



Holograms and Vocaloids: a deep dive into the virtual persona of Hatsune Miku

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Abstract

Hatsune Miku, originally created as a software for music creation created by Crypton Future Media, puts forward a different way to look into intermediality and playfulness through the lens of the “virtual idol”; a media performance that subsists independently of the referent of any performer (Black 2006, 209). Yet, although Miku’s position is more than present in media discussion, there is a lack of focus with regards to how intermediality and playfulness affect not only Miku’s performances, but also the audience in place. Throughout this thesis, I explored a number of media concepts, through the gaze of the duality of Hatsune Miku: a software agent and a performer. Having this in mind, I was able to draw conclusion concerning Miku’s place in the intemedial discussion, the importance of technological advancements within the music industry, as well as the importance of playfulness in audience participation and liveness.

Keywords: Hatsune Miku, virtual artists, vocaloid, hologram, holographic, concerts, intermediality, softwarization, media hybridity, playfulness, ludic, audience participation

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[As he is being shut down] Good afternoon... gentlemen. I am a HAL 9000... computer. I became operational at the H.A.L. plant [voice becomes lower & slower] in Urbana, Illinois... on the 12th of January 1992. [voice becomes even more lower & slower] My instructor was Mr. Langley... and he taught me to sing a song. If you'd like to hear it I can sing it for you. [starts singing Daisy Bell (Bicycle Built for Two)]

2001: Space Odyssey

(Kubrick 1968)

Introduction

It was the year 1961, when an IBM 7094 computer became the first known computer device to sing a recording of the song *Daisy Bell (Bicycle Built for Two)*. First composed by Harry Dacres in 1892, this rendition of *Daisy Bell* was immortalized by programmers John Kelly and Carol Lockbaum and music composer Max Mathews that “made” an artificial device sing (O’Dell 2009, 1). Although by today’s standards the sound of the IBM 7094 sounds primitive and quite obsolete, it was a huge step towards the evolution of music technology and a big indication of how this new concept would develop in the future. After that, the music industry has made leaps in incorporating computer technology into music production - either that be computer-generated musical instruments or music editing with tools like auto-tune altering pitch in vocal and instrumental music recording and performances. Following the course of technology intertwined with music, an example worth highlighting is the emergence of virtual musical artists. Early examples of this phenomenon started surfacing in the start of the 21st century, with animated bands such as the Gorillaz and One-T, which later developed into computer-generated, holograms like popular vocaloid artist *Hatsune Miku*.

The idea of virtual musicians is a concept that has become increasingly more relevant through the years, firstly due to the introduction of holograms on the live stage. By definition, a hologram is “a three-dimensional image reproduced from a pattern of interference produced by a split coherent beam of radiation” (Merriam-Webster n.d.). In recent examples, 2021 was the year that the Swedish band ABBA announced their virtual tour for their album *Voyage*, where concertgoers can experience a live performance by the band as it would have

been performed back in the 70s (ABC News, 2021)¹. This is possible through the use of holograms and has been a technique used extensively, especially as a way to offer audiences the chance to see late musicians performing live. The concept of hologram concerts and virtual musicians is not in any way new or revolutionary, but the inclusion of virtual artists into the concert going experience raises a number of questions concerning the development of the medium. The idea of holographic performances and vocaloids, is heavily related to the media concepts of intermediality, hybridity and softwarization, but also to the idea of performance as play. The reality of Hatsune Miku being a software agent that has been given the opportunity to perform on stage through the use of holograms, pushes the notion of intermediality to a new dimension. Concurrently, the ability to interact with the software and freely create content using the Vocaloid software, expresses the playful and participatory turn of performances and how it affects both the collective medium of live concerts and the way that the audience - or in this case “experiencers” - are affected by it (Kattenbelt 2008).

In the course of this thesis, I am planning to explore the impact of hologram artists to the medium of the concert-going experience. The case of Hatsune Miku presents interest in the way that the concert medium has evolved through the years. Concerts and live performances are now highly interconnected with the use of technological means which brings about the topic of “softwarization” and the evolution of the medium to an intermedial

¹ Recent data from the ABBA voyage concert showcases that ABBA did not only use holograms but also a concert hall, which is transferrable and designed specifically for the tour. “Stufish Entertainment Architects designed the ABBA arena to outlive the lifespan of the ABBA Voyage tour which will run until May 2023” (Brandy 2022). “While the structure is scheduled to exist on the east London site for five years, it will ultimately be transported for future use elsewhere” (Brandy 2022). “Inside, the structure will take shape with an internal clear span of 61 meters (200 feet) and allow for an immersive, 360-degree experience” (Brandy 2022).

performance. Realizing that performances constitute a playful medium, we're going to delve into instances of *play* in the persona and performances of Hatsune Miku. Ludic cultures can be found either in the way that the concert going experience is lived in by the audience, but also in the audience's behavior and participation with the artist and their medium.

Research Questions

Without a doubt, the existence of Hatsune Miku and her performances were the first provocations for this research. I became acquainted with Miku's work while starting my research master's in 2020 and ever since then I wanted to pursue my research into holograms and music. That in combination with my personal fascination for the role of "play" in communal experiences like concerts lead me to my final decision for this research trajectory.

As mentioned in the introduction, the purpose of this research is to delve into the impact of vocaloids, both on the medium of live performances but also on the effect they have on the audience they appeal to. Therefore my main research question has developed as follows:

What is Hatsune Miku's position in the intermedial discussion?

In order to answer this question in full, as well as looking at Hatsune Miku's performances in a detailed and extensive way, I developed two sub-questions that will help me understand the concept in a more concrete manner:

- a. *Does a performance by a hologram, like Hatsune Miku, constitute a hybrid medium? And in what way does "it represents (...) the world or [the audience's] experience in a new way by combining and possibly*

reconfiguring already familiar media representations” (Manovich 2013, 217)

- b. *Lev Manovich uses the term “softwarization” of media to refer to “the transfer of techniques and interfaces of all previously existing media technologies to software” (Manovich 2013, 199). With that definition in mind, how is the medium of the concert-going experience affected and transformed by softwarization?*

Additionally, through the course of this thesis I would also investigate the idea of playful performances and audience participation as play; that would include both the performance as a play and the experiencers of the performers as active members that interact with performance and become playful subjects themselves.

Huizinga in Homo Ludens defines “play [as a] free activity standing quite consciously outside ‘ordinary’ life as being ‘not serious’, but at the same time absorbing the player intensely and utterly (Huizinga 2016, 13). Implementing Huizinga’s definition can we put virtual artists’ performances and audience participation under the playful genre? What does this categorization indicate about audience behavior according to Huizinga’s definition?

At this point, I will briefly go into the structure and the content of the chapters that will be part of this thesis. The first chapter will cover a detailed introduction into the appearance of holograms in popular culture. Although vocaloid Hatsune Miku is the center focus of this

thesis, there is a long list of virtual personas that have been performing through the use of holograms. The intention of this chapter is to set up the robust background for the rest of the thesis and accommodate the reader with information on the history of virtual artists and their impact on the music industry. Since Hatsune Miku offers a broad spectrum of topics to discuss, it is of the highest importance that I discuss her origins, as well as the impact that she has had with regards the music industry and her fanbase. As I will be exploring “The World of Hatsune Miku” I am planning to focus on the duality of Miku’s persona as both a virtual artist but also a hologram. I feel like such a chapter is important in order to familiarize the reader with Miku’s art, what she presents to her fanbase, as well as to what is the limit of her success at the moment.

In the second chapter, my focus lies on answering and discussing with the first two research questions of this thesis. Firstly, I will discuss the concept of intermediality and its mappings through time. I am then going to demonstrate the basis of what makes Hatsune Miku an intermedial performer while analyzing her 2017 concert as part of the Miku Expo, taking place in Kuala Lumpur. Through this analysis, I will unravel the ways that concertgoers (or experiences) are affected by Hatsune Miku’s performances on stage. Furthermore, in an effort to further understand the “Hatsune Miku effect” we will also look into media modalities as imagined by Elleström. On the last subchapters of chapter two, I will place my attention on the concepts “hybridization” and “softwarization” as defined by Lev Manovich to further dissect the role of technology in an intermedial environment. The concept of this chapter heavily relies on analyzing Miku’s performances as a transformed and adapted medium; this transformation and/or adaptation refers to following and

integrating technological advancements into a more “traditional” one, that of the concert-going experiencing.

For the third chapter of my thesis, I will reflect on play and playfulness in Hatsune Miku’s persona. The idea of play as expressed by Huizinga, applies heavily to the way that Hatsune Miku’s persona as it has been constructed and received from her fanbase. Not only are vocaloids performances playful due to their ludic nature and the suspension of disbelief that they “demand” from their audience, but they are also a product of audience participation. The idea of liveness in performances is rejuvenated and reinvented, especially when discussing a non-sentient and non-corporeal being. Audience and fan participation is a common occurrence that one can meet in active fanbases, especially when exploring Japanese fandom culture. Secondarily, I will be also looking into the effect of copyright regulations in condoning and encouraging fan culture. Once again the nature of Miku will be explored with regards to her duality; being both a software agent and a performer. With this idea in mind I will get the chance to explore playfulness in a multifaceted manner.

Although this thesis is grappling with a variety of topics, that being intermediality, hybridity, and playfulness, the focus remains the same: exploring Hatsune Miku as a concept that not only offers a broad space for discussion and research, but also an uncharted territory that relates to a broad scope of media concept and ideas.

Method(ology) and Theoretical Framework

The focus case of this thesis will be Hatsune Miku; Hatsune Miku is a Japanese vocaloid (vocal android) that stands out as a prime example of the acceptance and spread of vocaloids and hologram culture (Hayashi 2020, 1). Designed as a 16-year-old Japanese female performer,

Hatsune Miku possesses “the largest song catalogue in the history of the world, with over 100,000 songs and 170,00 YouTube videos to date” (Hayashi 2020, 1). The impact that Hatsune Miku has had on the music industry has been remarkable with having 1,302,747 (as of March 5, 2022) monthly listeners on Spotify, rising in prominence in the mainstream, western music scene, and even becoming the face of number of commercial campaigns in Japan (Hayashi 2020, 1). Although Miku will be the main focus of this thesis, I will also have a chance to explore the vocaloids that often accompany Hatsune Miku, otherwise known within the fandom as Cryptonloids, that include Kagamine Rin & Len, Kaito, Meiko and Megurine Luka. This will offer me the chance to explore in depth the vocaloid culture as well as broadening my research spectrum. Supplementarily, I will also highlight examples that are more commonly known in western culture that include holograms of real-life performers, as mentioned in a previous section.

Additionally, I will be using two performances that have been conducted by Hatsune Miku in recent years. The first one is the *Miku Expo* concert taking place in Malaysia in 2017, and the second one is the *Magical Mirai 2021* taking place in Tokyo and Osaka. The reason behind my decision to use these performances lies behind the fact that one of them took place before the COVID-19 pandemic and the other one after. This choice came as a result of wanting to focus on first of all performances that included a full, sold-out crowd (which was not possible up until recently) but also I wanted to look on how livestreams of such concerts were distributed both before livestreams became the norm during the pandemic and after. Using these two concerts, on the second and third chapter, accordingly, will help me analyze the two main concepts that this thesis aims to explore: intermediality and playfulness in holographic performances.

As for the theoretical background that I am planning to utilize in support of this thesis, I will begin this journey by going back to the historical ideas that lie behind the concept of intermediality: *paragone, ut pictura poesis*, and *Gesamtkunstwerk* as defined by Bruhn and Schirrmacher (2021). Additionally, I will be further delving into intermediality using *Mapping Intermediality in Performance* (2010) as my guide. By combining the new concepts of experiencer and feedback loop theory as defined in this book, as well as, analyzing a performance by Hatsune Miku and comparing it to VJ performance as analyzed by Turco (2010) in the book, I am planning to solidify Hatsune Miku's position as a true intermedial performer. In continuation, using Lars Elleström's (2021) theory concerning media modalities, I will continue to explore Miku's intermedial performances, and further enrich the position of intermediality in the holographic discussion. Lastly, for chapter one, I am planning to discuss hybridity and media softwarization (2013), as two concepts that do not only complement each other, but also highlight the presence of technology in a mediatized world.

For the third chapter, I will proceed into discussing playfulness in holographic performances and audience participation. Since Miku's existence is a product of fan interaction and participation, it is only natural that I should discuss such topics. Huizinga's work is a key factor in defining play in adulthood, as well as understanding the need for play in a capitalistic environment. Additionally, it is important to also highlight the useful information provided by the book *Playful Identities* as it will help me further investigate playfulness. Using the second performance of Hatsune Miku as listed before, I will be looking into the concepts of Holland's suspension of disbelief (1967) and liveness as expressed primarily in the works of Power (2008) and Auslander (1999). On the second part of this

chapter, there will be an investigation around the effect of participatory cultures with regards to the work of Hatsune Miku. Since as mentioned before, the work of Hatsune Miku is possible through the existence of audience participation, I was lucky to be able to use research material that focuses solely on the effect of playfulness in the Miku persona. To name a few, the works of Tomonori (2021), He (2014), and Lam (2016) will work as my guides into unveiling further information on the topic.

Chapter 1: Hatsune Miku: The World is Hers

I'm the #1 princess in the world

And that's how you'll treat me, got it?

(translated from) The World is Mine – Hatsune Miku

A number of questions come to mind upon discussing the concept of virtual musicians and holograms. How do they come to prominence? How do they function? What exactly is Hatsune Miku? To be able to fully engage with the case study of this thesis, an insight into the cultural effect of holograms is helpful. This is why, before starting the analysis of Hatsune Miku's playful performances, there will follow an in-depth investigation of holograms, starting by the first manifestations of holograms in popular media and reaching the phenomenon of Hatsune Miku. The duality of Hatsune Miku lies in her presence being realized on stage as a hologram but also her role as a virtual persona. Additionally, there will be a brief overview of Miku's rise to fame. Due to the fact that her success heavily relies on audience and fan participation, it is important to map out the steps that were taken for Hatsune Miku's success. For the last section of this chapter, I will also highlight some of the dangers that follow a phenomenon of Hatsune Miku, with regards to the commodification and fetishization of the "non-body." This chapter, although lacking in theoretical bridging, is of utmost importance in order to acquaint the reader with the concept of holograms as they appear in media but also the concept of a virtual musician and how those two features are combined in Miku's character.

1.1. The history of the Hologram

For brevity's sake, I will be starting this investigation by providing the reader with an overview of the history of holograms with regards to their occurrence in popular media. Firstly, to define the concept of holography for this section I will be referring to the definition given by Dennis Gabor in the year 1948. For Gabor, holography can be imagined as a "two-step imaging process":

First, a beam of coherent radiation (that is, consisting of waves having a single frequency and synchronized phase) would generate a shadow of a microscopic object, ringed by interference fringes formed by light diffracting around the object's edges. In the second step, this interference photograph, or hologram, was used to diffract light from another coherent beam to "reconstruct" an image of the original subject.

(Johnston 2008, 223)

This definition shall help both me as the author of the thesis and the reader into a clear and concise definition of what is deemed as a hologram.

With that definition in mind and Johnston's text "The Hologram and Popular Culture" we can refer to the first work of fiction to include a hologram as a plot device as William Gibson's "Fragments of a hologram rose" that was published in 1977 (Johnston 2006, 406). In this story the author explores the "musings of the narrator about a holographic postcard (a white light reflection hologram of a rose) sent by his girlfriend (Johnston 2006, 406). "For Gibson, two visions of the hologram coexist: it is simultaneously a simple object like the 1970s hologram as well as a powerful future technology for producing a simulated three-

dimensional environment (Johnston 2006, 406). In a similar way, George Lucas incorporated the technological advancement of the hologram into the first *Star Wars* film.

"Help me, Obi-Wan Kenobi. You're My Only Hope!" (Lucas, 1977); the emblematic quote (Figure 1) is one of the most prominent examples of holography being used in popular media and specifically in film, and part of the original *Star Wars* trilogy that features R2D2, a robot presenting a hologram of Princess Leia asking for the help of Obi-Wan Kenobi in the form of a hologram. "George Lucas's depiction added another element to cinematic holograms: its flickering and stuttering image suggested intrinsic links with electronic communication like a television having poor reception" (Johnston 2006, 407). Lucas's depiction of the hologram can be also deemed as a frame of what the majority of people consider a hologram: the shakiness of the picture of Princess Leia, as well as the blue hue that is appointed to the hologram is a depiction that very much became the standard in any sort of visual medium.

