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POKYNY PRO VYPRACOVÁNÍ:

Popište způsoby, jakými nové technologie ovlivnily a změnily produkci i recepci různých druhů uměleckých děl. Uveďte příklady nových druhů umělecké tvorby využívajících nové technologie, nové formy komunikace mezi tvůrci a publikem, jejich pozitivní a příp. i negativní dopady na společnost.

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Abstrakt

Tato práce se zabývá s problematikou nových technologií v umění. Práce je rozdělena na tři části: Nové technologie v umění, Nové typy umění a Vliv internetu na umění. Každá z těchto tří částí je interpretována alespoň jedním příkladem z praxe. Téma první části je Virtuální realita a její praktické použití v umění, druhá část se zabývá videohrami a tím, co je může klasifikovat jako umění, v závěru se pak práce zabývá vlivem sociálních medií na umění, umělce a také na lidi, kteří to umění sledují. Jako příklad sociálního média jsou uvedené webové stránky reddit.com a nanowrimo.org.

Abstract

This thesis deals with an issue of new technologies in art. The thesis approaches the issue by dividing it in three parts: new technologies in art, new types of art and the effect of the internet on art. Each of these three parts are elaborated on by using at least one example from the real world. Virtual reality and its practical use for art will be the subject of the first part, the second part will feature video games and what could make them art, finally the third part will use reddit.com and nanowrimo.org in order to examine the effect social media has on art, artists, and those who consume art.

Klíčová slova

Umění, nové technologie, videohry, internet, teze

Key words

Art, new technologies, video games, internet, thesis

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V Brně dne

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(podpis autora)

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1 Introduction

Humanity has used art to express their thoughts and feelings as early as prehistory however, in those early times, humanity was limited in their ability to create art because of the primitive state of their technology: complex polyphonic musical compositions were impossible, painting was largely done on cave walls instead of canvas, etc. As humanity progressed technologically, the number of ways that one could express oneself artistically rose as well; This has become increasingly apparent during the last century, with the rise of computers and electronics in general. This bachelor thesis will concern itself with how the advent of new technologies has influenced and helped shape the world of art and how they changed the ways that art is consumed and appreciated.

Firstly, the thesis will concern itself with how the invention of virtual reality and its mainstream adoption has influenced the world of art. The introduction to this chapter will provide a short historical background to virtual reality, including some technological hurdles that needed to be overcome before virtual reality could see widespread adoption. Afterwards, the thesis will explore how virtual reality is used for art in practice, by detailing some art installations that are centered around virtual reality.

Secondly, the thesis will explore whether new, unique forms of artistic expression have arisen as a consequence of advancement of IT. The thesis will use video games as an example. As was the case previously, this chapter will begin with a small introduction that provides some historical background and sets up the problematics that the thesis will deal with in this chapter. What follows is a small dictionary of gaming related terms that will be used throughout the rest of the chapter. Finally, the main dilemma of whether video games could be considered art or not will be addressed, along with concrete examples of what could be considered artistic in video games.

The third and last chapter will deal with how the internet and more specifically social media have influenced the world of art. Advantages and potential disadvantages of using social media for art will be discussed by using specific websites as an example. The chapter will also touch on the subject of art that is unique to the environment created by the internet.

2 New technologies in art

2.1 Virtual reality: introduction and history

Virtual reality is not a new concept. Sci-fi writers have been aware of it as early as the 1930's, when a short story which features what could be considered a form of virtual reality glasses came out, called *Pygmalion's Spectacles* by Stanley Grauman Weinbaum. While in the '30s this concept was solely the domain of science fiction, first virtual reality head-mounted goggles were invented only thirty years later, called *The Sword of Damocles* (Mazuryk & Gervautz, 1996, p.26). This device was extremely cumbersome, as it was necessary to suspend it from the ceiling in order to prevent neck injury in the wearer. While this device contained some advanced features that we recognize in virtual reality devices of today, like head tracking, it featured simple, non-immersive, wire-frame graphics. The technology necessary to create immersive, virtual worlds simply did not exist at the time.

Virtual reality has had several surges in popularity since, but limited technology and as well as prohibitively high cost prevented it from achieving widespread adoption. It was only in the past several years, with the release of the Oculus Rift, that technology finally reached the point where it would be feasible for an average person to purchase one of these devices. Since then, virtual reality has seen a surge in popularity, most notably used in gaming, but also in flight simulators, training of surgeons and of course, art.

In this part we will examine the use of virtual reality in creating art by looking at some art projects which were centered around the use of virtual reality.

2.2 Virtual reality art installations

2.2.1 Jon Rafman

One of the early adopters of virtual reality when it comes to art is the Canadian artist Jon Rafman. Mr. Rafman (b.1981) is a Canadian digital artist that focuses on digital media and virtual worlds and communities. His two VR installations, *Sculpture Garden (2015)* and *Transdimensional Serpent (2016)* represent one of the earliest attempts to utilize virtual reality for what could be thought as "serious" art.

Rafman's *Sculpture garden (Hedge Maze)* is perhaps the first art installation to utilize the

Oculus Rift. In this installation, the audience is invited to explore a virtual maze, filled by various, interactive sculptures. The art piece is described as: *The installation heightens the collapse in our distinctions between the real and the digital as visitors are invited to enter a virtual space using Oculus Rift technology. Transporting us from the maze, imaginary scenarios interchange with tangible experiences and dissolve our perceptions of place and time* (Zabludowicz Collection, 2015).



