DESIGNING AND ANIMATING A HORROR CREATURE

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ABSTRACT

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Horror has been present in storytelling throughout history in narratives and art. With the improvement of technology the ways, to tell horror stories have evolved into audiovisual experiences such as video games and films, and thus creature design and animation have become relevant components in producing horror stories. The main objective was to create a 3D horror animation and take an in-depth look at the foundation of the genre as well as the theory related to fear. Based on this information, guidelines were generated for creating horror creatures and animating them.

The research began by defining the horror genre, its creatures and its setting. Utilising the gained study knowledge, a monster along with a setting was designed. By coming up with a story, animating and adding audio, a horror short film was produced as the end product. The final short film was distributed to receive feedback from the audience in order to draw conclusions.

The results suggested that in order to have a successful, scary monster design and especially animation, it needs to have a story in a setting. The concept of unknown and unpredictable were found to be the most important keywords when creating horror. Although the short film Barbie was successful based on the feedback given by the test audience, its story and some visual elements should be improved in the future.

Key words: horror animation creature design monster 3D short film

CONTENTS

1 GLOSSARY

3D	three-dimensional
Blender	a 3D computer graphics software toolset used for creating animated films, visual effects, art, 3D printed models, interactive 3D applications and video games
bone constraint	used to control a bone's degree of freedom in its pose transformations
bump map	a technique for simulating bumps and wrinkles on the surface of a 3D object
CGI	computer-generated imagery
GarageBand	a software for composing music
IK's	inverse kinematics
mesh	a 3D object
modifier	automatic operation that affect an object in a non-destructive way
phobia	an extreme or irrational fear of or aversion to something
PNG	portable network graphics – an image file format
rig	skeleton that allows different parts of a 3D model to be deformed and animated
rigging	creating a skeleton for a 3D model
texture	surface texture, or color information on a computer-generated graphic or 3D model
UV map	3D modelling process of projecting a 2D image to a 3D model's surface
VFX	visual effects

2 INTRODUCTION

Since a child I've had a wild imagination and curiosity towards monsters and creepy things. Being heavily inspired by video games and cartoons I used to draw monsters all the time to the point that my mother was actually getting worried about my mental state. Fortunately, the worry was all in vain. In time my interest in monsters has grown along with my passion towards animation. To me personally, exploring the creation of monsters has, and always will be a therapeutic outlet.

In this thesis, by studying fear as an emotion as well as the genre of horror along with its qualities including monsters, setting and its popularity, an attempt to create a monster will be made. When a monster is designed and completely 3D modelled, an animated short film will be formed around it by utilising the gained knowledge. Moreover, the final short film – and a feedback survey along with it – will be shown to as many people as possible in order to draw a conclusion of its success.

The main objective is to gain knowledge on what features form a horror monster, how it is animated and what are the requirements for it to provoke certain emotions such as fear. While the information provided by this thesis is used to create an animated short film, it can be adapted to video game environment as well.

3   DESIGNING HORROR

3.1.   Horror as a genre

The goal of this thesis, being a creation of horror fiction, required a deeper look at the genre itself as well as defining fear, phobia and their causes. Moreover, in order to understand the purpose of the genre, learning about the reason for the consumption of horror media was needed.

As described on Wikipedia, horror, as a genre of fiction, has the intention, or capacity to scare, unsettle, disgust, or frighten its audience by provoking feelings of horror (Wikipedia 2018). In other words, the goal of horror is to cause a powerful reaction in its viewers. Horror, however, is nothing new to storytelling. It has existed in folklore and religious traditions for a long time, often revolving around issues such as evil, death, the afterlife, demons and the principle of a thing embodied in a person. While the genre has ancient roots, it has maintained its sole purpose to this date. (Jackson 1981.)

Horror has been a significant genre in the history of mankind. In both high and popular culture, according to Bruce F. Kawin (2012, 3), horror has been a part of folklore and literature. Some of the oldest written stories of western horror, revolving around the terms of death and dangerous monsters, take back to the times of ancient Greece where stories such as Odyssey included monsters like man-eating Cyclops and Scylla. In Japan on the other hand, images of ghosts and monsters inspired by the rich mythology have been printed on woodblocks for centuries. Belief in supernatural that both Buddhism and Shinto contain, along with the tradition in cultural mythology have been influential in Japanese horror (Balmain 2008, 1, 7). Similarly other cultures have their own monstrosities based on fables and mythologies. Children's tales including danger and evil have been told for long, and when people have been faced with a suspicion of supernatural – witnessing a massive squid under the sea for instance – a beginning for a horror story, or a religion, might have formed. (Kawin 2012, 3.)

3.1.1 Fears and phobias

As H.P. Lovecraft has stated:

"The oldest and strongest emotion of mankind is fear, and the oldest and strongest kind of fear is fear of the unknown. The unknow leads to anxiety, which gives birth to fear." (Dok 2015.)

As Theo Tsaousides wrote in his article on Psychology Today, fear is partly based on instinct, some of it learned, and the rest taught. It is natural and healthy. Feeling pain causes fear instictively for it is related to survival and has been crucial for the evolution of mankind. Some fears are learned from personal experiences such as certain people, places or situations. Cultural norms often dictate whether something should be feared or not. Fear can be, and often is, imagined, and some neuroscientists claim that humans are the most fearful creatures on the planet because of our ability to learn, think, and create fear in our minds. (Tsaousides 2015.)

A phobia is, as Christian Nordqvist has defined: "a type of anxiety disorder that causes an individual to experience extreme, irrational fear about a situation, a living creature, a place or an object." (Nordqvist 2017.) It is possible to develop a phobia of nearly anything and new potential phobias appear constantly with the changing of society. The way an individual reacts when exposed to the source of their phobia varies but common symptoms are uncontrollable anxiety, compelling feeling of avoiding the source, unavailability to function and not being able to control their feelings even while knowing the fear is irrational and exaggerated. Some of the physical symptoms are sweating, increased heart rate, dizziness, nausea and dry mouth. It is possible to have multiple phobias simultaneously. (Nordqvist 2017.)

Despite living most of our lives in Finland, a country that does not contain any fatally dangerous spiders to humans, arachnophobia, the fear of spiders and other arachnids, is a common phobia. According to a spider researcher Niclas Fritzén, most of the spider species in Finland are unable to even penetrate human skin with their bite, and the species that are large enough to do this can cause allergic reactions, smarting or numbness at worst (Kaakinen 2016). The only seriously dangerous species of spider found in Finland – of which a bite can cause gangrene – is a small population of Chilean recluse spiders found in the Finnish Museum of Natural History in Helsinki. However, there is no proof that the ones in the museum have ever bitten a human (Paananen

2014). In that case, why are people afraid of spiders even when the most of them are completely harmless? The associative perspective states that fear and phobias are mainly consequences of individual's own experiences while nonassociative assumes that they are innate reactions generated during the evolution. Based on these statements a phobia could either be the result of a strong personal experience or an instinctive reaction. (Coelho & Purkis 2009.)

PICTURE 1. A huntsman spider (Photo: Juho Lahti 2016)

Fear is a vital response to either physical or emotional danger. A source of fear could be defined as something that motivates one of the following actions: freeze, fight, flight or fright. Freezing means an action of stopping and focusing on the cause of the fear and most importantly, planning what to do next. Fighting means to confront the cause of the fear head on and act. Flight means running away from the situation or looking for another solution or an escape route. Lastly, fright – the incapability of doing anything at all, therefore differing it from freezing. All of the mentioned are a part of our primal survival instincts. (Tsaousides 2015.)

As fears can form based on strong experiences the way they are triggered depends on the source. For instance, just a sound or a smell can motivate the actions

of fear. People deal with fear individually in different situations and that's what makes horror a fascinating genre to create – to find and provoke those emotions.

3.1.2 Why do people enjoy horror?

Before the birth of modern cinema, horror had been present for ages – in narratives and fables passed down from generation to another as well as in literature, art and theatrical presentations made to scare audiences (Dixon 2010, 1). Supernatural themes that are still present in modern horror fiction have been a major part of the genre throughout history. Dr. Glenn Walters (2004, 5) mentions that curiosity and fascination are some of the emotions horror stimulates and could explain why the genre is enjoyed. Moreover, horror fiction offers the pleasure to enjoy things we should not (Kawin 2012, 16).

As Mark D. Griffiths mentions, people consume horror fiction whether it is a film or a book for different reasons and while there are many theories, none of them fully explain why. It is said that people choose their entertainment because they want it to affect them which seems certainly true when it comes to horror. However, as people are individuals when it comes to fears or phobias, similarly different types of horror fiction affect people in a different way. As proposed by Dr. Walters (2004, 7-11), there are three primary factors that make horror alluring. These factors are tension, relevance and unrealism. Tension is generated by suspense, mystery, terror shock and gore. Relevance may relate to personal relevance, cultural meaningfulness or fear of death for example. Unrealism, or fiction plays an important part when it comes to horror as entertainment as it separates the events from reality. In 1994, when test subjects were shown documentaries including disturbing imagery such as skin surgery or butchering, most couldn't keep watching but when shown horror films with more bloody or violent imagery there was no problem. The answer seemed to be the fictional nature of horror films that placed a psychological distance between the subjects and the violent acts they had witnessed. (Griffiths 2015.)

A person's objectives are different when consuming horror. While thrill and excitement seem like obvious goals, watching violent and frightening films or playing such games can also act as a way to purge negative emotions or to relieve pent-up aggression (Griffiths 2015). Witnessing a character survive through a powerful negative experience with a happy outcome, such as the death of the monster, can stir up positive emotions in

the spectator. By relating to a struggling character one can share some of the stress they experience, as well as the relief given that the ending is happy. In ancient Greece, Aristotle called this carthasis – a theory of the emotional purification experienced through watching a tragedy resulting with corrective and healing effect. (McKeon 2001, 1131, 1458.)

Nowadays, video games are an extremely popular form of horror media and by being interactive experiences they can induce a strong immersion. With the technology constantly improving – including things like virtual reality hardware – the immersion that can be achieved in video games is ever growing. In horror games a player is usually set in the position of a protagonist, trying to survive through the game and sometimes given options to either fight or run. The experience can be emotionally intense but highly rewarding and when asked why people enjoy horror games, a common way to reply is by telling how they get the sensation of bravery. As Koushi Nakanishi, the director of Resident Evil 7 has stated: "Overcoming fear is an addictive experience." The chemicals brain releases when experiencing either genuine or simulated fear are addictive and probably one of the key reasons why people keep enjoying horror media. (Clark 2017.)

3.2.   Horror monsters

A horror creature, or a monster, is a thing that gives the impulse to fear. A monster is a dangerous and repulsive creature that can be deformed, gigantic, composed of the parts of animals, an aberration, not human or no longer simply human (Kawin 2012, 50). In most cases the monster can die but it often requires an unusual condition, and the destruction of a monster seems to be a main goal in many horror stories. Kawin also mentions the monster is feared not only because of its appearance but its power to do terrible things to those we can sympathize with. Some examples of more typical horror monsters are ghosts that have been very common especially in Japanese and Chinese folklore, creatures with features of animals like werewolves, and entities based on religions like the Devil. What happens after death has always been a mystery and theories surrounding it are likely to be the origin for many monsters. Every culture and religion has their own horror stories and monsters that often originate from people trying to explain something seemingly supernatural. Therefore, these monsters are often

tied to specific locations or time. In Japanese horror for instance, ghosts or spirits are often associated with water and humidity – assumably related to shapes in the mist – whereas Western horror tales tend to take place in dry and musty locations. On the other hand, sleep paralysis is suffered across the world and during the experience a sense of a malevolent force hanging over the victim is common. This is likely to be the origin of monsters like la pisadeira, a Brazilian monster that is a tall, skinny woman with long fingernails and red eyes that sits on a sleeping victim's chest watching them panic and being unable to move. Moreover, nightmares in general are likely to have been the origin of many monsters.

H.R. Giger's Alien and H.P. Lovecraft's creatures are examples of monsters that are something unfamiliar from another world. With their unique designs and unknown motives they manage to be quite frightening. In any case, whether a monster is supernatural, an animal or even a human, John Landis calls them the embodiments of fears (Landis 2011, 13.) and they have always been present in storytelling and art.

3.2.1 The idea behind a monster

If a horror monster is an embodiment of fears it should deliver that message both visually and contextually. Because people fear different things it is nearly impossible to design a monster that is scary to everyone. For instance, a swarm of insects killing a person can be hilarious to someone while being a nightmare to another. A monster can have features based on multiple fears but it is important to keep the the design credible and not too extravagant. Even though the usual goal of horror fiction is to terrify or unsettle its audience, horror comedies like Shaun of the Dead (2004) also exist. Nevertheless, the idea behind a monster is what always matters, whether it is comedy or not.

The purpose of a monster in horror is to be dangerous. It is supposed to provoke fear among other emotions and in order to do that, characters must exist in the stories. A listener, spectator or a player sympathizes with the characters therefore sharing some of their emotional burden caused by the monster. Yet, a monster does not necessarily have to be a physical entity – it can also be abstract. In such situation, characters are placed in a tense and dangerous situation with a promise of violence but without it (Extra Credits, The Beast Macabre - What Makes a Monster Scary? 2013). Moreover, the setting and

sounds hint of danger thus giving the reason to fear. As an example, video games in Project Zero series give the player fleeting glimpses of unknown things and situations, such as ghosts, as flashbacks. However, while there is no direct danger, the player begins expecting it and gets anxious. Similarly a setting itself – like a haunted house – can act as a monster.