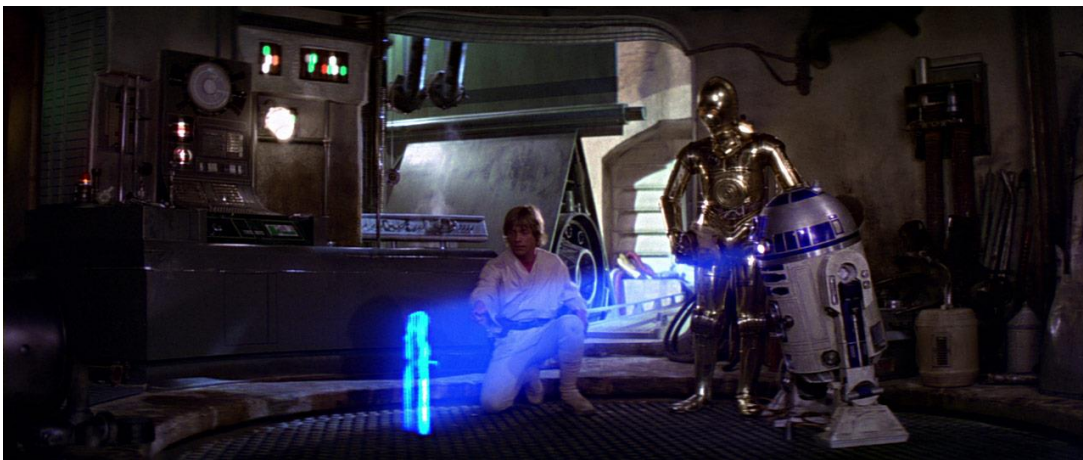


Figure 1: The hologram of Princess Leia as seen in *Star Wars: Episode IV – A New Hope*. George Lucas. 1997. *Star Wars Episode IV: A New Hope*. Dir. George Lucas. Twentieth Century Fox.

After *Star Wars*, television science fiction also started to use holograms as plot devices: *Red Dwarf* a British television show “[broadcasted] in Britain 1988-94”, and set

onboard a spaceship of the distant future, extended the capabilities of fictional holograms far beyond contemporary expectations” (Johnston 2006, 407). In this occasion, “one of the characters was a hologram, calculated in real time by the spaceship’s computer, his form reconstructed by a ‘light-bee’, which rapidly painted by three-dimensional image on the fly” (Johnston 2006, 407). In the first episodes of the series the character did not have the capability of being touched but was later updated to being solid due to a rewiring with a “hard-light drive” (Johnston 2006, 407). Those instances, although unrelated to the topic of discussion of this thesis, and quite far off of the image of a hologram that will be explored through Hatsune Miku, display the idea of the hologram that has been etched in the minds of the general population through popular culture.

1.2. The Virtual Persona

The concept of a virtual musician is in no way new; however with the leap taken in technological advancements there has been a spike in the appearance of virtual personas. The first examples of digitally simulated artists appearing in popular culture date back to 1992 where “the bodies of Humphrey Bogart, James Cagney and Louis Armstrong were digitally reanimated to appear in a Diet Coke commercial (Galbraith Karlin 2012, 2013). “Virtual personas are virtual humans based around a specific person and are increasingly being referred to as *Digital Twins*” (Burden 2020). Later on we can see early footings of endeavors targeted towards the creation of a virtual idol with Kyoko Date², created by

² Kyoko Date (伊達杏子, Date Kyōko) is a "virtual idol" associated with Horipro (Wikipedia Contributors 2022). Her debut was made in 1996 where she first appeared as a three-dimensional, CG designed character (Wikipedia Contributors 2022). “Despite her virtual nature, she was treated as talent by Horipro” (Wikipedia

Japanese agency, as an attempt to create “the new big thing” in the pop star sequence. (Galbraith, Karlin 2012, 213-214) Usually constructed through animation or CGI, examples like Lil Miquela³, Imma and Bermuda highlight the success of a new business model as its lead by start-up companies. In the course of the 21st century and the surgency of influencers, the example of specifically, Lil Miquela created a lively conversation in the start of 2018 as it confused the vast majority of her followers about her “realness”. In February 2022 “Miquela has over three million followers on Instagram (...) and has also worked [in collaboration] with Samsung, Amazon, Prada, Dior, and Calvin Klein” (Jalan 2022).

On the other hand, virtual musicians display a different example of how the concept of a virtual persona has infiltrated the cultural world. One of the first examples includes the animated virtual band Alvin and the Chipmunks that were firstly introduced in 1958. In more recent cases one can pinpoint the turn towards virtual musicians from the popularity that Gorillaz accumulated in the beginning of the twenty first century. As Daniel Black highlights in “The Virtual Idol: Producing and Consuming Digital Femininity” the prospect of music producers realizing that they are not dependent upon the living bodies of performers is highlighted by the case of Damon Albarn (formerly lead singer of the band *Blur*) and the creation of the virtual band Gorillaz (Black 2012, 209). Similarly, the concept of virtual musicians developed into new directions, which was the resurrection of late musicians through the use of holograms. Although, not technically a hologram but more of a visual trick,

Contributors 2022). As opposed to Hatsune Miku, she did not become popular amongst the pop culture fandom and that’s why she was discontinued in 2007 (Wikipedia Contributors 2022).

³ Lil Miquela, also referred to as Miquela Sousa, is a 19-year-old, Brazilian-American model, musical artist, and social media influencer with 3 million followers (at the moment of this documentation) (Petrarca, 2018). She is, in the words of Petrarca “an avatar puppeteered by Brud, a mysterious L.A.-based start-up of “engineers, storytellers, and dreamers” who claim to specialize in artificial intelligence and robotics” (Petrarca 2018).

“holograms of dead celebrities first became a spectacle when Tupac Shakur came on stage at Coachella alongside Snoop Dog and Dr. Dre in 2012” (Serpa 2018). This created a trend among the music industry of “bringing back” dead musicians with the use of holograms: Amy Winehouse, Elvis Presley, Maria Callas, Buddy Holly and so on. Although this particular example was met with success at first appearance, it has faced a significant amount of criticism due to complaints made about the copyrights of such holograms, as well as, the disapproval of the immediate families of the artists. There seems to be a distinction and a free space in the market for an artist that encompasses the two focal points of the aforementioned examples: virtuality and holography. In the following section, I will be introducing the case study of this research, Hatsune Miku, a software agent that combines both.

1.3. Hatsune Miku: the unconventional pop star

As explored in the previous sections of this chapter, the virtuality of performers and personas has manifested itself in two ways: the hologram and the animated persona. The duality of Hatsune Miku lies in the combination of her being a hologram and a virtual idol. Japan is not the first or only place to develop virtual idols - or in this case vocaloids - however “the enthusiasm for play with the boundaries of reality or awareness of the reality of fiction, makes virtual idols quite different from” the virtual artists mentioned. (Black 2012, 203). Through the rest of the first chapter, I will be looking into the intricacies and characteristics that created the virtual phenomenon of Hatsune Miku, as well as, delving into the way that she was marketed, distributed, and finally popularized along the Japanese, and later on a global audience.

1.3.1. Technological Aspects

Hatsune Miku can be defined as a Vocaloid: a vocaloid (vocal android) is “a commercial singing synthesis software developed by Yamaha based on diphone concatenation” (Kenmochi 2010, 1). Miku is admittedly the most successful and recognizable vocaloid out of the ample collection of Vocaloid virtual idols that exists online at the moment. “A vocaloid (ボーカロイド Bōkaroido) is a “singer in a box” voice synthesizer software, developed by a Pompeu Fadra University multidisciplinary research project in 2000, and later commercialized by Yamaha (Kärki 2021). Crypton Future Media developed Hatsune Miku but introduced the character design features by artist KEI (2021) as “a marketing ploy, designed to sell a Desk Top Music (DTM) software programme that lets users generate vocals by inputting syllables and pitches to create a reasonable (...) facsimile of singing (Arnett 2015, 164). That is how characters like Hatsune Miku, *Kagamine Rin*, *Kagamine Len*, *Megurine Luka*, *KAITO* and *MEIKO* came to exist. Hatsune Miku “uses Yamaha Corporation's vocaloid 2, vocaloid 3, and vocaloid 4⁴ singing voice synthesizing technologies, and Crypton Future Media's Piapro Studio, a singing synthesizer VSTi Plugin, with her voice modeled from that of Japanese voice actress Saki Fujita” (Kärki 2021).

Hatsune Miku’s “live” concerts are mediated through the projection of a video feed onto special glass screens (Kärki 2021). “In the very first concert in 2009, there were three separate screens, and Hatsune Miku would ‘move’ around the stage by switching between them. Or, at the end, appear in all three of them” (Kärki 2021). The projection technology

⁴ Vocaloid 2, 3, 4 refer to the different engines; that refers to different updates to the original Vocaloid software introduced in 2003 including the introduction of different languages, extra capabilities, and in the case of Vocaloid 2, the introduction of the animated characters like Hatsune Miku (Wikipedia contributors 2022).

and materials used in Hatsune Miku's concerts have evolved tremendously, making the concert more realistic, but there are still some basic qualities that are used to this day. First of all, "the glass screen is coated/matted/frosted so that the projected image is diffused for all viewers" (Kärki 2021). Secondly, "the viewing angle is not very wide" making the image appear dimmer when viewed from an oblique angle (Kärki 2021). Lastly, "whenever the projector shines the image onto the area of the glass that is collinear with the spectator, the light is very bright since it is not completely diffused" (Kärki 2021). Although the aforementioned difficulties concerning the construction of a stage that can accommodate Miku's performance are hard to completely obliterate, there have been major improvements into making her performances seem more realistic. Miku Expos now appear to be utilizing the "Polid Screen" technology developed by Believing Beyond, which allows two-sided projections on layered screens, making Hatsune Miku concert video appear three-dimensional on at least two thin screen layers, offering the possibility of dual projections (Dennison 2016; cited in Anderton and Pisfil Zavaleta, 2022). Most concerts feature a setlist that varies around twenty-five songs, and the set remains the same. "But the main distinctive feature, despite all the overpowering visual cues and the swapping of musical genres, is Hatsune Miku's voice, which is often far removed from the original Saki Fujita⁵ vocals, because of the "robotic" modulation" (Kärki 2021).

⁵ Saki Fujita is a Japanese voice actor that is known for her work on the *Attack on Titan* franchise, *New Game!*, and *Kantai Collection* (IMDB n.d.). Saki is the sample used by Crypton Future Media in order to create Hatsune Miku.



Figure 2: Vocaloid 2 Box Covers. (From left to right) Hatsune Miku, Kagamine Len and Rin, Megurine Luka. (© Crypton Future Media, Inc. Sourced from: www.crypton.co.jp/mp/pages/prod/vocaloid/cv0_Lus.jsp.)

1.3.2. Hatsune Miku's Rise to Fame

"I think Miku is already the present of music, in that she embodies a vast movement, brought about by the internet, and which blurs the line between creators and users. Music, like artistic creation in general, is not just a few professional artists making songs for the rest of the us. More and more individuals have the will, talent, and now the means to share their work with the world, and to be both consumer and creators"

(quoted by Petrarca 2016)

Hatsune Miku's early beginnings are quite different than other those of pop stars. The intention for Hatsune Miku, and the rest of the breakout vocaloid artists, was to become a commercial success as vocaloid products released by Crypton Future Media and their rise to fame came as a byproduct of their release. To reiterate, contrary to widespread belief,

“Hatsune Miku is not an AI agent” but more of a representative of the software created by Crypton Future Media with the option to be used and distributed to numerous users (Collins 2011, 36). Vocaloid technology is mostly used by users in Japan as a vocal track generator: a user can distribute lyrics and notes “with some expressions to some of the tracks and get synthesis results instantly” (Kenmochi 2010, 2). To put it simply, the vocaloid system allowed users to create their own songs through the software and use the voices of the “vocaloid presets” available in the software. Besides Miku there are also more than twenty vocaloid products that have not reached the level of success of Hatsune Miku, but they were also part of the first release of Vocaloid 2 (Kenmochi 2010, 1).

The success of Hatsune Miku heavily relies on user creation and interaction. The product as designed by both Yamaha and Crypton Future Media was designed to give musical producers “a voice” to use for their creations. However, the design of Hatsune Miku and the accessibility of the product offered Miku a gateway to her rise of fame. Hatsune Miku, made her breakthrough through a Japanese website, similar to YouTube, called *Niko Niko Douga*⁶. People started creating content using the vocaloid software this created a ripple effect of people re-posting, re-mixing, and re-designing videos created with the Hatsune Miku vocaloid pack (Kenmochi 2010, 3). The software allowed users to manipulate Hatsune Miku’s voice and appearance in every way possible: Miku’s (and other vocaloids’ music) does

⁶ ⁶ Niko Niko Douga (translated as “smiling videos”) is a Japanese video sharing platform, that is reminiscent of a crossover between YouTube and TikTok. “Niko Niko’s most distinctive feature is that members communicate via short texts inserted on top of the video feeds” (Toto 2008). The “entries [on Niko Niko Douga] are time-synched and flow over the frame from right to left” (Toto 2008). “Using different colors, other users can add comments later in the same way. Some videos are virtually covered with thousands of lines of text, which can be filtered or turned off” (Toto 2008). “Niko Niko Douga, has a strong Japanese character and it is “deeply rooted” in Japanese “geek culture,” which is reflected in the Manga-inspired design” (Toto 2008).

not have a specific *genre* or *theme* and it is not restricted by language barriers. Additionally, an interesting fact is that upon searching Hatsune Miku's music on streaming platforms or YouTube, is that artist credits are given to the producer of the song, rather than the vocaloid product used to create the song. Therefore, Hatsune Miku's presence in the media world was not only a product *for* the people, but also a product *from* the people. Had it had not been for the quick and widespread success of the Vocaloid 2 software that include Miku in its promotional campaign, Miku's career as a hologram would not have been of existence.

Miku's success was also heavily assisted through the way that the *Niko Niko Douga* is designed, where all content uploaded on the website "can be freely re-used so long as the original creator does not explicitly prohibit this (Kenmochi 2010, 3). Thusly, this allowed users of *Niko Niko Douga* to explore Miku's creative potential to the fullest and "skyrocket" Miku's popularity through the constant resharing of her original work. Users of *Niko Niko Douga* were free to create and share material containing Hatsune Miku; choreographies, short, animated videos, mangas and so on. Upon the release of the Vocaloid 2 software, the website was filled with thousands of videos that featured different songs and versions of Hatsune Miku. Testimonials show that "the most popular music in *Niko Niko Douga* "Miku miku ni shiteageru" has nearly eight million playbacks at the point of 27-August 2010" (Kenmochi 2010, 3).

1.4. Aesthetic Design and the Jump to Non-Internet Media

With a name that translates to the "First Sound of the Future" Hatsune Miku has dominated the virtual musician market in Japan. Miku's design is based on *Moe Anthropomorphism*, a design style in anime and manga where "moe" qualities are attributed to non-human beings,

and she is *usually* pictured as a 16-year-old girl with long, turquoise pigtails (Fig. 2). Moe designs come from the “nominalization of the Japanese verb *moeru*, “to bud” or “to sprout” (Galbraith 2011, 343). “The threshold in the development of *moe* came in the 1990s. Anime and manga characters named “Moe” had an infantile cuteness to them which reflected the nuance of “to bud,” and this reinforced the pun” (Galbraith 2011, 352). Shingo “defines the moe character as a human(oid) that is innocent, gazed at, and becomes embarrassed” (Galbraith 2011, 356). Additionally, the definition of “moe” does not rely on design characteristic but more of the reaction that it inspires to the people: “[“moe”] describes an affectionate response to fictional characters” (Kincaid 2018). As the reader can see in Figure 5, the portrayal of Hatsune Miku heavily falls under the category of “moe” and that can not only be appointed to her facial features but also the choices made in her outfit design that is feminine but also child-like. Another interesting comment that should be made with concerns to Miku’s appearance is that there was no effort in making Hatsune Miku as human-looking as possible, but their designers allowed the design to be otherworldly and heavily inspired by the *moe* aesthetic. This design, as it will be explored later on in chapter 3, is also meaningful with regard to the way that audiences and fans interact with Hatsune Miku, since it solidifies the fact that she is indeed non-human.



Figure 3: Kei (anime artist), image of Hatsune Miku. (© Crypton Future Media, Inc. Used by permission. Sourced from: www.crypton.co.jp/mp/pages/prod/vocaloid/cv0_us.jsp.)

Miku's cultural impact outside of the *Niko Niko Douga* is also worth noting, as she was the No. 1 charting album in Japan at the end of May 2010 (Collins 2011, 36). Following the internet-based success of Hatsune Miku, her rise to fame continued to bloom as she became one of the most sought-after celebrities in Japan. Concerning one of the first Public Relation moves made to establish Hatsune Miku as a brand name, and the most interesting to report on, is the inclusion of Hatsune Miku in the *Akatsuki* rocket launch on May 20th 2010 (Wikipedia contributors 2022). "A public relations campaign was held between October 2009 and January 2010 by the Planetary Society and JAXA, to allow individuals to send their name and a message aboard *Akatsuki*" (Wikipedia contributors 2022). The goal of the

campaign was to have names and messages printed out on aluminum plates and placed aboard Akatsuki: amongst them there were three aluminum plates with the images of Hatsune Miku (and her derivative/chibi⁷-styled figure Hachune Miku) (Wikipedia contributors 2022).

