond distilling and take the viewer into the experience itself. With this,

they can interpret the circumstance itself and draw their conclusion. This notion goes hand in hand by using the strengths of losing control in VR. Stanford Journalism adds that where it is important to turn your head to get the entire picture and also where it is difficulties for people even to go there; VR can add a new and important perspective. (Migielicz and Zacharia, 2016)

Falconer argues that the real power of VR lies in the fundamental advantage it has that with the technological advances that profoundly change how content is created and consumed.

Falconer is adamant that VR is not narrative, but experiences. He comes up with an example of a piece they did on New York City skyscrapers. What they conveyed to the reader were several traditional pieces; pictures, articles and an interactive experience. However, these did not reach the kind of engagement that the 360 experience brought. 3,5 million views cross platforms watched a photographer climb the One World Trade Center.

“Nothing could convey the thrill being above the New York City skyline.”

It is less about surrounding people, and more about giving them what they want on their own terms. It is important to think about how the user wants to experience it. And giving them multiple different ways to do so. However to this date, most of the new stories that are out there are not suited to be presented in VR. Stanford Journalism believes that it will be a complement to other forms of reporting, but would not replace it. (Migielicz and Zacharia, 2016)

What is storytelling?

To create compelling and convincing stories/experiences for virtual reality and 3D, we need first to understand why we as humans always have been fascinated by storytelling. How many ways can a story be told, and in what ways?

How can we explain our human compulsion to invent or enjoy stories we know to be untrue?

Why we have stories

Boyd, 2010 argues that there are good reasons to suspect that we may need biology as well as culture to explain art and stories. It is universal all over the globe with the same significant forms; music and dance and story and verse, several thousand generations have passed, and stories have been present. It involves high costs in time, energy and resources, and people are asking what do they get back?

At the end it stirs strong emotions and from a very early age, without specialized training; example with infants listening to lullabies or playing with “colors, shapes, rhythms, sounds, words, and stories” (Boyd, 2010)

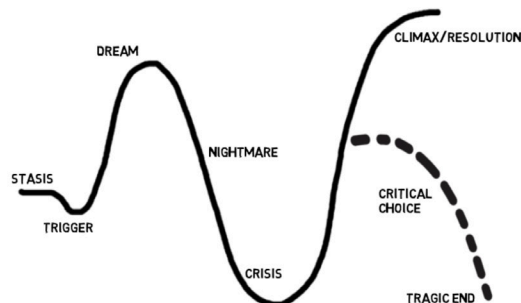
By knowing where art stems from and why we are creating stories we can have a more precise view on how to create experiences in VR that will stand the test of time.

What is a story

The story is the oldest entertainment of them all.

A story has a beginning, a middle and an end. A hero has a goal. A conflict arises, and a resolution comes in the end. (Lee Ball, 2017)

Steve Rawling, 2017 is basing his storytelling technique on the “basic story arc.”



The picture shows the classic representation of a story. Our hero starts with stasis, something then happens to make them change, up-up-up it goes with the dream with maybe new allies or early success, however the nightmare then kicks in with setbacks or enemies. The low part comes when a crisis kicks in, and in the end, our hero needs to make a critical choice. Whatever the decision it either becomes a tragic end or a climax with a resolution. There are several versions of the story arc, however the main elements are the same. (Rawling, 2017)

The history of stories

How we tell stories has been ever changing. From spoken words around campfires to revolutions in books, radio, film and television, and now digitalization.

The first men created visual stories on cave walls and ceilings. The first evidence of storytelling is from cave paintings possibly more than 30,000 years ago. These are found in Chauvet cave in Vallon-Pont-d’Arc in France. (Valladas et al., 2001) This shows the beginnings of human intelligence as we understand it today. Why did people draw precisely these artifacts in the caves? It is several theories, from giving messages to other groups to document their own story. (Boyd, 2010)

“... But we can be sure that here we have art, that the people who drew these figures knew that they were drawing, and drawing animals, and doing so with skill...” (Boyd, 2010)

The powerful mind of humans has made us able to depict these wall carvings and trying to understand why these stories were so important that they were forever chiseled.

Through vivid narratives, the indigenous people told stories to keep their history, customs, rituals, and legends alive. (Tracey, 2011)

The Romans and Greeks were at the forefront of writing down their stories. Odyssey and Shakespeare’s plays are luckily written down so we can enjoy. The revolution in the printing of books, it became much more important for people being able to read and write. (Mendoza, 2015)

With time stories got a bigger audience. The revolution in both radio, cinema, and television made stories come to life and made it easier to witness and engage. Technology has shaped how we are interacting with each other and also how we tell stories. (Mendoza, 2015)

With the internet the power went back to the people. Everyone with a camera could record and produce content for enjoyment. (BrandJuice, 2012)

All of these different ways of capturing and telling stories are coming together when we venture into virtual reality and 3D. You might even say we take one step further. We’re placing ourselves IN the story; we are the one telling it.

Storytelling in VR

“The true power of virtual reality lies in telling stories.”

- Anthony Geffen

Geffen is one of the pioneers in VR. As documentarist and leader of Atlantic’s creative team, he argues that the storytelling has to push the technology. By pushing what is possible technology wise, we would have to create better technology, and he believes it will be the stories that will drive the medium in the end. (Geffen, 2016)

However, James Cameron, filmmaker have stated: “ There seems to be a lot of excitement around something, that to me, is a yawn, frankly.”, and president of Pixar Ed Catmull have expressed “It’s good, but it’s not storytelling.” (Grambart, 2015) Grambart argues against these statement made by Cameron and Catmull by stating that the medium is “too nascent for a sweeping statement.” One example he mentions is comparing the Lumiere brothers’ films to Star Wars. By doing this he compares early film and VR, he believes they have a lot in common. With film, it was not before cinematography that a language evolved that could tell a story well on the medium. (Grambart, 2015)

“VR breaks that language, and we’ll need to discover it a ll over again.”

(Grambart, 2015)

There is a lot of exploration going on around in the world of VR, especially when it comes to storytelling and how creators are going to tackle the new medium. However, to date, very little research has been done into the design, structures, and writing when it comes to VR storytelling. Even though the interest in VR has gained much in the last two to three years. (Dooley, 2017) One of the big questions creators need to ask themselves, and their clients are why are we making this in VR? (Sourikoff, 2016)

“

With VR we are suddenly in a real world, and humans perceptual systems kick in; we expect to hear things, feel things and even smell things. Unlike any other VR is a metaphysical medium.

