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Sampling in the Age of AI

An Analysis of Sample-Based Music and Uses of Artificial Intelligence in Relation to Authenticity and Authorship

MA Thesis
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Abstract

This thesis examines the intersection of sample-based and AI-generated music, focusing on authenticity, authorship, and the future implications of these evolving forms of musical creation. Building upon a bachelor thesis titled 'The Use of Artificial Intelligence in Hip-hop Music: Attitudes on Authenticity & Authorship' (2022), which explored AI in hip-hop music from the perspective of artists, this study investigates the potential threat of AI technology to sample-based music. Theoretical frameworks by scholars such as Walter Benjamin, Roland Barthes, Jean Baudrillard, Mark Katz, Lawrence Lessig, and Kenneth Goldsmith are used to analyse authenticity and authorship. The concept of media ideologies by Ilana Gershon is also applied to better understand the cultural practices, values, and implications of sampling culture. Method triangulation is employed due to the complex nature of the topic. The thesis covers the historical background of sampling in music, explores its cultural values, conducts a discourse analysis of authenticity and authorship in sampling, and examines the use of AI in sample-based music, both through tools that help with the creative workflow of sampling such as Samplette, Jukebox, Playbeat, Orb Plugins, and LALAL, and through AI music generators such as, Amper Music, AIVA, Soundful, and Soundraw. In the discussion, a comparative analysis between sample-based and AI-generated music is presented to highlight the fundamental similarities and differences. The findings indicate that AI tools do not pose a significant threat to sample-based music, instead aligning with previous innovations in the art form. However, AI music generators may be perceived as inauthentic, necessitating adaptation and protection of cultural notions of authenticity by artists and audiences. Regarding authorship in the age of AI, collaboration among artists, audiences, developers, legal experts, and policymakers is crucial to strike a balance between innovation, artistic freedom, protection of legacies, and ethical considerations. This collaboration will enable the music industry to harness the opportunities offered by AI technology while overcoming its challenges.

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1. | Introduction

Artificial Intelligence is quickly becoming the most dominant and defining contemporary human innovation. Artificial intelligence (AI), a type of computer technology that aims to create machines or programs that have perceiving and synthesizing abilities akin to human intelligence, is already thoroughly implemented in the manufacturing, transportation, healthcare, and financial sectors. More recently, through the introduction of new deep-learning models and user-friendly software, the arts have become part of this ever-growing list (Roose, 2022; Chatterjee, 2022). While not as advanced yet as the visual art category, the relationship between artificial intelligence and music has also seen major breakthroughs in the past year (Civit et al., 2022). AI music generators have emerged, such as Amper Music, AIVA, Soundful, and Soundraw, which not only allow users to generate songs based on their preferred genres, styles, and instruments, but are also able to copy the entire aesthetic of a specific artist (McFarland, 2023).

In their current state, these generators are not on the same level as text-to-image AI generators such as DALL-E 2, Deep Dream Generator, Artbreeder, and Midjourney, and thus AI generated songs are not fully ready yet for the mass creator market. However, this will likely soon change, as people with a more advanced understanding of how these AI generators work have already created successful ‘replica’ songs, with a recent and viral instance being ‘Heart on My Sleeve’ by ghostwriter977, a song created by AI meant to sound as if it was made by Canadian artists Drake and The Weeknd (Coscarelli, 2023). This instance has shaken up the music industry, as it was a somewhat serious attempt to recreate the authentic style and sound of the artists in question rather than the more common AI ‘meme’ songs that have already circulated (Di Placido, 2023). Moreover, the song Heart on My Sleeve was also published on major streaming services, to which Universal Music Group quickly responded with a ban across the various platforms, due to intellectual property concerns (Coscarelli, 2023; Snapes, 2023).

With recent examples such as this, concerns surrounding the ethics and legal issues of AI and music seem more relevant than ever. Not everyone in the arts seems to be satisfied with the

arrival of AI artwork generators. Artists, audiences, and researchers are concerned about the effects AI art will have on the authenticity of art itself (McCormack et al, 2019; Modugno, 2022; Lockhart, 2023; Naraharisetty 2022). In what feels like a brief period of time, the relationship between artificial intelligence and art seems to have grown exponentially. All the while, we should consider that we are still in the relatively early phases of AI's influence on society, thus, the opportunities and difficulties of this new technology will reveal themselves as they become more ingrained in our daily lives. Nevertheless, these AI developments give researchers the opportunity to describe, analyse, and speculate on the phenomenon in great detail.

Because of this growth in the use of artificial intelligence in music, I conducted previous research in the summer of 2022 entitled 'The Use of Artificial Intelligence in Hip-hop Music: Attitudes on Authenticity & Authorship' (2022). This bachelor's thesis focused on the use of AI in hip-hop music specifically, concerning authenticity and authorship from the perspective of hip-hop artists themselves through an ethnographic interview-based study. The study concluded that AI and hip-hop have potential, but at the same time, the technology may interfere with the cultural fundamentals of the genre. The interviewees also found it likely that in the future a subgenre of AI hip-hop will emerge, and this distinction could be helpful for the perception of authenticity.

For the present follow up study, rather than just taking hip-hop music into account, the discussion will be about sample-based music in general. However, with that comes a shift in scope, as this thesis solely focuses on the instrumental side of music, mostly leaving vocals and lyrics out of the picture. This thesis aims to compare sample-based music and AI generated music in order to highlight its fundamental similarities, while also shedding light on crucial differences. Sample-based music is based on collage work, as it recontextualizes sound, and this style of music has already made intersections with AI (Navas, 2014; Tracklib, 2023; Veekens, 2023). In fact, it could be argued that AI music generators themselves can be seen as automatic sample machines that pull from an immensely large data set. This study aims to bring attention to the AI developments in music, regarding the sample-based music scene for creators and listeners alike. Moreover, the thesis aims to contribute to the general discourse surrounding artificial intelligence and art.

Ultimately, this thesis aims to research whether AI technology, such as AI music generators or other AI tools, poses a threat to traditional sample-based music, based on notions of

authenticity and authorship. Starting off, a literature review will establish some groundwork on sampling in music, and AI music generators. Alongside this, some key theorists will be discussed, including will be Walter Benjamin, Roland Barthes, Jean Baudrillard, and Ilana Gershon for authenticity and Mark Katz, Lawrence Lessig, and Kenneth Goldsmith for authorship.

Next, the methodological framework for this thesis will be established. This will cover the concept of method triangulation, and the theoretical framework of a multimodal 'musical' discourse analysis and a qualitative 'comparative' content analysis.

The body of the thesis will start off with a historical breakdown of the evolution of sampling in music across various genres, such as experimental, hip-hop, ambient, EDM and pop. Afterwards, the cultural values, practices and implications of sampling culture will be analysed through the lens of media ideologies by Gershon. This will help in establishing what is considered (in)authentic within sampling culture. The next chapter will cover discussions about the authenticity and authorship of sample-based music, with the help of the aforementioned theorists. This will be followed up with a breakdown and analysis of current uses of AI in sample-based music, which will include two separate sections: AI as a creative tool to create sample-based music, and AI generators that take over the creative process of sample-based music.

With this narrative in mind, the discussion chapter will include a comparative content analysis between AI music generators and sample-based music, which includes notions of authenticity and authorship. The thesis will close with a conclusion summing up the results, highlighting the need for up-to-date regulations regarding AI, and suggesting possible directions of future research.

2. | Literature Review

For this thesis, a theoretical understanding of the notions of authenticity and authorship is essential. This literature review will cover these concepts, alongside relevant theorists, so that they can be applied throughout the various cases that will be discussed in the upcoming chapters. Moreover, this section will start with a brief introduction about sampling in music and up to date developments relating to artificial intelligence and the arts sector.

2.1 | Sampling in Music

Sampling in music refers to the practice of incorporating pre-existing sound recordings into a new composition. It involves reusing segments of audio, such as musical rhythms, melodies, or sound effects, which are often subjected to various creative manipulations like looping, layering, equalizing, repitching, chopping, time-stretching, or other remix techniques. The process of creating sample-based music typically involves loading these audio segments from sources like vinyl records, cassettes, VHS tapes, or any other form of media into a sampler or sequencer machine. This allows artists to harness and repurpose existing sounds to shape their own unique sonic creations (Rodgers, 2003; Navas¸ 2014). Through these electronic music instruments, the sound samples can then be played and rearranged via the aforementioned techniques, sometimes in combination with effect machines. In recent years, sample-based music-making has evolved towards the Digital Audio Workstation (DAW), which in turn means that many musical samples are now gathered online, via platforms such as YouTube and SoundCloud, or via dedicated sample packs available to download (Navas, 2014; Harkins, 2019).

Sampling in music started off in the experimental and avant-garde musical scenes, from which it spread over into a variety of subgenres that cross the boundaries of electronic and analogue music-making, including hip-hop, R&B, EDM, house and ambient, amongst others. With this dissemination and growth of sample-based genres, more subcultural traits emerged that linked these different genres together, such as the practice of crate-digging (Vályi, 2010; Rodgers, 2003). When applying a sampling technique to their musical repertoire, artists take sonic DNA from pre-existing work and adapt it to their own creative needs. Because of this inherent trait of sampling, ethical and legal cases of authorship and copyright have always been a focal point of sampling culture. According to Amanda Sewell, these discussions are so ingrained into sample-based music, that it heavily influences how the music is created in

some instances (Sewell, 2014). A more in-depth look at the history of sampling will be covered during the historical background section.

Why would artists incorporate samples in their music in the first place? Music artists sample for many reasons, including experimentation and DIY music producing, to pay tribute or homage to the source material, for new creative insights, remixing and repurposing of sounds, aesthetic enhancement, to gain popularity with the use of a certain sample or of course, simply because sampling has become a cultural staple in certain musical scenes (Rodgers, 2003; Schloss, 2004; Navas, 2014). Therefore, the reasons for sampling can vary greatly between artists and genres. Some artists may sample for multiple reasons simultaneously or for entirely different motivations not listed here.

As stated before, sampling in music originated from experimentation with these at-the-time new and innovative music machines. This spawned a DIY style of music making: whereas previously you needed an entire studio to produce a recording, now artists were able to create full songs from the comfort of their homes (Rodgers, 2003; Emmerson, 2016). Sampling in music also lends itself well to artists who may not have a strong theoretical and technical background in music instrumentation and production but have the ideas and visions—and now the method—to execute their creative desires. Sampling should not be seen as a traditional form of music-making, such as knowing how to compose on a piano. Rather it should be recognized for its distinction in music, in giving artists different approaches to create music, so that different kinds of people are able to push their music into existence (Vrana, 2011; Rodgers, 2003). With this new style of creation, comes a plethora of new techniques to warp a sample to your liking. Thus, samples can add depth, texture, and richness to a composition, complement the artist's vision and enhance the overall sound and atmosphere of a track. These techniques have allowed musicians to create unique sonic qualities that were previously impossible otherwise (Vrana, 2011 and Rodgers, 2003). Moreover, samples are frequently also incorporated in music to pay homage to the source material. Sampling allows them to incorporate recognizable elements into their own work and honour the musical heritage that has influenced them. Think for instance of the samurai movie skits present in the Wu-Tang Clan’s projects, which is a way for RZA to express indebtedness to that genre of film (McIntosh, 2020). Furthermore, sampling has become an integral part of certain genres and musical cultures, meaning that some artists simply will sample because it is frequently part of the music they enjoy creating (Schloss, 2004 & Rodgers, 2003). And lastly, it should be mentioned that sampling popular songs can bring in a

broader audience for the sample-based artist. Sampling older, famous recordings can deliver a sense of familiarity, recognition and nostalgia to listeners, and opens up the possibilities for cross-genre appeal, viral potential and collaborations with the sampled artists. However, sampling well-known songs also brings a risk, as when the sample is not legally cleared an artist is more likely to be sued for the use of copyright infringement. Nevertheless, sampling has the potential to generate more sales for the sample-based artists, and for the sampled artist alike (Schuster, et al, 2019).