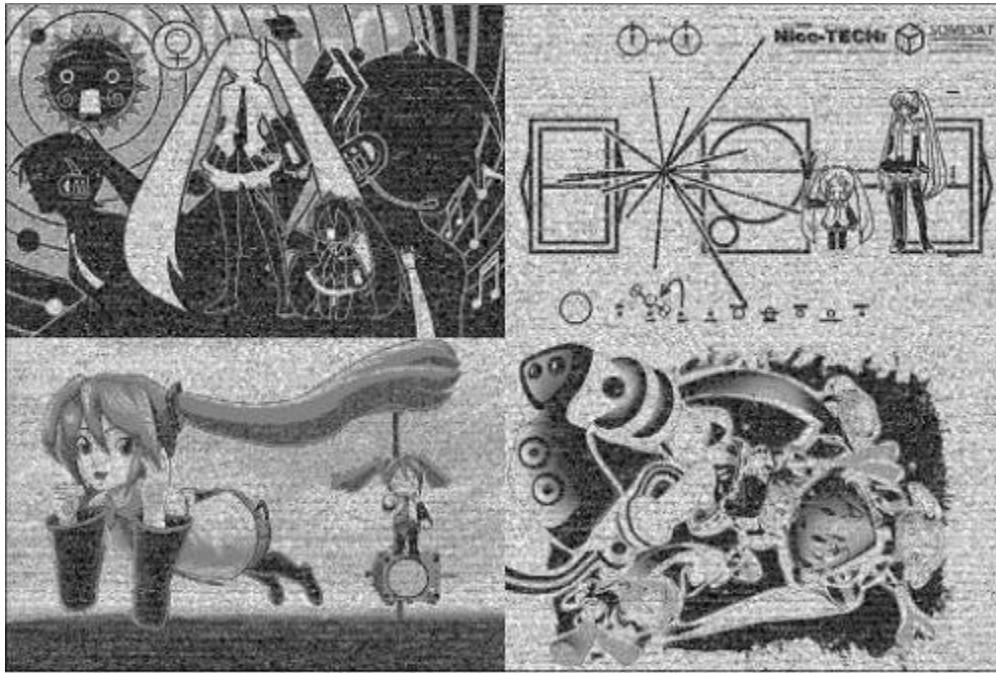


Figure 4: Guidance Officer. 2018. The Aluminum Plates included in the Akatsuki rocket launch. Flight Rising Blog. Last Updated on January 20, 2018. <https://www1.flightrising.com/forums/gend/2362970>.

Despite this huge breakthrough of Hatsune Miku into the world of PR and Marketing her success has also moved on to other artistic mediums. To list a few, she has her own manga series written by the creator Kei, called *Hatsune Miku: Unofficial Hatsune Mix*. Additionally, Sega produced a series of video/rhythm games under the name *Hatsune Miku:*

⁷ **Chibi:** “Chibi describes an art style common in anime featuring characters with large heads, large eyes, and small bodies.” (Dictionary.com) “Thanks to its connotations of smallness and cuteness, the word chibi is also used describe a certain type of anime character” (Dictionary.com n.d.). “This style, known more formally as super-deformed or SD style, features highly exaggerated childlike proportions, with heads sometimes as much as four times the size of the bodies” (Dictionary.com n.d.). “The style is often used in anime to emphasize changes in mood or call attention to the punchline of a joke” (Dictionary.com n.d.)

Project Diva which include Hatsune Miku and other vocaloids launched by Crypton Future Media. Most importantly, her music career enjoyed global recognition and appreciation when she made her American network television debut, performing “Sharing the World” on the *Late Show with David Letterman* on CBS (Moonchild897 2014). Later on, Miku was featured in the work of acclaimed musical artists like Pharrell Williams, Sophie, and Ashnikko. Finally, concerning her live performances outside of Japan, Hatsune Miku was announced as a performer for the 2020 rendition of Coachella (the event was cancelled due to the surge of Covid-19) and was the opening act for the *Artpop* tour of Lady Gaga. With concerns to the event market that has been built around the persona of Hatsune Miku, I can mention three major annual events: the Miku Expo, the Magical Mirai, and the Nico Nico Cho parties. These three different event types do not only happen on an annual basis, but they also have become popular outside of Japan and taking place in Western countries as well. The 2020 Miku Expo took place in London, Paris, Berlin, Amsterdam and Barcelona, and was supposed to extend to the United States of America and Canada but was cancelled due to concerns about the Covid-19 pandemic (Wikipedia Contributors 2022).

1.5. Ethical Questions

In the previous sections of this chapter, I have thoroughly discussed the origins of Hatsune Miku with regard to her position amongst different examples of virtual idols and holograms in popular culture. However, the commodification of the (female) body with regard to Hatsune Miku, raises a number of ethical questions that circle around the career of Hatsune Miku.

“Celebrity construction and presentation involve an imaginary public face” (Galbraith, Karlin 2012, 215). Focusing on the aforementioned examples of virtual personae, it is easy enough to assume that their existence does not leave room for a real self, as their existence is fully imagined and artificially created. The character of Hatsune Miku has been manufactured to fit under the *moe* artistic style. As mentioned before, the *moe* style of drawing usually depicts young girls as they are “sprouting” meaning that *moe* characters are usually young girls with anthropomorphic characteristics: Hatsune Miku herself is depicted as a “forever” 16-year-old girl, that does not age.

“In otaku⁸, *moe* expresses an emotional rather than sexual needs for *moe* characters, but the image of the girl-child is clearly eroticized” (Galbraith 2011, 85). Although different accounts showcase that such design decisions do not seem to promote pedophilic tendencies in Japanese culture, nonetheless “these images regardless of context, exploit girls and empower men, and that ideology is aligned with images” (Galbraith 2011, 85). Bringing up the instance of popularized dating simulators that feature *moe* characters, it is easy to draw up some conclusions concerning the sexualization of infantilized female characters. The main characters of such games are usually young and innocent looking girls and “as Akamatsu states, it is the pre-violation child that is *moe*, or that which does not know the

⁸ Definition of **otaku**: a person having an intense or obsessive interest especially in the fields of anime and manga (Merriam-Webster n.d.). The closest definition one can find in English for Otaku is usually “nerd” or “geek” (Kaichiro, Washburn 2013, 56). eek.” “The character type denoted by otaku is found in many nations and cultures, even though not every language has a precise name for it, and the common image the word brings to mind - an unattractive male obsessed with technology - can be traced back as far as Hephaestus, the ugly, crippled blacksmith-god of fire and the forge in Greek mythology” (Kaichiro, Washburn 2013, 56). This universal type of course exists in Japan as well, but a number of unique factors during the 1980s - cultural structures, social conditions, educational institutions - were responsible for the coining of the derisive term otaku (Kaichiro, Washburn 2013, 56).

world and is fetishized as pure. However, while protecting and nurturing, the child becomes a lover” (Galbraith 2011). As Azuma mentions “Since they [otaku] were teenagers, they had been exposed to innumerable otaku sexual expressions: at some point, they were trained to be sexually stimulated by looking at illustrations of girls, cat ears, and maid outfits” (Azuma 2009: 89 in Galbraith 2011)

Looking at examples that have landed on the frontpages of different online media outlets, one can sense a pattern of the sexualization of Hatsune Miku amongst her fans. The first instance that I am going to mention here is the example of an enterprising engineer modifying the Oculus Rift environment and thus making it possible for users of the head-mounted virtual reality device to kiss Hatsune Miku (Anime News Record 2014). Comments found on a YouTube video that showcases that modification of the oculus rift, showcase the sexualization of a character that is portrayed as a minor: “You are a true hero, a pioneer, a gentleman, and a scholar. I salute you,” “i can finally kiss my waifus”, “Cute and Clever. I want to give her a smooch too” (Alsione svx, n.d.). The sexualization and intention to be romantically involved with a sixteen-year-old virtual idol, has also manifested itself with further oculus rift modifications that allows users to “reach out and touch Hatsune Miku” or to simulate “sleeping next to her”. An article featured on CNN a few years ago, also featured a now forty-year-old man, who carried out a wedding ceremony with Hatsune Miku (Jozuka 2018). Using a device called the “Gatebox” that is equipped with basic artificial intelligence capabilities, Kondo can now interact with Hatsune Miku, and as the article notes “it has no sense of self and desires, and Kondo completely controls the romantic narrative” (Jozuka 2018).

This section I feel encompasses a problem that can be pointed out amongst all forms of performers, especially when referring to the pop scene. Idols and artists that have been put on the spotlight from a very young age are placed in a position where their appearance, performances, general public image is fetishized and sexualized to a variety of degrees. This problem is even more apparent in cases like Hatsune Miku's since her representation both and off stage will always be that of a minor. Although the "danger" in this case is lower, since Miku does not feel commodified or sexualized, due to her lack of a sentient mind, it still showcases the problematic perspective that the pop industry has pushed, as well as highlight the lack of awareness on such a problematic issue.

1.6. Conclusion

To get a steady background for further research, in this chapter I discussed all the manifestations of holograms and virtual personas, either that being in early fiction, visual media and finally virtual musicians. The aim of this chapter was firstly to familiarize the reader with hologram technology as it has appeared in popular media, but also to highlight the duality of Hatsune Miku as both a hologram and a virtual artist. Additionally, in this chapter, I analyzed Miku as a Crypton Future Media product with regards to the design choices they made and the tech specifications of her creation. This was a necessary step to take in order to familiarize the reader with Hatsune Miku, as well as highlight the magnitude of Hatsune Miku's popularity both in Japan, but also globally as her work has been featured in all kinds of media and commercialized around the world. Concluding, in the following chapters I will use the contents of this chapter as contextual evidence that I will consult in analyzing the concepts of intermediality, softwarization and playful performances.

Chapter 2: In and Between Media

Lev Manovich in his book *The Language of New Media* starts off by questioning *What is New Media?* On his quest to define what constitutes a “new medium,” Manovich makes some valid points concerning the limitations that come up when we think of new media merely as the computerization of culture as a whole (Manovich 2001, 43). New media, is indeed affected by the leaps that technology has taken throughout the course of the 20th and the 21st century, however in his own words:

There is no reason to privilege computer in the role of media exhibition and distribution machine over a computer used as a tool for media production or as a media storage device. All have the same potential to change existing cultural languages. And all have the same potential to leave culture as it is

(Manovich 2001, 43).

So, in a way, technology plays indeed a huge role on the optimization of media as well as the creation of new ones, however this does not mean that it is the only force that pushes new media to new directions, nor that new media cannot exist without technology. Throughout the course of the second chapter of my thesis, inspired by Lev Manovich’s work on the concept of new media and the softwarization of media, I am planning to discuss the place that a non-sentient, virtual, holographic artist like Hatsune Miku holds amongst the new media discussion. Firstly, I will try to find a definition of intermediality that best fits a convoluted and seemingly new phenomenon like the one that Hatsune Miku is to the media world. Amongst others, I am planning to expand upon the concept of media modalities on new media manifestations such as virtual artists, using Elleström’s work as my guide.

Concurrently having officially put Hatsune Miku under the scope of intermediality, in order to further discuss the concept of the softwarization of media with regard to Hatsune Miku's performance, I will be discussing in-depth how the terms "intermediality" and "media hybridity" connect with Hatsune Miku and as a gateway to grasp the progression from the conventional musicians to virtual pop stars like Hatsune Miku.

2.1. A Brief Overview of Intermediality

Intermedial research—at least in the German academic context—has by now outgrown its infancy. The initial development of intermedial research perspectives has been followed by reappraisals, and the term "intermediality" itself is no longer regarded as that ubiquitous catchword which came onto the scene in the 1990s with such striking success.

(Rajewsky 2011, 1)

The task to define intermediality can be daunting due to the vast amount of information that one has to take into account in order to do so. We can look at intermediality "as an umbrella term" – one that encompasses different theories and concepts in between, and a term that changes meaning depending on what discipline it is focused on. In short, intermediality, in media studies, is centered on discussing the "interaction of similarities and differences between media and the changes that may occur in a communicative material when it is transported from one medium to another" (Bruhn, Schirrmacher 2021, 3). Intermediality, thus, may serve as a general term for all the concepts and phenomena (hence the prefix 'inter') that take place *between* media (Rajewsky 2011, 46). Therefore, combining the two definitions, intermediality describes the differences and similarities amongst different

media as we jump from one medium to the next and that is what differentiates intermediality from commonly mistaking it for intramedial and transmedial⁹ phenomena (Rajewksy 2011, 46). We can also see glimpses of intermediality on the bridging between different media and what similarities they pose to each other (Bruhn, Schirmacher 2021, 3). Although intermediality tends to appear as a convoluted and confusing term for most people to understand, manifestations of intermediality appear and are used daily by a large fraction of people; audiobooks, film adaptations of novels, video games etc. So in today's society, most media used in our everyday life, either artistically oriented or not, are intermedial.

“All media are internally multimodal and externally interrelated with each other” (Bruhn, Schirmacher 2021, 11). This alludes to the fact, that each and every medium that exists, is in some way shape or form affected by another medium. To put this simply, let us think of the medium of a video game: to many the videogaming medium can seem detached from other media, and sometimes even looked down on from more “elevated” media. For some, video games are not even considered part of the artistic discussion¹⁰. If we deconstruct the videogaming medium, we can see that it actually is comprised by several other media: the design of the environment and characters, a soundtrack that accompanies the video game, a story line that progresses and unfolds throughout, and film direction for both the video game and several cut scenes that are usually included in storyline-based video

⁹ **Transmedia** is commonly defined as a narrative or project that combines multiple media forms. A transmedia project may combine many different types of prints or prose text, graphics and animation, or work across multiple platforms, such as different types of social media platforms, interactive websites or advertising outlets”. (Techopedia n.d.)

¹⁰ This comment refers to an article featured on the *Guardian*, which I contest, that reads as follows: “The player cannot claim to impose a personal vision of life on the game, while the creator of the game has ceded that responsibility. No one “owns” the game, so there is no artist, and therefore no work of art. This is the essential difference between games and art, and it precedes the digital age” (Jones 2012).

games. Media, therefore, do not only coexist in a harmonious environment, but they also interact with one another in order to create a new medium (Bruhn, Schirmmacher 2021, 11).

I will therefore introduce three quintessential concepts that play a crucial role into the discussion of intermediality; *paragone*, *ut pictura poesis*, and *Gesamtkunstwerk*. Firstly, the concept of *paragone* brings about the idea of competition between the arts: the term itself stands for comparison in Italian and it works as a way to classify different artforms varying from the most to least valuable (Bruhn, Schirmmacher 2021, 11). The idea of the *paragone*, although originating in the Renaissance, can be spotted in discussions about media even to this day: the debate concerning “lowbrow” and “highbrow” culture, or even the concept of “guilty pleasure” films and music. The idea of holding one form of art in a higher stake than others, is not only problematic, but also very evident amongst the arts. In an article featured in the New York Times, Mallon, and Mishra, discuss the prominence of such distinctions between art forms, as well as the consequences that they bring about to the enjoyers of each “brow”:

Lowbrows don't go highbrow in search of guilty pleasure or a creative kick in the pants, but highbrow musicians, designers and writers will go looking for what's being sung and worn on the streets or what's opening big on summer movie screens

(Mallon, Mishra 2014).

Paragone is therefore still prominent amongst the arts, as it is easy to spot out instances where certain forms of art are either praised for their long history amongst cultures, while others, especially newer art forms are overlooked and sometimes not even considered art. However, as we will discover and unravel in this research, new media, especially those that

have a dense technological presence, are not only “valid” but also provide a chance for a deep exploration of their roots in older media.

On the other hand, the idea of *ut pictura poesis* (“as in a painting, so in poetry”) introduces the idea “that what can be accomplished and admired in painting can be accomplished and admired in literature, too” (Bruhn, Schirmacher 2011, 11). Although an essay by Lessing published centuries later refutes this statement by claiming that “the same event has to be represented differently in different media”, the contradictions between *ut pictura poesis* and Lessing’s claim, are showcasing the struggle of “tradition of medium specificity¹¹” that existed even before intermediality was even part of the discussion (Bruhn, Schirmacher 2011, 12).

Lastly, the concept of *Gesamtkunstwerk* appearing in the late romantic era, describes the concept of a “total work of art” (Bruhn, Schirmacher 2011, 12). This total work of art, which bares similarities to the *ut pictura poesis* concept mentioned earlier before, describes a medium that is highly intermedial and encompasses a variety of media, in order to create a more advanced one; a newer medium that falls under the concept of *Gesamtkunstwerk* is the example of the video game medium which includes the bridging of different media, in a newer form.