A monster does not necessarily have to be supernatural to be scary. For instance, piranhas or some insects are exceptionally terrifying in large numbers. On the other hand, by magnifying an animal such as a spider can really amplify its scariness. Moreover, "People", as Kawin (2012, 152) mentions: "can behave like monsters." As a species with morals, rules and social standards, a person breaking these can turn into a source of horror. Slasher films like The Texas Chainsaw Massacre (1974) follow this idea. A human can take the role of a monster by committing inhuman acts such as murder and torture thus representing some of the worst aspects of humanity (Kawin 2012, 152). Even though characters like Michael Myers – the murderer in Halloween (1978) – appear to have supernatural features, he is a human and some events happening in the film could theoretically happen in real life as well. The realism is what makes these monsters terrifying but because of the context being a fictional story, watching the terrible acts can be enjoyed. Some other examples of human monsters are cannibals, cultists or even romantics like Erik in The Phantom of the Opera.

A monster representing negative aspects of humanity can also be given an inhuman mask. For instance, zombies, while being scary and causing a catastrophe by themselves, can bring forth the fragility of human mind causing people to lose their social senses when faced with such a threat (Extra Credits, The Beast Macabre - What Makes a Monster Scary? 2013). In a scenario as such it is the people who are to be afraid of as they struggle to survive. Another example, the Pyramid Head (PICTURE 2) in Silent Hill 2 literally represents the worst characteristics of the game's protagonist James. By repeatedly killing Maria, Pyramid Head causes him to experience guilt and suffering for he is in denial after killing his own wife Mary. This monster chases the protagonist throughout the game and committing brutal acts that James may have done or thought of doing, such as murder or sexual assault. (Silent Hill Wiki 2006.)

PICTURE 2. Pyramid head in Silent Hill 2 (Source: https://indecom.deviantart.com 2007)

3.2.2 Supernaturality

Supernatural creatures, whether invented by a writer or passed down as a part of a narrative, form the most common and the largest category of monsters. While the range of different types of supernatural creatures is practically unlimited, there is a factor that unifies them all – the concept of unknown. The reason we may fear the supernatural is because we don't understand it (Kawin 2012, 91). Zombies, for example, are living dead people, and the thought of a walking corpse is terrifying because it does not follow a common sense. Moreover, the fact that a zombie can infect one with a single bite turning the victim into a zombie pushes the horror even further. H. P. Lovecraft's stories revolve around entities from other realms and the concept of unknown introducing terrifying aliens and deities such as Cthulhu, often described as the combination of a human, an octopus and a dragon. A monster doesn't necessarily require a material body. An unknown evil force – like in Paranormal Activity film series where families are haunted by a demonic presence – can be intimidating as well.

While the most supernatural monsters in horror fiction seem to be portrayed as harmful or evil, an entity cannot be defined evil solely by being supernatural. Supernatural creatures are common in stories overall but even in horror they are not always evil.

Kawin uses werewolves as an example of this. If a person doesn't want to be a werewolf a spectator does not see them as evil but a victim of evil forces instead (Kawin 2012, 91). Although the concept of a monster being evil is common in horror films it is not absolute. Like an animal, a monster may simply be following its nature whether it is supernatural or not.

As there are no general rules to horror, a monster can represent more than one of the mentioned features. Some monsters are tied to a society of a certain age (Extra Credits, The Beast Macabre - What Makes a Monster Scary? 2013). In the 1950's for instance the fear of nuclear weapons and radiation was one of the main themes in horror fiction resulting in films such as Godzilla (1954).

3.3.   Visual appeal of a monster

As Istebrak mentions in her monster design critique video, unfamiliar and unsettling features are the base for a creepy creature design. For example, removing features like eyes from a regular human face, and emphasizing others by magnifying or replacing them with that of an animal can result with something that is both unfamiliar and unsettling. Depending on which senses, such as hearing, seeing, smelling, are the strongest in the creature, can tell a lot about it. A creature with big ears and big nose but no eyes tells the creature certainly doesn't rely on seeing so it is most likely more or less nocturnal. (Istebrak, Critique Hour! Creepy Creature Design Challenge! How to Design a Creepy Creature. 2016, 0:13:00.)

H.R. Giger's Alien has sharp teeth, another mouth inside its mouth, no eyes and parts of it look like a machine. These unfamiliar features form an unsettling entity and are the reason why the design works. Although, when combining features from different references such as animals, what must be kept in mind is to keep the design credible in a sense that the viewer believes such a thing could exist. (Istebrak, Critique Hour! Creepy Creature Design Challenge! How to Design a Creepy Creature. 2016, 0:15:00.)

At times, leaving some parts of the body, such as eyes, completely off can be effective. As an example, The Caretaker in The Witcher 3: Wild Hunt is a tall man wearing a long robe, has nothing but cuts and mouth for a face, and tries to kill the player with a rusty

showel (PICTURE 4). Similarly, giving a non-human creature a human face can have frightening results.

PICTURE 3. Monster design moodboard on Pinterest (Screenshot: Juho Lahti 2018)

It is good to note that creepy and scary do not necessarily mean the same thing. As an example of the combination of both creepy and cute features Istebrak uses Stitch from Disney's animated film Lilo and Stitch. Koala and cat-like features form Stich's overall design which is familiar and cute but the exaggeratedly large mouth filled with sharp teeth bring creepy elements to the creature. Yet, the monster is still not scary. (Istebrak, Critique Hour! Creepy Creature Design Challenge! How to Design a Creepy Creature. 2016, 0:17:00.)

A good monster design tells a story merely by its appearance. Being able to figure out some of the background of a creature just by looking at it is always interesting. For instance, the ghosts in Project Zero game series carry their own murder weapons and all of the enemies in The Last of Us clearly used to be human but have slowly turned into zombie-like monsters because of a fungal infection. Many of the monsters in Bloodborne seem like normal humans in the first glance but when a better look is taken, they have grown fur and claws or just rotted, some of them still thinking they are human. The Witcher game series offers a fascinating amount of depth to every monster the protagonist Geralt encounters. They all have backstories which can be seen in the creatures' design and the player is often tasked to find out the reason why something or someone is a monster to begin with.

PICTURE 4. The Caretaker in The Witcher 3: Wild Hunt (Screenshot: Juho Lahti 2015)

3.3.1 Basics of horror creature design

When concepting a creature or a character there should always be breathing room for the designs instead of filling the whole page or canvas. Another important rule to remember, as noted by Istebrak, is that if the design reads well as a silhouette it most likely is good. To keep sketches as clear as possible, extra lines and texturing should be avoided. However, by working smartly on lines they can be iterated. For example, for a furry creature it is better to draw clusters of fur here and there instead of texturing the whole creature. Gesture lines and basic shapes with no specific details are what one should begin working on first. Moreover, experimenting with basic shapes for different parts of a creature can provide a very original and unique silhouette. Furthermore, posing the creature is important as well. It can be done using gesture lines and may help to understand the anatomy. Creepiness can be achieved solely with ominous or offensive posing. (Istebrak, Critique Hour! Creepy Creature Design Challenge! How to Design a Creepy Creature. 2016, 0:20:00, 1:03:00.)
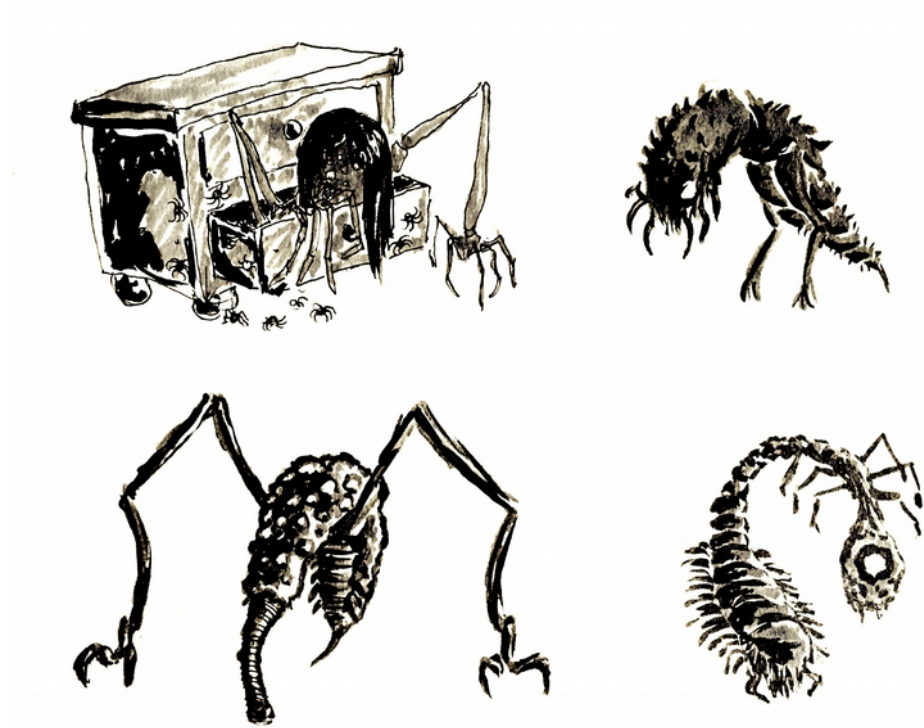
PICTURE 5. Early sketches for the thesis project (Image: Juho Lahti 2018)

When observing monster silhouettes round shapes often give more of a cute and familiar impression and are not as intimidating as sharp and pointy shapes. The answer to why pointy shapes tend to be more frightening may be in nature. Through evolution some plants and animals have developed spikes and thorns among other features causing them to seem dangerous to avoid being eaten or killed. In other words, the reason why humans see these sharp shapes as scary may be because of evolution and our ancestors who learned to avoid them.

The thought of a dead living, as mentioned before, does not make sense. While this is not always the case, in horror corpses are often described as filthy and disgusting. The fear of diseases and contamination along with the illogicality of living dead explains why zombies for instance are scary. However, these features can also be applied to a living monster and may prove with horrifying results. Nonetheless, while an undead or just a dead body can be scary, usually the most effective monster designs are living creatures with functional anatomy (Istebrak, Critique Hour! Creepy Creature Design Challenge! How to Design a Creepy Creature. 2016, 0:57:00). Giger's Alien is a great example how an anatomically functional design can be terrifying.

3.3.2 Motion causing terror

While a monster's visual design can be striking by itself, it rarely is horrifying enough to cause a genuine reaction. A creature that moves can be a lot more effective.. For instance, the scene in The Exorcist (1972) where teenage girl Regan runs down the stairs upside down like a spider is very unsettling and disturbing and works even without audio. Likewise, the monster in The Thing (1982) has a very unpredictable and disturbing way of moving depending on the host body it has taken over. While the film has visually suffered in time, it still manages to shock.

The nurses in Silent Hill 2 are a good example of monster animation. As they walk or crawl towards the player they tend to twitch and jerk to different directions making their movement hard to predict. Skulls that are parasite-enchanced super soldiers in Metal Gear Solid V: The Phantom Pain vary their movement speed violently and twitch from time to time. It makes these dangerous enemies difficult to predict therefore causing anxiety in the player. In Horror Short Film: Midnight Story by Alternate Studio the mother creature is smashed in the corner and when she starts getting up slowly the viewers gaze is mainly focused on her upwards flowing hair (PICTURE 6). She is facing back towards the camera and her daughter and suddenly charges at them really fast (Alternate Studio, Horror Short Film: Midnight Story. 2016, 2:50). The scene has great use of different speeds in the animation catching the viewer completely off-guard. Similarly, Madmen in Bloodborne may appear to be fairly far from the player but suddenly charge towards them at high speed screaming horribly while doing so (Loudbears, Bloodborne – Spectres and Madmen. 2016, 1:15).

PICTURE 6. Mother creature just before charging (Alternate studio, Horror Short Film : Midnight Story. 2016)

All of the before mentioned animation examples had a feature that unified them – unpredictability. Being unable to predict a monster's movements causes anxiety which leads to fear. However, not all monsters can move fast and unpredictably. As the monster's size, weight and anatomy vary, the animation should support that. While smaller creatures tend to be fast, a large and heavy monster is likely to move slower and more predictably. Yet, by changing the pose or the way of moving to something that is unexpected but credible can impact a large monster's scariness. For example, switching a creature's pose from standing on two legs to four legs, or making the movement asymmetric are ways to increase the unpredictability. Similarly, animals like bears tend to change pose in order to look more intimidating when being threatened or trying to scare off something.

While there are no rules to animating horror monsters specifically, unpredictability and timing seem to be the most important keywords. Timing means attributes such as the speed of an action as well as the execution time of different actions like attacking or charging. Timing is extremely important when an animation's goal is to cause fear or panic. Moreover, it is also a key factor to unpredictability.