Julia Sourikoff, 2016

“

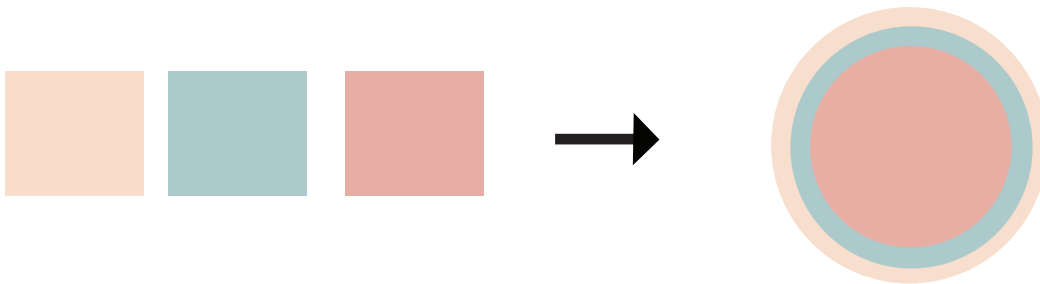
“VR is a new medium; we need new ideas.”

Nick Pittom, Director Fire Panda

Nevertheless, Jessica Brillhart argues that even though there are a lot of experimentations going around and we are all learning at the moment, there are still some fundamentals to how we create VR.(Brillhart, 2017)

For example Damiani explains that VR lies in the intersection of three discrete storytelling modes: narrative gaming, immersive theatre, and cinema. “Edward Saatchi, the producer at Oculus’ Story Studio, cites these as the three pillars of virtual reality storytelling.” (Damiani, 2016)

Stefan Grambart, creative director of VR studio Secret Location, as well talks about that it has three vectors it delivers on: Presence, narrative, and interaction (Grambart, 2015) We are going from a creating for frames to creating worlds. Brillhart calls the users of the experiences for visitors of these worlds, and by visiting; both the world and the visitor will change. (Brillhart, 2017)



From frames till worlds

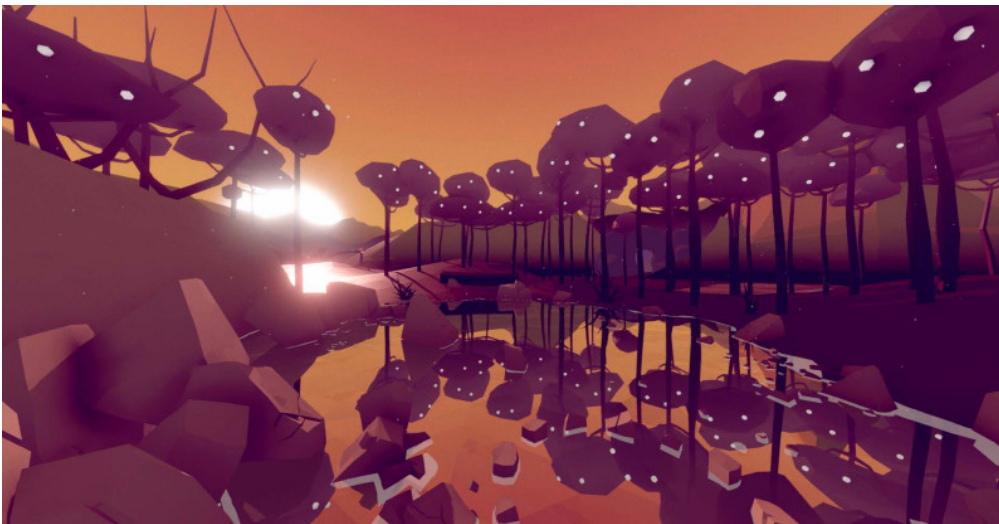
People are used to looking at screens, and creators are also used to create for that medium. As Grambart puts it: “A lot of our visual language depends on a defined screen edge” (2015) This demands a new way of writing and creating. Since people are not used to wearing HMD technologies, it is important to create “core experiences” (Jerald, 2016) Jerald encourages that “the basic structure of the virtual world should be directly evident and self-explanatory so that users can immediately understand and start experiencing and using the world” (2016)

Two new projects in 2017 are using the critical elements of successful VR experiences; “focus on strong emotions, deep engagement, massive stimulation, and an escape from reality”. (Jerald,2016) “Where Thoughts Go” and “Free the

Night” are both released in late 2017 and dips into what we might consider as interactive and cinematic experiences.

Both are actively using emotions.

“Where Thoughts Go” is an anonymous VR social space. People can put voice memos of their thoughts for people to find later. The maker Lucas Rizzotto explains it like this about the experience: “The colors, reflections, dreamy visuals and open spaces are all designed to make users feel relaxed and safe, while also containing visual metaphors of their own. The soundtrack, on the other hand, is a choir being sung by the thousands of thoughts roaming the sky in the distance. But all of this is there to serve one singular purpose: making the experience of listening to people’s stories more emotionally powerful.” (Chan, 2017)



Still from “Where Thoughts Go”

“Free the Night” is tapping into our childhood memories. We as visitors become giants in a mountainous landscape, tasked with liberating the stars into the night sky. The creator Nicole McDonald said that one of the challenges is getting people to settle in the narrative instead of trying to get the highest score. She hopes that people who have tried “Free the Night” are enticed to look up a little bit more often – and that they truly understand that we are the

magic and Earth is Eden. (Qin, 2017)

“My favorite response was that of a peer who tried Free the Night for the first time at the Summit. As she took off the headset, her eyes welled with tears. She told me how she had been transported to her own childhood and was filled with the same wonder I’d been way back when.”

Nicole McDonald, 2017



Still from “Free the Night”

There seems to be two distinct ways people imagine storytelling in VR to this day.

On the one hand, there is a lot of talk on how we can cue and divert peoples attention. To divert people’s attention is needed for creators to tell their story. On the other hand, some people think that the environment in itself should foster the story without us directing and controlling it.

The contrast with wanting to revolutionize a way to tell a story, but as well wanting to continue and control how a story is told in VR is fascinating.