Figure 1 Installation view of Hedge Maze



Figure 2 Hedge Maze, Seen through the Oculus Rift

Rafman's other virtual reality installation, *Transdimensional Serpent* which came out a year later is a 4-minute-long virtual reality experience in which the viewer is transported to a strange, fantasy world. The audience described the experience as *overwhelming* (Vimeo, 2016). The audience was seated on a white snake in a yellow room (Figure 3) while they explored Rafman's bizarre virtual world.



Figure 3 Transdimensional Serpent as viewed from the “outside”

While Rafman certainly one of the pioneers in the use of virtual reality in art, some critics have stated that his art installations served more as a “proof of concept” or “experiment” rather than truly groundbreaking art: *The scenario the artist has created is OK, but ultimately just a brief excursion into the surreal territory already explored much more scarily, without the help of Oculus Rift, by David Lynch or David Cronenberg* (Jones, 2015).

2.2.2 Marshmallow Laser Feast's *In the Eyes of the Animal*

In the Eyes of the Animal is an Oculus Rift art installation that aims to show how a wild beast sees the world. Developed by the London based, Marshmallow Laser Feast collective, it is quite different in tone than the earlier surrealist works of Rafman. The designers aimed for complete immersion and authenticity, which is the reason why the installation was placed in the forest. Aside from Oculus' virtual reality equipment, Marshmallow Laser Feast used various other technologies in order to bring their virtual world to life: *In the Eyes of the Animal* was created using UAV's, lidar scans and bespoke 360° cameras. This has helped shape the point cloud aesthetic and ghostly architecture we view in the computer-generated environment. The visual experience is also complimented by a meditative binaural soundscape using audio recordings from forests in the UK (Oculus, 2017). The installation contained 7 powerful, workstation computers, each equipped with Quadro M6000 Graphics cards, which means that 7 people could use the installation simultaneously (Visnjic, 2015).



Figure 4 MLF virtualise a forest through the eyes of its creatures

The entire virtual experience is also accessible to everyone for free on oculus.com, provided you have either the Oculus Rift or Gear VR.

2.2.3 The Machine to be Another

The last installation to be mentioned is Be Another Lab's *The Machine to be Another*. As much as experiment as it is art installation, the project's goal is to facilitate understanding between people by having them, through the usage of virtual reality, experience life from another person's perspective.

One scenario includes placing the installation in two identical rooms, and it requires two people: the "performer" and the "user", both of whom are wearing virtual reality headgear. The headgear of both the user and performer are also capable of recording and transmitting video and audio. This enables both parties to effectively "see through each other's eyes". The illusion is then completed by having the performer mimic the movements of the user, effectively handing them the control of their own body. The experience is enhanced even further by allowing the user to interact with personal items of the performer which are placed around the room. When the user picks up an object, the performer then delivers a small monologue related to that object. This gives the user access to not only the body of another person, but also their thoughts (BeAnotherLab, 2017). Some scenarios allow the user and performer to interact with each other, as seen on (Figure 5).



Figure 5 An example of user-performer interaction

While this installation has several things in common with Marshmallow Laser Feast's *In the Eyes of the Animal*, for example both share the same goal that could be understood as "empathizing with another" however, this installation's interactivity as well as the simple fact that we, as humans, empathize better with fellow humans, both help it reach that goal easier.

3 New Types of art: Video Games

3.1 Introduction

Video games have changed a lot since their first introduction in the middle of the XX century. At first video games were quite simple: one of the earliest examples, Pong, was a simplified representation of tennis, with two pads bouncing a “ball” on a 2D plane from one side of the screen to the other. In its earliest days, the video game industry (if it could be called that this early in its history), was focused on delivering simple, easy to learn and quick to complete games who no one could seriously consider to be a form artistic expression. One of the major limiting factors was certainly technology and indeed, we can see that as technology progressed, so did video games, as programmers were able to utilize growing computing power to create more complex and engaging games. At present, the video game industry is one of the largest entertainment industries in the world with estimates of global revenue that exceed 100b USD (McDonald, 2017).

Today video games are at the center of controversy, which is: *Should this medium be considered to be an art form or not?* The goal of this part will be to try give an answer to this question by presenting both sides of the argument.

3.2 Dictionary of terms

Before continuing, it will be necessary to explain some gaming-related terms and abbreviations that are going to be used further on in the thesis.

-FPS (first person shooter) – Not so much of a genre but a type of video game in which the player is looking through the eyes of the character. As its name suggests, the gameplay usually consists of shooting either other human players, or computer controlled bots.

-TPS (third person shooter) – Another type defined by the position of the camera, TPS have you observe your character from the back. While this genre contains shooters, more often than not this perspective is used in action RPGs or “sword and sorcery” fantasy games.

-RPG (role playing game) – This genre is not exclusive to video games since it originated in tabletop, “pen and paper” board games. The video games in this genre place the emphasis on narrative, developing your own playable character (hence role playing in the name) and decision

making.

-Cut-scene – *The most obvious definition of a cutscene would probably be a film in a game* (Hancock, 2002). Cut-scenes are parts of a video game that consists of pre-recorded or pre-rendered footage (using computer graphics or game engine), that are often used to separate sections of gameplay and/or as a storytelling tool.

-Gameplay – *The features of a video game, such as its plot and the way it is played, as distinct from the graphics and sound effects.* (Oxford dictionaries, n.d.).

-World-building - *the art of creating a new fictional world* (Merriam-Webster, 2018)

-Machinima – *The practice or technique of producing animated films through the manipulation of video game graphics.* (Oxford dictionaries, n.d.)