Why is the motion of a monster so important? In horror, just like a creature's concept or visual design aims to provoke fear or other emotions in the spectator, similarly motion follows the same goal. A successful animation or acting increases uneasiness or startles a viewer by itself. Furthermore, motion can provoke multiple emotions such as terror, amusement or even disgust. Badly executed or unsuitable motion may ruin a scene and the credibility of a monster completely.

3.4.   The importance of a setting

While a monster that moves can induce fear by itself, it seldom is enough as the monster needs a purpose and a setting. Even a still image of a horror monster is more effective when placed in some sort of setting. A horror narrative without a setting is essentially just a description of a monster.

As a horror monster needs a purpose the most common one is being a threat to someone or something the viewer can sympathize with. While a monster is the source of fear it needs a domain where its terrifying features excel. Alien (1979) takes place on a dark and cramped space ship – a perfect place for a smart monster that travels quickly through air shafts and narrow corridors hunting members of the crew one by one. Tsugumi Ohba, the creator of Death Note has advised to take a hero into a situation that even the creator can not figure a way out of, and to work from there (Fabiano, GDC Vault Reliving the Horror Taking Resident Evil 7 Forward by Looking Back. 2017, 22:20). Therefore, building a setting based on a monster's strengths – like the Alien and its ability to travel through cramped spaces – often compliments the creature in the terms of a story as well.

PICTURE 7. The claustrophobic camera angle in Resident Evil
(Resident Evil, Ars Technica 2014)

In the horror fiction the setting is almost like a character itself, as mentioned in Extra Credits' video. Moreover, it usually is based on one or more of the types mentioned below.

- Place of disempowerment, such as low light setting is where the character's or the viewer's ability to see is restricted by reducing their ability to see. The goal of this setting is to have the character confused and lost in order to inflict fear. However, the same effect can also be achieved by using camera like in video game Resident Evil (PICTURE 7) where the control of the camera is taken from the player and replaced with claustrophobic fixed angles that only reveal a small

amount of space at once. As this setting is based on disempowering characters there are more ways to do it than decreasing the visibility. For instance, this could be limiting resources or ammo, or not giving the character a chance to fight at all, like in video games Outlast and Amnesia: The Dark Descent. Unfamiliar or alien settings belong this category as well for not knowing or understanding one's surroundings tends to disempower them.

- Place of isolation, like in The Thing (1982) where a group of scientists is stuck with a monster at a research station in Antarctica. The station is isolated by dark and hostile environment and therefore offers no chance of escaping. Resident Evil is set in a massive mansion filled with zombies among other monsters and the player is forced to take risks and explore in order to progress and finally escape. Furthermore, there is potential danger anywhere and very few safe rooms. As the name of the category suggests, the goal is to isolate a character in a dangerous environment thus forcing them to act in order to survive.

- Psychological landscape – a physical representation of a characters inner life, like in Silent Hill 2 where the setting and not only Pyramid Head, but other monsters as well are formed around protagonist's negative aspects. Furthermore, in Max Payne the player occasionally enters a nightmare world where they run on blood trails and rooms based on Max's home trying to reach his murdered wife and child. While there is no direct danger, the cry of a baby, the sounds from a music box and his wife's screams really intensify this overall disturbing setting that is repeated a few times during the game. In conclusion, the purpose of this kind of psychological setting is to force characters to the most vulnerable state possible – often by revealing the worst sides from their life.

- Last general type of horror settings is a place with a negative nuance. Prisons, hospitals and tombs are a common example the follow this idea. These places are usually connected to negative or scary occurrences – such as crime, death or mental problems – and are therefore powerful platforms to work on further. While cemeteries and asylums are obvious examples of this type of setting, places like houses with a dark past – or haunted houses – belong to this category as well. (Extra Credits, Places of Horror – The Secrets of Scary Settings. 2015.)

As mentioned, a horror setting can, and often does include more than one of the types mentioned. However, while the general type of a setting, such as a place with a negative nuance is important, it is not necessarily enough to build a successful entirety. A setting is built from multiple elements depending on how the story is delivered. Whereas

everything is described verbally in a narrative, a film or a game must include visual architecture, props, colours, lighting and sound. Creatures like insects or birds may be treated as props that bring more detail and life to a setting. Settings in horror may vary depending on the culture as well. In East Asia for instance, spirits and ghosts are common in horror stories and often connected to damp and humid settings or water in general.

3.4.1 Colours for a setting

Colours play an extremely important part when designing a setting. They define the overall mood or emotion of the setting, or an individual shot. As noted in Blender Guru's video, when colours are used correctly, they can lead viewer's attention to what is relevant. However, when used incorrectly they can break the whole image or setting. Understanding colours and their usage may amplify any kind of mood or no matter how simple the setting is otherwise. Furthermore, colours include a lot of symbolism and meanings which may differ depending on the culture or religion. (YouTube, Understanding Color. 2014, 0:30, 1:00.)

The key features of colouring are saturation and value, or brightness. Unless the desired visual result is stylized like in cartoons, using highly saturated colours can ruin the mood of a scene causing it to look fake. Moreover, too saturated colours may be irritating to look at and thus the viewer's eyes won't be able to rest. However, high saturation can and should be used to highlight parts of a scene and to guide the viewer's eyes. Different moods can be achieved by adjusting saturation and brightness of the colours. For example, in the animated film Up (2009) positive emotions in happy scenes are shown by using strong saturation and warm, vivid colours, while a sad scene has dark, cold tones and barely any saturation (PICTURE 8). (Blender Guru, Understanding Color. 2014, 2:00, 7:00.)
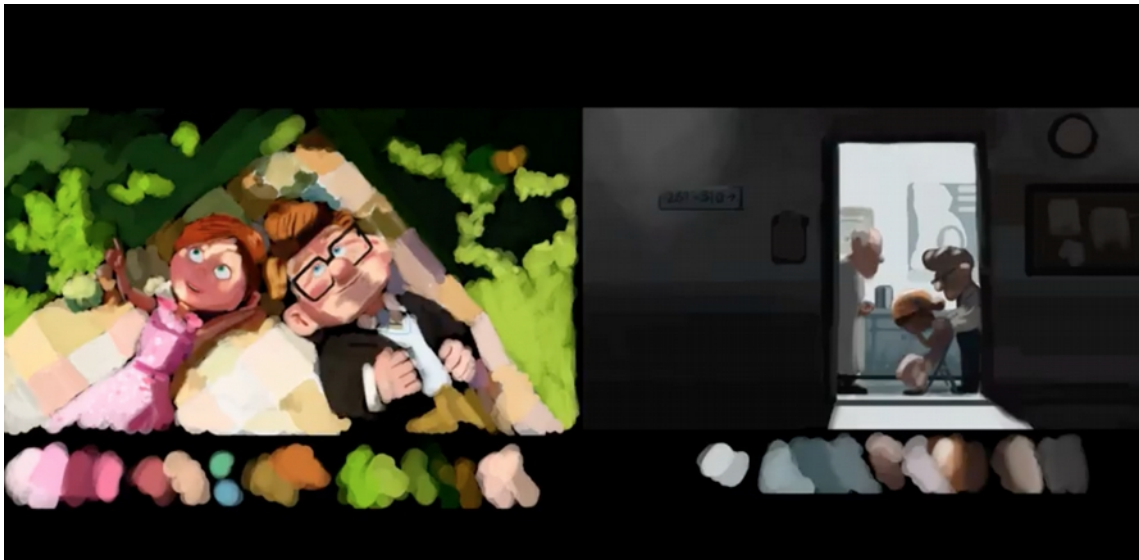
PICTURE 8. Screenshot of Up's colour harmonies (Blender Guru, Understanding Color. 2014.)

When planning colours for a scene or an image, understanding colour harmonies is nearly essential in order to bring forth the right emotion. There are six basic colour harmonies that have been proven to work (PICTURE 9) and may act as reliable guides when selecting colours for anything. However, as mentioned earlier, brightness and saturation are the key features especially when it comes to colour harmonies in order to avoid irritation in eyes. For example, a complementary harmony's point is to have complementary colours such as green and red. However, if bright and highly saturated green is used with as strong red the result is heavy on eyes. Thus, one of the two colours is usually chosen as the dominating one while the complementary colour is used for highlights, to create tension or to increase the sense of depth by using one colour on the background and other on the foreground. At all times it is crucial to pay attention to the values of all colours. (Blender Guru, Understanding Color. 2014, 8:00.)

Similarly to set building and prop planning in theatre one should have an understanding of colours and lights when creating art or planning a setting for an animation for example. As mentioned earlier, one can emphasize certain parts of an image or a scene solely by smart colouring. Therefore, the knowledge of colours is useful when setting up lighting as well. Lights play an important part in the mood of a setting. Moreover, with lights one can portrait whether a scene is indoors or outdoors. Different emotions can be achieved solely using lights. In black and white pictures or settings lights override the colour's task to deliver moods making them extremely important.
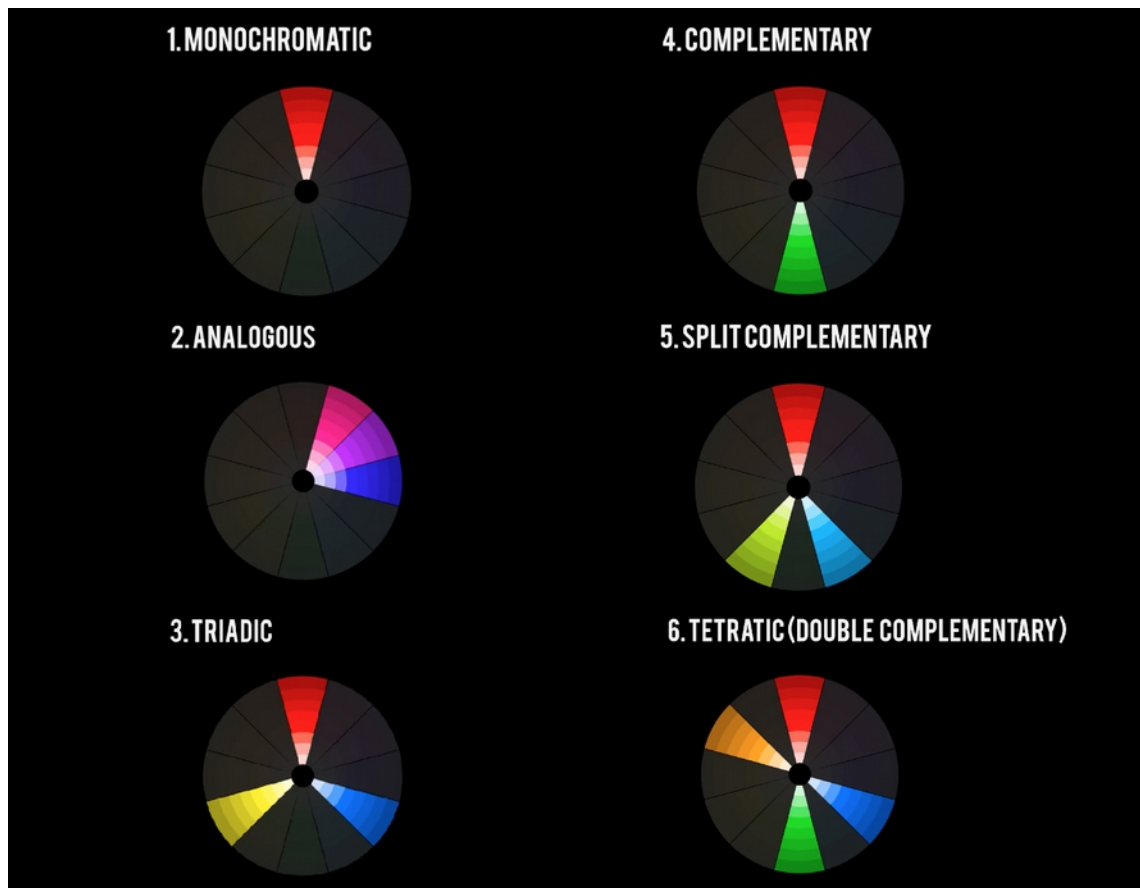
PICTURE 9. Six types of colour harmonies. Picture made from screenshots (Blender Guru, Understanding Color. 2014.)

In horror, both colours and lighting play an extremely important role in achieving a scary mood. Monochromatic, a colour harmony built around a single colour by adjusting saturation and brightness, seems to be very common in horror. A good example of successful use of monochromatic colour harmony is the short film Tsume (2014). In the film, the variation of brightness and saturation manages to deliver different moods while keeping the purple colour scheme at all times. Bloodborne (PICTURE 10) is another excellent example of having a well-thought colour scheme. Being mostly complementary the dominating colour changes depending on the location in the game. Although a horror setting often is fairly dark it does not necessarily have to be. Moreover, muted colours – or colours with low saturation – seem to be very common. However, in psychological horror oversaturated and psychedelic scenes can have a powerful effect even though, or perhaps because, they don't necessarily follow the rules of the six colour harmonies mentioned previously. (Topless, Tsume. 2014.)