Jessica Brillhart, a pioneer in VR, is talking about it like welcoming being a rebel and asking us to look in the opposite direction than where you think you

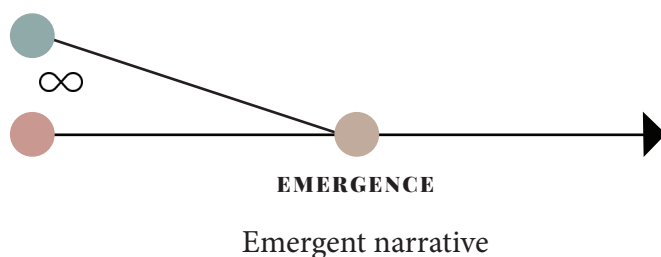
should see when you are in a VR experience. She argues that most likely not much would happen. A significant amount of energy has been used getting the viewer to follow and focus on a particular part of the experience. (Brillhart, 2015) Why is this? VR is “a fully encompassing experience,” why do creators seem to have difficulties removing the thoughts of the frame? If creators can embrace the freedom that a viewer has in VR and “attempt to leverage rebellion and curiosity instead of rejecting it,” innovation will happen. (Brillhart, 2015) Jesse Damiani talks about the same as a new era in storytelling where you implant it into your brain as an own memory, and he calls it “Builder-Participant Paradigm” (2016)

“The game’s creator isn’t the storyteller. The storyteller is the person playing the game. “ Jessica Brillhart, 2015

“In 2D visual media (ie. film), stories are visual and perceived.

In immersive media, stories are spatial and embodied.” Jesse Damiani, 2016

So if we as creators are not the storytellers, two people won’t have the same experience in VR most likely. In one VR experience, an infinite number of stories are present, and all are true. (Brillhart, 2015) Stefan Gambart agrees to a certain extent and calls it an “emergent narrative,” when it becomes to be a collaborative storytelling between author and user. However he still thinks the infinitive possibilities should collapse into a single, linear narrative and by this, the creators and viewers role gets to be asymmetrical.



“We are the builders of worlds, the makers of storytellers.”

By having this thought in the back of our mind, and take our previous experience about listening to stories around a campfire and re-telling it to more people. How will it be when you create your own story in VR with the level of immersion and presence that it gives. What kind of storytellers do we become then? (Brillhart, 2015)

“We never see the world as it actually is, but only the world that is useful for us to see.”

Beau Lotto, Neuroscientist

If we bring in the notion of perception as well; that we all perceive differently. By losing control and letting our visitor understand the story on their own terms, it will turn out that it is not just about WHAT we are capturing, but also how and why. (Brillhart, 2017) A study conducted by Quesnel and Riecke in 2017 tested and confirmed that VR could induce the feeling of awe. It was measured by goosebumps the testers experienced and their self-reports. Awe is found to alter an individual's perception in positive, lasting manners. By identifying that VR in an efficient way can be awe-inspiring, it is possible to “allow people to transcend themselves and to feel part of a greater collective.” (Quesnel and Riecke, 2017)

Challenges in storytelling in VR

There are several challenges, and VR is the driving force behind the significant shift in storytelling, creators need to develop a new language for immersive media.

Loss of control

It is easy for filmmakers to control what we need to focus on during a movie. Very little has been up to the imagination, and it is contained to a frame. However what do we do when you are missing more than what you want to tell. We lose about 75% of all the information in a scene, and our focus is on the remaining 25%. How do we as designers solve this? (Sourikoff, 2016)

How do you create a narrative when you can not control where the user is looking, and how do you tell a story with multiple outcomes and possibilities. (Sourikoff, 2016)

For better or worse, a human being can not see in 360°. By making them actively look around, and choose for themselves what to focus on; they piece their own story together. They decide themselves what they take in and make meaning out of. (Newton and Soukup, 2016) In Newton and Soukup tests some audiences expressed FOMO (Fear Of Missing Out) Small gestures become essential and they were afraid of missing out. FOMO can create distraction but can also be a powerful tool to “to create suspense or illicit curiosity” (Newton and Soukup, 2016)

Saschka Unseld, creative director at Oculus Story Studio, concurs. In traditional mediums like cinema and television, we are in full control. In VR, we have no idea. (Oculus, 2016)

Essential questions designer/storytellers should ask ourselves is: “How can you draw attention to the most important story points?” And “Can you use FOMO to your advantage?” (Newton and Soukup, 2016)

User identity

Going back to the previously mentioned strenghts of immersion and presence; the fundamental goal when designing for VR is to answer the question the user will have: “Why am I here?” Jessica Brillhart explains it well by saying that we always question our identity and presence, no matter where we are. In other words; the core is the presence and experience. This puts a huge responsibility on the VR creator. We ask for peoples trust and commitment that they ARE there. (Brillhart, 2015)

Katy Newton and Karin Soukup experienced the same thing when they collaborated with Stanford’s d.school Media Experiments back in 2016 to check several hypotheses around users in VR. Again; people needed to know who they were in the scene, even if they were just a fly on the wall.(2016)

Newton and Soukup’s advice:

“Consider how the audience will respond to the physical and social dimensions of the space. Ask yourself, “How can we give the audience enough context to feel comfortable being present in this environment?”

As previously stated it is essential to answer the big question the users will be asking themselves. Who am I and what am I doing here

Since you are in the story and you are the camera, it is easier to get the connection to the narrative than other mediums as cinema and theater. Since the viewer feels the presence, it is essential that it is recognized, even if their role is a passive one. Making characters have eye-contact with the viewer is acknowledging this is an effective manner. (Gardner, 2016) However, by looking at characters we can see that they emote, we can intuit how they feel. By using 1st person POV, we have less emotional cues.(Grambart, 2015)

Ryan is describing a sense of an epic world since it is the body in the space that will be the dominant theme. “The user will explore fantastic landscapes, navigate a space fragmented into multiple domains (the rooms of a castle, the

diversified geography of an island, even the books of a library), take possession of virtual worlds through movement and action, or achieve intimacy with the environment.” (Ryan, 2015)

So to give the users identity, it is essential to provide users time to sensory adapt to the environment and figure out where they are. It is easier to have a clear storytelling and keep Jeralds “core experience” at heart.

At Oculus Story Studio they have identified three aspects to acclimation in VR: the “In,” the “Letting Go,” and the “Call to Story.” (Oculus, 2016)

The “In”:

What will the user see first? When they enter the story, what do we as creators want to show?

The “Letting Go”:

Here creators introduce the environment to the user. How can we make people feel comfortable and acclimate to the space? Here it is vital to use the strengths of the medium; that people can explore for themselves.