2.2 | AI Music Generators

AI music generators are based on similar technology as text-to-visual AI art generators such as DALL-E or Midjourney, and primarily make use of a relatively recent innovation called Generative Adversarial Networks (GANs), a type of deep-learning AI. Machine learning (ML) refers to an AI's ability to self-learn through the help of algorithms, while deep learning (DL) is a subset within machine learning where the AI is programmed as an 'artificial neural network' to self-learn and adapt when massive data sets are present (Ertel, 2011).

Generative Adversarial Networks (GANs) are a type of deep learning AI that can generate media such as pictures, sounds, and sentences through the underlying distribution of data. GANs consist of two separate 'Artificial Neural Networks,' with one AI acting as the 'generator' and the other as the 'discriminator' (Brownlee, 2019). The generator aims to create and mimic the media input, and the discriminator ‘tells’ the generator whether it is doing a good job at creating indistinguishable new media based on the input media. As more data is put into the generator, it will learn to be more accurate because of the discriminator. Because of their intuitive nature, GANs have emerged as the most prominent and widely used AI approach in the field of artistic creation. This can be attributed to the dynamic interplay between the generator and discriminator, which mimics the progressive nature of human creativity. GANs have the ability to generate outputs that are both unpredictable and yet familiar, offering new possibilities for artistic expression and innovation (Brownlee, 2019).

The emergence of GANs has led to the increased development of user-accessible software such as DALL-E 2, Bing Image Creator, and Midjourney for visual art and Amper Music, AIVA, SoundRaw, and MuseNet for musical compositions. These programs, in combination with the millions of relevant data files that can be sourced online, have brought this new technology into the public sphere (McFarland, 2023).

For many, this technological leap came quite unexpectedly, as for years on end, public AI art generators were mainly seen as a novelty. However, now that these AI generators are here, and people have seen their short-term impact on the arts, many discussions highlight implications for the authenticity of art, as well as the necessity for improved policies surrounding authorship in the age of AI (McCormack et al, 2019; Modugno, 2022; Lockhart, 2023; Naraharisetty 2022).

2.3 | Authenticity

Questions and discussions surrounding the authenticity of artistic expressions are likely as old as art itself, as these topics naturally arise informally amongst creators, critics, and audiences. In academic literature, the notion of authenticity has also become a staple amongst philosophical, historical, and cultural theorists. While there are a large variety of theories that cover different angles of authenticity, a select few have been chosen for this study to assist with analysing the authenticity of the use of AI when creating sample-based beats. This includes work from Walter Benjamin, Roland Barthes, Jean Baudrillard, and Ilana Gershon.

To start with, a landmark and influential perspective on authenticity in art comes from Walter Benjamin's 1935 essay 'The Work of Art in the Age of Mechanical Reproduction'. In his work, Benjamin talks about the 'aura' that art carries with it. This concept of aura refers to the inherent historical and cultural presence that surrounds a work of art. For Benjamin, this 'presence in time and space' of an artwork is what encapsulates the unique and authentic qualities and essence of an artwork (Benjamin, 1935). Moreover, Benjamin wrote his essay at a time when reproductions and adaptations of artworks were beginning to take shape in mass quantities. Therefore, Benjamin states that our perception of aura is precisely what makes us able to distinguish the original artwork from any later replica. Ultimately, he believes that mass reproduction can lead to the 'flattening' of the work, meaning a loss of aura and thus authenticity (Benjamin, 1935).

However, it should be noted that Benjamin does not see this loss of aura through reproduction as an inherent threat in all cases. As he explains in his essay, these mechanical reproductions also help democratize art, making it more widely available and accessible to the masses (Benjamin, 1935). Nevertheless, if 'the presence of the original is the prerequisite to the concept of authenticity', then how authentic can AI artwork truly be (Benjamin, 1935)? And to that extent, the same train of thought can be drawn to the roots of sample-based music, as this style of creation is based on the foundations of recontextualizing existing art,

traditionally through mechanical means but nowadays also through digital methods. This dynamic between the concept of aura and how art evolves alongside technological advancements provides an intriguing topic of discussion.

Another interesting perspective on authenticity comes from Roland Barthes' 1967 essay ‘The Death of the Author’, which challenges the traditional notion of authorship by exploring the role of the reader in interpreting and assigning meaning to a work of art (Barthes, 1967). In his essay, Barthes argued that the author's intention and authority should not determine the singular interpretation of a text, or work of art, but rather, the reader's engagement and interpretation based on their cultural context should be emphasized (Barthes, 1967). With this perspective in mind, a much more open, reception-based reflection of art is created, which most certainly will be relevant to discussions surrounding sample-based music and AI. Sample-based music is often created through experimentation, to the point where even the artist themselves creates parts of the music by accident, through trial and error. This same thought can be extended to how AI-generated music is created—but more on this during the analysis.

Barthes' views on authenticity can be seen as contrasting with Benjamin's notion of aura to a certain extent. While Barthes questioned the singular meaning of art, attributed to the author, Benjamin's concept of aura emphasized this—by highlighting the importance of cultural and historical context—while also pointing out the emancipatory aspects of mechanical reproductions. Their views represent different approaches to authenticity, and this contrasting nature is precisely why these views will be useful for the analysis.

Following that, Jean Baudrillard’s *Simulacra and Simulation* (1981) will be used to link authenticity in artwork more concretely to technological advancements. According to Baudrillard, the concept of simulacra and simulation examines the nature of representation and the loss of the real in a ‘hypermediated society’. Simulacra refers to copies of existing work and signs that bear no reference to their original source, and thus blur the lines between the original and the copy. Simulation is the process of something becoming simulacra, the act of imitating or replicating. This simulating may lead to a loss of meaning, or at the very least, a loss of authenticity of the original. Baudrillard describes hyperreality as the condition in which the boundary between reality and simulation becomes blurred, and the simulated representations become more real than the reality they imitate (Baudrillard, 1994). Baudrillard’s idea of simulation may provide insights on the authenticity of sampling and AI-

generated music, where the distinction between the original and the simulated becomes increasingly blurred.

And lastly, the concept of media ideologies, from Gershon's *Media Ideologies: An Introduction* (2010) will be helpful in understanding the questions of authenticity surrounding sampling and AI-music generators. Media ideologies refer to the beliefs, values, and assumptions that shape the creation, distribution, and reception of media and technological innovations. They influence how we understand and interpret different mediums, and thus contribute to our understanding of authenticity within a certain topic (Gershon, 2010).

In the case of sampling in the age of AI, media ideologies play a role in determining what is considered authentic, as understanding the media ideologies within a specific field helps us determine the parameters of why something is considered (in)authentic. It can help us critically examine the cultural, social, and technological factors that shape our understanding of authenticity and thus protect or challenge traditional notions of authorship and creative agency.

2.4 | Authorship

Some of the previously mentioned theories overlap with the concept of authorship, such as Barthes essay 'The Death of the Author', as authenticity and authorship are frequently topics within the same debates. To elaborate on authorship, a handful of other theorists will be presented here. This includes work from Mark Katz, Lawrence Lessig, Kenneth Goldsmith, and Darren Hick. As in the case of authenticity, academic discussions surrounding the authorship of art have been around for decades, and are tied to ideas of creative ownership, originality, and copyright law. Note that while copyright will be an important factor in this thesis, it will mostly be explored for its cultural implications and how it shapes art and its creators, not for its specific legal purpose. Relevant for the topic of this paper is the relationship between notions of authorship and technological innovation, as sampling and AI are both tied to these discussions.

For this, the book by musicologist Mark Katz called *Capturing Sound: How Technology Has Changed Music* (2004) is a useful reference to better grasp this relationship. In this book, Katz explores the cultural impact of technological advancements on the creation, spread, and consumption of music throughout history (Katz, 2004). He examines these innovations, from the first record players, to electronic instruments, to Digital Audio Workstations, up to the influence of online contributions with the rise of the internet. He highlights how sound

technologies have allowed for new possibilities for preserving and manipulating sound, including the practice of sampling (Katz, 2004). More specifically, in Chapter 7, titled 'Music in 1s and 0s: The Art and Politics of Digital Sampling', Katz expresses his views on authorship in sample culture, in reference to a sample used by the influential hip-hop group Public Enemy. Here he both praises the artform for its creative liberty, but also displays concern as to where to draw the line when 'recontextualizing' art (Katz, 2004).

> Isn't Public Enemy's use of that sound an expression distinct from Trouble Funk's? And if so, does that make the Trouble Funk song the raw material of an idea (or even a wholly different idea) for Public Enemy? Could the same argument be made for mashups? That is, can "mere" recontextualization transfer authorship from the original artists to the masher?
>
> In other words, if all music can be thought of as raw material, is everything *fair use*? My point here is not to argue the legal issues of sampling— an area I have intentionally avoided, as I believe it overshadows so many interesting aspects of the practice. Rather, I raise the idea-expression dichotomy to demonstrate the radically transformative potential of digital sampling (Katz, 2004, p. 134).

Katz' argument, or rather questioning, displayed here proved to be highly relevant for the years to come, as more literature was released regarding authorship in an ever-evolving era of digital media. One such example is the immensely impactful work *Remix: Making Art and Commerce Thrive in the Hybrid Economy* (2008) by legal scholar and founder of *Creative Commons,* Lawrence Lessig. In *Remix,* Lessig examines the legal and cultural implications of remix culture during the rise of online media, and advocates for a more flexible approach to (U.S.) copyright law. His book focuses on the tensions between authorship, creativity, and the constraints that traditional copyright and trademark laws inherit (Lessig, 2008).

One example in the book is Lessig's suggestion to introduce 'Some Rights Reserved' as an alternative copyright legislation next to 'All Rights Reserved', which encourages the use of Creative Commons licenses. These licenses provide a middle ground between traditional copyright restrictions and the public domain, allowing artists to control the permissions of use for their artwork, while enabling independent artists to have greater control over their creations that use copyrighted material. Examples of these permissions include allowing for non-commercial use, derivative works, or sharing/commentating under certain conditions (Lessig, 2008). Since then, many of Lessig's ambitions for the non-profit organization Creative Commons have become a reality however, in practice, copyright still proves to be a difficult subject amongst creators, especially amongst sample-based music artists.

Nevertheless, Lessig's insights will be helpful when exploring this topic in greater detail during the analysis.