PICTURE 10. The complementary colour harmony in Bloodborne (Screenshot: Juho Lahti 2014)

3.4.2 Sound in horror

Sound design is arguably as important in horror films and games as the whole visual aspect. Sound effects and music have a huge impact on the overall atmosphere and a well-designed sound environment can be terrifying by itself. Sounds may create associations to horror even when not in contact with such media at the time. As an example, Kayla Herrera uses Silent Hill game series where the ominous sound of a siren is so iconic that hearing the same sound somewhere in the real world instantly reminds of Silent Hill and approaching danger. The sound Clickers emit in The Last of Us is not even remotely frightening before playing the game. However, after meeting the mentioned monster in the game one is reminded of these terrifying creatures every time the clacking sound of teeth is heard. (Herrera. 2016. Why Sound Design in Horror Gaming Matters.)

Dead Space is known for its extremely successful sound design. The sounds in the game make the environment feel alive and frighteningly believable. As can be heard in Ken Wainwright's video of Dead Space's ambience, the environment consists of sounds such as pipes hissing, objects falling, the humming metallic sound of the space ship, monsters growling and occasional foot steps among many other things (Ken Wainwright. Dead Space: Ishimura Medical Ambience and Monster Sounds. 2017).

Together little details like these form a deep atmosphere that should always be reached for in horror in order to achieve an immersion. The goal of sound should be to keep players on their toes at most times and it is possible solely with a successful ambience. While monster sounds should be credible and fitting for them, the noise in the environment as well as silence are what actually form most of the atmosphere. However, even silence needs to be controlled by always having white noise or some other sort of humming in the background. Absolute silence or even the lack of some sounds can result in ruined immersion and a broken scene.

Although sound effects are arguably more important in horror, music too can provoke different emotions. It can be used to evoke anxiety and terror as well as to disorient the audience. An example of disorienting is playing happy music in a scary scene. The previously mentioned Max Payne's nightmare levels for instance have the sound of a music box playing in the background while player runs through the horrible setting of blood trails and claustrophobic hallways. In this case the mixture of positive audio and negative imagery is what disorients the viewer by not making sense causing uneasiness and anxiety. Naturally, intense and disturbing music are effective and common in horror. However, tension and anxiety can also be induced as simply as having a single note constantly playing in the background. Nonetheless, at most times music should be used together with sound effects in order to maximize their potential.

Like storytelling, audio also need contrasts and variation in both loudness and melodies. Not only is the sound's purpose to explain aurally what is happening but also to communicate with the spectator and lead them. Trying to scare a viewer with audio all the time will only result in annoyance and boredom. Therefore, it is necessary to also have quiet phases to build up the suspense. In some cases – like in Jaws (1975) when the shark is approaching – a spectator is lead to predict what is likely to happen next using familiar audio or a melody. Yet, oftentimes the goal is to frighten them when they least expect it which is why sound is crucial in jump scares.

4   DESIGNING A HORROR MONSTER

4.1.   Pre-production

As enough knowledge about horror genre and creature design was gathered, the next phase of the thesis was to begin the practical part with an end product of a 3D animated horror short film *Barbie* (https://www.youtube.com/watch?v=yueyHkrwFL0).

The short film was to be built around a monster design and thus the first step was to design the creature. The workflow of the monster design consisted of several steps including

- finding references and creating a mood board
- coming up with a monster design using the gained knowledge and references
- writing a background story for the monster
- painting a concept art and a turnaround
- 3D modelling, texturing and rigging the creature.

Before carrying out with the animation of the monster, a story for the short film was to be created and visualized on a storyboard. Lastly, the setting was to be 3D modelled to finishing the pre-production phase.

4.1.1   References and mood board

In order to draw a conclusion of common colours and features of horror monsters a mood board was to be created. By using Google's image search and Pinterest with keywords such as 'horror', 'monster' and 'scary', a mood board of monsters was formed including creatures from films, video games or just art. Moreover, branching out to not only Western but also Asian horror imagery broadened the range of scary creatures on the board. Analysing the contents of the mood board helped to understand what kind of features made monsters or animals frightening. In conclusion, sickly details like unhealthy skin or tumors, sharp teeth and nails, lack of some body parts, and bestial features seemed to be rather common. Futhermore, while monster designs of all kinds were found, a vast majority of them were more or less based on humans.
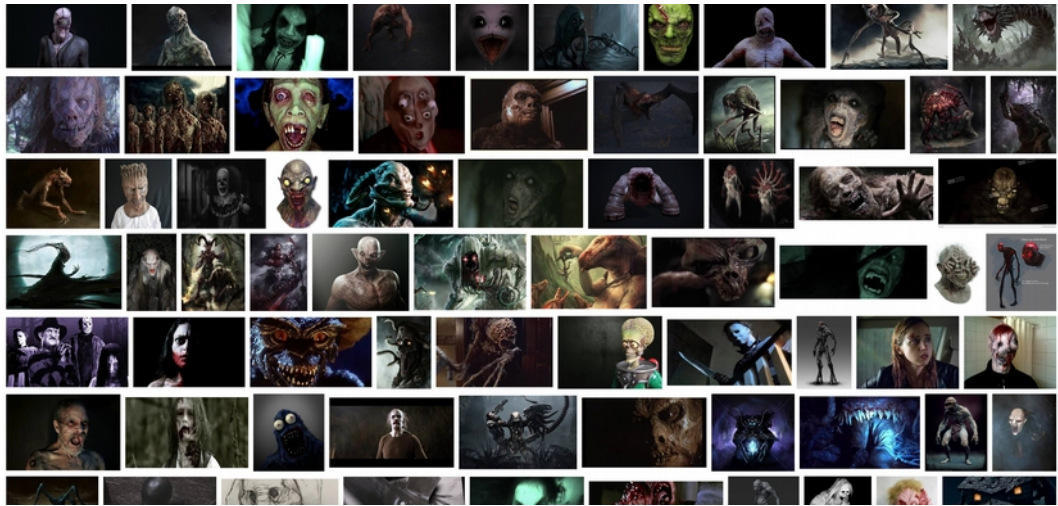
PICTURE 11. Screenshot of Google's image search results with the search word 'horror monster' (Screenshot: Juho Lahti 2018)

While the monsters on the mood board had been designed with different goals in mind the unfamiliarity and unknown were strong factors in nearly all of them. Some of the creatures had an unnatural amount or a lack of body parts like eyes or fingers while others were completely malformed into something gory that barely resembled of what had been a human once. Most of the monster designs were very unsettling and tended to provoke thoughts about their origins. Their colours were often very desaturated and cool. Moreover, red and blue tints dominated most of the designs and strong contrasts in colours and especially light were used a lot. Futhermore, monochromatic and complementary colour harmonies seemed the most common.

4.1.2 Creature concept

When creating a scary monster the aim was to make it as believable and convincing as possible. While the fear of the unknown was almost a necessary feature, the monster had to be something a viewer can familiarize themselves with. As mentioned previously, an effective monster design tells a story by itself, like necromorphs that are humans taken over and transformed by a violent alien race in Dead Space. Some of these creatures with their ruptured bodies and long, sharp bones still have the remains of their clothes and accessories on thus offering more backstory. Having something recognizable and familiar mixed with features that do not make sense is often an effective way to create horror. (Dok, Horror Game Design : Visual Design IV (Monsters). 2015.)

PICTURE 12. Junji Ito's work that inspired the creation of Barbie
(Source: https://www.pinterest.com.au/pin/349732727298603282/ 2018)

The work on the design began by sketching out various kinds of monsters and silhouettes. Exploitation of being arachnophobic and afraid of many insects in general was one of the foundations for the final design. Therefore, many of the sketched monsters had features from insects. Moreover, in childhood the fear of the arrival of a monster during the night was strong which ended up being another important factor in the design. Furthermore, Junji Ito's art (PICTURE 12) was an inspiration to both the design of the monster and the setting.

The creature was to be unsettling and weird at the same time. Unnaturally long fingers on multiple spider-like arms and twisted neck were some of the key elements of the design. Being inspired by Ito's mentioned art, the concept of a monster crawling out from a drawer in children's bedroom was developed. While the creature had many arms like an insect it was to have some clear features of a human as well. Moreover, the decision for the monster to have feminine features was made quite early during the creation process. Moreover, as expecially female spiders tend to have large abdomen, the monster – resembling mostly a human – was designed to be pregnant. The fear of becoming pregnant as well as the fear of losing a child were both issues that were kept in mind during the design process. Futhermore, this gave the creature more appealing characteristics and a good starting point for the backstory. In order to make the monster more intense and disturbing she was left naked and given a large, lipless and constantly smiling mouth. While round and symmetric shapes are generally less intimidating and

creepy than sharp, asymmetric ones, a complete lack of body hair and a mixture of human and animal-like features felt unsettling and promising. Moreover, the silhouette did not feel familiar at all which was promising. Some influential video game monster references were Dead Hand in The Legend of Zelda: Ocarina of Time, Sewer Centipedes in Dark Souls 3, monsters in Little Nightmares and Necromorphs in Dead Space.

Before the final design was ready a backstory for the monster was written in case some of its details could be reflected on the design. The creature got the name Barbie by being the first name coming to mind. Furthermore, the irony of sharing a name with a harmless children's toy seemed like a good twist giving the creature an unsettling attribute. As for the story, Barbie was once a woman who suffered a miscarriage during the later months of pregnancy. After the incident, grief and depression eventually lead to her suicide. However, the immense sadness and jealosy towards other mothers and their healthy children turned Barbie into a creeping, bitter creature that hunts sleeping children and steals clothes for the stillborn which she still carries inside her womb even after death, ever believing that one day she will give birth to a healthy child. Barbie attacks mainly during nighttime – after emerging from a bedroom drawer – by wrapping her bony fingers around a sleeping child and slowly swallowing them whole. Children uncovered by a blanket are more likely to be her victims. Her spider-like body with multiple long arms allow her formidable mobility and strength as well as the ability to climb walls and ceilings. She does not attack children that are awake but if a child wakes up during an attack she might drag the victim back to the drawer and drown them in the water inside it – for every night Barbie miscarries and fills the drawer with the water from her womb. After returning to the drawer and closing it Barbie disappears until the next time it attacks – likely in another bedroom. (See Appendix 1.)

Jealosy is a common reason for murder across the world and it is also what drives Barbie to kill innocent children. Her obsession with the unfairness of life caused her to commit suicide but ironically the same emotion was what brought her back as a mutilated monster therefore not letting her spirit rest. Moreover, Barbie hunts innocent sleeping children. While sleep can be treated as a form of safety when both mind and body are resting, a monster that threats that safety is bound to become a source of fear.
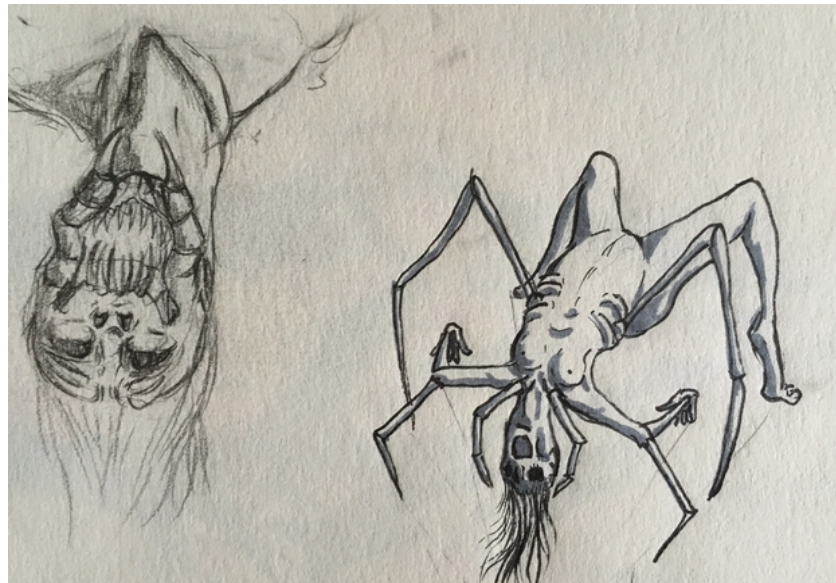
PICTURE 13. Earlier sketches of Barbie (Image: Juho Lahti 2018)