The “Call to Story”:

“Call to Story” is the signal that the story begins. Experience from the Oculus Story Studio that people need about 40 seconds in the story to get settled before you use an audio or visual cue. At Oculus they used a cue in the form of pre-credits as we are used to from cinema. By doing this; people know from experience that something is starting and it feels “soft and subtle.” (Oculus, 2016)

By using these three steps, creators have a way of making sure users know where they are and who they are before the story starts, and by this creating spatial immersion.

Another way of deciding **who** the users are in the story is using another tool from Julia Sourikoff. It is a matrix with four different versions of users:

Observant active:

With this, you have agency in the world, however the user is not embodied. It means that they do not have a body or an avatar, so their role is almost God-like. As a user in the story, you can make choices, however not necessarily change the endings. Sourikoff explains that this is very much a new format for storytelling and something that is interesting to look into.

Participant active:

You have an embodied character, and you got the power to change the outcome. This is how most video games are today. For example Grand Theft Auto.

Observant passive:

The traditional way of telling narratives. Linear and controlled as conventional digital mediums. Most 360 videos today follow this role. If you choose this one, it is crucial to ask why we are deciding to develop in 360/VR.

Participant passive:

As a visitor, you are given a role to play, however the format does not allow for interactivity. In the story, you are acknowledged by characters in the scene, however you are not able to respond to them in a meaningful way. As a result of this, you lack free will. Participant passive is also a new format of storytelling.

Sourikoff argues that observant active and participant passive allows creators to tap into the unique opportunities in the medium. With this storytellers gets new tools in their toolkit. These two roles give creators the ability to manipulate self-awareness and provide ideas of body ownership and self-representation.

Timescale

Presence in real time is one of VRs strengths but also has limitations. Because you are IN the story, time goes by at a fixed rate. While manipulation of time is one of the most potent tools of filmmaking, this is more difficult in VR. In the movies, time can be reversible or go in a blink of an eye. In VR, you can do a time lapse in 360, but that is not how you experience real life.

“Time becomes this weird limitation that you have to figure out, rather than a device to further your story. “

Julia Sourikoff, 2016

In VR we try to figure out how real-time storytelling look like and how that experience is. What are ways we can manipulate time while allowing the user keep their sense of presence?

One solution that might work is having “alternative modes of reality”: create a container where the passage of time feels natural.

By having layers of time that you experience at the same time you as a user is still in real time in your space, however can see time goes by faster/reverse in another sphere. An example of this is Pearl by Google. Outside the time is passing by – but it feels natural because what is happening inside the car is static. (Sourikoff, 2016)

The sense of being overwhelmed

“The more there is to see, the less the audience remembers.”

Since VR is for many people a new and immersive experience, a lot of people get overwhelmed when they try it out. When Oculus tried out their VR expe-

rience “Lost,” people testing did not know where to look or what to do. A lot of people had enough just being there. (Oculus, 2015) Saschka Unseld, creative director at Oculus Story Studio, argues that there is a conflict between being immersed and feeling presence.

Also in Newton and Soukup’s experiments, several of the people did not remember the name of the character in the narrative. They did, in general, remembered fewer details of the story and the environment.

“The more complete the environment, the more it resonates.”

In Newton and Soukup’s experiments, people in the 360 were more aware of the “tone of the piece,” and they got more in tune with the character in the environment as well. They felt more of the feelings and that those were shown in the surroundings. (2016)

Newton and Soukup bring up something interesting:

“It may be that when you feel present in an experience, you are more likely to rely on abstractions and pick up on feelings, and when you are in “detective mode” you are more likely to pick up on story details, however have difficulty accessing feelings.”

They are asking the question that “perhaps being present and retaining story details are fundamentally at odds.”? (Newton and Soukup, 2016)

One advice they give is that with each new bit of information we add to the VR storytelling experience, we should ask ourselves:

“Does this information lend to feeling present, or will it send the audience into their heads—and which mode do I want them in right now?”

“Perhaps there was too much information in 360° for the audience to process. When telling a story in 360°, we need to consider how to combine audio and visual elements without overloading the audience.” (Newton and Soukup, 2016)

Attention span

The creator needs to think about the platform they are going to release the experience on. The attention span of a user will be far less on a low-end Google Cardboard that they have to hold in front of their eyes than as someone being strapped into an HTC Vive headset with earbuds and controllers. To make it even more difficult, some experiences are cross-platform and needs to have these limitations in mind.

Primary research

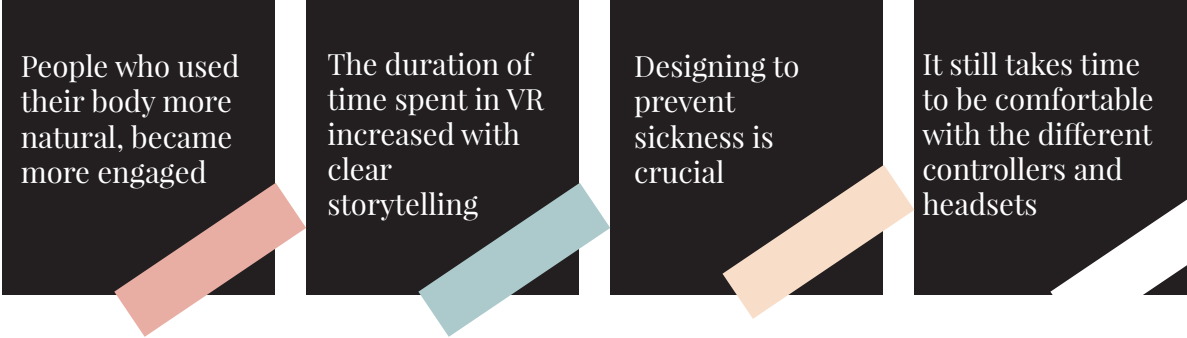
To understand VR you have to be in VR. You have to feel the pain points of putting a headset on, trying out the different controllers and being in different experiences of various quality.

Before starting the research project, I had never been in a VR experience over a more extended period. It had been trial and errors at different showcases or conferences, however not long enough to settle down and sense the feeling of presence that is previously mentioned as an essential aspect.

I tested out several different games and applications in the various VR sets and had discussions with my co-workers afterward regarding my own and their experience. I as well did observations on how they acted and got an understanding of what they just experienced.



From both my own experience and others I have come up with these distinctive insights:



People who used their body more natural, became more engaged

The duration of time spent in VR increased with clear storytelling

Designing to prevent sickness is crucial

It still takes time to be comfortable with the different controllers and headsets

Interviews

The interview objects were chosen because of their long expertise in the field. By having people with years of background in the area, they could provide insights and experience that would be difficult to find in books and online.