3.3 Video games: Art, or something else?

Today, there are 3 main ways that people look at video games: video games as a service, video games as a sport and video games as art. Out of these three, it is the last view that has caused the most controversy. The issue has been brought into the limelight five years ago, when the Smithsonian American Art Museum released their controversial exhibit titled *The Art of Video Games* (SAAM, 2017). *The games are presented through still images and video footage. In addition, the galleries include video interviews with twenty developers and artists, large prints of in-game screen shots, and historic game consoles* (SAAM, 2017). Two of the titles featured in the exhibit, *Flower* and *Halo 2600*, were permanently added to the museum's collection (McCormic, 2013).

3.3.1 Art in video games vs. video games as art

In order to determine whether video games should, or should not be considered art, there is one key dilemma that needs to be resolved: *Are video games merely a container for art, or a separate art form in and of itself?* Apart from the programmers, video game development necessitates the skills of many different artists, such as writers, visual artists and actors. A video game can therefore be considered to be more of an exhibit featuring many different pieces of art, rather than a separate work of art. This is explained by game designer Hideo Kojima, who states:

Art is the stuff you find in the museum, whether it be a painting or a statue. What I'm doing, what videogame creators are doing, is running the museum – how do we light up things, where do we place things, how do we sell tickets? For better or worse, what I do, Hideo Kojima, myself, is run the museum and also create the art that's displayed in the museum (Gibson, 2006).

While it is undeniable that video games contain large amounts of different and beautiful art, the question remains whether video games can be greater than the sum of their parts. To answer that, let us examine whether video games offer something unique when compared to already established art forms. Since many games in recent years have strove to look more like movies, to be more “cinematic” so to say (some of the ways that video game designers have tried to do this will be explained in later parts), let's compare them with cinema.

In cinema, the artist's vision and the message that they wish to convey is tightly controlled – the audience has no say in how the story progresses, what camera angles will be used or how characters interact with each other; There is a clear distinction between the artist and the one that consumes the art. This is in stark contrast with video games, in which all of the aforementioned elements are controlled by the player.

Some, like Chris Melissinos, the guest curator of Smithsonian's *The Art of Video Games*, posit that it is precisely this that qualifies videogames as a distinct form of artistic expression:

The three voices are, first being that of the designer, or the artist who is trying to build a story or build an environment for a player to engage. The second voice is the game itself: the mechanics of the game, the rules of the game which, then communicate to the player how to interact with it; But the third voice of the game, and really this is where games then become art, is the player themselves and it is the personal experiences that they have that they build into the gameplay at the time (Cox, 2013).

Others, like the movie critic Roger Ebert, disagree, citing precisely the unknown element that the player introduces as the main reason why video games could never be considered art: *I did indeed consider videogames inherently inferior to film and literature. There is a structural reason for that: Videogames by their nature require player choices, which is the opposite of the*

strategy of serious film and literature, which requires authorial control (Gibson, 2005).

To better illustrate both standpoints, that of art in videogames vs. videogames as art, let us examine one of the very games that were included in Smithsonian's exhibit, Mass Effect 2.

3.3.2 Music in video games

Music has been an integral part of video games for a very long time: from the simple 8-bit melodies that dominated the 70s and 80s, to the complex orchestral compositions of today, video games have used music to deepen the player's connection to the game and enhance their experience. The aforementioned evolution is primarily tied to the advancement of technology, allowing for larger memories that can in turn store more complex compositions.

Music in video games can take on a more central role, like in the genre of rhythmic video games, or more of a supporting role where its purpose becomes more similar to the role music has in other mediums, such as film. Thus, while we talk about how video games use music, we will also briefly touch on how music is used in film. The main focus will, of course, remain on the usage of music in video games, with special attention given to the issue of how it creates and supplements player immersion and how it can be deeply intertwined game's other elements.

3.3.2.1 Music and player immersion

As the intuitive use of the word suggests, immersion is indeed used to describe the degree of involvement with a game (Brown, 2004). (Douglas, 2004) defines immersion as: *self-consciousness disappears, perceptions of time become distorted, and concentration becomes so intense that the game . . . completely absorbs us.*

In primarily visual mediums such as video games and film, immersion becomes a very important factor to consider; this is especially true with video games as they include a direct link between the player and the game in the form of gameplay that is simply not present in non-interactive mediums such as film. As already stated, both mediums primarily rely on their visuals to convey the feeling of immersion, however both mediums heavily feature music as well which is also an important factor in immersing the player or watcher in their respective mediums. Apart from serving immersion, music in video games can serve other functions as

well, namely that they can *enhance a sense of immersion, cue narrative or plot changes, act as an emotional signifier, enhance the sense of aesthetic continuity, and cultivate the thematic unity of a video game* (Zhang & Fu, 2006). In other words, video game music need not be relegated to a tertiary role that comes after gameplay and visuals but can be used in concert with these two elements, especially gameplay, to deliver a fuller experience; In the words of (Nelson and Wünsche, 2007): *The music can and should affect the game play. The game play can and should affect the music. The player's actions can and should influence the direction and evolution of the music. By tightly linking game play and music, the player becomes much more immersed in the experience, and new creative possibilities abound for the developer.* Here, the differences and similarities between how film and video games use music become evident and the answer of course lies in player choice. Unlike in film, video game music needs to adapt to rapidly changing conditions on screen, without being jarring and thus immersion-breaking. (Nelson and Wünsche, 2007) also provide a short list of examples of how some video games have approached the aforementioned problem: *Super Mario Brothers* increases the tempo of background music when the player starts running out of time allotted for completing the level, with the purpose of instilling a sense of urgency; another example cited is from the game *.Hack*, which uses several versions of the same track, one slow paced and relaxing, other more fast paced and intense, depending on whether the player is simply exploring an area or has engaged in combat. Using alterations of the same track means that the transitions between them are less noticeable and jarring, which preserves immersion.