¹¹ “**Medium specificity** is an influential aesthetic theory that describes the possibilities and limitations of media, which are often called affordances. The concept of medium specificity dates back to German Enlightenment writer G.E. Lessing, who stated that each art form has specific possibilities and limitations that the art forms should not try to transgress. The debate resurfaces from time to time in debates among both artists and critics, often when new media types of battle to find stable ground. Elliott (2003) provides a general and historic overview of medium specificity in film versus literature, and Chatman (1980) offers a discussion of film versus literature from a medium specificity perspective. For a discussion of the ideas of medium specificity and visual arts, see W.J.T. Mitchell (2005)” (Bruhn, Schirmacher 2011, 12).

Overall, the aforementioned terms concerning the familial concepts to intermediality showcase how intermediality was conceived and thought about before the rise of the humanistic studies opinion on the matter. *Paragona, ut pictura poesis*, and the *Gesamtkunstwerk* are all, in one way or another, appearing in recent discussion concerning intermediality, and are still present. The goal of this section was to familiarize the reader with intermediality, and what it represented in earlier times, as well as how terms like the aforementioned ones can stay relevant in this day and age.

2.1.1. The Intermedial Experience

As previously mentioned, the performance of Hatsune Miku constitutes an intermedial performance, a performance that is close to what we previously established as *Gesamtkunstwerk*. The case of Miku presents an interesting outlook on the concept of intermediality since we are looking at a new, advanced version of what Steve Dixon called the “digital double”. Dixon argues that “in digital performance a simultaneously present mediated performer may be considered a “digital double” (Ploeger 2011, 1). Taking inspiration from Artaud’s *The Theatre and its Double*, Dixon explores the double as a “digital artefact which is actually present in the performance and can be perceived by the audience” (Ploeger 2011, 1). Dixon has introduced four different types of digital doubles, but I want to draw attention to the fourth type, that of the manipulable mannequin: “the computer avatar, a graphical stand-in for the human body within virtual worlds” (Dixon 259). The digital double, for conventional performances, refers to the use of technology to duplicate the performance of the physical body and replicate it on stage: Dixon mentions the work of Stelarc *Prosthetic Head* “which is a virtually intelligent copy of the artist’s head which speaks into questions typed by exhibition visitors” (Ploeger 2011, 1). *The digital double in the case of Hatsune Miku, relates to a digital replication of an already digital agent: the creation of a holographic representation on stage that finds*

its inspiration in a digital software, the vocaloid software. The body therefore is fully digital, and its presence both on and off stage is digitized.

The discussion concerning presence and perception is heavily implicated by how “the digital” is introduced. “The use of media in performance, set against the background of the intermedial turn of society reveals presence and perception as highly dynamic and transformative phenomena” (Nibbelink, Merx 218). Perception and presence, therefore, influence the way that an event is experienced by the audience. Intermedial performances affect the spectator’s view of the performance to the point where “spectatorship becomes itself a self-reflective act” (Nibbelink, Merx 218). Keeping this in mind, upon attempting to analyze Hatsune Miku’s performances, I will explore not only the ways in which one of her performances is intermedial, but also the ways in which the concert goers are affected with regards to Miku’s performances, and supplementarily, the distinction between the physical and the digital body as it is presented on stage.

2.1.2. Analysis of Miku Expo 2017: an intermedial performance

I will preface this section of the chapter by highlighting that the focus of this particular chapter lies on the manifestation of intermediality and hybridity as concepts with regard to **live performances**. Hatsune Miku’s presence in the music industry surely provides a number of opportunities to discuss such concepts and different focus points to focus on: the Vocaloid software on its own, online presence, audience creation and participation. However, for this section, I will be purely focusing on a live performance headlined by Hatsune Miku, which was also livestreamed and is available to access on public video sharing platforms. The live performance of Hatsune Miku that I have chosen to analyze is the Miku

Expo¹² of 2017 taking place in Malaysia in the Axiata Arena. This particular performance is available to access through YouTube, and it is a high-quality livestream with different cameras covering and recording the performance. The reason I chose this particular performance is that the recording of the concert is filmed with attention to detail, and since it took place on October 16, 2017 meaning that it preexisted the time of coronavirus and thus features a sold-out arena and an audience at its full capacity, without limitations on the number of attendees or regulations concerning the health concerns of such an event.

The virtual attendee watching this concert on YouTube, is greeted with the view of a dark arena that is illuminated only by the light of glowsticks that are held by the thousands of audience members. To offer the reader some trivia information on the 2017 Miku Expo, the “Axiata” arena located in Kuala Lumpur, Malaysia, and according to posts shared by fans on social media platforms the 6,500 tickets that were made available sold out in a matter of hours after the sale begun (Yap 2017).

All round the stage there are 6 large LED panels that project different visual elements throughout the concert. As the concert starts and excitement is building up amongst the chanting crowd, the LED panels start projecting outlines of the different vocaloids that are going to be performing on that night and finally Hatsune Miku “comes” out on stage singing the first song “Senbonzakura” (Thousands of Cherry trees) as cherry tree leaves fall beside her. Behind her one can vaguely see the live band, MKP39, that accompany her

¹² Miku Expo is a series of world tours organized by Crypton Future Media starring the virtual singing software character Hatsune Miku (Wikipedia Contributors 2022). The performances include notable user created Vocaloid songs and digital choreography of Miku dancing, projected onto glass screens (Wikipedia Contributors 2022).

performance¹³ The crowd is almost following a choreographed motion of moving their glowsticks all throughout the concert. There are numerous outfit changes and other vocaloids joining Hatsune Miku on stage during the course of this performance. Additionally, each song is accompanied with a video projection that fits the theme of the song (similarly to the cherry tree leaves mentioned before). The concert lasts approximately 2 full hours, with no breaks in between, and a full performance of one and a half hour, and a thirty-minute encore.

Analyzing such a performance is pretty much the same as analyzing any other live performance. A huge arena, LED screens accompanying the live artist with visual elements and music blasting through the speakers, outfit changes. However, in a performance by a vocaloid artist and additional medium comes to play; that of the glass screen. The glass screen is used in order to project the hologram of Hatsune Miku, and it is transparent so that it gives the impression of a real artist being on screen. On several occasions, especially in the most recent performances of Hatsune Miku, the glass screen technology has been elevated in a way that makes Miku seemingly three-dimensional, as she seems to have depth and sustenance.

Due to the heavy impact of several media and the strong presence of technology on stage, I will borrow a term that was mentioned in the previous section, that of the

¹³ **The MKP39 band:** 3 and 9 can be pronounced as 'Mi' and ku' in Japanese. The alternate reading is "san" and "kyuu", from which the word "Thank you" (san-kyuu) is derived. This band accompanies the CV series, Hatsune Miku, Kagamine Len, Kagamine Rin, and Megurine Luka, and the VOCALOID1 series MEIKO and KAITO (Fandom n.d.).

2017 HATSUNE MIKU EXPO 2017 Malaysia line up: Sakurai Rock (櫻井陸来): bass, Kosuke Kamata (鎌田紘輔): drums, MEG.ME: keyboard, Takahiro Misawa (三沢 崇篤): guitar (Fandom n.d.)

Gesamtkunstwerk. A concert of Hatsune Miku falls under the concept of *Gesamtkunstwerk*, a total work of art, as it is an immersive experience that includes a variety of media in order to become possible: a darkened stadium filled with people, high-quality presentations on the LED screens around the vocaloid performer that project videos all throughout the concert, a band that accompanies the performer on stage, stage props, and of course (the almost uncanny) vision of a hologram, animated, three-dimensional persona projected on a seemingly transparent glass screen. The *Gesamtkunstwerk*, this mixing of different media and art forms, is still considered by many necessary in order to achieve “the highest artistic and political/spiritual goals and affect to the [...] listener or spectator in the most efficient way (Bruhn, Schirmmacher 2011, 12)

The attendees of such an event experience, such as with any live medium projected on stage, are subjected to a variety of triggers. As Turco points out, the sheer existence of Hatsune Miku on stage, which includes a three dimensional 11-inch figure of an animated performer “triggers different interpretation patterns” (Turco 2010, 59). The combination of the visual that accompanies Hatsune Miku, in addition to the music and the effect the hologram performer on stage turns concert goers from spectators to “experiencers¹⁴”: “their entire bodies are turned into perceiving mediums” (Turco 2010, 59). The term experience as suggested in *Mapping Intermediality in Performance* describes the state of a concert goer

¹⁴ More information on the term **experiencer**: the term experiencer appears in *Mapping Intermediality in Performance* as an attempt to find a better term for “audience” or “spectator” since they seem inadequate in the context of contemporary arts and media. As mentioned in the main text it describes not only a more immersive engagement between the spectator and the spectacle on stage, but it also showcases some form of an interactive relationship between the two. Other terms that come close to the definition of *experiencer* have been given by Char Davies, where she described the audience as *immersants* (Nelson, Vanhoutte, Barton, Fewster, Wynants 2010, 45).

that “suggests a more immersive engagement in which the principles of compositions of the piece create an environment to elicit a broadly, visceral, sensual encounter, as distinct from conventional (...) performances, which are constructed to draw primarily upon one of the sense organs” (Nelson, Vanhoutte, Barton, Fewster, Wynants 2010, 45). The combination and interrelation of the different mediums presented on stage, pushes the spectator into a stage that “blurs the edges between technological media the medium body; synesthetic relationships the body senses and the brain produce a feedback loop of sensations and interpretative patterns” (Turco 59)¹⁵.

Turco’s analysis of a VJ performance taking place in Amsterdam, bares a number of similarities with Hatsune Miku’s performance and therefore it is easy to make connections and draw some conclusions from comparing the two of them. Since the music of Hatsune Miku is already recorded, same as her projection on the glass screen, and it is accompanied by music, light projections, and video projections, it is evident that we are talking about a multimodal and intermedial performance. The body of Hatsune Miku as it is projected on the glass screen installed on stage, draws the attention of the crowd to her, while the human, corporeal musicians of the band are kept in the dark, on the back of Hatsune Miku. In this case “the video image [of Hatsune Miku’s hologram] is both a site where the body is experienced and a medium that represents the body and abstracts it from its

¹⁵¹⁵ The **feedback loop** as referred to in *Mapping Intermediality in Performance* refers to the “mechanical-electrical phenomenon produced when an output signal (from a loudspeaker) returns to affect its input signal (the sound into the microphone”. The original signal is thus changed or distorted through the input signal, “causing the screech or hum associated with amplification”. “In everyday language, feedback refers to information in response to something produced, such as merchandise or a person’s performance, which can be used as a basis for improvement. In theatre and performance, a system of feedback can be understood to take place

phenomenological reality” (Turco 2010, 60). “Thus, this shift across three kinds of hypermedial strategies generates intermediality” (Turco 2010, 60). The three hypermedial strategies in Hatsune Miku’s case are:

1. Firstly, the duality of presences on stage, that of the human, physical bodies on stage and the appearance of a video-realistic projection of Hatsune Miku.
2. Secondly, “the materiality of the performers makes the materiality of the video technology relevant (underlining the three-dimensional, sculptural qualities of the screen, projectors, [LED screens], etc.)” (Turco 2010, 60).
3. Thirdly, the virtual presence of Hatsune Miku combined with the physical presence of the musicians, “eventually transforms the presence of the performers and thus relevance of their role as producers and participants into representations of their activity as performers.” (Turco 2010, 60).

Overall, from this analysis of Hatsune Miku’s performance taking place in 2017, we can safely conclude that her performances are not only intermedial in the way they are constructed, but also from the way that the “body” of Hatsune Miku counteracts with the vitality of the physical body, both of the human performers live on stage with her. In addition to that, the performance is intermedial to its core due to the effect that it has on the concert goers, or as earlier defined *experiencers*, and the feelings that are evoked to them. The term *experiencer*, as defined in *Mapping Intermediality in Performance* encapsulates how the total work of art affects the spectator by inducing complicated reactions to the crowd. This chapter section, aimed to showcase why and how a Hatsune Miku performance constitutes

a piece of intermedial art and should be used as a guide throughout this thesis in order to understand the reactions a software, non-material artist, evokes to their audience.

2.2. Media Modalities

The problem of defining intermediality lies heavily on the fact that there is no actual clarification on what a medium is. As Elleström defines it “media can be understood as communicative tools constituted by interrelated features,” however there is a number of things to be discussed concerning the different modalities that appear in the scope of intermediality. “The term modality is related to “mode” (...) [and] a mode is a way to be or to do things (Elleström 2021, 41). Modality therefore appeals to certain characteristic that a medium possesses and how this certain characteristic interacts with other modalities. Moving on to the first part of the word intermediality, “inter”, I will go back to Elleström’s definition:

The crucial “inter” of intermediality is a bridge. If all media were fundamentally similar it would be equally hard to find something that is not already interrelated. Media are both different and similar and intermediality must be understood as a bridge between medial differences that is found on medial similarities.

(Elleström 2021, 27)

Media modalities can help us better understand different intermedial relations, combinations, and transformations of media (Bruhn, Schirmacher 2011, 14). Elleström’s modality theory presents us with a precise, yet flexible framework in order to better understand the different fusions between intermediality. With this in mind, in this section I will attempt to answer the following questions *How are media related to each other? What do*

*they have in common? In what ways are they different? **How does intermediality bridge over those differences?***

2.2.1. Understanding Media Modalities

Media Modalities, as defined by Elleström, describe the modalities that work as essential cornerstones to all media, without which, their mediality cannot be understood and “together they build a medial complex, integrating materiality, perception and cognition” (Elleström 2021, 85). To reiterate, modalities constitute concepts that exist beyond the “new media discussion,” however in this case those modalities describe the different connections that can be drawn between media with regards to “time and space, the visual and the auditory, and natural and conventional signs” (Elleström 2021, 43).

Elleström cross-links the overlapping frameworks of intermedial and multi-modal studies and draws on different traditions that study the mixedness of media and communication by stressing that mediation always involves different aspects and takes place on different levels simultaneously

(Bruhn, Schirmacher 2011, 15).

Elleström in “The Modalities of Media: a model for understanding intermedial relations” discerns four main modalities that work as a basis and help us comprehend and define media and different intermedial art forms. “The categories of materiality, time, and space, the visual, and the auditory, and natural and conventional signs, have been reshaped over and over again, but they tend to be mixed up in fundamental ways” (Elleström 2021, 44). Those four modalities are:

1. Material Modality,
2. Sensorial Modality,
3. Spatiotemporal Modality, and
4. Semiotic Modality.

Starting off with *material modality*, one could define it as any latent corporeal interface that is part of the medium (Elleström 2021, 45). To further expand on this definition, in the case of material modality we focus on the surface of the material body that carries the message of the medium. Using traditional media as an initial example, paper, a resource that is used for different purposes, serves as a flat surface and thus a suitable interface for basic media types such as text images (Bruhn, Schirmacher 2011, 20). In more complex and technologically advanced media, such as an AR theatrical performance that would refer to the sound waves, the flat surfaces of the stage, as well as the corporeal interface of the human body. The materialities of media are different with each new medium that one encounters and cannot always be clearly separated from one another. Things that fall under the category of material modalities are: “human bodies, other materiality of demarcated characters, such as flat surfaces and three-dimensional objects, and material manifestations of less clearly demarcated characters, such as soundwaves and different sorts of laser or light projections” (Elleström 2021, 63).

Secondly, Elleström refers to the *sensorial modality* “as the physical and mental acts of perceiving the present interface of the medium through the sense faculties” (Elleström 2021, 39). Thus, in the case of the sensorial modality “we are interested in [the] sensual perception of the material interface that the media product demands” (Bruhn, Schirmacher

2011, 20). To reiterate, in this case Elleström goes back to the five senses acquired by humans as a means to experience a medium, meaning that there are five modes to of sensorial modality available: *seeing, hearing, feeling, tasting, and smelling*. Most mediums are experienced by spectators through the use of one or more of their senses: for instance theatre unlocks firstly the seeing sensorial modality, by watching what is performed on stage, but also the hearing one. In most cases, when experiencing a medium, the spectator focuses on only one sense, although all of them are felt: watching a film at the cinema the spectator can feel the texture of the chair under their body, taste the beverage and popcorn they brought into the film theater, and smell the scent of the snacks that the person next to them is eating¹⁶. Yet they focus on the sound and the visual triggers that unfold on the big screen. “The importance of the sensorial modality can be experienced when sense organs are temporarily or permanently limited” and while “many intersensorial translations are possible, they all radically affect communication and the semiotic modality” (Bruhn, Schirmacher 2011, 21).