After downloading the interviews, four central themes kept coming up.

The early adaptors

“VR poses interesting challenges, because we are not working in one type of experience, doesn’t talk about a scene, but we’re shifting the perspective of reality.”

Preston McCauley

VR is still in its early stages, even though it had a stint in the 90’s several of the interviewees told me that their first experience in VR was from back then. It seems things take much longer than what we expect. Several kept mentioning the clunky headsets, the lack of money from big companies and lack of wanting to take risks in the space.

However, Muki Kulhan states: “Things that scare me are really good too” – on taking risks.

It was an all over consensus that both companies and designers need to take more significant risks. However, the entertainment aspect of VR does not have substantial money in it at this time.

Several mentioned that business lead applications in augmented reality (AR) are of much higher interest because this will quickly and more efficiently bring in customers. Dave Raynard states that how the industry is today: “AR is more like mobile gaming, and VR is PC gaming”. It is the time spent in the world and the money and energy players use on the technology that makes the difference. That's why there is a bigger audience for AR at this point in time.

However, by being early on, designers have the opportunity to create processes and trying to push the creative angle and technology in the right direction.

“This is not a set in stone medium, so there's a lot of exploration, failure and learning”

Marta Ordeig

The traditional digital space has come a long way with designers in different specialized positions. You have UX writers, UX researchers, interaction designers, visual designers. All these various fields have span out from a need in the industry. With time companies have seen that you need specialized positions to be able to create great experiences.

Several of the people I interviewed were what you would call “all-rounders.” They have been innovators and early on in both fields of traditional digital design and trying to push the boundaries in the new VR field.

“How VR is shaping up is much like the digital content universe shaped up. It is very democratized; you do not need to go to a studio and sell it for 20 million dollars. If you have a 360 camera and do a rough stitch on your own, you can be that kind of designer/content creator.”

Dylan Southard

Southard's analysis on where the industry is at this point is that designers need to be able to create a lot of the content. So if you want to move into 360 however do not have any experience, it is a tough sell at this point. Matt Beve-ridge disagrees, "Learning software is easy," he states. There is several online courses on Unity on the internet.

"Good creative conceptual thought takes time, patience and trial and error. Getting things wrong and getting things right. That is where the real insight and intelligence behind the medium comes from." He believes there still is a place for creatives in the field without knowledge of code.

Lack of innovation

"We are just seeing a transference of design inputs from the 2D world."

Preston McCauley

McCauley mentioned his fear of a new "dark age" in UX. That since creators are just transferring existing patterns, we did not use the opportunities in the technology and the new medium as a storytelling tool.

Several others were also talking about the lack of new thinking and boundaries being pushed when it comes to designing for VR. Kulhan adds though that she liked the rawness of how everyone was experimenting and that is something that also is a part of the creating process.

"To evolve you need failure and mistakes. It is part of the process."

Marta Ordeig

John Foster maintains that the designer's job is to have ideas. However, he sees, that when ideas turn into game play, it automatically creates problems. Ideas and difficulties require iterating. As a creator and team, you might have a bunch of ideas that do not fit together when they are being put together col-

lectively.

“It is about **solving** ideas, as one of my colleagues said.” he states.

Matt Beveridge mentioned that it looks like the game industry seems to go down the obvious route for VR. The most common experiences to date are first-person shoot-em-ups, race car simulators, and horror. He makes the connection that it is a natural extension of cinema and tv, something they are doing well. However, it is possible to take it to the next level. Beveridge hopes for more innovation and that experiences will become more abstract and creative. But how these will look like is impossible to tell at this point he states: “Because we have not seen them yet. They are developing their own languages for VR. It feels very much like a tipping point at the moment.”

McCauley sees a very small amount of good applications, and that several factors are making the transitions to a 360 world challenging. Because there are so many more components to weigh in. “Physical world design, virtual world design, control systems, gestures, voice inputs, we are not locked down to one input,” he states.

Dave Raynard mentioned his team and how important it is to have a balanced and trusting one. With a team where the culture is strong the “crazy ideas” will flourish and people will dare to put themselves out there.

Another challenge that can hinder innovation is that people still are comfortable and familiar with a particular way of storytelling, and that comes from movies and tv-shows. Since these are the dominant storytelling mediums of our day.

One of the most significant challenges in this space is getting people to be more comfortable in the impressionistic and expressionistic world of VR as a storytelling medium. Having a plot-first-story is still what most audiences are used to, so introducing them to stories which are not told in the fashion that they are used to is difficult.

Another challenge is what the audiences think VR is at this point. First is that they are going to have their mind blown, and amazing things are going to happen. However, that is not the only way to tell a story. A way that is not based on goal achievement or advancing far, but being in the experience and taking in that moment and the world.

“Getting people to slow down that way is hard.” Southard states. Having your mind blown is true. However, VR can be incredibly meditating, intimate, room for stories that are smaller, more focus and intimate. That rely on sensation, style, and feeling, rather than story and plot and action.

“It is about winning the hearts and minds of people. “
Dylan Southard

Look to other fields

Since VR is a big hybrid of both a physical and virtual world, it was a significant consensus that it was important to take inspiration from other fields.

“It is a big connection between theater and VR as mediums. How the users experience it, so it made sense to take a playwriting class and adapt it for VR as their nearest closest model.”

Dylan Southard

“Starting referencing impressionist art, cause that felt like a clear analogue. Going from depicting things in a realistic way to depicting things to have an artist saw them. There is a real parallel there to VR.”

Dylan Southard

Southard saw from his VR playwriting-workshops in the US that the most important aspects (and what kept VR unique) are the point-of-view you can choose for the person visiting and the environment in itself. When he had stu-

dents in his classes, he made them work carefully on both these points.

“Games is the closest sister, but just applying game mechanics is a big fallacy, because not everyone plays games.”

Preston McCauley

However, John Foster mentioned two of his methods for games that he also uses for his creations in VR.

The first is the second-by-second, minute-by-minute and hour-by-hour. The game should be driven and have engaging elements in all these three categories.

Second by Second: Any kind of feedback; if there’s a swimming game; it is how your arms move through the water.

Minute by minute: The things that make it a game. It is the objective, the immediate challenge. What they need to do on their first try and how they learn and get better at the game.