In the introduction, we have talked about games that have music as a centerpiece of their design. One such game is called *Rez* and is one of the games talked about by (Nelson and Wünsche, 2007), which they describe as follows: *As the player flies through each level, the music loop evolves as each way-point is reached. The real magic, however, is that every last sound effect is quantised to the beat of the music. A new sound effect set is loaded for each song / level, and each sound effect set is designed to be the building blocks that fit on top of the foundation that is the current level's music. Furthermore, as the player fires missiles at enemies, they explode in sync with the beat. The game instills an amount of synaesthesia in the player, as they learn to associate the visual aspect of an enemy with the audio element it produces when destroyed... The final musical output is a collaboration between professional musicians, game designers, the player, and enemy AI.*

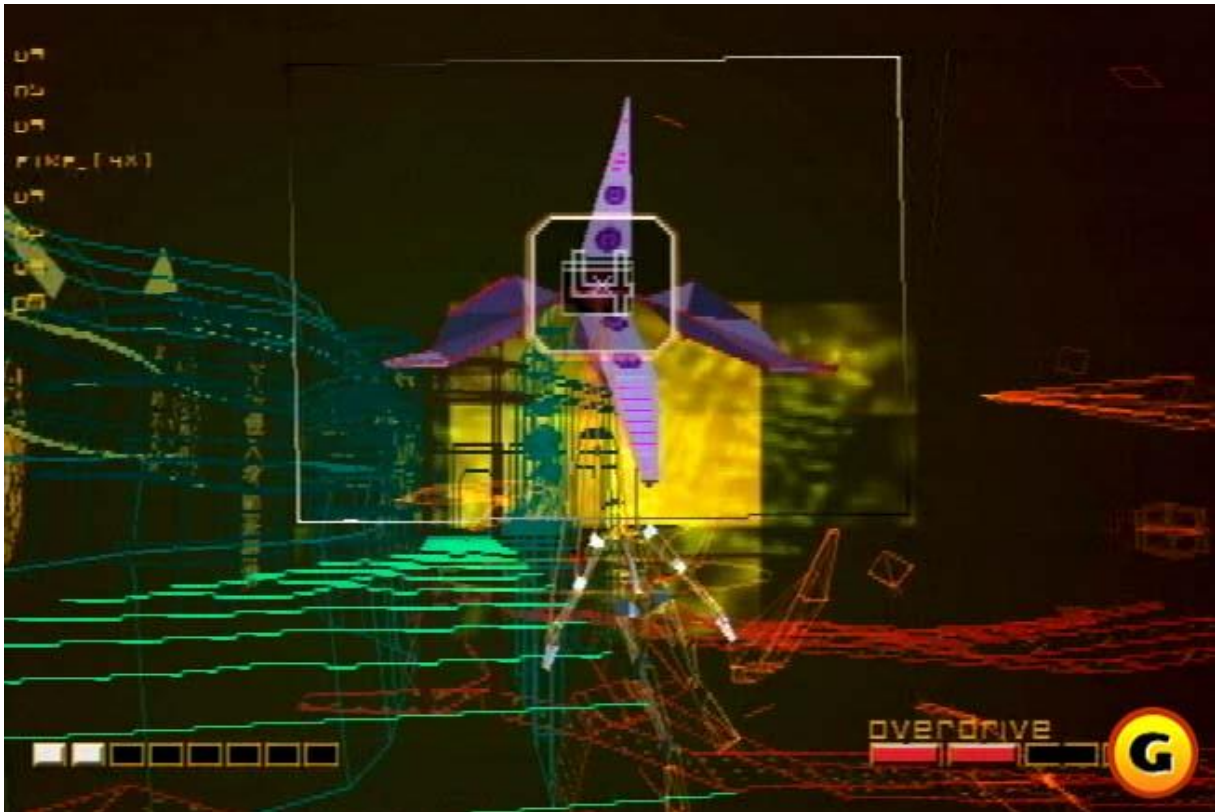


Figure 6 The abstract world of Rez

3.3.3 Writing in video games

While most if not all video games contain some kind of background music, not all video games are designed with extensive writing in mind; In the case with narrative driven video games however, writing is often at a centerpiece of game design. These video games can often have scripts whose wordcount can greatly exceed individual books and in some cases can equal entire book series: for example, the third installment in the Witcher series of video games has a script that totals around 450 000 words (Stein, 2015). In comparison the entirety of Tolkien's Lord of the Rings trilogy has 481 103 words (LotR project, n.d.). The goal of this subchapter will be to, through a brief comparison with other types of writing, give a brief insight into video game writing.

Similar wordcounts aside, writing in the Witcher, or any video game for that matter, rather different than writing found in books. One of the main differences being, yet again, interactivity. In the words of (Gal et al, 2002) *Writing for games is a rather difficult task. Of course it is an interactive composition and, as in other fields of open work, the author must leave a controlled freedom to the player.* Interactivity is not the only aspect of video games that necessitates non-conventional writing, however. Since writing for a video game is simply one facet of game development and thus is not done in a vacuum, there are many more factors that influence the writer that are not found in other writing; (Ince, 2006) writes in his book *Writing for Video Games* about difficulties that conventional writers encounter when writing for video games: *The problems that had arisen with those other writers had nothing to do with the quality of their writing skills and abilities, but they lacked the specific game development knowledge they needed... Like other industries, the companies that make up the games industry are governed by the need to create a successful product in order to be profitable... Anything that is likely to upset that process, add to the schedule or increase the budget will not be considered.* In other words, something that was simple enough to write may necessitate days of development time to realize in game, which can therefore lead to drastically increased development costs. Therefore, it can be concluded that the role that the writer plays when they write for video games is rather different: For example, the writer is rarely the one that comes up with the initial idea for the game, instead writers are usually brought in later in the development process – a stark contrast when compared to, for example screenwriting for movies. To surmise, in other narrative driven mediums such as movies and

literature the writing is usually the foundation of the work, whereas in video games that role is usually reserved to gameplay. (Ince, 2006)