Thirdly, the spatio-temporal modality of media alludes to the way that objects are perceived within space and time. As Elleström defines it the spatio temporal modality refers to “the structuring of the sensorial perception of sense data of the material interface into experiences and conceptions of space and time” (Elleström 2021, 34). Each medium,

¹⁶ In the text *What my Fingers Knew: the cinesthetic subject, or vision of the flesh* Sobchack explores the idea of cinema as a medium that affects both the body and the mind of its viewership (Sobchack 2000). Sobchack claims that little research has been conducted on the matter through the history of film theory and thus “the spectator’s identification with the cinema has been constituted almost exclusively as a specular and psychical process abstracted from the body and mediated through language” (Sobchack 2000). She argues that most of the research conducted in film theory is focused on the way cinema influences the psyche of the viewer, thus, ignoring the importance of the body in cinema (Sobchack 2000).

according to Elleström, possesses a place in space and time. The spatio-temporal modality “covers the sensorial perception of sense-data¹⁷ of the material interface into experience and conceptions of space and time” (Elleström 2021, 34). To offer some examples, media such as pictures, sculptures and paintings are described through their position in space: their height, depth, and length. Their position in time, remains static. On the other hand, “temporal events” like a concert or a theatrical play are defined according to their position in time: they have a beginning and an end: “once [the event] has started it takes a certain amount of time to finish” (Bruhn, Schirmacher 2011, 22). Each medium, therefore, possesses a different spatio-temporal position and they exploit these aspects in diverse ways.

Lastly, Elleström introduces the concept of *semiotic modality*. Semiotic modality concerns the reason behind the “use” of media: meaning and the creation of meaning in the spatiotemporally conceived medium by way of different sorts of thinking and sign interpretation (Elleström 2021, 44). “There are two different but complementary ways of thinking: on the one hand, some cognitive functions are mainly directed by propositional representations, while other cognitive functions mainly rely on pictorial representations” (Elleström 2021, 51). The way that spectators interact with a medium heavily reacts on how

¹⁷ “Sense data”, or “sense datum” in the singular, is a technical term in philosophy that means “what is given to sense”. Sense data constitute what we, as perceiving subjects, are directly aware of in perceptual experience, prior to cognitive acts such as inferring, judging, or affirming that such-and-such objects or properties are present (Stanford Encyclopedia of Philosophy n.d.)

In vision, sense data are typically described as patches exhibiting colors and shapes. For the other senses, they would manifest sounds, tastes, odors, and tactile qualities. Suppose that you are looking at a brown table with a white coaster on it; your sense data would be a patch of brown corresponding to the brown expanse in your field of view, along with a roundish-shaped white patch. Based on such data, you might come to affirm that a brown thing and a white thing, or a table and a coaster, are present before you (Stanford Encyclopedia of Philosophy n.d.).

they interpret the signs that are put across through diverse ways: “media can rely on conventional signs systems such as languages, but also, for instance, body movements in dance that convey meaning which may be difficult to translate into words” (Bruhn, Schirmacher 2011, 22). Since the corporeal or material surfaces of media have no meaning of their own, meaning is accredited to them through the acts of interpretations and perception of the medium.

Through the use of the modalities, we can draw conclusions, make comparisons, and differentiate “between what happens in different forms of mediation and intermedial relations” (Bruhn, Schirmacher 2011, 24). The way we interact with different objects is affected by the way we interpret the object in front of us, and then we decide on how we engage with it based on its materiality, the effect it has on our sensorial system, its position in space and time, and lastly the message we draw out of its existence.

2.2.2. Media Modalities and Hatsune Miku

As stated numerous times in this essay, Hatsune Miku is an intermedial agent. To relate the aforementioned points made on modalities in relation to this thesis’s case study, Hatsune Miku, it is logical that we can reach some conclusions and make abridgements. To further highlight the way that intermediality manifests itself in Miku’s work, I will try to map out the four different modalities as they appear both in her “live” performances, as well as the presence she has online.

With regard to Hatsune Miku’s material modality, although she is not a corporeal entity, Hatsune Miku exists in space through a number of ways. Her presence on stage, although holographic, is a product of a material interface: the use of a glass screen. The

consistency of the glass, as well as the way that the projection reaches the screen, makes her visible and three-dimensional. In addition to that, her concerts feature further material objects that all work in an effort to distribute her presence on stage (LED screens, speakers, a sound system etc.). On the other hand, on the level of Hatsune Miku as she appears on the vocaloid software, the material elements are including the computer that carries the software, the keyboard, the software itself in its material form and so on.

Concerning Hatsune Miku with regards to the sensorial modality, I can safely discuss that the sense that is mostly utilized upon interacting with her content is hearing. Since Hatsune Miku, firstly functions as a music-making software, and secondly as a live performer, hearing is the first sense that is affected by her presence. Secondly, when looking at her live performances one could say that the spectacle of an 11-inch hologram in combination with her “singing”, pushes the spectators to use both the sensations of seeing and hearing.

Hatsune Miku’s position in space and time is a complex concept to discuss. Since she is not a corporeal entity, her position in space is quite limited. We could talk about her material existence with regard to the various figurines created as merchandize or her appearance on stage, but that does not encapsulate the essence of Hatsune Miku as medium. However, we can discuss her performances as a time-based medium: her songs have a beginning and an end, same as her concerts.

Lastly, with regards to the meaning and the message behind Hatsune Miku’s performances, we can look at how the spectators interact with her performances. Hatsune Miku has managed to become the phenomenon that she is through the new ability that she unlocked for her fans: her work is purely fan made. Every song sung on stage is a shared

product made by creators and distributed to other fans. In addition to that, her quality of being “shareable” allows the spectator to not only interpret their own meanings from Hatsune Miku’s performances, but also to literally insert their own narrative in her work by creating their own song.

2.3. Hybridity

Before starting a discussion on media hybridity it is important to clear out confusion that may occur between two similar and often interconnected terms: *multimedia* and *hybrid media*. First of all, according to Manovich in *Software Takes Command*, multimedia documents and interactive applications one can see content types in multiple media appear next to each other (Manovich 2013, 167). One example that describes this quality of multimedia is a writing processor like Microsoft Word or GoogleDocs: the user can add manually pictures, graphs, and text manually to the document without necessarily having the document “interact” with those elements. Contradictorily, “in media hybrids, interfaces, techniques, and the most fundamental assumptions of different media forms and traditions are brought together resulting in new media gestalts¹⁸ (Manovich 2013, 167). To reiterate, media under the hybrid media umbrella “merge together to offer a coherent new experience” that differs significantly “from experiencing all the elements separately” (Manovich 2013, 167). Another difference between the two is that in the case of multimedia the different media introduced in the same space (Microsoft Word for example) are autonomous as they retain their own language; a picture added in a Word Document is still on its basis a picture,

¹⁸ Gestalt is a German word, that loosely translates to “configuration”. The central idea behind the **Gestalt principle** is that “things are affected by where they are and by what surrounds them” (Behrens 1984, 49)

same as the text and the graphs. The user is free to manipulate the picture (edit, crop, enlarge etc.) without altering the original medium to its core. On the other hand, in hybrid media the essence of the medium can be distorted and absorbed on the highest level: “they (the media) exchange properties, create new structures, interact on the deepest levels” (Manovich 2013, 169). Therefore, an example of a hybrid medium can describe a newly introduced medium that possesses qualities that were unique to older ones: “we end up with a new *metalanguage*¹⁹ that combines the techniques of all previously distinct languages” (Manovich 2013, 170). A more technical way to be able to tell the difference between multimedia and hybrid media is by “noting whether or not the original structure of media data is affected when different media types are combined” (Manovich 2013, 170).

The content of this subchapter aimed to help the reader distinguish between the two terms: multimedia and hybrid media. In the large scope of media terms, it is easy to get distracted and confused. “The term ‘multimedia’ captured the phenomenon the content of different media coming together – but not their languages” (Manovich 2013, 170). In addition to that, through this sectioned I aimed to solidify Hatsune Miku’s position in between the hybrid realm. Going through the list of things mentioned above, it is easy enough to see the connections that can be made between Hatsune Miku and the hybrid medium definition. Hatsune Miku is not only a software, but a hologram, a performer, a singer, and a well-known persona. She possesses qualities of an older, classic medium the musical one, while also combining traits and qualities from media like: animation, video editing, music

¹⁹ **Metalanguage:** a specialized form of language or set of symbols used when discussing or describing the structure of a language (Cambridge Dictionary n.d.)

technology. The core of her mediality, is altered by each user that gets access to the Vocaloid Software, as her voice can be manipulated in any way possible.

2.3.1. Media Softwarization

We live in a software society, and our culture can be justifiable called a software culture – because today software plays a central role in shaping both the material elements and many of the immaterial structures that together make up ‘culture’

(Manovich 2013, 33).

Technology has decisively changed the course of society; that spans from the way that we eat, live, breath so it surely has affected our culture too. Looking at examples of historically older media, like drawing and sculpting, the advancements of technology have helped not only in the way that art is distributed and sold, but also in the way that it is created. Pictorial media (and not only) have been changing for the past decades since we are seeing technology infiltrating every single aspect of creation, either by editing tools, or just the devices that have been made available to artists (such as the iPad, 3D-printers etc.).

Upon discussing the hybridization of media, it is important to also look into another term – that of *softwarization*. According to Lev Manovich “When a medium undergoes a process of softwarization, it is first metaphorized from the physical” (Bilansky 2013). An example we can refer back to is that of streaming platforms, like Netflix, Disney+, Amazon Prime etc. To their core, they allow the viewer to enjoy their favorite films (and series) through any screen they have available, which is very similar to the older medium of the television and cinema. However, due to the softwarization process that has occurred to the medium, new features are available: the user can now go back and forth through the duration

of an episode, additionally, one can put on reminders for new films, and get suggestions and recommendations according to their activity on the platform. Manovich at the same time though “refutes the facile premise (...) that capabilities are added to media – [greater ease at access of the material, manipulation, distribution and so on] – by virtue of their being digital” (Bilansky 2013). Instead those new features of media arise from the software itself; “it’s not by virtue of being digital” it’s because the software allows the user to do so. Thus, “softwarization of old media does not lead to their convergence²⁰” (Manovich 2013, 171). Softwarization leads to new media hybrids. “The unique properties and techniques of different media have become software elements that can be combined together in previously impossible ways” (Manovich 2013, 176). These new media hybrids as stated above are of course altered by the software that is included in their capabilities but that does not engage the existence of the original medium (i.e. in this case cinema and tv).

Can we then classify Hatsune Miku as part of the softwarization process of media? Certainly. The concept of Hatsune Miku as a hybridized medium, as stated above, showcases the effect of softwarization into traditional media. The concept of a virtual performer as mentioned in Chapter 1 of this thesis, is in no way new. Neither the concept of a pop star, of course. For years, we’ve been seeing and monitoring performers on stage using technological advancements in an effort to elevate their live performances – autotune, LED video walls, playback, and pre-recorded live vocals. Hatsune Miku, is a product of softwarization, since she herself is a software; her concert setlist is an accumulation of the songs that are produced

²⁰ **Media convergence:** a phenomenon involving the interconnection of information and communications technologies, computer networks, and media content. It brings together the “three C’s”—computing, communication, and content—and is a direct consequence of the digitization of media content and the popularization of the Internet (Britannica n.d.)

by users of the Vocaloid software. Concurrently, watching a performance by Hatsune Miku, one can pinpoint the coexistence of an older medium, that of a live musical concert, in coexistence with new elements. The “physical” body of the performer is replaced with that of a hologram and although it holds a lot of resemblances to the realistic body (technical issues, coming up late on stage) there are some capabilities that cannot be replicated by the “traditional” pop star; a performance that is not affected by the physical state of the performer (Hatsune Miku cannot fall ill, and cancel a concert, outfit changes out of thin air, perfect vocals in every performance).

2.4. Conclusion

What is important is to see that one should not start with definitions of media and then discuss intermediality but the opposite: The intermedial field (including the intermedial processes on writing about intermediality) produces definitions of media. The remaining task is therefore to start a differentiated analysis of the politics of intermediality and the politics of the corresponding notions of various media.

(Schröter 2011, 6).

Throughout the course of the second chapter of this thesis I have placed my focus on the manifestations of intermediality with regards to the performances of Hatsune Miku. Intermediality has stayed prominent in the scope of media discussion for years now, however there is still a lot of uncertainty on how it is defined and what differentiates it to multimodality and transmediality. Media are all connected to each other. Analyzing terms like *paragone*, *ut pictura poesis*, and *Gesamtkunstwerk* was a gateway to look into the past of intermediality and how its mappings can be found in a time where intermediality was not

even a defined term. In addition to that, by looking into the media modalities as defined by Elleström, I proposed a simple yet defined way of making connections between media with concern to their place in materiality, the human senses, space, and time, as well as the meanings that we draw out of those connections. My main goal for this chapter was to establish Hatsune Miku as not only an intermedial agent, but to also showcase the impact of technology into transforming older and established media, into a newer and more advanced one. The performances of Hatsune Miku, like the Miku Expo of 2017, display the intricacies of this medium as well as the effect that these changes have in the experience the spectators receive from attending them. Returning back to looking at Hatsune Miku's performances as a "total work of art", I delved deeper into the hybridity and softwarization of media. Exploiting new and old technological advancements, Hatsune Miku's work transforms the original medium of the concert going experience into a hybrid medium with immense depth. Hatsune Miku is not only a software, but a hologram, a performer, a singer, and a well-known persona. She possesses qualities of an older, classic medium the musical one, while also combining traits and qualities from media like: animation, video editing, music technology. Lastly, bringing into the work of Lev Manovich and the concept of softwarization, I aimed to make a point about the fact that Miku's existence is in no way, or does it aim to "threaten" traditional or conventional performers, but is part of a process of introducing new modes of technology into the medium of live musical performances and how the medium is affected by this predicament.

Chapter 3: Playing with Hatsune Miku

In the previous chapter, I discussed the Hatsune Miku persona as one that exists in an intermedial, interdisciplinary, and softwardized environment. While keeping in mind that Hatsune Miku lies in a binary state being both an artist and a virtual being that was created and distributed by Crypton Future Media I am going to delve deeper into the essence of Hatsune Miku, while also examining what makes her unique both with regards to her performances on stage, and her “interaction” with fans. For this chapter, my goal is to discuss the manifestation of ludic culture and playfulness in a twofold: performance and audience. Firstly, the reader will be provided with an in-depth analysis of a performance of Hatsune Miku, which will function as a guide to unveiling play in this performance. Using Huizinga’s work on playfulness and ludic culture as a directory, I am planning to map out a discussion concerning the importance of the suspension of disbelief into playful performances. Hatsune Miku’s persona and stage presence present a unique form of playfulness that combine a willing suspension of disbelief coming from the audience, as well as active audience participation in the creation of fan-made content. Per contra, on the second session of this chapter I will discuss the connection between audience behavior and participation with regards to ludic cultures. Taking into consideration that the sheer existence of Hatsune Miku and her discography lies on creative work attributed to her fanbase, there is an important bulk of information that should be discussed concerning the role of DIY²¹ cultures and

²¹ DIY here stands for do-it-yourself. According to Merriam Webster the definition of “do-it-yourself stands for the activity of doing or making something (as in woodworking or home repair) without professional training or assistance” (Merriam-Webster n.d.). More broadly it stands for “an activity in which one does something oneself or on one’s own initiative” (Merriam-Webster)

playfulness amongst fandoms. With this idea in mind, I will delve into audience behavior with regards to ludic cultures. What I study as DIY audience participation and ludic cultures, also entails audience response to a non-material figure, such as Hatsune Miku.

3.1. Ludic Cultures and Adulthood

The development of modern individuality has sacrificed the ludic aspect of life for the construction of the free responsible individual

(Fortunati 2015, 295).

Although this is a pompous quote to use as the first statement of this chapter, especially when unfolding the mappings of playful cultures in an adult setting, one can find its roots in historical events. With the development of capitalism and “the organization of its new social order” society faced an expansion of working hours and labor system that “violently suppressed ludic culture (Fortunati 2015, 295). Ludic culture and playfulness in adult settings have been seen as the enemy of productivity and practicality, and therefore an attribute that had to be muted and concealed.²² The concept of play was only reintroduced in culture after “a great struggle of working-class struggles that reduced the hours in the working day” (Fortunati 2015, 295).

²²“The reproduction of the working class was seen in terms of the mere reproduction of the energies that were necessary for the worker to return to workday after day and be productive. In capitalistic society workers’ games were contrasted not only at the stage of the original accumulation of capital, but also in the following stage of the development of big industry. Indeed, when the survival of the ludic culture was allowed, it was mainly for children and partly for the women of the dominant classes, while almost the entire lifespan of proletarians was reduced to working time. Ludic culture was taken away even from children of the working class, who were sent to the factory to work from an early age. Consequently, ludic culture went underground, but it was never defeated” (Fortunati 2015, 295).

“The right to play became part of the struggle of the working class for improvement in their quality of life” (Fortunati 2015, 295). Later on, we see play becoming a tool of “social control” (Fortunati 2015, 295). As expressed by Gallino as quoted in Fortunati’s text, “social control usually includes the mechanisms, reactions, and sanctions that a community elaborated and applies with the intention:

- a. to prevent deviance,
- b. to eliminate an already occurring deviance (...) and
- c. to impede the act of deviance of being extended to other people (Fortunati 2015, 296).