Since Barbie was supposed to crawl out from a cramped drawer she had to be very flexible. Adding extra joints to each of the six arms and a long bending back resembling that of an insect seemed practical. Furthermore, being a creature that would use her massive non-blinking eyes mainly for hunting, Barbie was given really small nostrils and no ears at all. Similar to cats, Barbie could see in the dark. After iterating long enough and getting feedback from friends including illustrators, the final design of Barbie was ready (PICTURE 14).
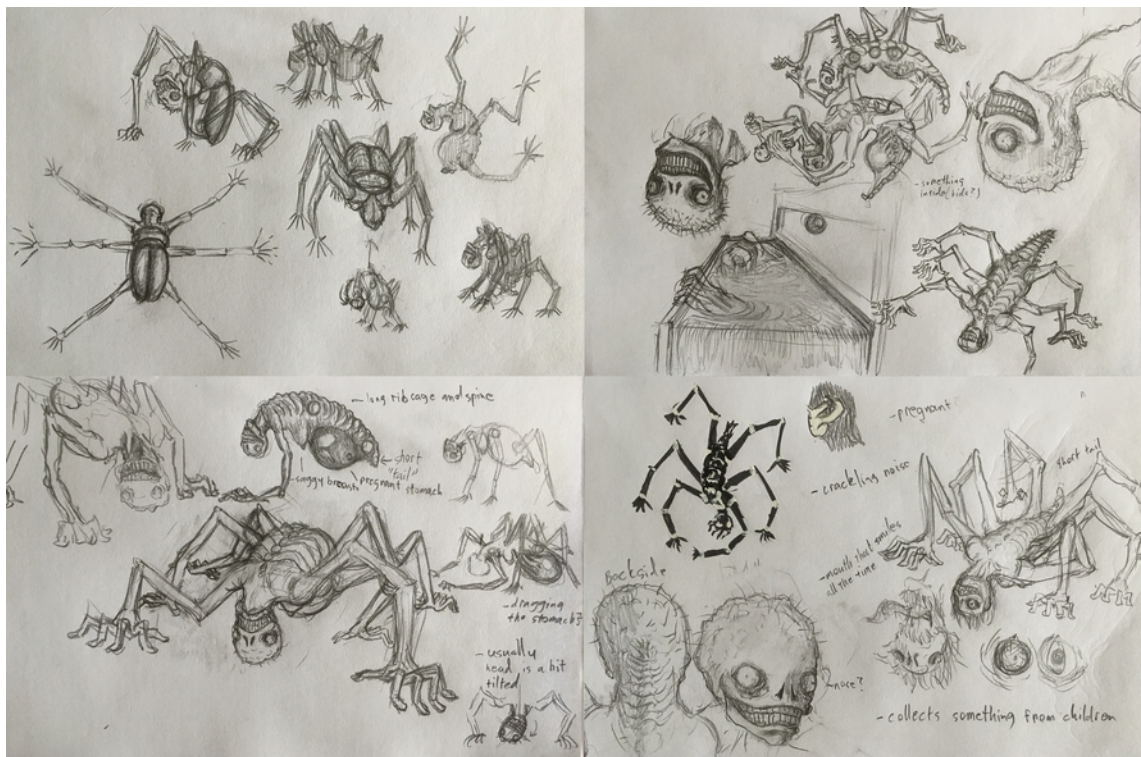
PICTURE 14. Last sketches of Barbie (Image: Juho Lahti 2018)

After finalizing the design, a proper concept art of Barbie was to be digitally painted on Adobe Photoshop in order to get a proper image of the creature inlcuding details on her skin. Moreover, suitable colours had to be chosen. The concept art also functioned as a guide later when Barbie's 3D model was textured. In order to come up with a suitable colour scheme the mood board was used. After trying out different dominating colours Barbie's unhealthy and pale body was painted monochromatic using shades of red. Furthermore, some highlights like the spots on the head were coloured using brighter and more saturated reds leaving areas such as the eye sockets dark and desaturated. When the painting was satisfactory (PICTURE 15), it was shared with friends and posted on a Facebook group Ten thousand hours (See Appendix 2.) where thousands of digital art hobbyists and professionals alike share their work and provide feedback. While no significant feedback on the design was given on Ten thousand hours, tips for animation references were provided. Illustrator friends advised to make the torso more like that of an insect.

PICTURE 15. Final concept art of Barbie (Image: Juho Lahti 2018)

With the concept art of Barbie ready, a character sheet, or a turnaround with pictures of the monster from four different directions was drawn (PICTURE 16). The purpose of

the turnaround was to act as a guide during 3D modelling to get the proportions right and see all details from different angles.
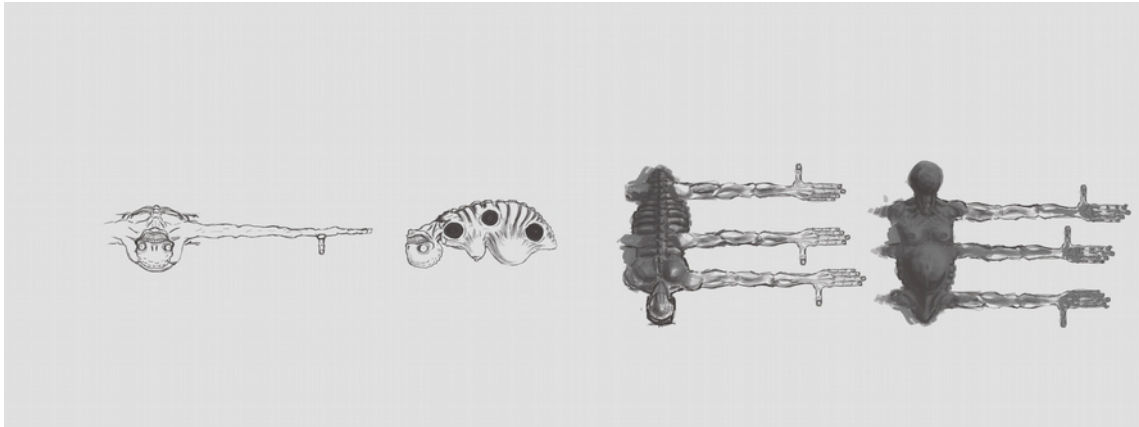
PICTURE 16. Turnaround of Barbie (Image: Juho Lahti 2018)

4.2. 3D modelling

As Barbie's backstory and design were ready, the next step was to 3D model her. Blender was used in all 3D modelling – including the creature and the setting – as well as animating later on. This part of the thesis goes through the process of 3D modelling the monster to the point where it is ready to be animated.

The 3D modelling commenced by modelling of the general shape of the monster starting from the head and followed by the torso. By separating the screen into four different sections the use of the previously made turnaround as guidance was enabled (PICTURE 17). As the monster was to be stylized and not photorealistic – and to save computing power – the amount of polygons were to be kept low. Furthermore, a smaller polycount allowed better control over the topology.
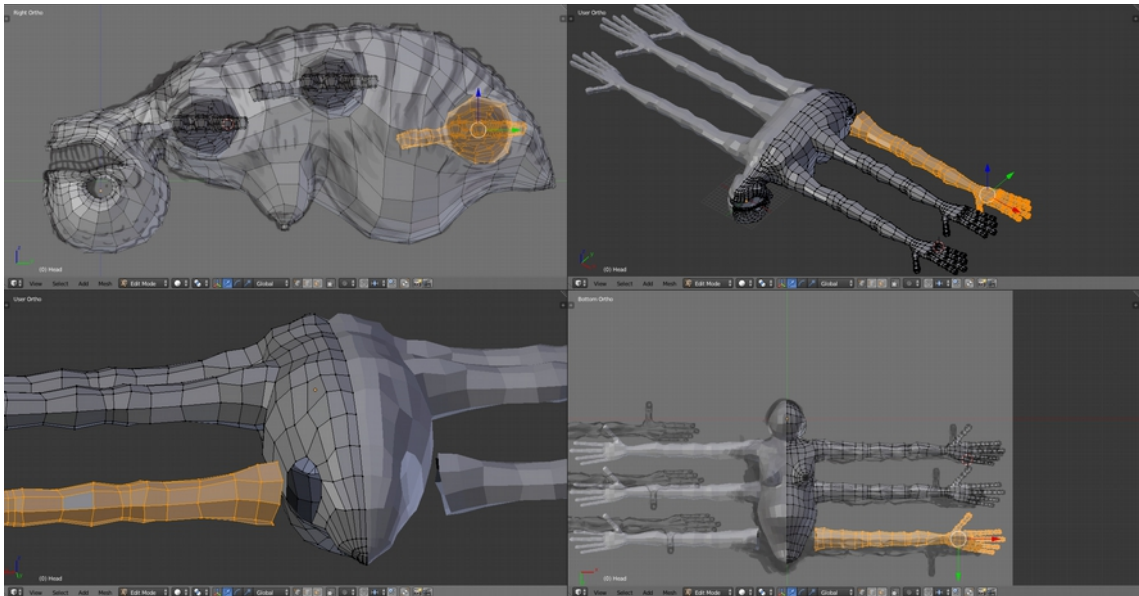
PICTURE 17. 3D modelling the body (Screenshot: Juho Lahti 2018)

When Barbie's torso along with her breasts and stomach were done, arms and hands were modelled. In order to have a functional and clear topology, quads – polygons consisted of four vertices – are preferred over triangles. Yet, while working on Barbie's hands a few triangles were difficult to avoid. In video game context, whether polygons are quads or triangles matters less. However, in film CGI quads and smooth topology are always preferred to ensure the functioning of subdivision surface algorithms as well as cleaner folding when animated. After the body was finished, facial features such as teeth were added.

4.2.1 UV unwrapping

As mentioned by Tapio Terävä, while modelling is what forms the three-dimensional shape of a creature, textures and materials are often necessary. Without them the model is but a single-coloured object. Therefore, the next phase was to UV unwrap the model in order to create normal map and texture for it. (Terävä 2017, 18.)

UV unwrapping often requires marking seams to the model. They separate parts of the model on the UV map that is essentially a 2D projection of a 3D model. Similarly to clothes are created based on patterns, UV unwrapping follows the same general idea albeit in reverse. After the seams on Barbie's model were marked the next step was to use the final UV map to create a normal map.

4.2.2 Normal map

Tapio Terävä describes normal maps similar to basic bump maps but more advanced. They adjust the direction of the model's surface normals instead of storing simple one-directional height information allowing more complex detail to be depicted (Terävä 2017, 24). To create a normal map the shape of the model needed more detail, and by adding a Multiresolution modifier the visual density of Barbie's vertices was multiplied while not sacrificing any computing power. Moreover, the feature allowed the possibility to create a detailed high poly sculpture of the model. The main reason for using the normal map was to have more emphasis on Barbie's rib cage, face and finger details.
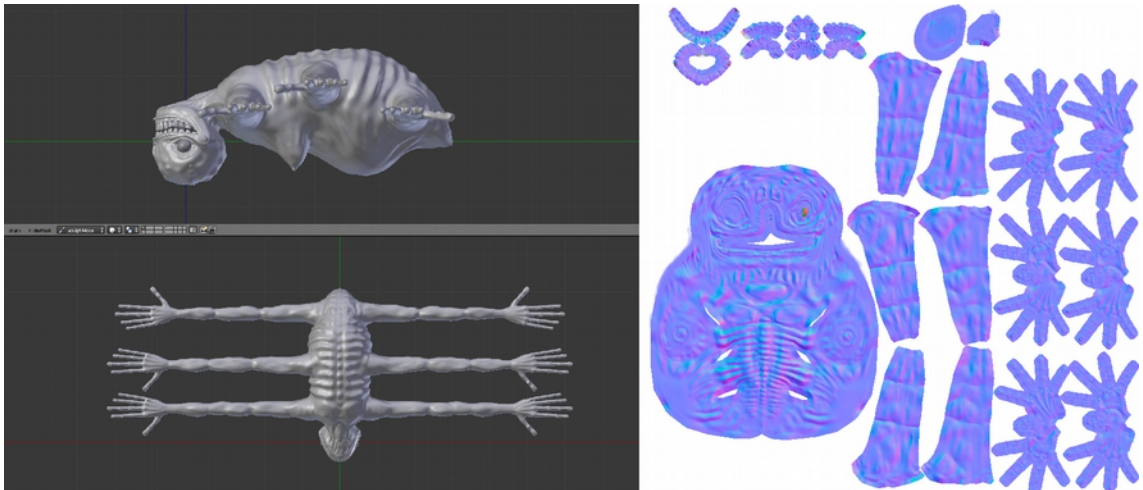
PICTURE 18. The final sculpt and normal map (Screenshot: Juho Lahti 2018)

After finishing the sculpture a normal map was baked and set on Barbie's model (PICTURE 18). Another reason to use a normal map was to make the texturing process easier by showing the location of ribs and muscles for instance.

4.2.3 Texturing

Using the UV map again a new texture image was created. The previously painted concept art worked as a guide for the colour scheme of Barbie's body. Furthermore, the usage of the normal map helped with the locating of separate ribs and muscles.
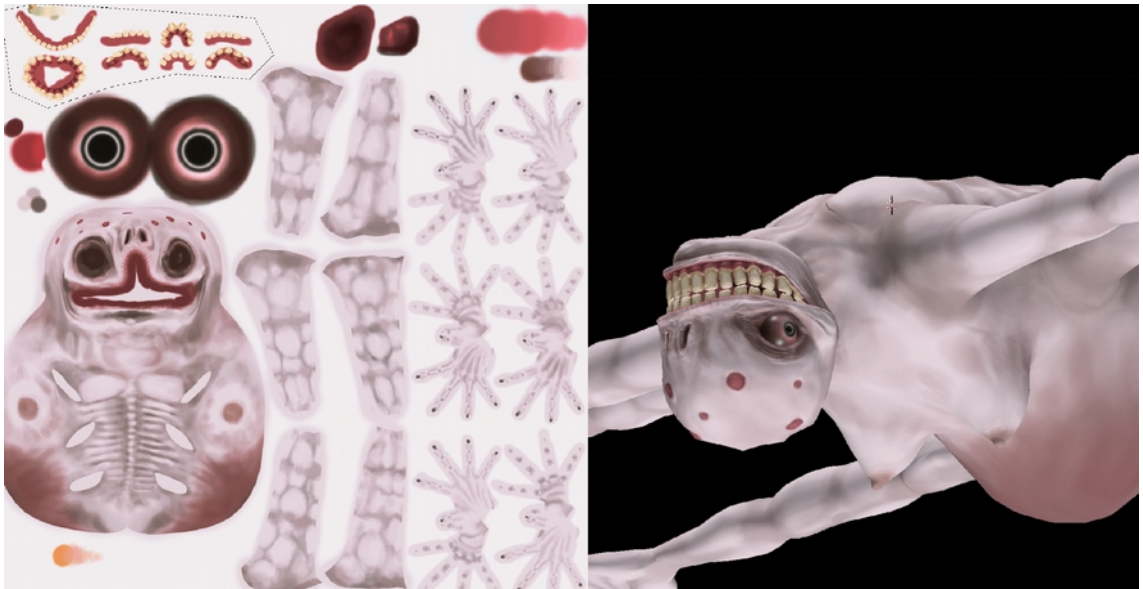
PICTURE 19. Texturing (Screenshot: Juho Lahti 2018)

Although most of the texturing was done in Blender, Photoshop was used for the final adjustments such as increasing the overall contrast and altering some of the colours to cooler tones. When the texture was adequate (PICTURE 19 & 20) Barbie's 3D model was ready for rigging.