3.3.4 Cutscenes

Cutscenes are a significant part of modern video games, especially those that place an emphasis on storytelling. In many video games, they provide narrative context that was not conveyed through regular gameplay. (Hancock, 2002) uses the following categorization of cutscenes, according to the way that they are used: *conversation scenes, information dump, scene and mood setting, reward, introduction of plot or gameplay elements and pacing*. Cutscenes can also be categorized according to interactivity, which is to say they can be either interactive, or non-interactive. The former are largely detached from gameplay and can be realized using the game engine, pre-rendered graphics, or sometimes even using live-action, which is most notably the case in *Command & Conquer* series of strategy games; The latter are nearly exclusively realized using the game engine and can have varying degrees of interactivity. While non-interactive cutscenes fundamentally do not differ much between games, interactive cutscenes can have many different implementations. Interactive cutscenes in *Mass Effect 2*, for instance include a great deal of meaningful player input, to the point where the boundary between cutscene and gameplay ceases to exist: they can feature prompts which allow the player to interrupt the scene and therefore change the outcome, or sometimes they can lead into interactive dialogue at which point the cutscene becomes indistinguishable from regular gameplay.

It should be noted that both types of cutscenes can be featured in one game, which is the case in *Mass Effect 2*.

3.3.5 Mass Effect 2

3.3.2.1 Introduction

Mass Effect is a science fiction action RPG TPS video game series whose first iteration was released in 2007. As of now, the series features 4 titles: the original trilogy which consists of Mass Effect 1, 2 and 3, and Mass Effect Andromeda, which features a distinct cast of characters and follows a different storyline. The original trilogy follows a soldier, Shepard, whose mission is to save the galaxy from a race of sapient starships known as the Reapers.

3.3.2.2 Narrative in Mass Effect

The original trilogy received nearly universal praise, from both gamer and critic alike for its *rich storytelling, compelling cast of characters and thrilling action* (Metacritic, 2017). As a result, the second game in the series, Mass Effect 2, was one of the games included in Smithsonian's *The Art of Video Games* exhibit (SAAM, 2017).

The feature that the game, and the series as a whole, was praised most for was its storyline, which was driven by player choice. What this means is that the player was given freedom to, through direct action or inaction, decide the flow of the story and the fates of many of the characters present within it. Furthermore, the choices made in one game would carry on to the sequel (e.g. the choices made in Mass Effect 1 will shape the world in Mass Effect 2 etc.). This feature makes storylines in Mass Effect and video games like it much more complex and non-linear when compared to the stories in other mediums like cinema and comics and it is because of this that some consider video games to be art, as seen above. While Mass Effect 2 can definitely be classified as an action game, in most cases the player does not influence the story through combat, but through dialogue.

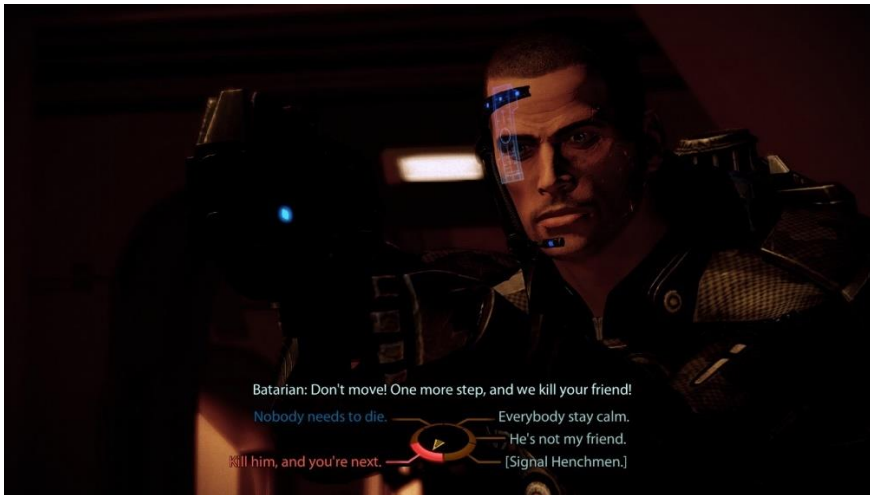


Figure 7 Example of Mass Effect 2's dialogue wheel

The game includes an interface that allows the player to choose a line of dialogue which will either have immediate consequences or not, sometimes those consequences will not manifest until the next game in the series: for example, a choice made in the first game in the series decides whether one of the main characters survives or not – this has consequences that manifest themselves in the subsequent two games. The choices that will be available to the player are not fixed and they can be influenced by several factors, such as dialogue choices that the player has made earlier in the game or the *morality* of the player character. The game contains a morality system that allocates either *Paragon* (generally morally good choices) or *Renegade* (generally morally bad choices) points to the player character according to how the player has approached certain situations in the game. Acquisition of these points unlocks special dialogue choices which are represented on the left side of the dialogue wheel in the figure above, with blue for *Paragon* and red for *Renegade*. As a consequence of this system, the main character evolves as a result of player choice, which in turn affects how the game's narrative develops.