William Patry's *Moral Panics and the Copyright Wars* (2009) dives further into the complexities of authorship and copyright, also suggesting a more balanced approach is needed in the digital era. Likewise, a manifesto released by David Shields called *Reality Hunger: A Manifesto* (2010) challenges traditional notions of authorship and originality, advocating for a more fragmented and collage-like approach to art creation. His ideas resonate with the practice of sampling, as he celebrates the transformative power of borrowing and recontextualizing existing material (Patry, 2009; Shields, 2010).

This narrative and argument seem consistent among many academics over the years, and some of these discussions accumulate into another important publication, *Uncreative Writing* (2011) by Kenneth Goldsmith. Goldsmith, who founded the online repository of avant-garde material UbuWeb in 1996, goes into detail about creativity and authorship in the digital age. In his work, he argues that art and literature have been subject to appropriation, copying, reusing, repurposing, reframing, remixing, and sampling for decades, and to a certain extent, much longer (Goldsmith, 2011).

In the context of AI-generated music and sampling, Goldsmith's ideas can provide insights into the ways in which artists can engage with pre-existing material, challenge notions of authorship, and explore the creative possibilities of remixing and repurposing. His description of the digital remix culture works even better today than it did back in 2011, as the growth of social media platforms has taken this practice to new territory (Goldsmith, 2011).

An interesting follow up to Goldsmith's work is the book *Artistic License* (2017) by Darren Hudson Hick. While Goldsmith's approach to authorship is grounded in the cultural implications that rose with the prominence of digital media, Hick takes it back to ontological philosophical implications of authorship. His book revolves around the question 'is it wrong to copy the work of another artist?' and highlights various ethical issues when it comes to recontextualizing art (Hick, 2017). Hick argues that when it comes to art, an artist should be allowed to copy and reframe an existing artwork if it is necessary to express their creative ideas. Thus, he deems this act 'not a wrongful violation' of the author's rights and references, the creative liberty necessary behind appropriation, collage, and sampling art (Hick, 2017).

Up until this point, many of these texts have discussed the notion of authorship during the rise of online media. However, since AI programs have only recently seen a surge in user

accessibility, these authors were not yet able to reflect on this new, complex layer of the conversation. Even so, many of these theories will still prove relevant when it comes to AI developments, though it is likely that perceptions of authorship and copyright will become increasingly complicated as AI and art creation continue to intertwine. In order to grasp these up-to-date discussions on authorship in the age of AI, several recent articles will be used throughout the paper that cover this relationship more precisely, shedding light on the evolving landscape of creative authorship and originality in the digital era.

3. | Methodology

3.1 | Triangulation

In order to bring these different topics together in a cohesive study, triangulation will be applied. Triangulation in qualitative research refers to when multiple methods or data sources are used to better understand the central phenomena of the research (Patton, 1999; Carter, et al. 2014). Therefore, triangulation as a research strategy can contribute to the validity of the research, as dynamic phenomena can benefit from being analysed from different perspectives (Carter et al. 2014). A critical contributor to the conceptualization of triangulation is Norman Denzin, who describes several forms of triangulation: data, theory, investigator, and method triangulation (Denzin, 1978). For this research, data, theory, and method triangulation will be applied.

Firstly, data triangulation refers to the use of multiple data sources to illustrate different perspectives—in the case of this research—of sample-based music and AI generated music. Amongst this variety of data will be articles and research, as well as references to recordings and musical software, like AI enhanced plug-ins. In some instances, fragments of my interview with Dutch hip-hop artists McGyver, Ntan, and Drees in 2022 will also be highlighted to better support the argument. Secondly, when applying theory triangulation to a study, multiple theoretical angles will be used in the same research. In this case, two main cultural topics about the philosophy of art will be cover: authenticity and authorship. Some of the aforenoted theorists will be placed in dialogue with one another, and their theories applied to the topic at hand. Namely, Benjamin, Barthes, Baudrillard, Lessig, and Goldsmith will be used for the analysis. And thirdly, method triangulation involves the use of multiple research methods. Contrary to my previous research, which was a multi-method study primarily highlighting the perspectives of artists themselves through ethnographic interview-based research, the methods for this research will be more theoretical.

Starting off, a historical breakdown of the evolution of sample-based music will be provided. This will be followed up with a chapter about sampling culture, in which the media ideologies that shape the values, practices, and implications will be identified. Furthermore, the research will make use of the multimodal discourse analysis and qualitative comparative content analysis methods.

3.2 | Multimodal ‘Musical’ Discourse Analysis

A multimodal discourse analysis (MDA) is a method rooted in the critical discourse analysis (CDA) method, which is well presented in Jan Blommaert’s work *Discourse* (2009), and uses the methodological breakdown of Norman Fairclough. Discourse analysis in general is a branch of linguistics that studies language in relation to its social context, in order to understand how it is used in practice (Blommaert, 2009). According to Fairclough, CDA ‘brings the critical tradition of social analysis into language studies and contributes to critical social analysis a particular focus on discourse and on relations between discourse and other social elements (power relations, ideologies, institutions, social identities, and so forth)’ (Fairclough, 2013).

For the purposes of this research, a multimodal discourse analysis will be applied when researching the complexities of AI-generated sample-based music and authenticity, authorship, and reception. When applying a multimodal discourse analysis to research, multiple modes of communication, such as text, colour, images, and audio, can be used as data for the analysis. Gunther Kress highlights the benefits of this type of methodology in his work *Multimodality: A social semiotic approach to contemporary communication* (2010), stating that ‘looking at multiple modes at once elicits a more nuanced and complex analysis, especially when looking at online environments’ (Kress, 2010).

Even more specifically, this research can also be considered part of ‘musical discourse analysis’, which is a concept further explained in Evgeniya Aleshinskaya’s work titled ‘Key Components of Musical Discourse Analysis’ (2013). Essentially, this method applies the foundations of CDA and MDA and opens them up for specified research about music. Aleshinskava explains: ‘Musical discourse in all its diversity opens up infinite possibilities for multidimensional analysis combining social, linguistic, psychological, visual, gestural, ritual, technical, historical, and musicological aspects’ (Aleshinskava, 2013). For this paper, the linguistic, social, ritual, technical, historical, and musicological aspects of the topic at hand will be analysed.

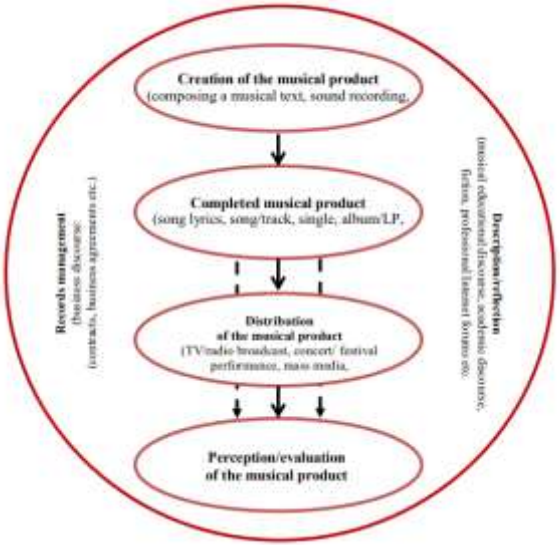

Figure 1: A visual representation of the segments of musical discourse (Aleshinskava, 2013).

3.3 | Qualitative Comparative Content Analysis

Lastly, a qualitative comparative content analysis is a method of comparing two cases against each other in order to identify change, similarities, and differences amongst them. Ultimately, by comparing the fundamentals of these two cases, which in this case are the foundations of sample-based music and AI-generated music, a more nuanced understanding of these topics can be found (Baptist and Befani, 2015). This method will mainly be applied to the discussion section of this thesis.

4. | History and Evolution of Sampling in Music

4.1 | Early Avant-garde Scene and Experimentations in Popular Music (1940's-1970's)

The roots of sampling in music can be traced back decades before its inception in popular culture. While there are prior examples of artists experimenting with pre-recorded sounds, no other example is as clearly related to sampling as the music of Pierre Schaeffer. During the early 1940s, Schaeffer developed a style of music that was cutting-edge, breaking traditional norms of musical composition: musique concrète. Musique concrète uses audio signal processing and tape music techniques in order to create a composition from pre-recorded sounds; the results are best described as sound collage, avant-garde, experimental, (early) ambient, and noise music (Holmes, 2012; Harkins, 2019). This quote from Schaeffer illustrates this connection to early sampling and the avant-garde:

> When I proposed the term 'musique concrète,' I intended … to point out an opposition with the way musical work usually goes. Instead of notating musical ideas on paper with the symbols of solfege and entrusting their realization to well-known instruments, the question was to collect concrete sounds, wherever they came from, and to abstract the musical values they were potentially containing (de Reydellet, 1996).

In the years that followed, these early sampling techniques, primarily relying on manipulating tape, began to play a prominent role amongst experimental and electronic composers such as John Cage and Karlheinz Stockhausen. Moreover, sampling also started to have an influence on popular music, an example being the background tape loops on 'Tomorrow Never Knows' (1966) by the Beatles, creating a psychedelic ambience. Around this time, the first sampling instruments were also developed, namely the electro-mechanical keyboards, the Chamberlin and its successor, the Mellotron, as well as the inception of the first drum machines (Awde, 2008). Other notable artists that brought sampling to the foreground include Pink Floyd, who included snippets of dialogue from interviews and recordings on 'The Dark Side of the Moon' (1973); Stevie Wonder, who featured a sample of a street noise recording on 'Innervisions' (1973); and the incredibly influential work of Brian Eno, who utilized tape loops, repetitive patterns, and layered recordings to create atmospheric and textural compositions for 'Ambient: Music for Airports' (1978) (Holmes, 2012; Miller, 2021). The Japanese electronics group Yellow Magic Orchestra should also be recognized, as in particular their fifth studio album 'Technodelic' (1981) was one of the first to use a large variety of samples across the entire project (Cox, 2014). These early influences and uses of sampling in music already displayed a diverse interest among different artists and genres—

namely pop, rock, funk, ambient, and synth-pop—who noticed and made use of the creative opportunities early on.

4.2 | Breakthrough of Hip-hop Music and Flourishing of Sampling in Other Genres (1970's-2000)

This aforementioned list is, of course, missing perhaps the genre most commonly associated with sampling: hip-hop. The rise of hip-hop music in popular culture is often attributed to the hit record 'Rapper's Delight' (1979) by the Sugarhill Gang. Although the genre was not explicitly referred to as hip-hop at the time, the term "rapping" had already made its presence felt. 'Rapper's Delight' brought hip-hop to the mainstream, and soon other artists developed global reach, such as Grandmaster Flash and Melle Mel (Kugelberg, 2007). However, the roots of hip-hop music emerged prior to its mainstream appeal, originating in the United States, specifically in the Bronx, New York City. It spawned predominantly in New York's African American community, where during block parties pioneers such as DJ Kool Herc, Grandmaster Flash, and Afrika Bambaataa laid the instrumental groundwork for hip-hop music (Chang, 2005). DJ Kool Herc is often credited as the 'founder' of hip-hop music for his innovative technique of simultaneously operating two record players. This technique allowed for the isolation of drum breaks from funk, soul, and disco records, which could then be extended, merged with other sounds, or mixed into different drum breaks (Gonzales, 2017). The block parties hosted by DJ Kool Herc and other DJs in the Bronx served as a platform for the emergence of breakdancing and rapping as integral parts of the broader hip-hop culture (Kugelberg, 2007).