Hour by hour: The challenges that fit around the core game. If you play it for an hour, how do you use that skill to win something more. How will you prove that you got better at it?

The second is a simple metric they use to see if an interaction/mechanic is good enough.

“It should be fun doing just that for 60 seconds before you get any objectives.”

By having the mechanic or interaction being fun in itself, it is a great foundation to build a game around. In the company, Foster explained that they are trying to avoid people saying that it will be fun when they add to it. Like graphics and the goals of the game. The bottom line is that “The simplest parts of the game should be engaging.”

Muki Kulhan has 20 years experience in producing television shows and creating digital content. When she was on The Voice for the BBC she told me:

“Because I was working for the show I was immersed in the show. I knew the nervousness of the contestant, and how it might feel standing on the stage and the judges are not turning. But for me; I was immersed in it physically and emotionally, and wanted to translate that into an immersive experience.”

She continues by saying that you have access to this particular angle that most people do not have, how could they give this to the audience that is watching?

“So when to design these immersive experiences we need to understand cinematography and filming.

We have cameras, we have positions, and we can use those advantages. We can use those viewpoints. “

McCauley describes it more of describing a scene and telling a story. “Thinking about a mood at that scene, what is that mood of that particular scene, what is the mood at that moment.”

It is all about dissect existing design patterns;

To understand what we could, should and might be able to do with the new medium. Like a plot in a VR experience is similar to immersive theater.

Creators should go off the beaten path. Look to avant-garde and performance art. Experiences that are creating a moving story without having a plot.

Southard comes with an example how theater is using lighting to reflect emotion: “And you do not see that in a film. You do not see a room go bright red because a character is angry, but you see it in theater, and you can use that in VR that would be tremendously impactful. “

Use the challenges as opportunities

“Rather than slamming the limitations, learn to embrace them.”

Dylan Southard

Southard uses the example of a 360 movie as an example. In it, you can not move around, and you can not talk. He asks designers to think of stories where that are sensations. 360 is perfect for storytelling of depicting dreams and memories. Those are two sensations that are the same. You feel like you are there, or that you are an outsider. There is a barrier between you and the rest of what's going around you. So if you want to tell stories about dreams and memories, 360 are the best medium for it he states.

“The first sort of sensation a viewer in a VR experience is going to be about the feeling about where they are. That becomes a really important thing.”

- Dylan Southard

Since the challenge in VR is that you do not know where the person is looking; Use it as something powerful. Since designers can create whatever world they want, make sure that the world you are creating is particular and unique. And has meaning embedded in it.

The presence in the environment will be unique and subjective, so everything that happens will be subjective to the visitor, and creators should indeed embrace that.

“Their perception of this world is unique and fundamentally altered subjectively. So whoever I am I'm going to see this world slightly different than somebody else. And what I see can be colored by emotions. So the environment becomes not just an objective background, however also a subjective part of the experience. So if I as a character are feeling sad, how will how I look at the world change. It still doesn't have to be an objective reality and can be colored by my emotions. Just like how real life is.”

Dylan Southard

A lot of experiences today in VR is concentrating on a plot, a sequence where

creators want people to look at a particular linear storyline.

From the interviews, it arose that is unwise and tricky to build your experience from a plot.

Using different tricks to move peoples attention was labeled as something relative unsuccessful and defeats the intention of VR.

The whole point of VR to is that you are free, and you can script your journey, story, and adventure. Previously mentioned is one of the challenges is that the visitor can look wherever they want, whenever they want.

Marta Ordeig wants creators to identifying interest points, and how people might imagine getting out of a world and into a new one. By this you are trying to imagine the ideal path for them to take, to see if you can guide them.

As a storyteller creators have to be able to live in the story without really feeling that you are guiding the visitor.

“Your ideal story might now happen; so you have to count for diversity and knowing that not everyone will be going down the ideal path.” Marta states, this is a challenge for a lot of creators to this date.

So how can we use this challenge as an opportunity? We have to approach plot from a very different standpoint. Not look at it as “This is the foundation on how my story is going to build”, which is again the dominant way of how stories are made in western culture today. Understanding the plot is not a foundational thing anymore, it is a stylistic thing. So it is a vast mind-shift and shift in thinking.

Southard explains that especially for writers in LA that are trained to do it a certain way. They have to shift their way of working. That a person can still be in the experience, they do not see the major plot points and still enjoy the experience. This is hugely challenging for writers of today

“But that is why you go back to stuff like environment, the story you tell becomes your relationship to the environment.”

Dylan Southard

Opportunities

To figure out what kind of opportunities that lie to this date in VR, I want to recap my research questions. By synthesizing my findings from both the literature review and my primary research, I can better see what the pain points are and what should be prioritized.

1. How are companies designing today?

From both my interviews and the literature review it was clear that it is a lot of exploration going on at this point when it comes to design and how companies are working. There is as well little academic research on storytelling and design for VR.

Different designers and makers were all trying to come up with processes and workshops on how things might be done.

The overall view is that we either are just following already set design patterns or the money is not there, so the user experience is put in the back seat.

Luckily there are several designers out there in the world trying to tackle this challenge and want to make innovate experiences.

What the industry is lacking at this point is a universal language to talk about designing for VR, a process that we know can create great experiences, knowledge of what makes a great experience and getting money and more people involved.

2. What makes a story great?

Storytelling is an incredible escape from reality when it is done right, in VR is

even more crucial that it is on point. Because if the experience breaks, your immersion and presence breaks and that is difficult to regain.

From interviews I got a clear understanding of other fields like cinema and theater. That great stories have stood the test of time even though the technology has improved. As long as you have been thinking about WHY you want to tell the stories, the character you have been creating is interesting and have depth, and the narrative of what you want to say is compelling you have come a long way.

The same thing goes for VR. Since there is no more frame to the picture and you are in the story as previously stated, the environment and the visitor's identity becomes even more critical.

Creators need to ask the question; Why are we making this in VR? If we do figure out that it is the right thing to do. Make sure to have a proper process that involves creating together as a team and draw out the story in several parts on what is essential to make a story stand the test of time.

3. What are the strengths and weaknesses of VR?

The strengths of VR is immersion/presence, natural interactions, and empathy. The weaknesses are the sickness that can occur for the person trying out a VR experience. The technology is still not where it should be regarding processing power/resolution and the clunky and cumbersome headsets.

One of the most compelling things from both my literature review and my primary research is how creators can use the weaknesses of VR to their advantage. To try to see the positive in something bleak.