Narrative wise, there is another aspect that stands out according to critics – characters. This is because, at its core, Mass Effect 2 is a character driven story: while the overarching plot undoubtedly revolves around defeating the galactic threat that are the Reapers, Mass Effect 2 is the game that almost forgoes the epic scale that is the main focus of its predecessor and successor in favor of exploring the personal stories of the protagonist's squad mates. Each of the main 13 squad mates have a detailed backstory which the player can uncover over time through dialogue and gameplay. (Bizzocchi and Tanenbaum, 2012) reflect on the depth of these

characters: *Although many of them represent common genre tropes, they are each varied and distinct with their own personal contradictions and difficulties for the player to explore. Perhaps more importantly, Shepard's squadmates exhibit a consistency of personality and behavior, even within the ever-shifting landscape of the broader simulation.* The same paper also mentions other, secondary, non-playable characters who, admittedly, while not as *deeply envisioned* as Shepard's crew, are nevertheless diverse and characterized through unique *character-based humor*.

The last narrative related element to be mentioned is the world in which the game takes place. As Shepard, the player is in command of a space ship, and is, aside from key plot points, allowed to freely explore the Milky Way galaxy as they recruit their crew for the ultimate confrontation with the game's antagonists. The writers have placed special emphasis on world-building, by writing backstory for many of the galaxy's races, planets, technologies, etc. and compiling all of this information into an encyclopedia accessible in-game, called the Codex. Of course, the player is not required to read the Codex if they wish to learn about the world: *Backstory about races, cultures, and people is liberally distributed throughout the storyworld locations. Some of it is explicit—growing out of direct encounters the player has. Some is implicit—such as the advertising that blares over the public radio in Ilium* (Bizzocchi and Tanenbaum, 2012). Background information about the world also vary from central to the game's plot, to additional information for world-building's sake: *These backstories are also scaled: from the Reaper-Collector-Prothean ur-myth that drives the entire Mass Effect series of games, to broad racial histories such as the Human Alliance, to groups such as the Cerberus operation or the various mercenary groups, down to individuals.*

3.3.2.3 Art in Mass Effect 2

While it is still a matter of debate whether video games could be considered art or not, one thing that can be agreed upon by both sides of the argument is that video games are full of various conventional art. From the visuals that are front and center in most games, music that almost always accompanies them, to the story and dialogue that is encountered in story driven games.

Kate Cox, of the Smithsonian magazine has this to say about the visuals featured in Mass Effect: *Video games have come a long way from the pixilated romps of the 1980s. As production values have increased, games have drawn on more inspiration from classic cinema. In particular,*

framing and lighting devices borrow heavily from film noir techniques to convey ambiguity and anxiety (Cox, 2013).

While Mass Effect 2 certainly draws upon classic cinema for its visual style, it cannot use these visuals in the same way; Video games, by their very interactive nature, forbid it. What video game designers sometimes do instead is use cutscenes. They can range from fully acted, live action clips, CGI imagery, to in-engine machinima.

3.3.6 Emergent gameplay

Earlier, we have talked about non-linear, interactive storytelling as an example of why video games can be considered a separate narrative-driven art form. While we have shown how narrative in video games differs from narrative in other mediums, it still relied on scripted stories, not entirely unlike movie scripts or book plots, with the only major difference being their interactivity. This subchapter will continue to attempt to prove that point but will forgo all relation to standard narrative and instead rely on a type of storytelling unique to interactive mediums.

So, what exactly is meant by *emergent gameplay*? (Sweetser and Wiles, 2008), elaborates: *Emergent Gameplay occurs when interactions between objects in the game world or the player's actions result in a second order of consequence that was not specifically planned by the game developers.* While emergence shifts the burden of storytelling from the creator to the player, this does not mean that the creator cannot have any influence on emergence – in fact there are a lot of examples of games that provide the player with an environment and tools that are conducive to emergent gameplay. This *intentional emergence* is common in open world, sandbox video games, such as *Metal Gear Solid V: The Phantom Pain*. MGS V is an TPS, action, stealth game whose gameplay revolves around undertaking infiltration missions to hostile military bases that are scattered in a sandbox, open world. The game encourages the player to discover novel, creative ways of completing objectives that it sets out in front of them. The game and its emergent elements are talked about by video game journalism website Gamespot in their video titled *Metal Gear Solid V & The Power of Emergent Gameplay*. The video gives an example of intentional emergence that occurred when the player was infiltration

an enemy compound: The was approaching an enemy base and was spotted by two of the guards; after shooting both with a tranquilizer gun, he goes on to dispose of the bodies one by one by throwing them of a short cliff; following the disposal of the first guard, the player spots a third guard approaching the body of the first guard; in order to prevent the third guard from discovering the body and having found himself out of tranquilizer darts, the player is forced to think up an unconventional solution when he picks up the second unconscious body and throws it from a cliff onto the third guard thereby knocking him unconscious as well (Gamespot, 2015).

The second type of emergent gameplay is unintentional emergence, and can appear in all kinds of video games, irrespective of whether they were designed with emergent gameplay in mind or not. Sometimes, emergent gameplay can be completely unrelated from the main gameplay design, a good example of which can be found in the multiplayer FPS *Counter Strike*, which is also talked about in the video cited earlier. The video talks about *jump maps* which transform the game from a FPS to a platformer, more related to *Super Mario Bros.* games. Unintentional emergence can extend to exploiting glitches in the game's code which is a common tactic in *speed-running* which is a practice of completing games in the shortest time possible (Gamespot, 2015).

Usually, even in games with non-linear storytelling like *Mass Effect 2*, the game designer has the ultimate authority when it comes to how the player experiences the story, because even in the many branching plotlines that *Mass Effect 2* offers, the gamer is simply choosing among predesigned plots; In games with emergent gameplay, the designer shares that authority with the player, either intentionally or not, thus allowing for experiences that may not be completely in line with their initial artistic vision. Whether this enriches or diminishes the work's value as an art piece is a matter of debate.