The early hip-hop instrumentals of the 80s saw a clear style of sampling, where drum breaks were layered with sound effects and melodies—alongside some turntablism scratches—so that MCs could rap over them. While these early beats became incredibly influential, they did lack some texture, partly because drum machines and samplers at the time were already being pushed to their technical limitations. During the early 90's, advanced samplers, such as the Akai MPC60, E-mu SP-1200, and Roland TR-808, upgraded a beatmaker's production capabilities and significantly increased the DIY workflow of sampling, as these machines in combination with mixing panels, effect pedals, and audio equipment could effectively create a budget home studio for beginning artists (Schloss, 2004). These new machines also allowed for more complex sampling techniques such as chopping, pitching, time-stretching, and layering. Influential producers such as Q-Tip (A Tribe Called Quest), DJ Premier (Gang

Starr), Pete Rock (and C.L. Smooth), and Large Professor (Main Source) sampled classic jazz recordings, smoothly creating a fusion of hip-hop and jazz, which was often added onto with live instrumentation. Dr. Dre (N.W.A.), Daz Dillinger (Tha Dogg Pound), and Johnny J. (2Pac), amongst other artists, pushed forward the G-Funk style, collaged from funk and soul samples. While beatmakers such as RZA (Wu-Tang Clan), Havoc (Mobb Deep), and DJ Muggs (Cypress Hill) mastered the art of morphing and transposing a sample to create gritty street anthems (Schloss, 2014; Söderman & Folkestad, 2004),

Throughout the 1990s, sampling also had a significant influence on the development of other genres, such as R&B and various electronic styles of music such as house, techno, dance, ambient, and noise. Artists like Timbaland, Jeff Mills, Derrick May, Frankie Knuckles, Inner City, Aphex Twin, and The Orb embraced sampling as a means of sculpting intricate rhythms, manipulating vocal snippets to enhance the hypnotic nature or dancefloor-friendliness of their tracks (Reynolds, 1999; Brewster & Broughton, 2006; Collins, Schedel, & Wilson, 2013). Moreover, sampling continued to be a crucial element in the experimental music scenes, as it shaped subgenres that were entirely built on sampling, like plunderphonics, trip-hop, and sampledelia, and spawned a rich underground hip-hop scene that was often experimental in nature with production from EL-P, MF DOOM, Dan the Automator, and DJ Shadow. The latter, DJ Shadow, created one of the earlier instrumental hip-hop albums, ‘Endtroducing.....’ (1996), which is now regarded as the first album created entirely from samples (Masterclass Staff, 2022; Sullivan, 2012).

4.3 | Becoming a Pop Cultural Staple in the Digital Era (2000-present)

In the 2000s, artists such as Daft Punk, Gorillaz, and Kanye West brought sampling techniques to new audiences in mainstream music across various genres, making sampling a central part of popular music (Szatan 2021). Furthermore, with the inception of digital audio workstations such as Logic, Cubase, Ableton, and FL Studio, sampling became even more accessible as it was now connected with the digital realm, allowing artists to sample obscure sounds from across the web (Harkins, 2019). At the same time, more advanced sampling equipment was released, such as the Roland SP-808, Boss SP-303, or MPC2000 (Schloss, 2004). With that, instrumental hip-hop gained increased attention and garnered a cult following. Notable contributors to the instrumental side of hip-hop include Madlib, Nujabes, and J Dilla, who would later be regarded as the forefathers of lo-fi hip-hop (Yoder, 2017). Detroit producer J Dilla, in particular, is highly esteemed among fellow hip-hop beat-makers

and fans for his unique drumming style. Dilla's decision to disable the quantization feature on his MPC 3000 drum machine resulted in drums played with more swing and natural 'human-like' rhythmic variations than usual (Charnas, 2022).

From the 2010s until today, sampling continues to diversify into any genre imaginable, and it has become increasingly intertwined with digital and online media. Sampling has become a true staple of popular music all around the globe, and throughout the development of sample-based music, many subcultural values have come and gone. This will lead into the next section about the cultural values and implications of sampling, as well as notions of authenticity and authorship across the years. Finally, this will lead into the discussion surrounding the use of AI technology when creating sampling.

5. | Media Ideologies: Values, Implications and Practices of Sampling Culture

During the development of sample-based music, a subcultural scene emerged of sample DJs, composers, producers, and beatmakers, alongside a large non-participatory audience of sample-based music lovers. This section will cover elements of sampling culture, looking at the values, implications, and practices of the scene, which can be understood through the lens of media ideologies (Gershon, 2010). When these cultural elements have been identified, they will be linked to relevant cases of authenticity and authorship regarding sampling. Note that in practice there will be more variations in media ideologies amongst the different sampling subgenres than are presented here, but that is beyond the scope of this thesis.

According to Gershon, media ideologies refer to the dominant beliefs, values, and assumptions that shape the production, distribution, and reception of media content within a particular culture or society. These ideologies influence how media is created, consumed, and understood by individuals and communities. When examining sampling culture, we can explore how media ideologies intersect with the cultural practices, values, and implications of sampling (Gershon, 2010). Understanding these ideologies will help in understanding what shapes the authenticity of sample-based music. Sampling practices include acts such as ‘crate digging’, ‘sample flipping’, ‘sample clearing’, and ‘sample snitching’, which come with their own cultural values and implications. These follow in chronological order of the pre-production, creation, release, and post-release stages.

5.1 | Crate Digging

The act of crate digging originates as far back as the early 1970s, when it emerged with the rise of hip-hop, but nowadays it can be seen as part of the broader ‘vinyl community’ worldwide. Crate digging is derived from the phrase ‘digging in the crates’, and in the context of sampling, it refers to the act of searching for rare and obscure records to sample at flea markets, second-hand record stores, or personal collections (Maguire, 2021). It reflects a cultural value of musical exploration and the desire to unearth forgotten or overlooked gems, while also displaying selection skills as a beatmaker. A sampling artist's crate digging goals often align with their musical influence; think, for instance, of Nujabes’ acquired sampling taste of spiritual and modal jazz recordings or MF DOOM’s adoration for old cartoon samples (Allah, 2020). On the other hand, some artists may dig up anything they can find and try to work with that, relying more on an experimental workflow, but often it is a combination

of these approaches that contributes to a producer's sampling selection (Vályi, 2010). Ahmed et al., who conducted an ethnographic study about crate digging in 2012, stated:

> This is very much an exploratory practice, as the value of a record can lie in anything from a particular vocal sample or a small section of a melody, to a specific drum break or sound. It is also a practice that is strongly associated with the vinyl rather than the digital format, as many old and obscure records are simply not available to download (Ahmed et al, 2012).

In actuality, however, crate digging has most certainly extended to other formats than vinyl, as many producers also search for rare tapes and CDs, as not everything has been pressed on record. Moreover, with the rise of the internet and social media, crate digging has also found its way to the online space. Online communities and forums dedicated to sampling and crate digging provide spaces for crate diggers to connect, share knowledge, and exchange sample sources (Harkins, 2019). The internet also makes it possible to discover a vast amount of rare and otherwise inaccessible recordings—through a practice that I informally refer to as 'web digging'—via platforms such as YouTube, Spotify, or Soundcloud, online sample libraries such as Tracklib or WhoSampled, or old physical formats that are available for purchase via online record shops, auction sites, or via the world's largest online music database and market, Discogs (Harkins, 2019; Headliners, 2021). Attitudes regarding the authenticity of online or digitally selected samples differ amongst the sampling community. In my previous research, I interviewed hip-hop artists McGyver, Ntan, and Drees, who are influential contributors to the underground Dutch scene. I asked them about this division amongst sample-based producers about digital sampling:

> Boaz: What is authenticity in hip hop? A lot of people look at it differently.
>
> Ntan: Never let anyone one else tell you what to do and how to make the art you want to make. Everyone has their own way. I think that's it mostly. Do you understand that? You can't tell everyone to do this, do that. But we also know people who say that you have to make sampled beats via vinyl, for example. And I'll tell you, we have made the sickest beats just with YouTube samples. Just pulled off my phone or just sampled from the television. There is no fixed formula for that, I think in any case. Yes, you know.
>
> Boaz: -laughing- Right, Drees and I had just talked about the fact that in this day and age you have the opportunity to sample from vinyl and CDs and cassettes and on the internet, then you take those chances to have as much 'sounds reach' as possible, so to speak?
>
> Ntan: Why wouldn't you? Why would you limit yourself only to very difficult find rare vinyl? But we know about those guys. They say to you, if you don't, then you can't call yourself a hip hop producer or I do I know what. Get the fuck out of here bro.

This example shows that within the sampling community, attitudes about the authenticity of their own craft are not always the same, as even genres built on technological innovation can react negatively to newer inventions.

5.2 | Sample Flipping

After sample-based artists have gone through their collection of sampleable audio and made a selection to sample for a new composition, they enter the creation stage. The process of actually inserting a sample into a song through intertextuality and sound collage is often referred to as ‘sample flipping’ (Hall, 2018). As explained previously, this involves techniques such as looping, chopping, layering and, pitch-shifting. While different producers will prefer different techniques, there is generally no ‘inauthentic’ way to flip a sample within the sampling community (Rodgers, 2003; Navas¸ 2014). People unfamiliar with sampling and its process may be more likely to look down on a looped sample-flip of a well-known song, as that could be regarded as blatant creative theft. Moreover, an unspoken rule amongst the sampling community is to not sample recently released music, as that will take the spotlight away from a song in its prime and is viewed as disrespectful to the original artist, and thus inauthentic (Quan¸ 2023).

5.3 | Sample Clearing

Sampling recordings of other artists is frequently met with complications surrounding copyright, which is why some sample-based producers opt for royalty-free sample packs or copyright-free music to sample. In reality, however, most sample-based producers use copyrighted audio material for their recordings, and before releasing their track publicly, the process of sample clearing is in order (Navas, 2014; Schloss, 2004). Sample clearance is the process of lawfully acquiring the rights and license to incorporate a sample from an existing recording into your own music. This involves obtaining two distinct licenses: one for the master recording, typically held by a label, and another for the underlying composition, overseen by the publisher or songwriter. These licenses, both vital and separate, ensure compliance with copyright regulations and secure permission for usage (Brewster, 2021). Sample clearance can be a tedious and expensive procedure, as clearing a sample often costs between $2000-$10000 on top of a percentage that goes to royalties, which can stack up significantly if you have an album full of samples. Hence, sample clearance can be extremely difficult or downright impossible for artists, especially those who wish to stay independent, are starting out, or are non-commercial (Fowlkes, 2020).