PICTURE 20. Final model after texturing (Image: Juho Lahti 2018)

4.3. **Rigging**

Like Amy Drobeck goes through in her presentation, having an understanding in basic anatomy – and how skeletal structures work – helps a lot not only with rigging but also when figuring out how the creature should be able to move (Drobeck, Developing Creature Movement, Personality and Presentation. 2013, 9:00). Smart rigging uses as few bones as possible while maximising the possibilities of mobility. When planning Barbie's rig the goal was to avoid extra bones. While the workflow of rigging depends on an individual, what was found practical was to start with deformation rigging which was followed by weight painting. Lastly, more bones were added to create the final rig with controllers. Also, saving the adding of some bones for later spared a considerable amount of time.

4.3.1 Deformation rig

The deformation rig consists of bones that move the vertices of a mesh. Therefore, every part of Barbie that was to be animated needed a bone. A smart way of naming the bones was necessary in order for the constraints to work later on.

An example of a naming convention is *FingerFrontIndex1.L*. All of the following information can be found in the name: the bone class (*Finger*), which hand it is located in (*Front*), which finger (*Index*), which of the three finger bones (*1* meaning the first bone after the knuckle) and lastly, left or right side of the body (*.L* at the end standing for left). A proper naming convention is recommended to make the usage of rig more understandable to anyone – especially if the model such as Barbie's has a lot of bones.

PICTURE 21. Duplicating the arm bones (Screenshot: Juho Lahti 2018)

After most primary bones – like spine and arms – were in place, some more detailed bones such as the ones moving the stomach and jaw were added. This was followed by mirroring all bones to the other side therefore finishing the first phase of the rigging.

4.3.2 Weight painting

As the deformation bones were in place Barbie's mesh was parented to the armature. Although the model was moderately movable after this, its weight painting needed to be fixed in order to have cleaner deformations. As the name suggests, weight is painted on vertices either to decrease or to increase the amount they move along with a specifc bone. A smooth weight gradient is often desired for more natural results and better folding. Therefore, thorough weight painting was necessary in order to have the animations as clean as possible.
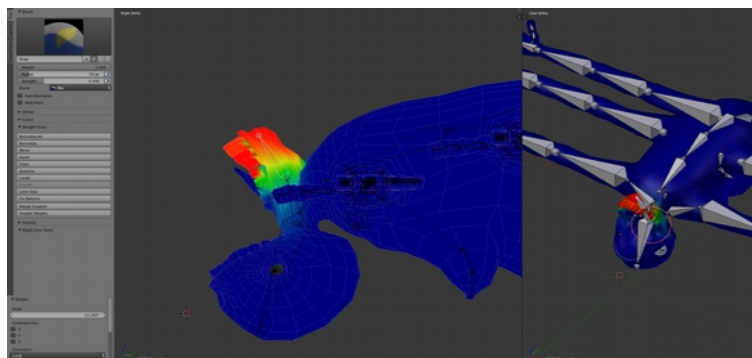
PICTURE 22. Weight painting (Screenshot: Juho Lahti 2018)

4.3.3 Control rig

Although Barbie was more or less ready to be animated, after weight painting more bones and visually appealing controls for the rig were needed. These bones, however, did not need weight painting as their purpose was to control single or groups of deformation bones some using constraints such as IK's. The reason for this was to ease the animation process later on.

For instance, the hand IK's allowed the whole arm to follow the location of the hand. Therefore, only a hand bone needed to be keyframed instead of each bone in an arm. Moreover, constraints were also used to automate bone motion in fingers to either control the bending and rotation of the whole finger at once, or to move the finger more specifically using the IK at its tip (PICTURE 23).
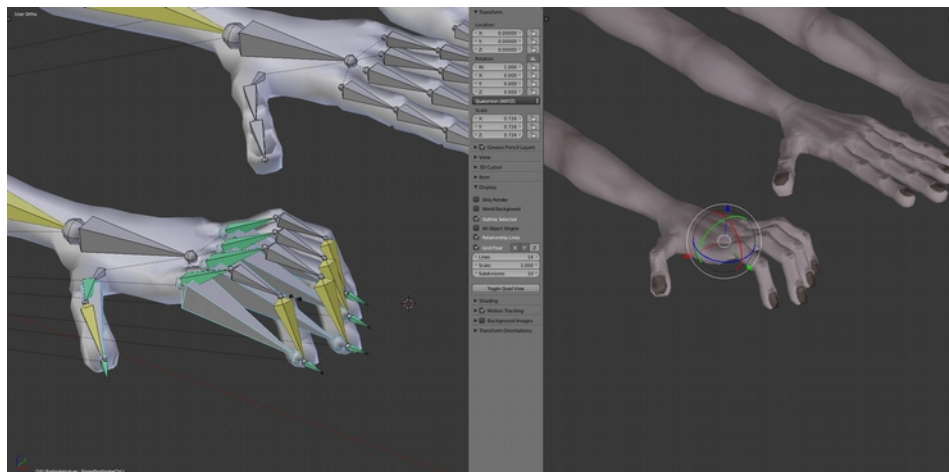
PICTURE 23. Finger rig (Screenshot: Juho Lahti 2018)
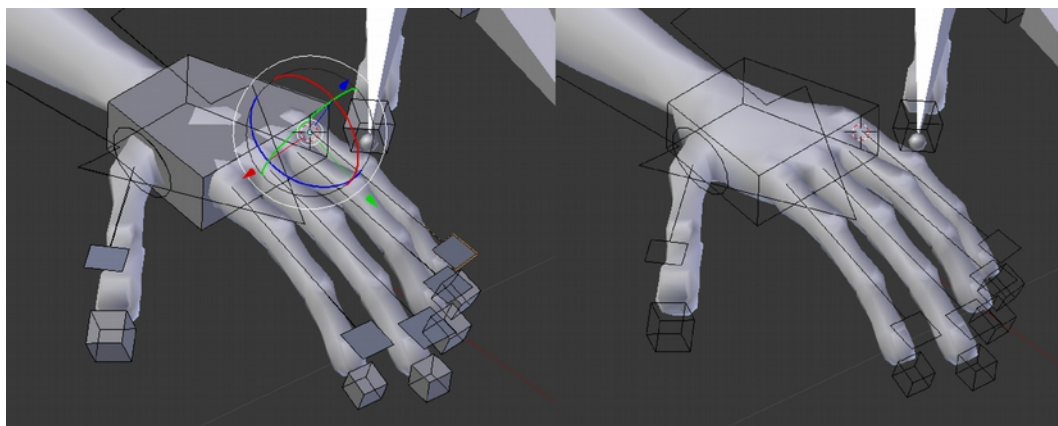
PICTURE 24. Custom shapes (Screenshot: Juho Lahti 2018)

To get some variation to Barbie's expressions some facial bones were added including ones that enabled the tracking of eyes. Before the full rig was finished it required custom control objects that replaced the bones which were to be animated. This way the rig became a lot more convenient to use and all unnecessary bones could be hidden. Most of these objects were based on simple meshes such as circles or cubes (PICTURE 24) and while they were not mandatory they made the animation process considerably more comfortable as bones may normally cover parts of the model too much. Along with the finishing of the rig (PICTURE 25) Barbie's 3D model was complete.
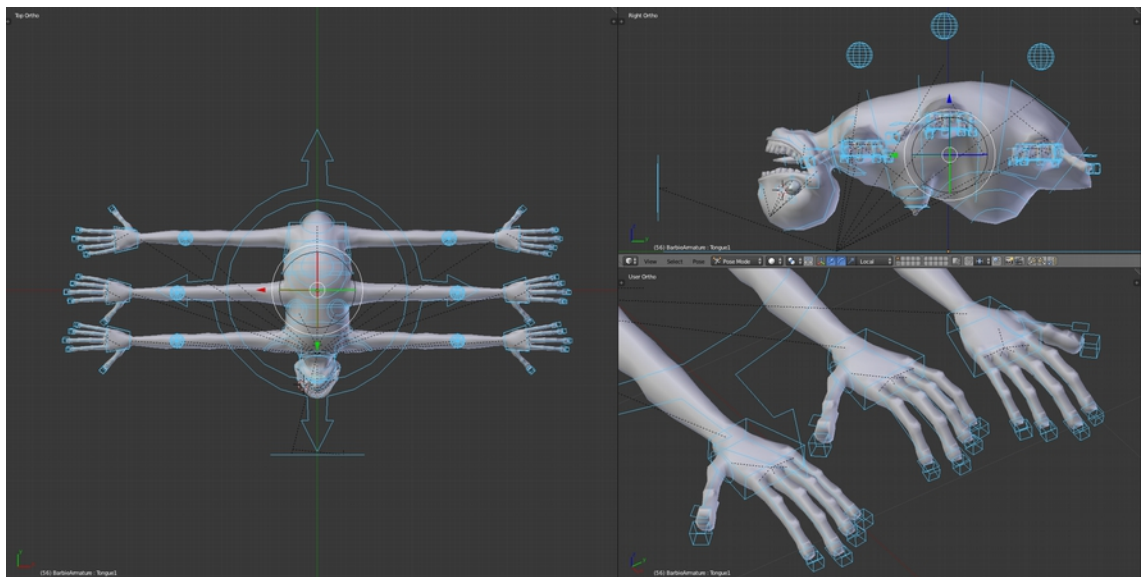
PICTURE 25. The final rig (Screenshot: Juho Lahti 2018)

4.4. Building a scene for the short film

As the genre of the animation was horror, animating the creature in an empty and sterile environment with no story wasn't going to be enough for horror tends to work best in a setting and as an audiovisual entirety. Therefore, a short film was created around the monster to maximise its effectiveness.

Since the monster was designed to crawl out from a drawer to hunt children, a child's bedroom felt like an appropriate environment for the animation. Furthermore, the aim was to have a location that feels safe and anyone can relate to – such as in one's own bed at home. While the bed felt like one of the safest places of childhood in general, the protection of the cover of a blanket was essential to me personally. The safety and

familiarity of the environment was a way to make the place and characters more relatable, and breaking the trust in the safe space by having a monster infiltrate the room was to cause fear and anxiety.

4.4.1 Storyboarding

As mentioned, the setting needed to be something anyone can relate to. A child sleeping alone in their room in the night when a monster appears – while not the most original idea in general – seemed like a solid base for a story. As horror usually demands characters who a spectator can relate themselves to, their presence was necessary for the story. However, while not 3D modelled and animated, the characters were to be represented by sounds and still body parts.

Coming up with a story was important before drawing a storyboard. The story ended up being about a young boy about to go to sleep. His father says good night, leaves the room and time passes on. A drawer begins to open slowly and a monster emerges from inside it starting to crawl across the room cluttered with toys. The creature approaches the bed where the boy – whose foot is uncovered by a blanket – is sleeping and climbs on top of it. However, the noise has alerted the boy's father who arrives and opens the door revealing Barbie who is just about to reach the child's head. The deaf monster startled by the presence of the man and the blinding light escapes behind the bed. The father follows her to find out she has disappeared for a brief moment until he notices her on the ceiling. Barbie panics and quickly crawls back to the drawer climbing the ceiling and walls. The drawer closes and the creature disappears.

With the story ready, a storyboard was drawn based on it. Too much attention to the detail was not paid during the process. Instead, the drawings ended up being simple sketches enough to visualise what was happening in each shot. The emphasis was on Barbie and her details that were revealed little by little. Furthermore, the goal was to have powerful and dramatic staging in order to build up tension before the full exposure of the monster. Therefore, many of the shots were also planned to have strong depth of field. Post-it notes were used to draw the storyboard which made the shots easy to replace and rearrange if needed. (See appendix 3.)

4.4.2 Modelling the scene

With the storyboard finished, a setting or a scene along with all props was to be 3D modelled. As mentioned earlier, the scene was a young boy's bedroom cluttered with toys. Therefore, coming up with a theme for the room helped to come up with ideas for the clutter such as toys and posters. The theme ended up being space and sci-fi. Moreover, the colour harmony of the room was based on the theme as well resulting in blue as the main colour with some orange and red highlights. A complementary colour harmony seemed like the most suitable choice in order to create tension. Images of children's rooms were used for reference during the creation.