In a way, play and ludic culture developed in the years of capitalism as a way to control and influence the general public and especially the working class. This became possible by allowing them the freedom to explore their playfulness through a regulated framework and by introducing the concept of “free time” and “entertainment” people (Fortunati 2015, 296).

After having set a historical precedent on how ludic cultures were treated in the past it is also critical to also explore the present. While discussing the difficulties in recognizing the importance of ludic culture in everyday life, it is important to mention that “playfulness is no longer restricted to childhood, but has become a lifelong attitude” (Frissen, Lammes, de Lange, de Mul and Raessens 2015, 10). The idea of play or playfulness has traditionally been attributed to children, or child’s play. Either it is creative play, like make-believe, or traditionally associated with toys and games, when we think of playing, our mind immediately associates it with adolescence. However this is not the case for this chapter, since I will be focusing on manifestations of playfulness in adulthood, and especially in the

medium of live performances and creativity. As Huizinga suggests “culture and civilization arise *in* and *as* play, and never leaves it” as “play is a primary category of life” (Frissen 2015, 15).

If we imagine a binary distinction between playfulness in children and adults, we can pinpoint a distinct imbalance; “adult play is relatively understudied” (Proyer 2017). Playfulness or ludic cultures in adulthood can be defined “an individual differences variable that allows people to frame or reframe everyday situations in a way such that they experience them as entertaining, an/or intellectually stimulating, and/or personally interesting” (Proyer 2017, 2). Those activities can be either performed by the individual in group settings (e.g. shared play activities) or they can be used as a way to relieve tension and escape the mundanity of everyday life (Proyer 2017, 2). Combining the aforementioned details about the role of capitalism in the development of ludic cultures amongst adults as a means to make the best of “one’s free time” it is evident that playfulness in adult has become more prominent through the years as an escape from reality. Therefore it is easier to pinpoint examples of adults, willingly, letting go of their inhibitions and becoming part of sub-cultures, and in what or how they spend their time and money on (the gaming community, fandoms, merchandize, Reddit subcultures etc.).

With the case study I have chosen for this thesis in mind, I am using the concept of playfulness in order to touch upon *two* sides of playfulness: first of all playful performances and secondly playfulness in participation. Taking into account the ideas that unfolded in the previous paragraphs we can pinpoint the manifestation of playfulness in Hatsune Miku’s audience. In the first part of this subchapter, I explored the concept of ludic cultures as it

manifests itself beyond infancy and childhood. Ludic cultures in adulthood, although sometimes “demonized” as an unnecessary pastime and deemed unnecessary in early capitalism, are not only valid in this day and age, but also employed by corporations in order to promote merchandise amongst fans. The idea of ludic cultures is not only more apparent in recent years, but also embraced as a pastime. The concept of ludic cultures appearing more and more frequently, either in the traditional form of games, with the resurgence of board game culture and video games, or in the way that live performances and art has turned ludic. Focusing on my case study, the playfulness of Hatsune Miku lies in two manifestations of ludic culture: suspension of disbelief and DIY cultures.

3.2. The Magical Mirai: a glimpse into the magical future

3.2.1. Performance Analysis and Realism

The *Magical Mirai* can be considered the biggest celebration of vocaloid culture. Magical Mirai is an annual event that is a live concert event combined with an exhibition that shows the creative culture of Hatsune Miku. The latest Magical Mirai took place from October 20th to the 24th in Osaka and from November 5th to 7th in Tokyo. Each rendition of the Magical Mirai festival is organized in a meticulous and (commercially lucrative) way: there is an annual theme to each festival, a theme song, a new visual “design” of Hatsune Miku, and themed merch that is sold for the duration of the festival.

An interesting point to be made is the excessive selling and using of glowsticks: glowsticks are a major part of vocaloid culture. According to a tweet made by Hatsune Miku herself, “one free chemical glow stick is given [to all attendees]” (@cfm_miku_en, 17 April 2016). Additionally, glowsticks have to be “concert approved” which means that concert

goers are not allowed to bring their own LED lights or any other battery-powered glowsticks, since they may interfere with the performance (@cfm_miku_en, 17 April 2016). The glowsticks are color changing, and each color represents the performance on stage (Turquoise: Hatsune Miku, Yellow: Rin and Len Kagamine, Blue: Kaito, Pink: Luka, Purple: Gakupa, Red: Meiko). Despite the 3DCG²³ live concert that takes place at the end of the festival, attendees can create and enjoy artworks, support other creators, and meet people with whom they share the same interests. In order to cater to the new needs that arose through the Covid-19 pandemic, the 2021 rendition of the Magical Mirai that I will be reflecting on, was available to watch as a livestream through the social media platforms of Hatsune Miku.

²³ 3DGC here stands for three-dimensional computer graphics.



Figure 5: Glowstick (Europe 2018). 2018. Miku Expo. Accessed May 5, 2022.
<https://mikuexpo.com/europe2018/goods.html>

Examining and observing the 2021 Magical Mirai concert is an interesting and unique experience. The livestream starts with a screaming crowd, jumping up and down, holding color changing glowsticks with exceptional enthusiasm. The LED videowalls showcase a countdown starting from the number 39, and by the time the timer reaches zero, Hatsune Miku comes up on stage, starting her setlist with the song 39みゆーじっく！ (39 Music!)²⁴. Although the sighting of an eleven-foot-tall hologram of animated girl is highly unrealistic,

²⁴"39" is a song featuring Hatsune Miku by *sasakure.UK*. It was uploaded in celebration of Miku's 5th birthday. The song is about Miku giving thanks to all her listeners, people who use her, and just any overall fan of VOCALOID in general for sticking with her for this long. "39" is a number often recurring in the VOCALOID franchise because it can also be read as "Miku". In this song, "3-9" can also be read as "San-Kyuu." When spoken with an accent, it sounds like "Thank You" in English (Vocaloid Fandom n.d.)

the concert bares no difference to a conventional concert: Hatsune Miku takes breaks in between songs, she usually features “guest” vocaloids that take the stage throughout the two-hour concert, and she takes some time at the end of her concert in order to thank her accompanying band, just like every other live performing artist does. This brings a certain realistic feeling to what one would think is an “unnatural occurrence”.

In this section I will explore the concept of realism in its purest form: how close are Hatsune Miku’s performances to reality? And with what regards can we discuss reality when the focus lies on a non-existent, non-human agent? Talking about realism, there a lot of moments in Hatsune Miku’s concert that have been carefully planned and designed in stage planning that make her relatively realistic. As Frank recounts from their own experience at a Hatsune Miku concert: Miku emerges on stage as a “a virtual musician with very physical capabilities” (Frank 2016). After watching a variety of concerts of Hatsune Miku’s, one can catch a lot of glimpses of realism in Miku’s performances: “technical issues” happening to Hatsune Miku on stage, where her mic is not working, starting her set late, as all musicians do (Frank 2016) or Miku having some sort of interaction with the crowd and having a sort of repartee with her guest musicians or the crowd. All those moments in Hatsune Miku’s concerts make the experience of following her concerts unique and in a way more realistic.

On the other hand, the realistic elements of Hatsune Miku, are not planned to trick the viewer into believing that what they are experiencing is real. As an article featured on Polygon points out, the “encore” part of Hatsune Miku’s concert lasts a full hour, which is fairly different that the encores held in conventional concerts that have a duration of one to five songs:

She will play for another full hour, no holds barred. At one point, she will seemingly die, grow wings, and ascend up toward the sky. She'll then reappear mere moments later, reborn. Also, she'll be a pianist all of a sudden.

(Frank 2016).

Additionally, in the concert held at the Magical Mirai, Hatsune Miku changed her show attire about five times, and the change took place in a matter of seconds. With these facts in mind the aim of Hatsune Miku's performances is not to "trick" viewers into believing that what they are experiencing is performed by a human, but they more or less emulate a conventional performance.

The aforementioned data mentioned concerning the performances of Hatsune Miku work as pivotal information in order to map out a discussion on realism and playfulness in the performances of Hatsune Miku. Discussing the concept of realism and a realistic stage presence when talking about Hatsune Miku, a hologram with no material presence, could seem like a far-fetched topic. However, the glimpses of realistic behavior manifested in Hatsune Miku's concert are not purely performative or an attempt to trick concert goers into believing that what they are experiencing is real. They serve a purpose, and that purpose is offering a great performance as well as reinforcing the feeling of the suspension of disbelief that is felt by the audience attending Hatsune Miku's concert.

3.2.2. The Hologram in Performance

As mentioned before the reality of Hatsune Miku performing live on stage is merely a product of light being projected to a glass screen on stage, and that allows her the commodity of appearing as a 3D holographic projection. This unique concert experience is only available to watch through the use of such technology, and due to the restrictions of this glass screen,

Miku's movements have to be confined in a specific area of the stage, as far as the glass screen can allow her to move (Lam 2016, 1113). The illusion of Hatsune Miku's performances can be as Lam puts it "shattered" if the concert goer watches the performance from an area that does not compliment the glass screen, for instance from below as opposed to a straight on view of the stage (Lam 2016, 1113). In Baudrillard's *Simulacra and Simulation*, in a section concerning holographic technology, he quotes that "the hallucination is total and truly fascinating once the hologram is projected in front of a plaque, so that nothing separates you from it" (Baudrillard 1981, 105). The existence of Hatsune Miku and the charm of her performances relies on the "dream of passing through ourselves and of finding ourselves in the beyond (Baudrillard 1981, 105). The only thing that keeps us away from the hologram is the very reality that touching Hatsune Miku, will dissolve her existence and therefore take away from the reality that has been created and projected before our eyes.

As it will be discussed in a later section, the secret behind Hatsune Miku's performances and the connection people have with them lies on two things: the hologram itself and the willing suspension of disbelief as felt by the concert goers, or rather experiencers of such a phenomenon. The hologram itself, creates a unique feeling of realness and interactivity with something that was thought of as unreal. In the minds of the dedicated fans of Hatsune Miku, similarly to conventional performers, the reality of Hatsune Miku is debatable. Miku exists as a software or a voice that is usually experienced by them in a private environment through the use of a speaker or their headphones. As Auslander proposes in *Musical Personae* we should think of musicians as social beings, "not just in the sense that musical performances are interactions among musicians, but also that to be a musician is to perform an identity in a social realm" (Auslander 2012, 101). Performances

are social to their very core, and especially in the case of Hatsune Miku, performances are social in the way that the audience interacts with Hatsune Miku, but also in the way that concert goers get to experience Hatsune Miku. The otherwise non-existent body of Hatsune Miku, takes shape and form on stage and becomes accessible to her fans in a material form.

However, “materializing a singing voice database by giving it a bodily form gives visual pleasure to the users, but it also engenders virtual corporeality” (Lam 2016, 1114). Hatsune Miku, mostly falls under the category of an android, instead of a cyborg, since her physicality resembles that of a female human, but other characteristics like her hair or her features are clearly animated and non-humanlike. “Building a feminine icon that resembles a real person will erase the fantasy that a virtual one provides, but exaggerating digitality will expel the character completely out of the realm of authenticity” (Matrix 111-12 cited in Lam 2016, 1114). Therefore the decisions made around her design, physical appearance, and even her voice do not aim to make her more human-like, but actually accentuate her digitality.

The concept of materiality with regards to Hatsune Miku’s body takes a different perspective if we think about the concept of materialization through the scope of Deleuze and Guattari’s “body without organs”. The hologram works as an empty vessel, that leaves the audience the space to interact with it in any way they want to. “The hologram, with its unstable and slippery surface, acquires meaning from the interactions with the users, in the process generating an interplay of repulsion and attraction” (Guga 2012 104). The body without organs therefore expresses a desire to interact with it. In Deleuze and Guattari’s work, desire is expressed as a “lack”, which fits the concept of the hologram idol pretty well

as well as the concept of a *kyara*²⁵. The desire for virtual characters that fall under the character of a *kyara*, includes a feeling of unattainability: “you can see her image but never have her impossible body” (Annett 2015, 166). This creates a feeling of intensity with regards to how concert goers interact with the hologram of Hatsune Miku, especially when taking into account that interaction with a vessel such as Hatsune Miku was impossible until the creation of the holographic representation of her.

3.2.3. Suspension of disbelief

What makes live concerts an interesting topic to reflect on is audience interaction with the spectacle that unfolds in front of their very eyes. Either looking at an intimate concert with a limited amount of attendees, or a large-scale festival where the audience can only see the performer through a LED video wall, the feeling remains the same. Concerts constitute an intense experience that is *live*. Audience reaction and interaction with the concert medium, heavily relies on how ludic the performance is and how it urges the attendee to react to it. In order to better understand playfulness in performance as it manifests itself in the concerts of Hatsune Miku, it is important to analyze and reflect on the notion of the suspension of disbelief. For this section, I will be once again using the 2021 “Magical Mirai” concert as my focus and a point of reference.

²⁵ **Kyara:** *kyaras* describe “image beings that fans both idolize and consume” (Annett 2015, 164). The concept of *Kyara* “can be distinguished from both fully rounded literary or cinematic characters (*kyarakutaa*) and the simple, one-dimensional brand mascots copyrighted and disseminated by major corporations” (Annett 2015, 164). “As evolving image-constructs that thrive on fan adoption, *kyara* cross the planes between psychologically rounded subjects and flattened symbols, between official and unofficial product circulation, between licensed merchandise and free-for-all repurposing on the internet” (Annett 2015, 164).

The willing suspension of disbelief as defined by Coleridge describes “the moment which constitutes poetic faith.” To put it simple, upon entering a museum, a concert hall or a theatre, the spectator willingly lets go of their inhibitions and they’re ready to accept all kinds of unrealities and improbabilities. *They are willing to make-believe.* According to Norman Holland, “modern psychology can help us understand this fundamental precondition for [art]” (Holland 1967). The spectator willingly “trusts” the performer with their time, money, and ultimately their expectations of feeling entertained.

“Basic trust in mutuality is that original optimism, that assumption that ‘somebody is there’” (Holland 1967). The feeling of trust and willingness to let go of one’s inhibitions about art stems from the developmental years of the humankind, where infants are trusting blindly their care provider, through a lack of knowledge of the world (Holland 1967). As Holland describes it, a clear demonstration of the suspension of disbelief can be found in the reactions of people when something sudden “stops” the distribution of the fictional work they’re following (Holland 1967). For instance, when “network trouble flashes on the screen of the movie” one is streaming or upon finding out that the last pages of a book are torn (Holland 1967). This abrupt and sudden pause creates frustration for the spectator because they are “forcefully dragged out” of the imaginary space the medium brought them to.

Supplementarily, “art is a regression in the service of ego” (Holland 1967). The way people approach art is highly opportunistic. “We approach a work of art expecting it to feed us pleasure at least in the imagination and we are willing to suspend our disbelief to gain pleasure” (Holland 1967). That is to say, that *Star Wars* fans that become engulfed in the storyline of the films, or Hatsune Miku supporters are not naïve for falling into the trap of

believing for a moment that what they're seeing is a true fact, a reality that they live inside of. This is a direct consequence of the willing suspension of disbelief, their desire to let go of their inhibitions in order to receive "pleasure", as Hollands puts it from a certain piece of art. "[They] have been conditioned to expect pleasure from art and because [they] are conditioned to this [and they] trust its promise" (Holland 1967).

Although art is opportunistic, it is not necessarily useful in the traditional sense. "The work of art presents itself so divorced from utility; sometimes we do the divorcing ourselves, as when we put aside whatever religious feeling we might have to look at an altarpiece still in its church in a secular, aesthetic way" (Holland 1967). This is a great answer to the question that many people might have concerning holographic artists: *Why do we feel a need to interact with a non-sentient being?* There is no definite answer as to why. Admittedly, there are enough real, human artists that can perform in a way that Miku does, but that does not deem her existence "useless" or redundant. Hatsune Miku, does not only offer audiences a distinct live experience but for many, she is a source of inspiration and/or creativity. On the other side of the spectrum, it is important to also note that at its very core the performances of Hatsune Miku do not bare that many differences from "conventional" performances. If we take into account the concerts that take place in large arenas, the artist is not only non-visible from the audience sitting on the back, but they are also available

Bringing together the points that were mentioned throughout this section in Hatsune Miku's case, what concertgoers and supporters of Hatsune Miku experience during a concert is a willing suspension of disbelief. The act of supporting Hatsune Miku to any extent and purchasing a ticket to one of her concerts creates an unwritten contract of believing that

what they are experiencing at the moment of the concert, is in fact real. The hologram that they are facing in front of them is at that moment and only a true reality, rather than merely a software presented on a glass screen. Returning to the original point of this subsection, attending a concert is much more than just enjoying a live performance. The feeling of belonging among a crowd of likely-minded people, the volume and quality of the sound, and even the venue itself are also part of the concert-going experience. So is spending time and resources on a virtual experience, such as watching Hatsune Miku live any different than attending a conventional concert? The short answer is no; especially when taking into account that most concerts at this time and age heavily rely on the use of screens. Or if we also take into consideration the popularity of live-streamed concerts and theatre plays at the time of the pandemic.