While there are no large-scale statistics on this, it is likely that the vast majority of sample-based music released has not been sample cleared. Some artists aim to morph a sample to such a degree that the original is barely recognizable, and others just take the risk of releasing their music in hopes that they will not get sued. There have been massive lawsuits caused by sampling, but for most recordings out there, it is unlikely that they will be sued. Unless the song has become extremely popular and is earning enough money to warrant the expenses that come with a lawsuit. In recent years, some progress has been made for affordable sample clearing through sites like Tracklib, which partner up with labels, publishers, and artists to create a large library of $50 sampleable recordings. While many in the sampling community see this as a step in the right direction, this concept will inevitably leave millions of samples unable to be cleared. Moreover, picking from a pre-selected library of sampleable recordings does not align well with the crate digging ambitions sampling is known for (Brewster, 2021).

5.4 | Sample Snitching

As mentioned, a majority of sample-based music that has been released publicly has likely never been legally cleared, or at least not fully. This trend has always been a part of sampling in music, even major labels are often unable to clear every sample of a recording, in part because many beatmakers such as Madlib often forgot what they sampled during the creative process (Sorcinelli, 2018). Because of this, many sample-based artists frowned upon the practice of revealing a sample of a recording, traditionally on the back of bootleg mixtapes or written about in magazines or online blogs and forums. This act is commonly referred to as ‘sample snitching’. Most alleged sample snitching just occurs because fellow producers or fans are naturally curious where a sample came from—driven by intertextual referencing and the desire to trace the lineage of musical ideas—and are proud to share their discovery. At the same time, there have been instances where people snitched uncleared samples to the copyright owners. Nowadays, sample snitching can be seen as a common practice, as people in the sampling community do their best to find the samples used in their favourite songs and catalogue them on sites like WhoSampled. While this could be seen as a negative influence, it could actually be argued that this sharing of samples online is a good thing for many artists. Content creators on platforms like YouTube and Instagram have created dedicated ‘sample breakdown/deconstructed’ videos for iconic sample-based music, reaching a newer generation of listeners who are often in awe of the creativity it took to flip the sample or the skill and dedication it took to discover it. Artists themselves have even embraced this, such as producer Havoc of Mobb Deep. He himself forgot the sample he used for the instrumental of

‘Hell on Earth’ (1996), and after 26 years, it was recently discovered (via AI technology). He posted the sample breakdown video on his social media with the caption ‘Put some respek on my name, ya heard’ (Havoc, 2022).

Thus, when viewing sampling culture through the framework of media ideologies, the cultural values, implications, and practices of sampling within music become clear. These cultural elements influence how sampling is understood, valued, created, and discussed, as well as the ways in which artists and audiences navigate the creative and legal landscapes of sampling within contemporary media culture. By examining, critiquing, and comparing these media ideologies, we can gain a deeper understanding of the complex dynamics and debates surrounding sampling, such as its relationship to authenticity and authorship.

6. | Authenticity and Authorship in Sampling

Discussions about authenticity and authorship have surrounded sample-based music ever since its inception, as it is built on repurposing existing material. These discussions have come from inside the sampling community, which was just discussed through the understanding of its media ideologies. And they have also come from outside the community, which includes essays by critics or general discourse by public audiences or other artists (Vaidhyanathan, 2001; Eckhause, 2019). In this chapter, the discourse about authenticity and authorship of sampling will be highlighted and analysed, with the assistance of the previously mentioned theorists and literature. This outside perspective of authenticity and authorship on sampling will be discussed, along with some references back to the ideologies that shape the authenticity of sample-based artists themselves.

6. 1 | Benjamin, Barthes and Baudrillard

As explained, sampling started out in the experimental and avantgarde scene all the way back in the 1940s (and likely even earlier than that) with musique concrete. It is difficult to find reliable sources about how people reacted to sampling around this time since back then it was an innovative, yet extremely niche practice (Holmes, 2012). Because of that, a first step would be to link up sampling with the concept of authenticity presented by Walter Benjamin, as his work was written at a similar time. In 'The Work of Art in the Age of Mechanical Reproduction' (1935), Benjamin paints a picture of the shift happening to the world of art due to mechanical interventions. When interpreting Benjamin's notion of aura in the context of early sampling, it is likely that Benjamin would not have critiqued the practice much, as back then the sample source mainly came from producing obscure sonic soundscapes rather than sampling previously existing art. Therefore, it could be argued that these early days of avantgarde sampling sparked one of the first artforms that spawned and relied on new technologies, which created a niche cultural following. Through avantgarde sampling, such as musique concrète, an authentic aura emerges of a new original artwork, based on the recontextualization of pre-recorded sounds (Benjamin, 1935).

The conversation became more interesting after sampling broke through the mainstream, as popular artists applied sampling techniques throughout the 60s, leading up to its massive break-through with hip-hop culture in the 70s and 80s. This exposure and rise of sampling in popular music led to public debates: On one hand, some believed that true authenticity in music could only be achieved through creating entirely original compositions without

borrowing or referencing existing works. Thus, sampling was seen as a shortcut or a form of artistic laziness, and in some cases as creative theft and appropriation (Vaidhyanathan, 2001). On the other hand, some voiced their praise, highlighting how sampling machines and techniques were revolutionizing the way artists could create and manipulate soundscapes. Take, for instance, a quote from influential music writer Greg Tate, who described hip-hop music in 1998 as 'the only avant-garde around, still delivering the shock of the new, due to its effortless status quo-breaking nature' (Chang, 2005).

Another documented advocate for sampling culture is composer John Oswald, who wrote his essay 'Plunderphonics, or Audio Piracy as a Compositional Prerogative' in 1985. The essay explores the concept of plunderphonics, which Oswald defines as the use of existing audio recordings in a new composition without obtaining permission or clearance. Subsequently, the name of the aforementioned sampling subgenre spawned from this text. In his essay, Oswald argues that plunderphonics is a legitimate form of artistic expression and challenges traditional notions of authenticity, authorship, and intellectual property. He states:

> A sampler, in essence a recording, transforming instrument, is simultaneously a documenting device and a *creative device*, in effect reducing a distinction manifested by copyright.
>
> After decades of being the passive recipients of music in packages, *listeners* now have the means to assemble their own choices, to separate pleasures from the filler. They are dubbing a variety of sounds from around the world, or at least from the breadth of their record collections, making compilations of a diversity unavailable from the music industry, with its circumscribed stables of artists, and an ever more pervasive policy of only supplying the common denominator (Oswald, 1985).

This view can be compared to Roland Barthes' in 'The Death of the Author' (1967). Barthes made clear in his essay that the author's intention does not dictate the singular meaning of a medium, in turn questioning their authority on the authenticity of the artwork. Instead, audiences themselves can contribute to the meaning of an artwork through their own subjective interpretations (Barthes, 1967). In this sense, sampling can be seen as an inauthentic artform—that relies on infringing authorship rights—by some audiences, while a different audience may see it as an authentic artform that explores innovative 'creative devices' to break traditional notions of what it means to be an author. Hence, Oswald references the power that music listeners gain by sampling. Through sampling techniques, a passive listener can become an active creator by morphing, distorting, and bending sound compositions to their own creative will (Oswald, 1985).

Furthermore, now that sampling has broken through to the masses and has expanded to recontextualizing previously released music, some new perspectives can be gained from Walter Benjamin's thoughts about reproduction in art. Benjamin's traditional notion of aura does conflict with the act of sampling music of a different artist. This is likely to contribute to a loss of aura, as the historical and cultural values of the sampled composition get blurred and potentially lost through the sampling process (Benjamin, 1935). However, when interpreting Benjamin's essay, it could be argued that the sampled-based recording shapes a new authentic aura of the art, made up of several auras of the past. Chapman, in his research 'The Elusive Allure of "Aura": Sample-based Music and Benjamin's Practice of Quotation' (2011) refers to this as 're-authenticating' the notion of aura and states that 'sample-based composers collect aural quotations' (Chapman, 2011). Moreover, with the rise of more affordable samplers and, in turn, the DIY value of creating sample-based music, Benjamin's vision about the opportunities of mechanical reproduction proved correct. Samplers and later DAWs have significantly contributed to the emancipation and democratization of music-making. Take, for instance, the influential 'bedroom producer' wave of musicians. Some may argue that this has degraded the quality of music, but it undeniably has made music more accessible to people of all backgrounds (Walzer, 2016).

On the topic of authenticity, it is also interesting to compare sample-based music to Jean Baudrillard's ideas in *Simulacra and Simulation* (1994). Again, simulacra and simulation explore the loss of authenticity and the blurring of reality in a 'hypermediated society'. Simulacra are copies or signs that no longer have a connection to their original source, while simulation refers to the process of imitating or replicating, leading to the proliferation of these disconnected copies (Baudrillard, 1994). Can the act of sampling be considered simulating? And is the end result a simulacrum? Following Baudrillard's thought, it is clear that acts such as sampling in music contribute towards the coming of this 'hypermediated society', but it can be argued that sampling itself does not lead to 'simulacra'. As discussed, sampling certainly blurs different sources and recontextualizes them into something new, but in most cases, these sample sources are still very clear. This especially holds true for cleared samples that are referenced, but also for the abundance of uncleared samples that are now visible on platforms such as WhoSampled. However, it could be argued that samples that are flipped to such a degree to the point where its original source is unrecognizable can be considered a simulacrum (Baudrillard, 1994). It will be interesting to see how Baudrillard's concepts can be applied when taking artificial intelligence into consideration.

6.2 | Lessig and Goldsmith

As previously mentioned, sampling is often regarded as appropriation, which is a topic brought up in discussions of authorship (Dillon, 2006). It should be made clear that under the unconditional definition of (cultural) appropriation as the act of taking something from others and making that your own, sampling should by all means be seen as appropriation art. However, this does not mean sample-based artists appropriate with malicious intent; in fact, most artists would argue that they sample to honour their influences with their personalized twist (Eckhause, 2019). Melissa Eckhause dives into the topic of authorship and copyright regarding digital sampling and appropriation art in her article 'Digital Sampling v. Appropriation Art: Why Is One Stealing and the Other Fair Use: A Proposal for a Code of Best Practices in Fair Use for Digital Music Sampling' from 2019. She compares sampling in music to visual appropriation art such as collage work and pop art and questions why many visual artists can get away with claiming 'fair use' legislation for their work, while sampling in music is regarded as copyright infringement (Eckhause, 2019).

From the viewpoint of sample-based artists, authorship is often regarded as a collaborative process that involves both the legacy of the original creators and the samplers themselves. They argue that by sampling, they are contributing their own creative vision, adding new layers of meaning, and expanding the cultural significance of the sampled material. This shift in perception has been influenced by the rise of remix culture, where the idea of creative reuse and transformation is celebrated. This argumentation is present in the works of Lawrence Lessig and Kenneth Goldsmith. Lessig is an influential advocate for reworking copyright legislation in order to adapt to the modern digital climate. For sampling, a system similar to Tracklib's cheaper flat-rate sample clearance options would be beneficial, but applied to all copyrighted recordings instead of only a small selection, perhaps only taken down if requested by the original artist themselves (Goink, 2021). In fact, sample clearance itself does not avoid controversy. Logically speaking, it would make sense that if a sample gets legally cleared, a large portion of the royalties owed would go to the original artist of the sampled composition. However, in reality, this is not always the case. When a sample has been cleared, a percentage of the revenue from the sample-based recording goes to the owner of the master and the publisher, but this does not always include the artist themselves.