4 Internet and the effect of social media on art

4.1 Introduction

The beginning of the XXI century was characterized the widespread adoption of the internet by the masses. Cheaper internet, brought on by advancements in technology meant that more people than ever before were now connected. This had a profound impact on the world of art as well, since easy access to the internet has greatly facilitated the sharing of art around the world. The rise of social media in the second half of '00s greatly contributed to this trend, by giving everyone a platform where they could promote their work.

Social media also facilitated communication between the artist and the audience, with some social media sites like tumblr.com, twitter.com, reddit.com, etc. that were designed to provide instant feedback from the audience. All of this has helped aspiring artists find their niche quickly and easily.

Another thing to consider is the effect that social media has on those who use it and the effect that it has on and art itself. The internet is a place where trends change rapidly, artists need to be aware of this and therefore adjust their art and their presentation of it accordingly.

In this chapter, we will examine the various ways that social media has affected art, artists and the consumers of art.

4.2 Examples of art in social media: reddit and NaNoWriMo

Since the social media came into the limelight during the last decade, there has been an influx of websites that feature user-generated content. Promoting your art on one of these websites affords many advantages that are not present when attempting to gain exposure by conventional means, however, many of these advantages have certain drawbacks. In order to more closely examine what these advantages and their potential drawbacks may be, let us examine one of the most popular websites that features user-generated content, reddit.com.

Reddit is a social media website that enables users to submit and vote on links. Reddit's FAQ section claims:

reddit is a source for what's new and popular on the web. Users like you provide all of the content and decide, through voting, what's good and what's junk. Links that receive community

approval bubble up towards #1, so the front page is constantly in motion and (hopefully) filled with fresh, interesting links (Reddit, 2017). The voting system also applies to the comment section under each link. While reddit is mainly a link aggregator website, it is also one of the most diverse hubs of user generated content on the internet. This is because of how reddit is structured; To quote reddit's FAQ section again:

reddit is made up of thousands of sub-communities, each focused on a specific topic. There's a subreddit for science, a subreddit for music, and probably a subreddit for your nearest city. By default, new users are subscribed to a selection of the most popular ones, but you'll get a lot more enjoyment out of the site if you take the time to subscribe to ones that appeal to you. After doing so, the front page will change to show a customized listing tailored to your interests (Reddit, 2017).

Many of these subreddits are dedicated to art and some of them, most popular ones, like /r/Art, are more of a general nature and feature art related news and discussions along with user-generated art, whereas some, like /r/WritingPrompts, are entirely driven by submission of user-generated content. This subreddit specifically is based around the submission of short stories as a response to user defined prompts, hence the name. The typical form of a submission will usually consist of a short set-up for a story, to which writers will reply with a short story that fits into the defined premise. Many of the most popular writers have their own subreddits.

Even though reddit lacks the means for users to monetize their content, some have managed to do so through third party donation websites like patreon.com, others have gone on to publish their own novels and have used reddit for advertisement, one has even had their story purchased by Hollywood, with plans to turn it into a movie (Rothman, 2013).

One of the limiting factors that is not exclusive to reddit, but is endemic to social media as a whole is the voting system. Be it reddit "upvotes", Facebook "likes", or something else, the fact remains that the main deciding factor in the success of an art piece is popularity. In reddit's case, the most popular demographic that uses the website are males in the age range of 18 to 29 (Barthel et al.), so it comes as no surprise that the most popular content will be of a variety that appeals the most to said demographic. Examining the most popular stories in /r/WritingPrompts seems to reflect that (Reddit, 2017), since most of the stories lack variety and could be classified as either sci-fi or fantasy, genres traditionally popular with young males.

4.2.1 Reddit's *place*

So far, the paper has concerned itself with how the internet and social media have affected artists, their art and its consumption; However, the unique nature of the internet means that it can be fertile ground for types of art which would be difficult or impossible to reproduce outside of it. The piece that will be talked about in this section is reddit's *place*.

There is an empty canvas.

You may place a tile upon it, but you must wait to place another.

Individually you can create something.

Together you can create something more. (Reddit, 2017)

This was the tagline of subreddit /r/place, which was created on April 1, 2017. *Place* was a social experiment that resulted in a 1000 x 1000 pixel piece of collaborative art. As its tagline suggests, the experiment began as an empty canvas, and each individual user was only able to place a single pixel on it every 5 to 20 minutes (Machovech, 2017). The nature of the experiment necessitated a high degree of collaboration and coordination, which caused the creation of many new communities dedicated to *place*, as well inciting existing ones to action. By the time *place* ended 72 hours after it began, over 1 million users had edited the canvas by placing approximately 16 million pixels (Weinberger, 2017).