As Barbie's design was fairly stylized the scene had to match the style. Keeping the models as simple as possible made the scene lighter to work on and eased with the render times. Only a few textures were created – on walls and curtains for instance – but the rest of the colouring was done using single colour materials. The scale of the room was set based on Barbie's model and as the scene was a child's bedroom having some furniture was essential. Therefore, objects like a bookshelf, some lamps and most importantly the drawer and the bed were modelled. The space theme could be seen on the wall paper and shining stars on the ceiling. Some toys, a plant and a skateboard were added as a clutter.

Cloth physics were used to create the curtains and for the blanket to be shaped like a human. Lastly, MakeHuman was used to create the child's leg. Eventually, as the scene was finished the animation phase was ready to begin.

PICTURE 26. Top view of the scene creation progress (Screenshot: Juho Lahti 2018)

5   ANIMATING A HORROR SHORT FILM

5.1.   Animation workflow

With the bedroom setting ready the animation process was carried out next. Its workflow included setting up cameras based on the drawings on the storyboard, finding animation references, block animating Barbie and lastly finalizing the animations by filling gaps and adding more detail.

5.1.1   Setting up cameras

The objects in the scene were arranged on different layers which enabled parts of the scene to be hidden thus increasing the visibility when animating. Based on the storyboard cameras were added to the scene. When setting up the length for each shot, the cameras and some objects, like the drawer and the room's door were animated. Overall, the animation ended up having 12 shots. Moreover, actions were created for each camera in order to have their animations easily tracked and changed if needed.

Most of the cameras were still or had only small motion. In 2016, Simon Unger stated in his microtalk that it is good to remember not to use handheld camera when the shot does not call for it (Unger, The 2016 Animation Microtalks. 2017, 0:47:00.). However, as the father returns to the room the camera changes into handheld thus switching the perspective to the his eyes. The goal of this was to improve the storytelling in the animation as well as make Barbie's escape situation seem more chaotic and dramatic.

5.1.2   Monster animation references

With the cameras in place the next step was to animate Barbie. As mentioned earlier, hobbyists and professionals alike in the Facebook group Ten thousand hours were asked for tips and references for animating horror creatures in general (See appendix 2). Recommendations to use nature for reference – including not just animals but flora as well – and the idea of big variations to speed rose among the comments. Unsurprisingly, spider-like movement was mentioned considering Barbie has three pairs of arms.

Eventually, instead of using anything specific as reference, inspiration was drawn from sources like the previously mentioned stair scene in The Exorcist (1972) where the teenage girl Regan sprints stairs down like a spider. Other sources of inspiration were Skulls in Metal Gear Solid V: The Phantom Pain with their very unpredictable way of moving, and the way the contortionist Troy James performed in Steve Harvey's show causing rather hilarious reactions of anxiety and disturbance in people (Basner 2018). What was concluded was that unfamiliar was as important factor in motion as in visual design when it comes to horror. Especially the variation between speeds seemed to be effective and the technique was used when animating Barbie.

5.1.3 Block animations

Like with cameras, actions were used in order to have control over all separate animations. Apart from one, Barbie had a single action per shot. NLA editor turned actions into separate strips which were convenient to move, rearrange or edit later on if needed (PICTURE 27). In his GDC keynote in 2017, Jalil Sadool mentioned that creating small animation cycles can be very useful and even time saving. Therefore, before block animating, a walk cycle was created for Barbie both to understand the capabilities of her rig and in case the cycle could be used at some point in the animation. After the cycle was finished the next step was to create the block animations. (Sadool, A Study of Creature Animation in Film and Games. 2017, 45:00.)

Block animations, also known as pose-to-pose animations, functioned as placeholders before the final, more detailed animations, and mainly included the most important poses and locations. Moreover, they are useful when figuring out the timing and length of each shot. During the block animation phase most of the creature's final movements were planned. As Simon Unger, the animation director at Phoenix Labs, stated in GDC's animation microtalks in 2016: "Stop animating anything before planning it first" (Unger, The 2016 Animation Microtalks. 2017, 0:48:00).

In her presentation in 2013, Amy Drobeck mentioned it to be wise to set up a block version using very low poly proxy of environment so a character can easily be set to positions as well as prop planning without sacrificing computing power. Therefore, as the bedroom was planned with animation in mind all the props were quite low poly to

begin with as well as hideable. It was desired for Barbie to interact with the space and objects around her in order to make her, and the room itself feel more natural. Therefore, her animations included actions like stepping on a skateboard, climbing the walls and using different parts of the drawer for support. While most of the block animations were set fairly quickly the final shot including Barbie's escape proved challenging and took more time to both plan and set as it was to be the most intense and the longest of all shots. (Drobeck, Developing Creature Movement, Personality and Presentation. 2013, 38:00.)
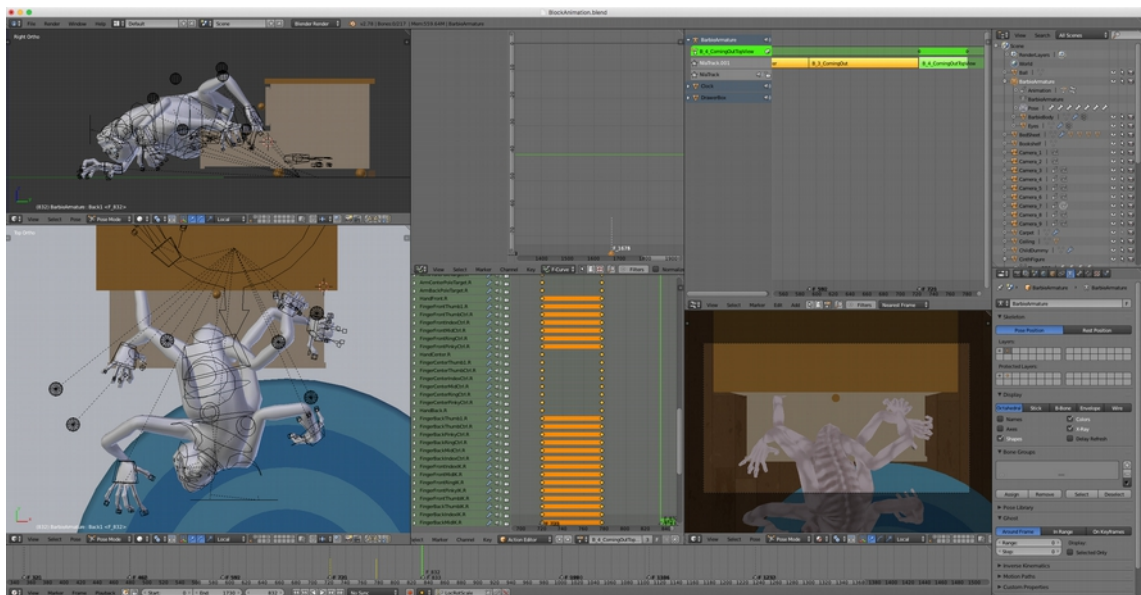
PICTURE 27. Setting a block animation (Screenshot: Juho Lahti 2018)

5.1.4 Finalizing the animations

As the block animations were set the next step was to fill the gaps between them. Furthermore, each hand's location for example, had to be precisely set before secondary actions and more detail could be added. After keyframing all the bigger motions in each shot, smaller motions such as finger animations and eye movement were added. Last details included in the animations were secondary actions such as the stomach and breast motions as well as facial animations. The parts of Barbie's body left outside the camera view often needed no detailed animations.

The goal was to reveal more of Barbie with every shot while always emphasizing some parts of her. Naturally, hands had an important role in the animation but her clacking jaw and twisting, cracking neck were things that aimed to unsettle the viewer.

Moreover, as her body had multiple arms and immense mobility it was to be shown in the animation by making her use different surfaces. Furthermore, she was to have clear control and awareness of every detail and location of her limbs which can be observed as she steps on the skateboard and grabs different parts of the drawer for instance. Barbie's overall motion was made to resemble that of a spider while keeping her human-like elements such as the usage of fingers.

The shot of Barbie climbing on the bed was designed to finally fully reveal Barbie to the viewer. However, as she is caught off-guard and startled, similarly the goal was to startle the viewer by using a rapid zoom on Barbie's screaming face (PICTURE 28). Sounds were planned to help with the jump scare. Barbie's quick escape behind the bed and vanishing aimed to increase anxiety in the viewer. At this point they knew what the creature looked and sounded like but were still unaware of its capabilities or intentions. Moreover the creature had disappeared and could be anywhere. A squeaky sound of the ceiling was planned to lead the father's gaze along with the camera towards the monster again which meant to cause the final startling before a brief but tense chase scene.
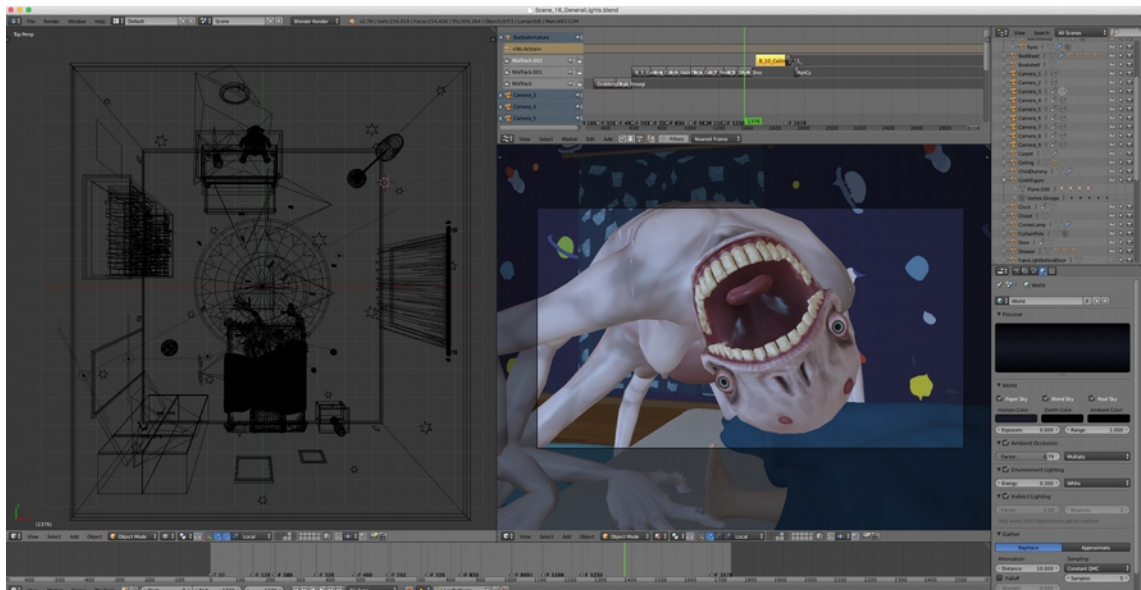
PICTURE 28. Animating Barbie's face (Screenshot: Juho Lahti 2018)

The final escape was not only the longest but also the most challenging shot to animate. The usage of different surfaces brought its own difficulties – hence the cycle made earlier was not used although it was originally the plan – but what really made the animation challenging was to deliver any kind of emotion as the shot was very brief and chaotic. As the animation for the shot was done it felt too predictable, slow and stiff overall. However, by adding large, exaggerated variations to speed a satisfying result

was achieved. In order to add a better cinematic closure the top-down camera from an earlier shot was used again.

5.2. Post-production

With Barbie's and the scene's animations finished the next phase was to render all the shots and put them together to form the short film. However, before rendering the scene needed lighting and depth of field to the cameras. Furthermore, these were used to deliver moods and especially depth of field was useful in emphasizing certain parts of a shot. Moreover, they improved the overall look of the scenes. Eventually, after every shot was rendered, the last thing to add to the animation was audio.

5.2.1 Lighting and adding depth of field

As mentioned earlier, lighting has an important role especially in horror when it comes to increasing tension. Moreover, lights are often coloured and can be used to highlight certain parts while unifying the colour harmony of an image. Therefore, lights – mostly consisting of blue shades with subtle red and orange highlights – were added to the scene and iterated depending on which camera was in use. Furthermore, the contrast between safety and danger was displayed using different lighting. At the start of the animation the colour scheme feels safe and cosy with warm orange tints but when Barbie's about to appear the shades turn into colder blues.

To emphasize some parts of the shots and to have a more cinematic feel altogether, depth of field was added to the cameras. Moreover, leaving parts of the shot blurry was aimed to increase anxiety by not revealing too much detail of the creature except for her glowing eyes or twisting head for instance.

5.2.2 Rendering

After the adding of lighting and depth of field the next step was to render each shot. Fortunately, the fairly small amount of low poly props resulted in unexpectedly fast render times. Moreover, using two computers simultaneously spared a lot of time

especially after having to fix and render some shots more than once. The shots were rendered into PNG sequences the and full animation was compiled on Adobe Premiere Pro.