Questlove of hip-hop band The Roots gave a concrete example of such an instance on his social media. One of Daft Punk's most popular hits is 'One More Time' (2000), which

samples a disco recording titled ‘More Spell on You’ (1979) by Eddie Johns. Questlove explains that even though the sample within ‘One More Time’ has been cleared, the artist Eddie Johns has never seen a penny in royalties come his way; instead, all the money went to the publishing company GM Musipro. It commonly occurs that publishing companies wish to purchase music labels with a vast catalogue when they are experiencing financial instability in order to build up their copyright library (Goink, 2021). Music industry attorney Erin Jacobson estimated that Johns could be owed a sum ‘in the high six-to-seven-figure range’ based on streams alone (Brown, 2021). Other famous examples of artists never getting any royalties include Clyde Stubblefield’s ‘Funky Drummer Break’ (1970) and Gregory Coleman’s ‘Amen Break’ (1969). Coleman passed away homeless in 2006, even though the Amen Break is the most sampled drum loop in music history (Goink, 2021; Brown, 2020). Instances like this show how traditional claims of authorship, such as copyright, even fail to uphold artistic ownership in cases of legally cleared sample-based recordings.

From diverse viewpoints and instances that challenge conventional notions of authorship, it becomes apparent that art that infringes upon traditional values can still be seen as a form of creative expression. Goldsmith even states that when art is reframed into a new piece of art, it has the potential to be just as creative as a ‘fully original’ piece, emphasizing the creative depth and dynamics involved in the selection and reconfiguration of art, such as the practice of sampling (Goldsmith, 2011). Nevertheless, this does not take away the ethical and legal implications of sampling. It is clear that copyright remains outdated in a world of digital media, and it needs to be adapted so that artists who sample and get sampled both thrive. Copyright is already a step behind in modern times, but with the intervention of AI, these questions regarding authenticity and authorship become even more complex.

7. | Uses of AI in Sample-based Music

In recent years, AI has made a significant impact on the creation process of music production. In this chapter, two different types of uses of AI for sample-based music will be discussed. The first will discuss AI that has the potential to enhance the creative workflow, sort of like a 'musical tool', when creating sample-based music. The second will discuss AI programs that have the potential to take over the entire creative process, essentially becoming a (co)author of the sample-based composition. This, of course, includes the previously mentioned AI music generators. Throughout this section, the effects of these AI developments will be compared to the media ideologies of sampling culture discussed earlier. Afterwards, a comparison and analysis will be made between the notions of authenticity and authorship of sample-based music and AI music generators.

7.1 | AI as a Creative Tool to create Sample-based music

In music production, the use of artificial intelligence during the creative workflow has made notable advancements, even prior to the inception of widespread AI art and music generators in 2022. A creative workflow such as that of sample-based beat-making lends itself well to AI integration, due to its already established digital infrastructure. As discussed previously, DAWs play a large role in the creation of sample-based music, and modern dedicated sampler machines also use up-to-date software, thereby enabling compatibility with AI integration for creating sample-based compositions (Harkins, 2019). This digital infrastructure has paved the way for AI-driven techniques, tools, and plugins to influence the sampling experience. For the sake of continuity, these influences will be discussed in regard to how they influence 'crate digging', 'sample flipping', 'sample clearing' and 'sample snitching'.

Starting off, AI has already influenced the practice of online crate digging for several years through personalized algorithms. Platforms that catalogue music, such as Spotify, iTunes, YouTube, and SoundCloud, use AI-powered algorithms that learn to suggest music to you that you enjoy based on your previous search results and listening experience (Julie, 2022). For sample-based music producers, this can have the following influence: an example would be a producer who enjoys sampling 70s fusion jazz from around the globe. The more this producer listens and searches for these types of recordings, the more their algorithm will specialize in suggesting rare, obscure fusion jazz recordings. In turn, these suggested songs can then be sampled by the producer, essentially delivering a sampleable song on a golden

platter. It is likely that this practice is somewhat unconscious for most producers, but it is most certainly having an influence on the way music is consumed. Take, for instance, Japanese jazz pianist Ryo Fukui (1948-2016), whose work saw a recent insurgence in popularity amongst a younger generation because his albums received an immense—seemingly random—algorithmic push on YouTube (Rosean, 2016).

As mentioned, this algorithmic influence on crate digging is quite nuanced, but in 2022, some AI programs were released to discover music. One example is the site Samplette, which can be used to randomly find recordings to sample with a click on the button. Filters can be applied as well to narrow your search by genre, style, country, year, tempo, and key. Using a platform like Samplette seems like an instant crate digging technique, but keep in mind that the producer still needs to find the precise segment of the recording they wish to sample flip (Samplette, 2023). Another AI sample source is OpenAI's Jukebox, which aims to generate 'curated samples' made from 'scratch' for a producer to use. Again, the user can decide what kind of aesthetic they want the sample to have, and this could be a handy tool for artists who wish to avoid copyrighted material as the AI generates a 'new' sample. Comparing this evolution of AI-enhanced crate digging to previous developments in digital crate digging, it can be argued that, in reality, not much has changed. Algorithms and programs such as Samplette only make the search for a potential sample more efficient, but the creative decision-making is still up to the sample-based artist. And software such as Jukebox can be compared to using a pre-selected sample pack to sample, only now it is personally generated to fit your taste. While there will inevitably be some figures in the sampling community who find these practices inauthentic, history has already proven that sampling easily adapts to such shifts in the digital climate.

Moving on to the process of actually flipping the sample, AI could influence this step in the creative process via dedicated AI-enhanced plug-ins or other production tools. Across the 2010s, several plug-ins for DAWs had been released that already used some kind of algorithmic technology, such as 'Serato Sample' which has become prevalent in sample-based music production (Wilson, 2017). It enables artists to load samples into their DAWs and offers features like looping, chopping, pitch-shifting, and speed adjustments. Additionally, the plugin includes an intriguing function called 'find samples', where an algorithm automatically chops the loaded sample based on its analysis, providing potential beat-making ideas and feeding into the 'accidental' experimental nature of sampling. Note

that many of these earlier plug-ins run on pre-programmed algorithms and not with deep-learning technology.

However, in the course of the last few years, plug-ins and tools that use deep-learning AI have been put on the market. For instance, Playbeat is a program designed to generate randomized drum grooves, providing an efficient burst of variety in rhythmic patterns. Or Orb Plugins, which converts any audio into 'melancholic and harmonious polyphonic rendition', which can help with adding ambience to a recording (Short, 2023; Orb Plugins, 2023). Tracklib themselves have also contributed by allowing an option in their sampling clearing service to let AI find loops within a recording to sample (Ronnie, 2021). Several other online AI music tools have also emerged recently, such as LALAL and Uberduck. LALAL is a software that allows the user to upload any audio file in order to extract the stems from it. Through this technology, producers are able to isolate the vocals, drums, or other instruments from a recording, which opens up new sample opportunities. This practice of isolating stems was previously possible by reversing the phase of a file with a file that lacked the audio you wanted to extract. This can be quite difficult to achieve, so programs like LALAL and, before that, Acapella Extractor have streamlined this process (LALAL, 2023; Acapella Extractor, 2020).

Thus far, the examples listed do not interfere much with the media ideologies of sampling culture. While some people within the community may find the use of these AI tools lazy or uninspiring, overall these programs opt for a natural next step in music production, just like the way sample-based music was introduced. However, AI tools such as Uberduck have proven to cause more commotion. Uberduck is a free text-to-speech application that synthesizes celebrity voices instantly based on the input data of the user (Sandzer-Bell, 2023; Uberduck, 2023). Tools like this have been used to create many funny mashups that are only meant for jokes, but the viral The Weeknd and Drake AI song also made use of this technology (Coscarelli, 2023). In the world of sampling, this tool can be used to create personalized vocal samples of your favourite artists to sample. This practice does, of course, come with its fair share of legal and ethical complications. Should these AI voices be protected by copyright? And more importantly, should you be allowed to sample anyone's voice to say whatever you want? Hip-hop artist Ice Cube has voiced his opinion on this practice and called it 'demonic' (Bove, 2023). *New York Times* writer Lauren Coscarelli stated how this may allow 'people who are not Black to put on the costume of a Black person'

in reference to 'Heart On My Sleeve' (2023), essentially appropriating cultural identity (Coscarelli, 2023).

Writer Tristan Bove compares the practice to the history of sampling, highlighting the similarities in history. In fact, there have been instances in sample-based music that come very close to this practice. For example, producers such as J Dilla and Nujabes are applauded for their vocal sampling techniques, chopping up old recordings to change the meaning of the vocal sample (Caswell, 2017). Moreover, on a posthumous release of Tupac Shakur 'Loyal to the Game' (2004) produced by Eminem, 2Pac's voice was sampled and edited to say words such as, '2005', 'G-Unit', and 'Em'. For this, Eminem received explicit permission from Shakur's mother, Afeni Shakur, but it nevertheless sparked some debates about the ethics of making dead people say whatever you desire, even if it is for creative purposes (Hochman, 2005). These examples show that similar effects to those of AI vocal generators had already made their mark decades earlier, and that back then this practice also challenged traditional values of authenticity and authorship.

After a sample-based composition has been made, there is typically still the phase of mixing and mastering the audio track. Some artists may see this as part of the creative process, but many outsource this to an audio engineer, to make the recording ready for release. Hiring a professional mastering engineer can be costly, and many independent artists have already opted for an AI substitute. An example is the software called LANDR, which assists in the mastering process by optimizing volume levels for track distribution (Short, 2023). Again, while there will always be artists who prefer to do this themselves or hire a specialist, this does lower the entry barrier to releasing music and does not interfere much with the creative workflow of sample-based music.

Before a sample-based recording is ready for release, many artists still opt to legally clear the sample used. Currently, there seems to be no innovative AI system that can help artists with clearing samples, but some speculation helps to imagine what these influences could become. Again, similar to Tracklib's service, AI could streamline the sample clearing process and automate it (Partridge, 2019). Let's say an artist wants to release a new recording on streaming platforms. An AI program could then process the samples used and automatically arrange the clearing process with the artist, label, and publishing company. This would be especially useful for artists who are unfamiliar with or wish to be unaffiliated with the business aspect of music but want to get it legally cleared in order to focus on the craft itself.

Technologically, such a system could already be created. Nevertheless, this is a case where the policies and regulations first need to be updated in order for it to work (Partridge, 2019).

Ironically, AI has already intertwined itself with the practice of sample snitching. As mentioned above, Mobb Deep's 'Hell on Earth' (1996) sample, amongst others, was found after decades with the help of AI technology. In an article for Tracklib titled 'Artificial Digging: How Google's AI Now Reveals What Producers Sampled' (2023), Danny Veekens explains how Google's AI assistant is now able to discover samples of classic recordings that had never been discovered before: 'Google Assistant can even detect samples less than a second long, and is usually able to detect samples that have been chopped or time-stretched.' (Veekens, 2023). Veekens asks, 'what's next?' when it comes to this technology. On one hand, this is great news for fans of discovering samples in order to learn from the unique and creative way that they have been flipped. On the other, this technology can be used as an automated sample snitcher. If a label or publishing company wishes to opt for maximum commercial gain, they would now be able to expose thousands of artists who never cleared samples they own and, in turn, sue them. In a sense, this could both highlight and threaten sample-based artists. For instance, Havoc of Mobb Deep has been a legendary hip-hop producer for years on end, but it is undeniable that the recent discovery of his flipping skills in tracks such as 'Shook Ones, Pt. II' (1995), 'Survival of the Fittest' (1995), and 'Hell on Earth' (1996) in the digital age has contributed to his appraisal as a sampler. All the same, these artists are now at risk of being sued for everything they have ever released.