Concept & solution

After researching around VR and storytelling, I saw it as crucial to try to focus on the opportunities that lie in the technology and use the challenges to our advantage.

I believe from experience that most of us have a creative side and genuinely think that by having workshops and creating together innovative ideas can flourish. To push the boundaries of what VR can provide storytelling-wise, I sense that workshops could bring more enlightenment than anything else at this point.

The research showed that people did not take enough risks and did not understand the opportunities that lied in the medium. I wanted to create artifacts to be used in workshops by people who are new to creative writing and storytelling.

I wanted to focus on the overall *story*, the *visitor* and what kind of *environment* the visitor is engaging in. I took inspiration from both Brillhart and Southard, and their approach to worlds and theater.

I made three different tasks that could be solved during a workshop on storytelling.

1. The story

1. The story

The background: Feeling 1: Feeling 2:	Once upon a time, there was_____. Every day,_____. One day,_____. Because of that_____. Because of that_____. Until finally_____.
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With this, I wanted to test out a writing exercise as well as some fundamentals of the story.

The background: What is the backdrop for the world the visitor is entering.

Two feelings: I wanted them to pick out two emotions as well, to have that in the back of their mind when they were going to write out their story later.

Once upon a time: This is the creative writing exercise where they had to make the storyline up based on a particular framework.

2. The visitor

2. The visitor

Who am I? Point of view:	How can the setting/environment reflect that? <i>Any other characters?</i>
How are the visitor understanding who he/she/it is?	What kind of emotions do the visitor have?

Since user identity was crucial to the success of the immersion itself I wanted them to think about who this person is, and how we as creators can help them with understanding who they are.

3. Environment

3. The environment

Where are we?

Description of the world:
Colors/sounds?

Focus now on the emotional impact of the place :

How and why its physical details resonate with you (or a character) personally and emotionally.

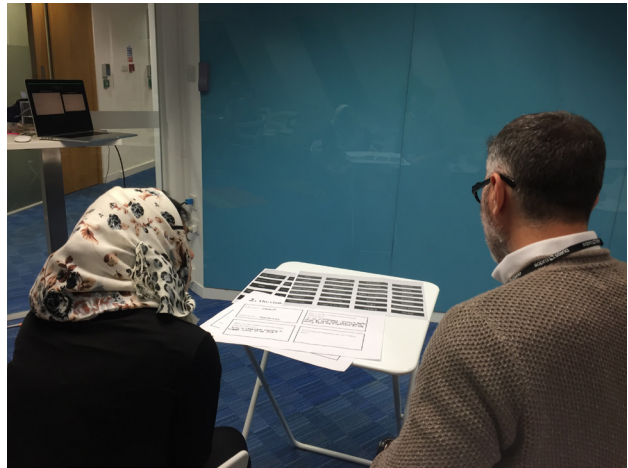
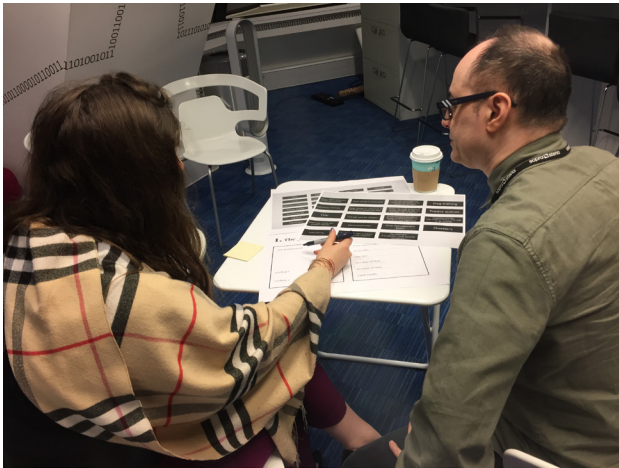
Since creators lose control of the timeline and the story, the environment takes an even more prominent part. Here I wanted to really dig into where the visitor is, detailed description and focus on the emotional impact of the place.

Testing

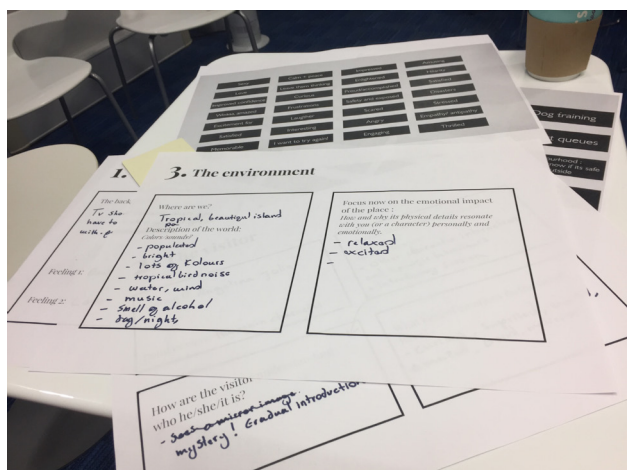
I conducted a workshop where I tested my assumptions on 4 participants. Their backgrounds were mostly technical. By testing on people with this kind of experience, I could push the creative angle of the workshop and see if it worked. If it went well for people with no artistic backgrounds, it would be easier to conduct it with people more open to creative tasks. There were two females and two males. They were put together into two groups, creating to-

gether.

It took 90 minutes, and I printed out the tasks on A3 paper and handed it out while I went on facilitating.



The team that I tested on had undergone an ideation workshop beforehand where several different scenarios for a VR experience had been ideated around. The team had as well come up with several different emotions they wanted the visitor to have.



I took this foundation and did a workshop around the idea of getting the creativity going. I first had an introduction to VR, storytelling and the strengths

of the medium to get people acquainted with the context.

I then gave them 10-15 minutes on each task, and the feedback was this:

Task 1: Creating the story

Both teams had problems filling out “The background.” They had questions what I wanted from them. If it was the background of the visitor or the background of why they choose that scenario, or if it was the background of why the visitor was in the space.

When they got, it explained both teams did a good job and commented that both “The background” and the two feelings that guided them and gave them the right amount of constraints for them to be creative. We discussed though that it could have been lined up as a one beginning emotion and one that end the story.

“It was fun!” one commented.

When it came to the creative writing exercise that went:

“Once upon a time, there was_____.

Every day,_____.

One day,_____.

Because of that_____.

Because of that_____.

Until finally_____.”