5.2.3 Sound design

As mentioned previously, sound design is incredibly important in horror. However, with no budget or expertise the sound effects had to be recorded unprofessionally. Fortunately, a house in the countryside provided both a location to record as well as sources for the most sounds such as the squeaking floors. Screams, voice acting and all SFX were recorded on Voice Memo app of iPhone SE and later edited on GarageBand. Furthermore, simple music was composed to increase the tension in some scenes and to support the animation. The finished audio was added in Premiere (PICTURE 29).
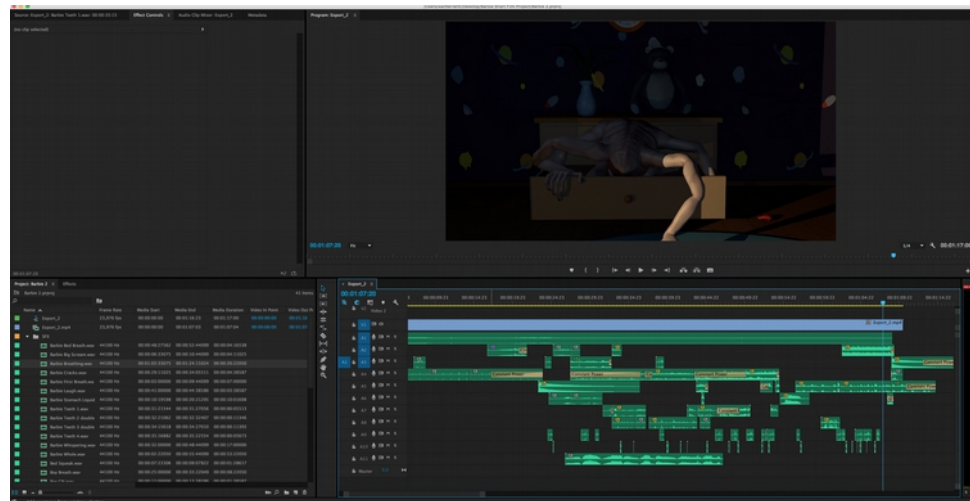
PICTURE 29. Editing and adding sound on Adobe Premiere Pro (Screenshot: Juho Lahti 2018)

5.3.   Creating a survey and sharing the short film

To finalize the short film, a logo of the name *Barbie* was created and added to the beginning and transitions between some shots as well as last adjustments to colours were done. After exporting, the animation was uploaded on YouTube along with a survey to collect viewers' feedback and thoughts. The short film was shared on

Facebook and Instagram in order to gain as large an audience as possible. Potentially the test audience could have been thousands of people. (See Appendix 4. and 5.)

5.3.1 Analysing the results

After two days the short film had roughly 250 views and 35 viewers had responded to the survey. The overall feedback was very positive. The survey had questions about the emotions the viewers felt while watching the short film as well as asked for general feedback.

The first question: "Did you like the short film?" with four answering options "yes", "no", "I don't know" and "other" resulted on 80,6% saying "yes", only one person responded "no" while rest were not sure. The second question: "What kind of emotions or reactions did the short film cause in you? (e.g. Fear, boredom, amusement, etc.)", was a question to which people responded with a short written answer. While there was a vast variety of different responses the feeling of uneasiness seemed the most common. Other common emotions mentioned were fear, amusement, and disturbance.

The third and fourth questions were both about Barbie, the former being: "Do you think the monster Barbie's design was successful? Why?" Most people thought Barbie's design was very successful, disturbing and creepy. Some mentioned the textures should be improved making it more realistic and two people thought the design wasn't very original. Several were impressed by her sound design. The fourth question: "Do you think Barbie was well animated?" with same four choices as the first question had very positive results. 83,3% responded yes, three people did not know and three thought she was somewhat well animated there being room for improvement. None responded with "no".

The fifth question: "How would you improve the short film?" was responded with useful ideas. Many thought the lighting and texturing should be improved and that the film needed more suspense to the story as Barbie was revealed too early. A few responded with no answer. The last question: "Any other comments or feedback?" was optional but received 22 responses nonetheless. Most of the responses being general compliments a few people also complimented the usage cameras and sounds. One viewer thought Barbie should have had her own musical theme and one advised to use

more silence. An individual mentioned the close-up shots of Barbie being the best part of the animation. The received feedback was generally very pleasing.

5.3.2 What needs to be fixed?

Based on own analysis and the feedback provided by the survey there is room for improvement in the short film. Firstly, the length of one minute 20 seconds did not seem enough as the story required more build-up. Furthermore, the pacing of the story should be improved. Moreover, proper 3D animated father and son characters should be added for a viewer to relate to. Barbie's background – being completely unclear in the short film at this point – should be revealed in a way or another, such as on a newspaper article.

Improving the visual aspect by adding more textures that are similarly stylized and adjusting the lighting would amplify the general look. Moreover, increasing the amount of detail such as clutter and cloth physics would significantly improve the scene and make it more interactive as well. Also, the addition of liquid pouring out from the drawer would add one more unsettling element to the scene as well as support Barbie's backstory.

While the sounds were decent they could be improved considerably by spending more time and resources on them. Furthermore, adding some VFX such as dust particles and paying a lot of attention to the colouring of each shot could make the look of the overall short film significantly better.

6 DISCUSSION

Utilising the theory behind fears and phobias, and features of horror genre in general made the creation process of a monster both thorough and reliable. Understanding what causes fears and phobias and how they effect individuals forms a strong basis in terms of horror design. Furthermore, finding ways to trigger fear can be fascinating and rewarding when it comes to creating entertainment. It was also found out that the reason for people to enjoy horror fiction depends on an individual, and the psychological distance between the media and consumer seemed to be the answer to why horrible, disturbing or even disgusting acts can be enjoyed. Furthermore, a horror story can function as a mentally purifying experience.

As was learned, horror creatures are the embodiments of fears and may be either realistic or supernatural. The form of a monster can be anything that provokes fear but most important keywords were found to be *unknown* and *unfamiliar*. These keywords could be iterated not only to the design and story but to each step of creating horror media such as animations and setting. Moreover, a monster often represents either humanity's or a character's negative aspects. In order for a monster to become a source of fear it often needs a story and a setting with characters who the spectator can relate themselves to. Furthermore, an ideal setting is built around a monster and its strengths thus making the characters more vulnerable. Attention to colours should always be paid as they can formidably amplify or break an image and the setting. Lastly, sound design and audio in general can be frightening by themselves and cause strong associations to scary experiences. Therefore, audio is an extremely important factor in horror films and video games.

The created short film *Barbie*, while not being perfect, managed to affect people and mainly achieved positive feedback. Despite this, much room for improvement was left in case the animation was to be done again or enhanced. While the idea and the design of the monster was enough, the setting needed minor improvements such as more textures and polished lighting. However, what the short film mostly required was more story elements including visual characters and more time for suspense in order to grow anxiety in the viewer.

In conclusion, the progress of creating the short film demonstrated that while a monster with a scary design often plays a crucial part in horror fiction, the key element to

provoking fear is the story. Moreover, building the story and setting around the monster itself seemed to be an effective way of achieving desired results, and the revelation of a monster should be saved for the perfect moment in order to have maximum suspension. Audio can lead the viewer and amplify moods making it an essential part of horror. Lastly, unknown, unfamiliar and unexpected features were learned to form the core foundation of inducing anxiety and fear, and are extremely important in all parts of horror design.

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APPENDICES

Appendix 1. Barbie's backstory

Barbie - a name that came to my head first and stuck there.

This monster used to be a woman who suffered miscarriage at the later months of pregnancy when everything including the room, crib, toys and especially clothes were ready for the newborn. The depressed woman killed herself by jumping down a high place and breaking her spine. Sadness and jealousy towards other mothers turned her into a creeping, bitter monster that hunts other people's sleeping children and steals their clothes for her own stillborn.

Barbie crawls out during nighttime from the depths of a drawer. Her body is mutilated into a spider-like form with three pairs of long arms and no legs. This provides her immense mobility to run and climb. Because of the way she died, the head was rotated to the backside of the body. She's still pregnant and carries the remains of her own child inside her womb ever believing that one day she will give birth to a healthy child. She collects shoes for her baby which can be noticed by finding missing shoes in a child's room or inside a drawer. When Barbie attacks children she wraps her long, bony fingers around them and slowly swallows them whole as they're sleeping. Children who sleep without blanket or with feet uncovered by it are the easiest targets for Barbie as doesn't want to wake them up. If the child wakes up, Barbie quickly crawls back to the drawer and, if already caught, drowns the child in the water inside it. For every time she appears the drawer is flooded with water from her womb.

Appendix 2. Post on Facebook group Ten thousand hours

Appendix 3. Barbie's storyboard
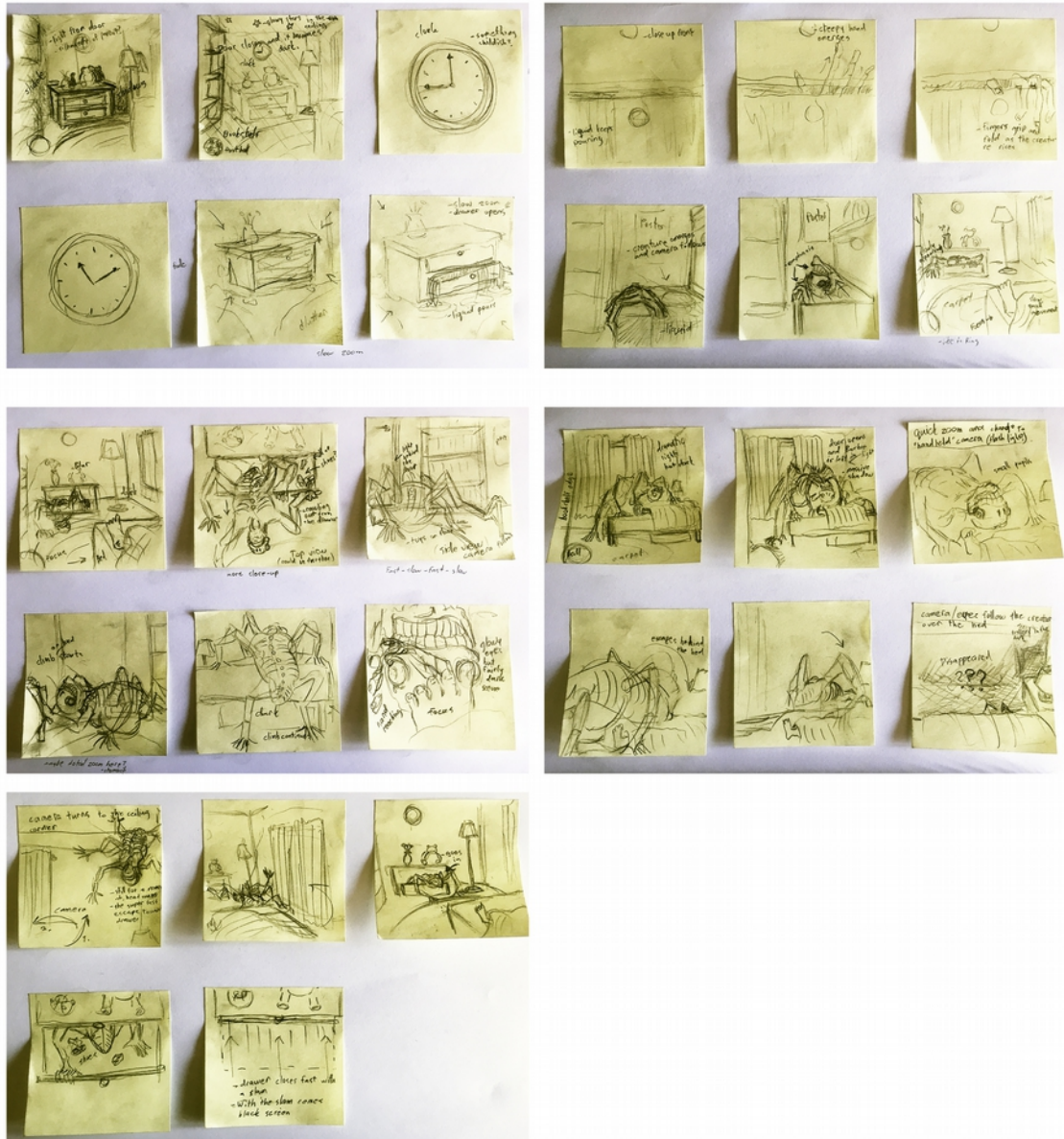
Appendix 4. Barbie - A short Animated Horror Film – the thesis project

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https://www.youtube.com/watch?v=yueyHkrwFL0

Appendix 5. Survey for the viewers of Barbie

Barbie - A Short Animated Horror Film

Please answer the questions below after watching the short film. This data will be used in my final thesis, and most likely for an improved second version of the short film.

* Required

Did you like the short film? *

○ Yes.

○ No.

○ I don't know.

○ Other:

What kind of emotions or reactions did the short film cause in you? (e.g. fear, boredom, uneasiness, amusing, etc.) *

Your answer

Do you think the monster Barbie's design was successful? Why? *

Your answer

Do you think Barbie was well animated?

○ Yes.

○ No.

○ I don't know.

○ Other:

How would you improve the short film?

Your answer

Any other comments or feedback?

Your answer

SUBMIT   Page 1 of 1

Never submit passwords through Google Forms.