All in all, these different AI tools demonstrate how they impact the media ideologies of sampling culture. The majority of these AI tools can contribute to the creative process in a similar way as previous technologies have, but some may threaten the authenticity of sample-based music such as the AI voice generators and AI sample finders, which could lead to sample snitching.

7.2 | AI Programs that take over the Creative Process of Sample-based Music

Up to point, AI music generators have intentionally been left out of most of the discussion. These cutting-edge AI innovations shake up the fundamentals of what it means to create art, to the point where it seems difficult to keep up with their breakthroughs. For sample-based music, there are instances of these breakthroughs prior to 2022. One such prominent example can be found within the subgenre of lo-fi hip-hop. The Digital Acid, a research and media platform dedicated to exploring forefront technologies, embarked on an experiment involving

the creation of ‘AI-generated lo-fi hip-hop beats’ (The Digital Acid, 2019). With the use of Generative Adversarial Networks (GANs) and training them on a vast dataset of existing lo-fi hip-hop music, they produced an impressive outcome: 8 hours and 46 minutes of live AI-generated lo-fi beats. While these beats may exhibit a degree of simplicity and mechanical quality, one could argue that such characteristics could be seen as intentional artistic choices if they were created by a human artist. The project is one of the first to highlight the potential of AI to generate complete musical pieces once the necessary setup and training have been accomplished. I discussed this case with McGyver, Ntan and Drees in July 2022 and asked them about the authenticity of this process. They replied by saying that since this project was made by a dedicated group of producers and developers, it can be seen as an art piece and as a human-to-AI collaborative adaptation of beat-making. However, they criticized the idea of someone else using a program (that they did not develop) to simply generate sample-based instrumentals and considered this a lame, lazy, and inauthentic way of creating:

> Boaz: Again, for this example (AI lo-fi beats), who here is the artist is the artificial intelligence or is it the person who programmed the AI to do this. And is that a valid way of making beats?
>
> McGyver: Yeah, I think it's still the personal programming. As much as I would like to say it's the art creating itself, it is not completely true. But if you- if you have all these samplers and things, and you can pull them in, in such a way where they all like sync and connect, and, you know, through MIDI, like they, yeah, it's the same, same thing. You just press play, and sit back and let them all talk to each other. So I'm still the artist. But I'm just doing nothing. Just programming.
>
> Boaz: But what if somebody else who didn't program it would use it, click 'generate beat' and then be like, 'hey, this is my beat.' How would that affect? You know, the authenticity? Is that still considered art? It's a different twist on it, you know?
>
> McGyver: Yeah, that's a good question. So basically the same that where you are The whiz kid who like set up my studio, and I just sat here press play without knowing anything about, the back end, but I just press play. And that's it. Like, only press play? Is that artistic intend? No, I think it might then shift more towards the AI. Or not even I think still the programmer. If you add nothing else to it than just engaging the machine to work. I don't think that's artistic intend. That's too easy. Like I guess you pressing space, and then all of a sudden the rhyme appears, that's nothing.
>
> ---
>
> Ntan: Then you’re a very lazy motherfucker man. That is what that would mean. I tell you honestly, you will then miss the process. Working on a beat all the time and then working towards the final product. That also makes the art beautiful. You miss the whole journey of creating.

An example such as these AI generated lo-fi beats suggests that as an experimental project with limited availability, commercial interest, and private ownership, it can be viewed as a niche artistic practice. During my interview, we cautiously estimated the breakthrough of AI music generators was about 5 years away, yet only a few months later, these applications have become a reality in the public sphere. AI music generators such as Amper Music, Soundraw, AIVA, and MuseNet have become publicly available and have shaken up the music industry (McFarland, 2023).

These AI generators challenge our preconceived notions of the authenticity of art, not just within sample-based music but across all genres (Cormack, 2019; Modugno, 2022; Lockhart, 2023). With these programs, anyone could generate a composition, often via filters based on genre, style, instruments, tempo, and key. Currently, the end result would need to be significantly edited in order to sound worthy of release, but sometimes the generator creates something that really clicks. Some of these programs can also be fed samples as input data, effectively making a sample-based recording. Moreover, it could be argued that all AI music generators are essentially giant sampling machines. These programs operate on the newest GAN technology and are only able to generate music because of the millions of musical data available online. The companies behind these generators argue that the AI creates something completely new, inspired by the input data, similarly to human creativity, also claiming the input data of copyrighted material as 'fair use' (Revell, 2023). Currently, this discussion occupies a grey area, similar to the way sampling has always occupied that space. This area is likely to become increasingly ambiguous, the better these AI generators become with future developments.

There is a glaring change here, however, which is, of course, the absence of a human being in the creative process. Some AI artists argue that there is a creative skill needed for the selection process and curation of which AI generated art to use as the final product (Millière, 2022). While this is true, as it can be compared to the curation of an art exposition or the selection of a DJ or sample-based producer, it should be noted that this decision-making happens after the art has already spawned into existence. The absence of a human brings up questions about whether AI generated music can be considered a creative process at all.

Pitchfork's Philip Sherburne wrote an article titled 'Will AI Lead to New Creative Frontiers, or Take the Pleasure Out of Music?' (2022) which states, 'We can now train machines to play and write music that goes beyond mere mimicry—but does that mean we should?'

(Sherburne, 2022). This is a legitimate question, as you wonder what these AI generators will genuinely contribute to the artistic integrity of human creativity. Hip-hop artist Drees made a valuable remark in our interview last year, stating:

> Drees: It's still a bit of a good thing, just human. Craftmanship will always be valued and will not be replaced. You also have people who go to the Albert Heijn to get bread, but also people who prefer to go to a real bakery.

Here Drees refers to how people value the artistic process of art, and thus there will always be people who value the true 'craftmanship' of music. A study from 2022 titled 'AI composer bias: Listeners like music less when they think it was composed by an AI' confirms this idea of people preferring human-made recordings over AI generated ones:

> The AI composer bias—which we introduced and explored in the present work—may therefore be an important issue as AI-composed music becomes more prevalent. While new AI technology might compete with human musicians, it has been an open question as to when listeners will accept and enjoy this music. Our findings here suggest that listeners may be hesitant to accept AI-composed music, in part because they are biased to like music less when told it was composed by an AI. However, this AI composer bias may be influenced by musical features and whether the music in question is seen as being congruent with creation by a machine (Shank, et al, 2022).

The results of the research indicated that people indeed have a negative bias toward music when they know it is created by artificial intelligence. However, they do highlight how this bias may be broken when the style, idea, and concept behind the AI-composed music are made clear (Shank et al., 2022). This is why AI music generators may occupy a space of authenticity among experimental, avantgarde, and conceptual sample-based composers, which could utilize the aesthetics and nature of AI to enhance a futuristic narrative. Nevertheless, AI music generators are likely to pose a threat to many other sample-based music producers. No artist wants to get replaced by AI, but we could see a future where AI generators will be preferred over human producers (Lauber-Rönsberg & Hetmank, 2019). This is most likely to take shape in the space where music is highly commercialized and needs to be created efficiently and cost-effectively. Think, for instance, of advertisement jingles, commercially focused pop music, and film/game soundtracks, which are presented in research by Lauber-Rönsberg and Hetmank called 'Does artificial intelligence shift paradigms?' (2019):

> From a factual point of view, AI-generated "works" presumably will compete with human works. It can be assumed that AI will be able to create "works" on demand, which cost less and are more adapted to the customers' wishes. To certain extent, AI will replace human creators – probably not with

> regard to the fine arts, which reflect human emotions, but with regard to the more commercial sector such as jingles used for advertising, posters, graphic design, etc. (Lauber-Rönsberg & Hetmank, 2019).

Already, there have been some instances of people taking it a step further, even with sample-based music. A quick online search will lead you to ‘financial advice’ YouTube channels, where three videos already suggest the concept of automating sample-based music to ‘Earn $3k–10.3k/Day With AI Generated LoFi Beats’ by uploading them on various streaming platforms (Mr. Money, 2022; Mr Reis; 2022; Dave Nick Daily, 2023). While such exploits do not yet work as well as these click-baiting videos claim, they do raise a concerning reaction and give a glimpse of what the future could look like if unregulated AI developments take over.

8. | Discussion: Comparative Analysis

It is clear that sample-based music and AI-generated music have a lot in common in terms of their history in technology and the inherent nature of recontextualizing previously released work. In Ernie Smith's article 'The Lines Blur Further: How AI-Generated Music Hits in a Litigious, Sample-Friendly World' he states that 'AI music reflects the same kind of disruption as sampling' (Smith, 2023). Hence for this discussion, a comparative analysis will be laid out between the fundamentals of AI-generated music and sample-based music regarding authenticity and authorship. The previously discussed theorists—Benjamin, Barthes, and Baudrillard for authenticity, and Lessig and Goldsmith for authorship—will be revisited to see how their perspectives compare to AI-generated music.

8.1 | Benjamin, Barthes and Baudrillard

Benjamin's ideas regarding authenticity and mechanical reproductions can be applied to AI music generators and resemble the connection to sample-based music quite closely. As in the case of sampling, it could be argued that AI generated music contributes to the loss of aura in music. However, AI music generators also use previous input data to create music, so could it be concluded that AI music also consists of a repertoire of previous auras from the past, ultimately creating an authentic artwork?

On one hand, this seems very similar to sample-based music, so it could be regarded as an authentic new aura. On the other, it is very unclear or, in most cases, completely impossible to trace back the input data of an AI generated song (unless you explicitly request to sample a recording). Are the auras that contributed to this newly generated piece part of the recording in that case? Or have they completely diminished during the generation process? And does this leave behind a newly AI generated aura of art? While these questions are difficult to settle on, Benjamin's thoughts could be interpreted as the following: if AI generated music would carry an authentic sense of aura with it, then where do these cultural and historical values come from? Currently, there is no real creative process that shapes this music into existence, except for the curation part after it has already been generated. Is the generation of this art a cultural practice, or merely an automated action? In reality, only time will tell whether people will treat AI generated music as authentic in some way. When time passes, history is written, and discourse determines the influence AI has had on music. It will be fascinating to see how attitudes towards AI, aura and authenticity will develop over the

coming years as this technology gets increasingly intertwined with the musical world (Benjamin, 1935).

Moving on from aura, Benjamin's view of the democratisation and emancipation of artwork through mechanical reproduction can be applied to AI art as well. He envisions the potential for technology to empower individuals and challenge traditional hierarchies in artistic production (Benjamin, 1935). Again, as with sampling, AI music contributes to this vision; in fact, it amplifies it. AI music generators lower the entry barrier to music-making, allowing anyone to engage in music production and express their creative vision without the need for extensive musical training or access to expensive equipment. For instance, ByteDance, the company who develops TikTok, recently launched the AI music generating app Ripple. The app ties into TikTok and makes AI music-making accessible to an even broader audience (Leight, 2023). Some may criticise this shift, as a larger quantity of artists does not necessarily equal more quality artists, but nevertheless Benjamin's prediction holds true, even if it challenges traditional ideas of authenticity (Benjamin, 1935).