One team felt it was too limiting and made it difficult to create a story, the other team however really liked it and made them build a broad story. I could

see yet as a facilitator that the stories that were created got too broad for just one session.

One female stated that: “Should not have been so specific.”

2. Choose the visitor

“I liked this. Gave us a nice context and opened your mind.”

One team commented that this was not as “fun” as task number one. This got too open when it came to describing who the visitor was. Personality and appearance was not asked after, so it could have been an idea to give more guidance.

Both teams filled it in a different order than what I wanted. They filled it out from left top to right top. However I wanted it to be from left top and left down, before right top and right down.

It was also discussions that two of the questions were kind of similar:

“How are the visitor understanding who he/she/it is?”

and

“How can the setting/environment reflect that?”

Any other characters?”

To better the task these two questions should be looked over one more time.

One person commented that the question was good because it made you think about the visitor in the environment/objects and the interactions it might have.

As a facilitator I also did a mistake by not going through what the different point of views they have to use.

3. The environment

This task got a bit tricky since one of the teams had created a broad story from task number one. The story spawned several scenes, so describing the environment in detail got a bit difficult.

One commented that “It opened our mind.” by the notion that they had to think on how the environment and the objects that we place in it can affect the visitors emotions.

It was several comments that the question to the right: “Focus now on the emotional impact of the place :

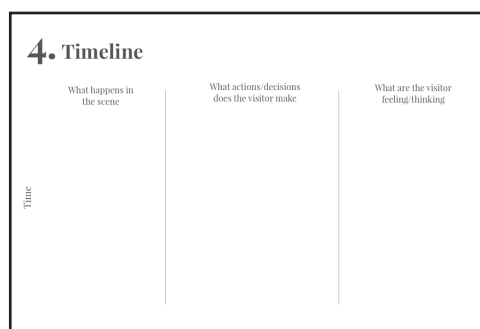
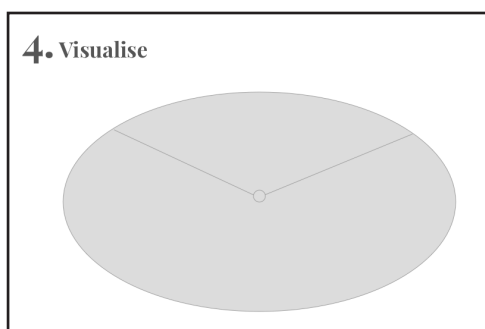
How and why its physical details resonate with you (or a character) personally and emotionally.” was difficult to fill out and I needed to guide both teams on it.

Take aways

The feedback from the people was positive. They liked different aspects of the tasks, and it was a right step to take to introduce VR in a new way.

What I take away from the workshop is that it is a tremendous potential to do more of these and get people talking and thinking differently about how they are creating content for immersive mediums.

I need to iterate the different task; I will also introduce two new ones in the next workshop. I want to improve the methods and what kind of questions I am asking to make it as self-explanatory as possible.



Conclusion

All throughout the research project I have been immersed in many different experiences, I have had interesting discussions, talks, and meetings with people with expertise in the field and I have felt both hopeful and sometimes pessimistic on the outcome of VR as a medium.

If we go back to my question “How might we create stories that are well told and designed so that people stay immersed?” I am proud to say that by digging and grasping the limitations and the advantages of the technology I have seen it is possible to create heartwarming, intimate, amazing, out-of-this-world experiences that are well told, are well designed and make people feel immersed and present in the story. By thinking of the environment, the users identity and not have the story being too plot-driven, we can with time create a new genre that will stand the test of time.

I must admit it is difficult to conclude in any direction when it comes to VR as a medium. There is not much money on the artistic side of the immersive technologies so far. However, since everyone is still at the stage where they are trying to grasp what can we do with this and are putting their hearts out I am hoping that I as well can be a contributor with time.

By testing out storytelling techniques for VR collaborative in workshops, I have seen it can enlighten people involved and make them more in tune with the new medium. It can make it easier to create processes that work and with time develop experiences of high quality. Now it is the time to introduce people and let them have a say in the evolving nature of producing content that will hopefully touch people.

I have high beliefs that if more people can try out VR in environments where they both get the time and the comfort they need, it will become a medium where creative and artistic experiences can thrive. At this point not enough people have had the chance to land appropriately when they test it out, they are trying it out in short periods of time, and I hope that VR arcades that are popping up all over the world will with time introduce more people to the beautiful world of VR.

I am excited to be a part of a medium that still is in its early stages. To create together with other people when we are still exploring is a gift and something I hope will have value for others later.

Next steps

The assets from the workshop will be updated. The outcomes from the workshop I conducted will be used later on, where I want to create more detailed scenes and timelines of the stories that were designed.

I also want to create a talk on my thesis and travel around to UX and developers conferences to spread the word on the new medium. Make people aware what they should think of early on and inspire them.

Reflections

Conducting this research project has been a rollercoaster ride. I think I have had all the emotions that are possible in 14 weeks. I had the excitement that you have when you are first starting up, however also hopelessness when the process did not go as expected.

I started off very wide with both VR and AR as my field of research. However, after trying out different experiences myself, I saw clearly that the medium I had a more emotional response to was VR. To research both AR and VR, I also saw that it would be a too large quantity of research for this paper.

What went well

I am happy with my primary research and interviews that got conducted. Being in Sopra Steria helped me a great deal with trying out different headsets and experiences, and made me feel comfortable in VR.

What would I have done differently

The most challenging aspect was talking to the right people at the right time. A lot of the people that did work I found fascinating was not based in London, so the interviews had to be done over Skype. Having interviews digitally went better as I got used to it, however I would have preferred meeting them face to face. Work environments say a lot of the interviewee is working and body language is trying to pick up when the connection is bad.

I also narrowed down my scope quite late. I started off wanted to figure out how companies prototyped/tested VR experiences today. However since I found out during my research that most people did not have a clear way of testing or prototyping yet and was still experimenting it became difficult to

synthesize. I ventured into the storytelling aspect after a while, and that made the ball rolling.

I would have loved to have the means to travel. To visit other continents, I think I would have gotten a broader view.

As I mentioned, interviews were a pain sometimes planning and conducting. A lot of the people I wanted to speak to it took a month from I got in contact till I finally met them. It was worth it, however this extension of time for research limited my time to prototype and test. So this comes in as my final reflection, I would have loved to have time to make several iterations and re-tested. That will be done, but outside this paper.

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