3.2.4 Liveness

“I spent many years making films. And I moved to theatre because I found that there was always one great lack in film: living contact with the action and the audience. Film seemed two-dimensional, a reproduction of an action, while theatre was closer to the direct action itself. The spectator at the movies is more passive than he is in theatre, and I like a close and active contact with people in the audience”

(Weiss 1966, 106).

This quote, as featured in Cormac Power’s *Presence in Play* although referring to the difference between theatre and film with regards to the concept of liveness, is highly applicable to the medium of live concerts. Concerts, as conducted by performing music artists, are **live**, and what is expected from them is not only a performance by the artist on

stage but also the reaction, and interaction of the crowd watching. One could even go as far as saying that concerts are even more live, than theatrical plays, since the audience is free to sing, dance, and follow along with the artist on stage.

As the quote suggests, “there is an ‘aura’ about live presence in theatre [and concerts] of which there is a ‘lack’ in film; literal presence as the living presence of the original (Power 2008, 147). Although the distinction between live and recorded is a binary distinction, through the passing of time one can pinpoint an “increasing cross-over” between the two due to the advancement of technology and its appearance on the live stage (Power 2008,148). The idea of theatre or concerts being live while the film medium is not seems a bit outdated if one notice’s how prominent technology is on stage, as well as how much dependent the medium is on the use of projection screens and lighting systems (Power 2008, 148). Especially when referring back to Hatsune Miku, technology has been a quintessential factor in her success both on and off of the stage. Hatsune Miku’s performances would not be possible without the existence and advancement of the technology that supports her: the Vocaloid software, the glass screen used to project her hologram, the LED screens that project her figure. Consequently, if we abide by Weiss’s definition of a live medium, we can no longer deem live concerts as a purely live medium, since the element of technology is no longer an accessory, but a necessity²⁶.

²⁶ Author’s note: this is not uncommon with other performances as well. *The Beatles* stopped performing live after 1966. Some of the reasons included personal fears concerning their safety and the safety of their fans due to the “Beatle mania” phenomenon, but they also could not perform due to the lack of advanced technological equipment. ‘When The Beatles performed live on tour, they had a hard enough time hearing themselves play due to the screaming fans on tour - so these extra features (songs that could not be reproduced live) would have made it even tougher’ (Indie Panda n.d.).

When discussing Hatsune Miku's live performances it is also important to discuss their counterpart, conventional live performances by real, living performers. I will preface this subsection using a quote from *Rhythm and Noise: An Aesthetics of Rock* by Theodore Gracyk:

The vast majority of the time, the audience for rock music listens to speakers delivering recordings. Exploring the limitations and possibilities of the recording process, crafting music in those terms, rock's primary materials are often the available recording and playback equipment. Guitars, pianos, voices, and so on became secondary materials. Consequently, rock music is not essentially a performing art, no matter how much time rock musicians spend practicing on their instruments or playing live

(Gracyk 1996, 74-75 in Auslander 1999, 75).

If, in this case rock, studio recordings have set a standard on how we judge live performances, is there actually a difference between a "conventional" live performer and a virtual pop diva such as Hatsune Miku? To that I would add, Simon Firth's description of the listening experience as "something that never existed, that never could exist, as 'a performance'" (Auslander 1999, 76). Discussing this, a particular example of a song comes to mind that would not translate the same as the recorded version in a live performance, especially at the time of its production: "How Soon is Now?" by *The Smiths*. Although it was one of the breakout songs of the band, it was actually rarely performed live due to the intricacies of the original recording of the song ²⁷. "How Soon is Now?" was for a long time,

²⁷ On different accounts members of *The Smiths* have admitted that they opted on not playing the song "How Soon is Now" due to the difficulties it presented on reproducing the original in a live setting. "The tune is built around a guitar chord that rapidly oscillates in volume. As to how the distinctive resonant sound was achieved, Marr gave the following account to *Guitar Player* magazine in 1990:

especially in the 1980s, considered a “major problem” to play in live performances of *The Smiths* and all attempts to recreate the original sound of the song as it was recorded were unsuccessful (Rock Fandom n.d.). On a general note, the relationship between live and recorded performances mainly in the rock genre “revolves around a complex articulation of the concept of authenticity that was central to the rock ideology of the 1960s and 1970s” (Auslander 1999, 185). This brings about the topic of pop music. Examples like the legislation introduced after lip syncing scandals that stained the career of Milli Vanilli²⁸ (and other artists), that where demanding from artists do disclose on tickets and promotional posters of live concerts whether or not the performer was lip-syncing or not, showcase the importance of authenticity of live performances and the relationship they establish with their audience (Auslander 1999, 73).

The decline of how meaningful live performances are to a musician’s career has steadily increased and can be attributed to the “alterations in the structure of the music

The vibrato sound is (...) incredible, and it took a long time. I put down the rhythm track on an Epiphone Casino through a Fender Twin Reverb without vibrato. Then we played the track back through four old Twins, one on each side. We had to keep all the amps vibrating in time to the track and each other, so we had to keep stopping and starting the track, recording it in 10-second bursts... I wish I could remember exactly how we did the slide part -- not writing it down is one of the banes of my life! We did it in three passes through a harmonizer, set to some weird interval, like a sixth. There was a different harmonization for each pass. For the line in harmonics, I retuned the guitar so that I could play it all at the 12th fret with natural harmonics. It's doubled several times (Rock Fandom n.d.).

²⁸ The story or scandal concerning the Franco-German pop singing and dancing duo Milli Vanilli finds its early beginnings on the spring of 1990, when the duo won *The Best New Artist Grammy* for 1989. “The award prompted a spate of newspaper articles with titles like “That Syncing Feeling” (Detroit News, July 31, 1990) and other media commentary concerning various performers, including Milli Vanilli, who allegedly lip-synced to pre-recorded vocals in concert” (Auslander 1999, 73). “In November, Milli Vanilli’s producer created fresh controversy when he admitted that not only had the duo lip-synced during their concerts; they had not even sung on the recording for which they were awarded the Grammy, which was then rescinded, much to the embarrassment of the National Academy of Recording Arts and Sciences (NARAS), the Grammys’ institutional sponsor”. (Auslander 1999, 73)

industry and its relation to other entertainment industries” (Auslander 1999, 98). Additionally according to Grossberg, the new star does not necessarily need a reputation preceding him, as the “rise to fame” through meaningful performances is slowly being replaced by the immediate insertion of a figure into a position of stardom already waiting for them (Auslander 1999, 75).

So, what is the takeaway concerning liveness and the performances of Hatsune Miku? On the one hand, liveness is a key factor to authenticity, and therefore the medium of a concert is highly live due to the feelings evoked by the performance and the interaction between the audience and the performer happening. On the other hand, according to Auslander and Power, it is getting extremely harder to define liveness in concerts, due to the heavy impact of technology to the medium. As stated before, the role that technology and studio recordings play to the establishment of an artist’s career is detrimental, and therefore, live performances now work more as an “advertisement” to the artist, rather than a performance that showcases the true talent of the artist. Nonetheless, this factuality does not deem performances obsolete nor unnecessary. “The thrill of the live is to see a performance event unfold, with all the risk that it entails” (Saltz 2001 in Power 2008, 158). As Power notes (on theatrical performances but still relevant here) the audience and the performer share a common system of communication, where the performer and the concert goer share a “situation” (Power 2008, 193). Therefore, the medium of concerts does not only rely on the performance itself, but also on the communication between the performer and the concert goer, as well as the relationship between concertgoers themselves. A concert, or any sort of a live performance, is a shared experience that relies on far more than the performer’s ability to conduct a concert. “Between the beginning and ending of a live performance, there is a

zone of indeterminacy; the result of the performance is discovered *through* the performance” (Power 2008, 158).

3.2.5. The Importance of Liveness

After discussing the difference between liveness and recordings with regards to a specific phenomenon such as the performances of a software agent like Hatsune Miku, it is important to supplementarily ask ourselves *why?* Why is there a need for such a performance? Are the reasons behind it, only of monetary value? *Seeing is believing.* That is the answer that Philip Auslander offers in *Liveness and Performance in a Mediatized Culture* where he unfolds the reasons behind the perseverance of live performance culture in the music industry.

The first reason Auslander suggests in favor of the live performance medium lies in the history of live rock musical performances. Rock “has always stressed the visual as a necessary part of its apparatus - in performance, on record covers, in magazine and press photographs, and in advertising” (Goodwin 1993:8 in Auslander 1999, 86). The image of a musician, especially in rock but also in pop music, heavily relies on how they present themselves in visually impactful media; thinking about an example different that the one provided by Auslander, let’s think about the visual elements that comprise a pop star, specifically Hatsune Miku.

As mentioned in Chapter 1 of this thesis, her persona and appearance in popular media has been heavily impactful; from mini-TV series, magazine covers, merchandize, to being the face of a rocket launch, Hatsune Miku’s appearance to the public has been carefully constructed to make her as “visible” as possible. So it comes as no surprise that her first live

performance came only two years after her creation²⁹ (Amero 2017). In a way, performances are no longer important only as a way to present musical prowess and talent, but they also constitute a way to advertise oneself and cater to the needs of an audience. Taking also into account the vast amount of merchandize and event economy that is accounted for (e.g. The Miku Expos, The Magical Mirai festivals, the glowsticks etc.) it is easy enough to assume that the performances of Hatsune Miku do not solely rely on the performance itself, but also the monetary value that those aspects add for.

The second reason that Auslander lists concerning the importance of live performances with concern to live music is “that only in live performance [is] when a listener can ascertain that an [artist] that looks authentic on records, really is authentic in terms of rock ideology” (Auslander 1999, 90). What we can draw from this quote from Auslander’s book may not relate so much to authenticity with regards to Hatsune Miku’s talent or ability to perform live, since her performances are a recording of her songs, however it opens up a discussion concerning what fans of Hatsune Miku think is authentic or realistic about her performances. Similarly, to other pop stars “the pop song might be performed live for an audience, but today the live performance is more likely to be understood as a reproduction of the original studio recording, rather than vice versa” (cf., Gracyk 1996, 37ff.) Miku’s ability to perform live is not a direct demonstration of her talent as a performer, but a proof of her

²⁹ The first official appearance of Hatsune Miku at a concert took place on August 22, 2009 (Amero 2017). It took place at *Animelo Summer Live*, with two songs being performed: “Miku Miku Ni Shite Ageru” and “Black Rock Shooter” (Amero 2017). “The character Black Rock Shooter and Asami Shimoda, the voice provider of Kagamine Rin and Len, also made appearances at *Animelo*” (Amero 2017). The next live performance of Hatsune Miku, took place 9 days later, on August 31, 2009, at the “MikuFES’09 (summer) event, exactly two years after her initial release (Amero 2017). “It also featured Kagamine Rin and Gumi. However, both of them only had their voice included, they did not appear on the projections” (Amero 2017).

existing. “The physical and cultural remoteness of the object from the spectator means that audience relationships carry a high propensity of fantasy and desire” (Rojek 2001, 25-26).

3.3. Playfulness in Participatory Cultures

In the previous section of this chapter, I investigated ludic cultures with regards to the medium of live performance. For the third part of this chapter I am going to explore a different display of play as it appears concerning the persona of Hatsune Miku. This part is heavily interconnected with the principal characteristic of Hatsune Miku: the flexibility of her very being. As a software designed to freely be manipulated by individual users of the Vocaloid program, the essence of Hatsune Miku brings about a variety of topics to discuss concerning participatory culture and artistic freedom.

Although Andrew Keen considers the emergence of DIY cultures and amateur creation as a loss of seriousness, the playful element in culture and the ludification of media is a widespread practice (Frissen 2012, 150). Through the emergence of social media platforms, ordinary internet users have found a place to consider their digital playground; “an exciting innovation lab they can tinker and experiment to their hearts content” (Frissen, Lammes, de Lange, de Mul, Raessens 2012, 54). Participatory culture has evolved in recent years, especially after the 2000s, due to the emergence of Internet cultures and the advancements of digital technologies. Now more than ever it is easier for people to convene in a digital environment and explore their individuality and skills through the support and communication of people that they share the same interests with. Fandoms have become the norm for every artistic medium and they are inclusive space to share content, thoughts, and opinion in digital platforms.

3.3.1. The limitless song library of Hatsune Miku

With over 100,000 songs produced through the vocaloid software, Hatsune Miku has understandably so and immense amount of songs to perform live. Each setlist that is featured in one of the concerts features a variety of songs that are all fairly varied in genre, rhythm, and sometimes in the language sang. A concert goer in an article featured on Polygon recounted that:

Her music will be varied enough that, even if you are familiar with her back catalogue, each song will feel like a discrete piece. Still, you'll keep dancing straight on through her setlist, which includes electronica, J-Pop, more emotive numbers, and plenty of up-tempo jams.

(Frank 2016)

This comes as a result of the fact that the songwriters or in this case the producers are free to create anything their mind can come up with, without necessarily abiding to a specific musical genre or lyrical theme. They just have to have access to the Vocaloid software and some basic skills in order to write and produce a song through the program.

“Creative making and sharing activities, online and offline, are increasingly mediated through technology and virtual spaces tie [...] people together: the communication, exchange, and collaboration of everyday life” (Orton-Johnson 2014, 147). The example of Hatsune Miku and her presence in digital platforms is a fitting example of audience participation and how it relates to artistic success. Miku, as previously mentioned, began her career as a composing software released by Crypton Future media and sold to the public under the name vocaloid. This software allowed users to produce their own music using the

voice of Hatsune Miku. The versatility offered by the software allowed users to create their own version of Hatsune Miku according to their preferences, “changing clothing, appearances, and [her] personality to suit the music they made” through the vocaloid software (Tomonori 2021).



Figure 6: A Different Version of Hatsune Miku on a video uploaded on Nico Nico Douga. Still taken from the video: “動画広告や動画紹介を非表示にす.”

The ability to freely create, modify and change every aspect of Hatsune Miku launched an upstream of users that created content using Hatsune Miku’s software and uploaded it on *Nico Nico Douga*. In true internet culture behavior, the upstream of videos uploaded that included Hatsune Miku set in motion a ripple effect, with users reposting the content, making covers, choreographing original dance moves, and writing fanfiction or short fictional stories on Miku, and overall unknowingly promoting Hatsune Miku to the public. The success of

Hatsune Miku was therefore “a confluence of the creative energies from countless users that swirled and merged online, propelling the fad into a movement, and then into a totally new form of cultural expression” (Tomonori 2021).

More importantly it allowed users of the vocaloid software to create numerous songs that helped Hatsune Miku’s rise to fame. The breakout song for Hatsune Miko was “Meruto” created by Ryo (Supercell). The song proved to be the first commercial success of Miku, “breaking 3 million views in just a year” (Tomonori 2021). This, once again, led to a continuous stream of content produced by fans of Hatsune Miku, with them covering the song. ““Meruto” marked a turning point from early efforts that centered heavily on Hatsune Miku, such as “MikuMiku ni Shite Ageru” and “Koisuru Voc@loid,” to more authentic pop songs of the sort of actual idol girls might sing” (Tomonori 2021).

Looking at these instances from Jenkins’ point of view; one can realize that participatory culture actually urges fandoms to evolve their skills and thus create new material in a more nuanced and concise way, but also encourage the individual to share their art between their community in a place they consider a “safe space”. In the case of the expanded “vocaloid community” creativity lies not only in the original content itself, being accessible to users, but also in the decisions made by Crypton Future Media as a company, to allow the free use of their intellectual property, and thus urge users and fans to create their own content based on their original design.

“Crypton Future Media has played a major role in promoting the propagation of these secondary works” (Tomonori 2021). In December 2007, Crypton Future Media, launched Piapro, a software that offered Vocaloid users in new directions with less limitations. “By

instituting an open-source copyright system (similar to software such as Linux) it made its characters freely available for private, nonprofit applications” (Tomonori 2021). “Piapro also provided a platform for users to upload their creations and make contact with one another” (Tomonori 2021). The idea of allowing personas like Hatsune Miku as an open-source product available to the public highlights a stark difference in the “copyright” mentality between the East and the West. “The copyright strategies of the Japanese anime industry with regard to some of the unauthorized usages of their copyrighted contents - namely fan-based activities - are the paradigmatic example of an alternative choice” (He 2014, 1011). As opposed to the western outlook on copyright that presents difficulties on creators reusing and reimagining already licensed products, the Japanese “school” allows audiences to freely use content and repurpose it in new ways.