Furthermore, Barthes' ideas about the importance of audience interpretation in art also prove relevant in the age of AI music. As discussed above, in sample-based music, the role of the author becomes multi-layered, as the artist acts as both a composer and an intermedial curator of existing material. Not only is the role of the listener important when interpreting sample-based compositions, but in fact, the artform lends itself well to listeners becoming creators (Barthes, 1967). However, AI-generated music takes this process a step further, as the composition itself is entirely generated by an algorithm. The absence of human intervention in the creative process challenges traditional notions of artistic intention, personal expression, and subjectivity to an even greater degree. Without a human creator, there is no traditional artistic intention, further relying on the interpretation of its audience. This also amplifies the role of the listener, as this new 'intent' can be shaped through curation after the art has been made. This differs from sample-based music, where the curation of samples occurs during the creative process, rather than afterwards. For AI generated music it is not a matter of 'what to create' but instead a matter of 'what to choose'.

Next, Baudrillard's concept of simulacra and simulation can also be interpreted more in-depth with AI music in mind. Again, in the context of sample-based music, Baudrillard's ideas can be applied as the boundaries between the sampled material and the newly created music get blurred. However, sample-based music still involves the intervention of human

agency in selecting, manipulating, arranging, and adding to the samples. Moreover, sample-based music is still clearly composed of its referenced material, meaning it can be traced back to its original source and thus cannot be considered a full simulacrum (Baudrillard, 1994). Here, the influence of AI begins to differ. AI generated music relies on algorithms and machine learning to generate music, and this process often lacks the human touch. Unlike with sampling, AI music usually does not reference its input material, and thus the source of the original does not just get blurred but even completely lost (Smith¸ 2023). Hence, it could be argued that AI music generation is one of the first examples that could truly be considered a process of simulation, resulting in a simulacrum (Baudrillard, 1994). Following this claim, AI generated music may lead to a loss of meaning in the world of music—effectively challenging traditional ideas of authenticity and authorship—while contributing to the manifestation of a hypermediated society (Baudrillard, 1994).

8.2 | Lessig and Goldsmith

The relationship between AI and music displays similar themes that Mark Katz highlighted about how notions of the authorship of music change with technological innovation. Katz questioned where to draw the line between authorship and theft when 'recontextualizing' art (Katz, 2004). Lawrence Lessig and Kenneth Goldsmith made significant contributions to the ideas of authorship and copyright in the digital age, but how do these theories stack up against the coming AI era?

Lessig argues for a more flexible and inclusive approach to copyright, where creativity is not condemned due to regulations. This idea is compatible with sample-based music, as the artform is likely to flourish more if copyright legislation takes a more balanced approach (Lessig, 2008). In the context of AI-generated music, the question of authorship becomes more complex (Sturm, 2019; Lessig, 2008). In cases where AI is used as creative tools during music production, it could be argued that it involves a collaborative process between human creators and the algorithms. In cases of fully AI generated music, it could be argued that a balanced approach, similar to what would work for sample-based music, would credit both the new creator and the original input creators. While this seems like a logical ethical step in the right direction, it becomes tough to execute in practice since an AI takes millions of inputs in order to create an art piece. This is unlikely to work in terms of credit, let alone in terms of distributing royalties. Nevertheless, through trial-and-error, these AI developments

show that some compromise needs to be made within copyright policies, so that innovation and creativity are both respected for the artists involved (Lessig, 2008).

Furthermore, Goldsmith's concept of uncreative writing embraces the notion that the act of selection and reframing can be just as creative as original composition. Again, this applies well to sample-based music, but becomes blurry when referring to AI. Goldsmith might find value in the creative potential of AI-generated music, as creators can effectively 'choose' and 'reframe' musical elements from vast datasets (Goldsmith, 2011). However, it is important to note that Goldsmith's ideas also emphasize the role of human agency and intentionality in the creative process. While AI algorithms can analyse and learn from vast musical datasets, they may not possess the same depth of conceptual understanding or artistic intention as human creators (Goldsmith, 2011).

Moreover, an article titled 'The Revolution Has Arrived: AI Authorship and Copyright Law' discusses questions of authorship and actually advocates for allowing AI generated material to be copyrighted. Abbot and Shubov state:

> Technological evolution is often an impetus for re-evaluation of copyright law. Today, AI-generated art is making a splash on the Internet. Tomorrow, AI-generated music will be playing on the radio and people will be drawing insights from AI-generated literature. Encouraging the creation and dissemination of such content is the main purpose of the copyright system and allowing copyright protection for AI-generated works will achieve this purpose (Abbott & Shubov, 2022).

These discussions regarding the authorship of AI generated music are still very much open-ended. Some will advocate for increased copyright regulations to protect human-made art; others will ask to lower these regulations so that creativity can flourish; and here is an example of advocates doubling down on copyright in order to protect AI generated material itself (Sturm, 2019; Abbot & Shubov, 2022). Ultimately, these open-ended debates show that, in reality, these attitudes toward the authenticity and authorship of AI-generated music will only unfold as people become more familiar with the impact it will have on the music industry. For now, it seems unlikely that AI will replace sample-based artists—or, for that matter, artists across all genres—any time soon, as it will influence the creative workflow of some artists while others may neglect the technology all together (Epstein, 2023).

9. | Conclusion

This thesis has explored the intersections of sample-based music and AI generated music, discussing various perspectives on authenticity, authorship, and the future implications of these evolving forms of musical creation. The research question of this thesis aimed to determine whether AI technology, such as AI musical tools or AI music generators, poses a threat to sample-based music, based on notions of authenticity and authorship. This was done via an extensive musical discourse analysis of sampling culture and a comparative analysis between sample-based music and AI generated music.

The history and evolution of sampling contributed significantly to a change in the creation process and perception of music. This spawned a dedicated sampling culture that engages in various values, practices, and implications. To highlight these elements, they were analysed through the lens of the media ideologies of Gershon, which revealed aspects such as crate digging, sample flipping, sample clearing, and sample snitching. The different ways in which sample-based artists engage with these aspects shape beliefs about the authenticity and authorship of the musical form. From this, an analysis was conducted to establish sampling's own complications with authenticity and authorship, with the help of theories by Walter Benjamin, Roland Barthes, and Jean Baudrillard for authenticity and Mark Katz, Lawrence Lessig, and Kenneth Goldsmith for authorship. Next, the potential effects of AI on sample-based music were discussed, and it was determined that AI music tools, such as Samplette, Jukebox, Playbeat, Orb Plugins, and LALAL do not pose a threat to the authenticity of sample-based music. While some may neglect these AI tools, when comparing them to previous technological innovations in music, they can be interpreted as tools that only enhance the creative workflow of sampling and do not replace the artist. However, AI music generators might influence the authenticity of sample-based music, and are likely to disrupt perspectives on authorship. While it is unlikely that AI will soon replace sample-based producers, these generators have the potential to be used for highly commercialized music, such as jingles or pop charts, and any other medium that only requires music as a result, instead of valuing the artistic process.

Furthermore, a quality content analysis was made between AI music generators and sample-based music to more clearly show the similarities and differences between notions of authenticity and authorship. As for authenticity, Benjamin's concept of aura is likely to be diminished through the use of AI music generators. While for sample-based music it could be

argued that the artists compile a repertoire of auras into a new culturally rich aura, for AI music generators this seems unlikely for now, as thus far it does not hold any cultural or historic value. Nevertheless, Benjamin's vision about the democratization and emancipation of artwork through technological innovations gets amplified in a world where AI music generators are accessible to anyone, for better or worse. Barthes' idea of the death of the author also shows increased relevance in a world of AI music, where listeners become increasingly important in interpreting the meaning of a musical composition, and have the ability to become active participants themselves, similar to sample-based music. Moreover, when applying Baudrillard's framework of simulacra and simulation to AI music generators, more details are revealed. It can be argued that sample-based music is not a full simulacrum yet, since the music still bears many references to its original source. In contrast, with AI music generators, it is next to impossible to figure out the reference material, thus, it could be considered one of the first simulacra in our world, contributing to the beginning of a hypermediated society. As for authorship, the work by Lessig and Goldsmith, who strongly advocate for freedom within digital remix culture, shows complications in the age of AI, while also displaying its increased importance. AI puts discussions about creative ownership, agency, and copyright under fire and highlights the need for fair, balanced, and up-to-date policies more than ever before. In terms of music, AI brings a multi-layered, complex shift in our perception of authenticity and authorship to a situation that was already multi-layered. It could even be argued that AI shakes up our beliefs about the arts to such a degree that it will cause a paradigm shift (Lauber-Rönsberg & Hetmank, 2019). While we cannot determine for certain the impact that AI will have on music, it is important to look ahead and ask, where do we go from here?

While AI-generated music presents new possibilities for creativity and efficiency in the music-making process, it also raises questions about the role of human intentionality, the authenticity of artistic expression, and authorship. Looking ahead, distinct music communities should protect their values of authenticity with regards to the core of their beliefs. This does not mean that these communities, such as that of sampling culture, should neglect the upcoming musical innovations that AI may bring. On the contrary, communities of artists and their audiences should utilize the potential of these technologies by authentically applying them to the existing artistic groundwork, spawning waves of AI influenced music while keeping its fundamental integrity alive. For sample-based music, this opens up opportunities to utilize new AI tools and plug-ins that could enhance or bring

unexpected variation to the creative process. At the same time, it is precisely this creative process that should be protected, as AI music generators challenge the agency of the human artist. Regarding authorship, it seems clear that the introduction of these AI music applications promises challenging times ahead. As companies develop even more advanced and user-friendly AI generators, the world will see an increased amount of AI generated artwork, which will be used for creative and commercial endeavours alike. With the rise of these 'simulated' artworks that blur the lines of reality and ownership, it becomes essential to adapt copyright regulations accordingly.

Crawford, Cowling, and Allen conducted research regarding the policies of ChatGPT and the educational system, and they suggest that leadership is needed in order to come to a balanced approach (Crawford, Cowling & Allen, 2023). The same could be argued for the arts: moving forward, a comprehensive yet decisive approach is necessary. The involvement and collaboration between artists, audiences, developers, legal experts, and policymakers will prove more important than ever before. This requires continuous dialogue and adaptation to address the challenges and opportunities presented by AI generated music. Striking a balance between innovation, artistic liberty, protecting legacies, and ethical considerations will be crucial in shaping a future that respects the authenticity of musical expression while embracing the potential of emerging technologies. Research could also contribute to this, by engaging with these parties to establish concepts, theories, and ideas to back up the need for a balanced approach to copyright. In conclusion, perspectives on the authenticity and authorship of art need to be simultaneously adapted and protected. This way, music can continue to flourish in the age of AI, by utilizing its unique creative opportunities, and rejecting its inherent impediments, not just across sample-based music, but across all musical styles.

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