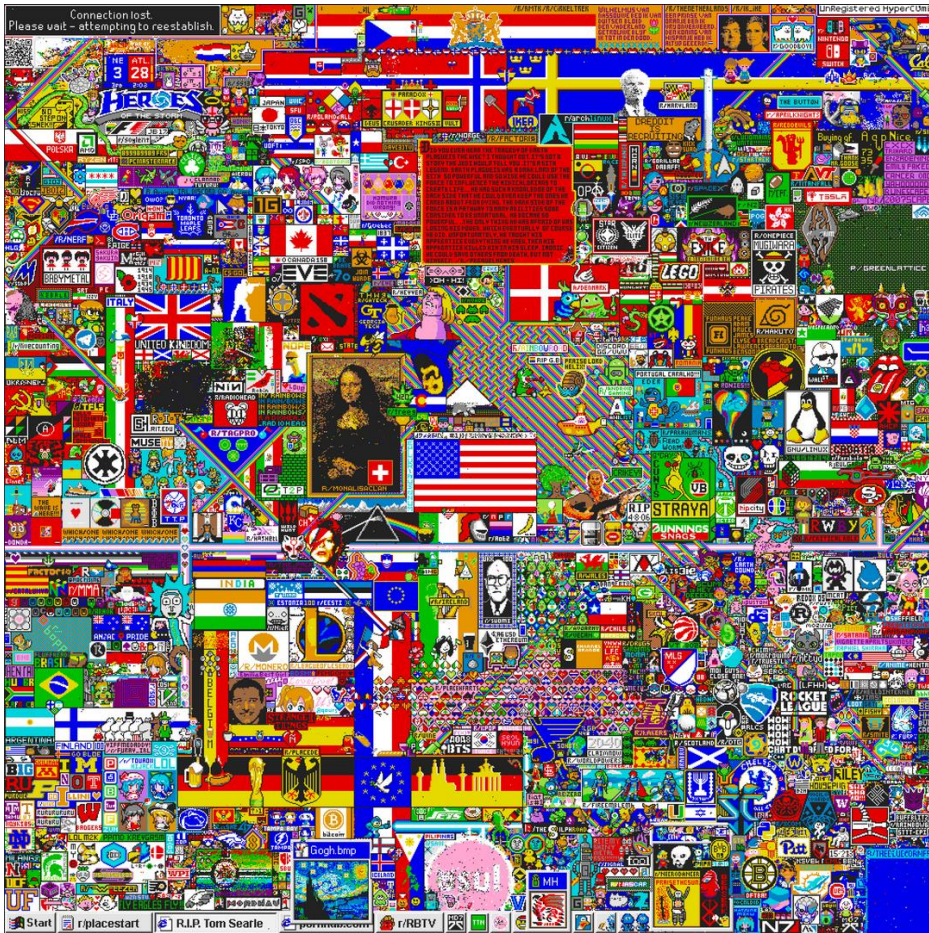


Figure 8 Final appearance of "place" April 3, 2017

4.2.2 National Novel Writing Month

National Novel Writing Month, or NaNoWriMo is a project in creative writing that is held annually from 1st to 30th of November, with a goal to write a 50 000-word novel in that timeframe (NaNoWriMo, n.d.). According to the website's own figures, the project had 312 897 participants in 2016, of which 34 678 managed to complete the goal of submitting a 50 000-word novel draft. The organization largely relies on donations and sponsorships for funding (NaNoWriMo, annual report, n.d.). The participation is free and open to everyone.

It is perhaps this last point that has made NaNoWriMo so successful, especially since self-publishing a novel can incur significant expenses and publishing houses are can be wary of publishing inexperienced writers. Although there are no prizes for those who managed to achieve the stated goal, hundreds of contestants have had their books published and some like Sara Gruen have had their novels adapted into movies (NaNoWriMo published, n.d.).

Overall, the impact that NaNoWriMo has had and continues to have on amateur writing could be characterized as positive.

5 Conclusion

This thesis' goal was to show the influence that new technologies have had and continue to have on the world of art. In order better deal with the issue at hand, the thesis was divided into three parts and each of these parts dealt with a different aspect of the problem.

The first part dealt with how new technologies were used to create art, with virtual reality being the technology that was examined. In order to prove the technologies' viability as an art platform, several art installations that are centered around the technology were detailed. The installations that were featured utilized different methods, and have had different goals to one another, which demonstrates the versatility of virtual reality in creating art. Since most of the mentioned installations use virtual reality at their center and not simply as an accessory, it would be difficult to diminish the importance that virtual reality currently has and potentially will have in the world of art.

The goal of the second part was to find out if technological progress has resulted in any new, unique types of art. The potential new art form that was discussed were video games. Video games are a relatively new medium, that really came into the mainstream during the last 20 years, so it is partly because of the mediums relative immaturity that many question its place among other, already established art forms. Even so, this thesis presents several reasons to consider the contrary, citing one major art exhibition that has exhibited video games, as well as pointing out some advantages that video games have over other art forms when it comes to storytelling. This part also briefly talks about video games as a "container" for other art, since many different art forms are included in the production of each video game. Music is one such example and it is undoubtedly an important part of most video games. We have seen how music can be used to enhance player immersion and thus deepen the player's connection to the game, and how there are some games where music plays a much more central role and is in fact a centerpiece of the game design. Another example that this part has briefly elaborated on were cutscenes, which blend elements of cinema into an otherwise fully interactive experience. Writing in video games, its main features and how it differentiates itself from conventional writing were also elaborated on. Finally, the thesis examines the video game Mass Effect 2 in detail to see how its complex narrative forms and approach to storytelling enables video games to tell stories on a scale not possible in other mediums. As all video games, so does Mass Effect

2 contain copious amounts of conventional art, which were briefly examined as well.

The final part of the thesis discusses the impact that the internet and, more specifically, social media has on the world of art. The invention of the world wide web has transformed nearly all aspects of society, so it comes as no surprise that it would have a big impact on the world of art as well. Social media in general has become one of the primary ways many people today come in contact with art, which is not surprising considering how convenient it is for both the artist and their audience. Using social media for art is not without its negative side. Many of the most popular social media sites include some sort of voting system that ultimately determines which content will be featured the most. Unfortunately, this system has a tendency to reward art that is easily digestible and caters to the lowest common denominator. Looking past its negative side, the internet has made art much more accessible to the masses and has enabled the creation of new art pieces that would not be possible without it. One such example has been examined by looking at reddit's place, which is a large-scale, collaborative art piece whose completion would not be possible outside of the internet. This chapter also examined how the internet could be used to inspire and facilitate the creation of art by the everyman. Websites like NaNoWriMo which give everyone a platform and motivation to express themselves represent a large, positive impact that the internet has on the world of art.

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