3.3.3. Questioning Authenticity

Hatsune Miku’s voice, as mentioned before, is a product based on the voice of Japanese voice actress Saki Fujita (Piapro.net, n.d.) “To develop a human-like singing voice for Miku, the Vocaloid developers digitized separable and transportable fragments of recorded voice and integrated them into a singer library” (Lam 2016, 1110). As each programmer works with Hatsune Miku’s Vocaloid software they are allowed to freely manipulate the sound library that is included with the program and adapt, transform, and change the pitch freely. Contradictorily to any other “conventional” pop star, the creations made by Vocaloid Users, can choose to follow a path that sounds closer to a human singing voice, but because of the limitless capabilities the Vocaloid software offers, the user may choose to program Hatsune Miku to sound highly un-humanlike and almost robotic (Lam 2016, 1110). The freedom to

manipulate the voice of Hatsune Miku, although allowing creators to expand their creativity affects the authenticity of the original medium.

Walter Benjamin has suggested that “the product of mechanical reproduction jeopardizes the authority of the object”. Thus “the unique presence in time and space of the original rests on the history to which it was subject throughout the time of its existence” (Lam 2016, 1110). In his essay *The Work of Art in the Age of Mechanical Reproduction*, Benjamin describes as authentic an original work of art and by this “he means [that this work of art] has a presence in time and space, and a unique existence in the place it happens to be” (Tate n.d.). Consequently, the reproduction of a work of art questions the artworks authenticity and therefore undermines the original product (Tate n.d.). Thus, “the quality of the humanness [of Hatsune Miku] is not intensified but depreciated” every time the original gets reproduced and adjusted (Lam 2016, 1110). The aura³⁰ as defined by Walter Benjamin is lost when the original vocals as provided by Saki Fujita are endlessly changed and adjusted by producers.

3.3.3. Finding Common Ground: comparing Hatsune Miku to a regular pop star

As a closing note to this chapter, there is room and enough data in order to conduct a comparison between Hatsune Miku and a regular, human, sentient pop star. Chris Plante, on behalf of Polygon made a video essay where he compared the qualities of Hatsune Miku with Justin Bieber (Polygon 2014); he pointed out several differences between the two instances

³⁰ “The term [aura] was used by Walter Benjamin in his influential 1936 essay *The Work of Art in the Age of Mechanical Reproduction* (Tate n.d.). “Benjamin argued that ‘even the most perfect reproduction of a work of art is lacking in one element: **its presence in time and space, its unique existence at the place where it happens to be**’” (Tate n.d.). “He referred this unique cultural context i.e. ‘its presence in time and space’ as its ‘aura’” (Tate n.d.)

concerning their career, progression, and personal development. First of all, it is important to point out that when discussing Miku, we're referring to a software that allows user's of vocaloid to create any song they want. That immediately means that her music is and can be as diverse as it can be since it depends on the freedom and creativity of the user owning the software. Additionally, Hatsune Miku can and is releasing as much music as the users can: her music is not constraint by producers, co-writers, editors etc. On the other hand, the music of a regular pop star not only has to go through various states of approval and editing, but especially when we're talking about pop artists that write or co-write their own music, there has to be a significant break between each album they release to allow creative flow. Concurrently, as mentioned before, the way that Crypton Future Media decided to put Hatsune Miku out in the market allowed users to freely manipulate the persona of Hatsune Miku. As Chris Plante mentions on his video essay nowadays "we claim ownership over the things we love" and the idea of a heavy copyrighted artist seems a bit outdated nowadays (Polygon 2014). On the other hand, producers most of the times have almost exclusive control and copyright over the work of already established pop stars. Another note that is important to point out is the notion of artificiality. An artificial, non-sentient entity like Hatsune Miku cannot be susceptible to criticism, addiction and further emotional and mental turbulence. An entity like Hatsune Miku, cannot be manipulated by her record label, or feel anything for that matter and that ensures the fact that she cannot be taken advantage of, or hurt. "Her life cannot be altered because she doesn't have one" (Polygon 2014). Of course, that brings up another issue about her persona being mistreated. As mentioned in the first chapter, the persona of Hatsune Miku has been heavily commercialized as is, but also heavily fetishized. Examples as the ones taking place in the digital environment of the oculus rift, or

the middle-aged man that “married” Hatsune Miku, showcase a dangerous pattern building around the sexualization of characters that have been popularized as minors or under the age of eighteen.

So what is better and more sustainable? A virtual persona like Hatsune Miku or a regular pop star? From an ethical point of view, it is safe to say that a pop star like Hatsune Miku, since it is virtual, is more likely to be a more ethical option since she is not a person and therefore has no feelings. During the last decade, we’ve experienced first-hand the toll that publicity takes on well-known personalities. Either that be addiction, relentless following by paparazzi, or the sheer pressure that managements put on (usually) young people, fame can seriously damage the mental and physical health of those involved. Miku will forever stay young, happy, and unbothered by any controversy her music or “behavior” may cause. In addition to that, any controversy that might come up concerning the way that Hatsune Miku behaves in the public will be a hundred percent fabricated either by her “controllers” or her following; meaning that no direct consequences can come by Hatsune Miku’s public behavior, unless someone wants it to be a controversy. Of course, this is not to say that regular or conventional pop stars are “outdated” or they will not continue to exist, this subsection of this chapter only aims to create a discussion on ethics, and how popularity affects individuals, as opposed to the “backlash” a non-sentient, software agent faces in a similar situation.

3.4. Conclusion

Throughout the course of the third chapter of this thesis I discussed the manifestations of playfulness in Hatsune Miku’s performances. Firstly, I focused on offering the reader a

concise description of how ludic cultures came to exist into the capitalist society and how they were used in a way to manipulate the masses through entertainment. For the rest of the chapter I decided to divide playfulness as manifested in Hatsune Miku's career in two distinct ways: playful performances and playful participation of her audience and fans. For the first part, I placed my focus on the *Magical Mirai* a festival that celebrates the culture behind Hatsune Miku, and specifically the 2021 performance that was available online as a livestream. This performance, since it is the most recent one, highlight the effort made by Crypton Future media into making Hatsune Miku seem as realistic as possible, as well as highlighting the excitement of the crowd attending. This brings about the topic of the suspension of disbelief as defined by Holland. The suspension of disbelief relates to the willingness of the audience to let go of their inhibitions or *disbelief* and enjoy the performances of Miku with no prejudice about her realness. Additionally, I also made a point concerning the general authenticity of live performances, since as Auslander has highlighted there is actually a lack of authenticity in live performances since their main objective is to recreate the original recording of the artist performing. On the other hand, ludic culture is highlighted concerning Hatsune Miku's persona due to the active participation of her audience into the creation of her songs and additional fan-made content. Since Crypton Future Media has allowed creators to use the persona of Hatsune Miku in their creations, with no obligation to copyright laws this allowed creators to fully explore the potential, and therefore provide meaningful content and free promotional material to Hatsune Miku.

Conclusions

The title of this thesis “Holograms and Vocaloids,” refers to the two definitive identities of Hatsune Miku: that of the *hologram*, virtual, pop diva and that to her playful identity of being the front face of the vocaloid *software*. Through the course of this thesis, I wanted to look at Hatsune Miku as a dual entity, that balances among her two different personas. On the one hand, she represents, literally, an untouchable, non-existent, and non-corporeal figure that hovers over sold-out arenas while on the other hand being the most accessible product the music industry has to offer; a software anyone can buy to construct their own version of what Hatsune Miku is. The study of the various manifestations of what is intermediality, hybridity, softwarization, but also playfulness and liveness reveal that Hatsune Miku, at the end of the day, is not different to any other conventional performer on earth. She is certainly no lesser than any corporeal, human pop star, if not better.

Let’s return to the main research question of this thesis: What is Hatsune Miku’s position in the intermedial discussion? I have answered this question by studying the history of intermediality along the years, beyond the scope of the media discussion, while looking at different theories that have developed along the research of intermediality. Firstly, I discussed the origins of the term intermediality as it has manifested itself in the scope of media studies. Going back to terms like *paragone*, *ut pictura poesis*, and *Gesamtkunstwerk* allowed us to look into the original terms that described intermediality and draw conclusions about Hatsune Miku’s “place” in the intermedial discussion.

The short answer is that Hatsune Miku is an intermedial agent. The longer answer would prompt us to think about the sub-question to the first research question: *How is the*

audience affected by the scope of intermediality? As quoted by Nibbelink and Merx, intermedial performances affect the spectator's view of the performance to the point where spectatorship becomes itself a self-reflective act (Nibbelink, Merx 2010, 218). In an attempt to cross check the claims made I decided to reflect and analyze on of Miku's performances in Kuala Lumpur that was conducted as part of the annual *Miku Expo*. The analysis of this performance shed a lot of light on to the role of the concert goer in the midst of an intermedial performance. The combination of the holographic projection of Hatsune Miku with a live band on stage, subject the spectator to a number of different triggers. Their concert going experience is even more immersive, but also displays engagement and interaction between the spectator and the performer. In order to further solidify the claim of Hatsune Miku's intermediality, I also opted to refer back to Elleström's theory of modalities and made a distinction concerning how the four different modalities (material, sensorial, spatiotemporal, and semiotic modality) by Elleström manifest themselves on Hatsune Miku's work (Elleström 2021, 45).

The second objective of this thesis was to discuss the impact of technology to the intermedial discussion. Upon discussing an agent or persona such as Hatsune Miku, it is almost a necessity to discuss the impact of technological advancements into media discussion. The essence of Hatsune Miku lies on the idea of virtuality and technological advancements, so there is plenty of room for discussing concepts like media hybridity and softwarization. First of all, I started a distinction between two terms that are easily misinterpreted and/or create confusion around their definition: hybridity between media and multimedia. Working with Manovich's *Software Takes Command* I created a clear distinction between hybrid and multimedia and came to the conclusion that Miku's

performances and work is highly hybrid. On another note, I tackled media softwarization as an attempt to further discuss the impact of technological advancements on the media discussion: “Softwarization of old media does not lead to their convergence” (Manovich 2013, 171). A medium undergoing softwarization may be receiving new capabilities through the power of technology, but this does not completely reject the original medium, nor does it deem it obsolete. The softwarization of media in a lot of cases, same as in the case of Miku, does not necessarily change the base medium decisively, but just adds further characteristics that would not otherwise be possible.

The third objective of this thesis relied on the playfulness of Hatsune Miku’s persona. As stated before, Hatsune Miku’s presence as examined in this thesis is dual: her performances and her online presence. I started the third chapter of this thesis by focusing my attention on the manifestations of ludic cultures specifically on adults. Although play and playfulness remain prominent throughout the duration of the life on an individual, the concept of ludic cultures in adulthood is sometimes ignored or deemed unimportant. On a second note I focused on the performances of Hatsune Miku as a demonstration of playfulness in performance. Analyzing the performance of the *Magical Mirai* of 2019 taking place in Tokyo, I discussed the concept of realism as manifested in a performance by a hologram. In order to be affected by any artistic performance, especially a performance by a hologram, there needs to be a willing suspension of disbelief: push to think that what you’re experiencing is real and therefore enjoyable. As discussed, the willing suspension of disbelief relies heavily on skills that are acquired during the developmental years of humanhood, where infants trust blindly their caretaker due to lack of knowledge of the world (Holland 1967). I then ventured into discussing the concept of liveness and authenticity, with regards

to this specific willing suspension of disbelief. These findings allowed me to draw conclusions on Miku's presence on stage with regards to how the non-material body of Hatsune Miku affects the concert goers. As discussed, in the age where technology is detrimental to the successful conduction of concerts, the presence of Hatsune Miku on stage does not necessarily stray far away from conventional performances in terms of playfulness.

On the other side of the spectrum, I discussed playfulness with regards to audience participation. Hatsune Miku has a very active fandom which is a direct result of her existence. Since Miku is a software agent, fans, and users of the vocaloid software are free to "use her" in any way shape or form they may please to. Which brings about the question of authenticity: if we take into account Benjamins notion of authenticity we may be pushed to think that since every aspect of Hatsune Miku is a copy of a copy of a copy, that there is no room for authenticity in such a medium. I feel that the answer lies somewhere in the middle: on the one hand Hatsune Miku is unoriginal due to the fact that every single representation of her is either a copy of another one or an alternative to that, but on the other hand, we cannot deny the inspirational content that her music has brought to the surface, as well as the essence of her existence (a software agent) being unique on its own. Furthermore, I also made a final comparison between Hatsune Miku and the regular pop star as a way to seal the debate between the two: the verdict is that from an ethical point of view, Hatsune Miku "beats" the traditional pop star for numerous reasons.

This thesis has highlighted the many ways in which the medium of Hatsune Miku's performances both on and off stage, is a prominent part of the discussion of the interdisciplinarity between technology and the arts. In this day and age, one is inseparable

from the other, and we can see manifestations of both counterparts in this discussion. With regards to what I hope this thesis offered to academic discussion, my main objective was discuss the concept of the communal medium of live concert performances with regards to a newly established, intermedial and playful medium such as the one of Hatsune Miku. While doing my research I encountered a number of materials that discussed Hatsune Miku from an ethical standpoint, or from a more critical point of view. What I hope I did through this thesis, is to display the robust grounding of Hatsune Miku into older media theories, as well as highlighting the new discussions that Hatsune Miku can lead us to with regards to intermediality. Additionally, my aim through this essay was to also critique in a way the way that communities look at new media under suspicion and disbelief. Especially when exploring the genres of pop, and especially hyper-pop there is a lot of disbelief concerning the validity of such genres as well as their place in the music industry. I personally believe that technological attributes introduced into music should not affect the way that they are perceived from the general public. I am also a firm believer of the thought that genre should not also play a role on how we treat music, or to how important we think it is.

In the process of completing this thesis, I encountered a number of limitations that changed the direction of this paper. Due to the limited amount of information of a performative medium that is relatively new, compared to more established ones, Hatsune Miku's performances are considerably understudied, or lack a certain focus. This is the main reason behind the decision to unravel different topics in the course of such a research project. The literature concerning Miku's work lacks focus, and a lot of examples had to be drawn out of different media manifestations, such as VJ performances or rock concerts. However, due to the strong intermedial character of Hatsune Miku that was explored in this

thesis, I was able to compare and contrast different performances. As mentioned in the previous paragraph, I personally believe that there is a lack of focus in pop culture, and especially Asian derived pop culture in western academia. Since my recent fascination with the genre of J-pop, and especially vocaloids, I feel that they offer a large space for further research not only with regards to their intermedial character but also the discussion of participatory cultures. A concept like Miku's career, is indeed unique not only in the way that it progressed with the massive popularity that Hatsune Miku gained, but also with regards to how it started. The idea of a pop star being an open-source persona, that people can adapt and transform to the way that they please are not only new but can revolutionize the medium of the music industry as a whole. In addition to that, I felt that there is a lot to be learned by the way that Western Cultures approach the concept of copyright, as in the case of vocaloids and the way that Japan treats copyright, we see a more lenient response to personal expression with regards to a commercial product.

This thesis was possible by approaching Hatsune Miku as an intermedial, hybrid phenomenon. With this in mind I was able to draw conclusions on the relationship between technology and live performances. Additionally, by inserting the concept of softwarization, as expressed by Lev Manovich I was able to further realize the position of Hatsune Miku in the intermedial discussion. Due to the lack of concrete evidence and literature that focuses specifically on Hatsune Miku, I tried to make connections and comparisons on live performances as conducted by real life musicians, as well as, extending it to the idea of VJ performances as explored by Turco (2010). On the other hand, the existence of Hatsune Miku places numerous questions on her connection to playfulness and ludic cultures. Firstly, performances are playful to their core since they allow concert goers to experience a live

performance and interact with it in a number of ways. Since her production relies on a software that was designed for users to create music on, her existence is not only playful, but also part of the idea of DIY cultures. This allowed me, to relate Hatsune Miku to the concepts of adult play and interaction with a software but also look into the ideas of Walter Benjamin. The aforementioned concepts that were discussed throughout this thesis, were explored all throughout the Media, Art, and Performance studies programme, and I was able to refer to them in order to relate it to the case of Hatsune Miku. As mentioned further on in my Conclusions, due to the nature of Hatsune Miku's existence and live performances, and the fact that she has been in existence for a little more than ten years, the specificities of her as a phenomenon are fairly understudied.

Therefore, as we reach the ending point of this thesis I am going to put forward some questions that could be the subject of a future research project. My first question will cover the lack of quantitative research material with regards to the audience and how they interact with Miku's concert. Surely, the theoretical material covers a lot of ground on how an audience perceives Hatsune Miku, but I feel that it would be beneficial to have concrete, scientific data on such responses. On another note, an area that would be interesting to explore in the future would be the combination of physical and digital bodies on stage; in this research project I briefly mentioned the coexistence of vocaloids and the band on stage, but it would be interesting to explore performances of Hatsune Miku where she interacts with real, human, performers on stage. On a last note, I feel that an area that should be further explored is the differences that one can find between Japanese (in this case) fandom as opposed to western culture. Since the appearance of Hatsune Miku, a rise in popularity in western countries has been noted. As mentioned before, the last tour conducted by Hatsune

Miku, took place in a number of European countries as well as planning to extend to the US and Canada. How do different cultures interact with a non-sentient character as opposed to the traditionally more dedicated fandom of Japan?

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