The Trans Girl and Her Computer

Vocal Processing and the Creation/Expression of Gender in Hyperpop

Lisa Karolyn Holte (she/her)

Masteroppgave i musikkvitenskap (MUS4090)

60 studiepoeng

Vår 2023

Institutt for musikkvitenskap

Universitetet i Oslo

27/04/2023

Abstract

The discourse around transgender identities and rights has become increasingly polemic throughout the last decade. Simultaneously, aesthetic developments in popular music have primed audiences for "artificially-sounding" voices, and the accessibility of vocal processing technologies and digital audio workstations has increased dramatically. This thesis is concerned with trans voices, music production, gender and agency. I investigate different uses of vocal processing technologies through hermeneutic and critical study of two hyperpop artists; Laura Les and Dorian Electra. My research is situated in the emergent field of queer musicology, and the research question for the thesis is as follows: "*How is vocal processing technology being used by transgender and gender nonconforming artists to create and express gender in hyperpop?"* I develop the concept, *identificatory distance,* which relates to the metaphorical *distance* between the sounding voice and the gender of the queer artists and concerns how various technologies are employed to decrease or increase the discrepancy between the two. Perhaps the most important finding of the thesis is that these vocal processing tools are tools of survival. In the case studies investigated, the artistic developments are intermingled with the personal lives of these musicians. "Finding their voice" takes on a literal sense as they utilize technologies to express queer gender and voice, claiming their space in a cisheteronormative world.

Acknowledgements

Before our journey through gender identity and the technologically mediated voice starts, I would like to give thanks to friends and family that have helped me throughout this master's thesis. Undoubtedly, my greatest thanks goes out to Professor Emeritus Stan Hawkins. Thank you for believing in me and my project from the start, and for all the meaningful conversations we've had both in and outside the topics of musicology, and for the great honor of trusting me to co-write chapter 9. "Lil Nas X's Hedonistic Travels of Earthly Delights" with you and Zack Bresler in Bloomsbury Academic's forthcoming book, *Traveling Music Videos*.[1] My dear childhood friend and fellow UiO student, Jakob Erlingson Haaland Borgen, also deserves many thanks for the countless, fascinating lunchtime talks and for being an inspiration, both academically and as a human being. I extend my gratitude to my supervisor, Kai Arne Hansen, for the brilliant feedback and support he has given me. Great thanks also to Max Schaffer for their inspiring article and coinage of the term, "the chaos-trans voice." Lastly, I would like to thank my beloved partner, Maja Hveding Styffe, for the boundless support she's given me throughout the personal difficulties I have faced these last semesters, and for all the joy she has brought to my life. I love you.

In memory of Isak Holte

"The greatest treasures are those invisible to the eye but found by the heart." – Judy Garland

[1] *Traveling Music Videos* is expected to be available in October this year, 2023, with Mathias Bonde Korsgaard and Tomáš Jirsa as editors. https://www.bloomsbury.com/uk/traveling-music-videos-9781501397998/

Table of content

Abstract ii

Acknowledgements iii

1. Chapter I: //Run program:_ Introduction 1-6
- Terminology 6-10
- Case studies: Laura Les and Dorian Electra 10-11
- Political intent 11-12

2. Chapter II: Decrypting://_ Theoretical and Methodological Foundations 13-14
- Critical musicology 14-18
- Popular musicology 18-21
- Queer musicology? 21-22
- Methodology 22-23
- Conclusion 24

3. Chapter III: Rendering the voice://_ Vocal Processing Technologies and Identificatory Distance 25
- Synthesizing voice: The Vocoder and The Talk Box 25-29
- From opaque to transparent, pitch perfection and back again: Auto-tune 29-30
- Contemporary vocal processing technologies and The Chaos-Trans Voice 31-32
- Technologies speaks to us(e) 32-35
- Identificatory Distance 35-40
- Conclusion 41

4. Chapter IV: Bridging the Identificatory Distance://_ Laura Les 42
- Voice dysphoria and solace through technology: “how to dress as human” 42-46
- Finding her voice: “money machine” 46-54
- Shedding the sonic prosthesis: “mememe” 54-58

- The chaos-trans voice shrieks like a banshee: “Haunted” 58-62
- Conclusion 62-64

5. Chapter V: Voice Fluidity and The Aesthetics of Ambiguity://_ Dorian Electra 65
- Mercurial voices, suits and pencil skirts: “Career Boy” 65-76
- Bodily denial and queer anachronism 76-80
- Conclusion 80-81

6. Chapter VI: Download Incomplete (99%) […]://_ Conclusion 82-85

7. References 86
- Literature 86-99
- Audiovisual 99-101

Chapter I: //Run program:_ Introduction

I couldn't really grasp it at the time. It was my first time discovering this new kind of music called 'hyperpop.' I was so drawn towards these chaotic, beautiful trans people screaming through distorted, pitch-shifted vocals about 'money machines' and 'faceshopping'. There was something so fascinating about them, but I couldn't put my finger on what it was or why I was drawn towards them. 100 Gecs was my first hyperpop crush and I honestly liked the duo as a whole, but when Laura Les sang and thrashed her long, bleached hair in a flurry of energy and passion, I felt as though she was singing directly to me. I felt as though her voice was emanating from a deep place of longing in my heart that I never knew existed. To be more precise, I knew there was something missing in my life, but I thought that I would never find it. "Maybe this was a feature of human existence?" I remember thinking. To constantly feel as though you're dying of thirst, but not knowing what water even is. I felt a pull towards these transgender artists, musicians, YouTubers, and characters in fiction. Listening to these artists' music, I felt as though they were expressing my own emotions in a more authentic way than I was able to myself! Over time, the admiration I felt transfigured itself into a longing to *become*. Or, perhaps, to discover my true self. I started to see myself in their passions, their anger, their longing, and their joy. And, lastly, I finally felt that their strength, the strength needed to be your authentic self, was also residing in my own heart. For me, it is not a question of *if*, but, rather, *how* it is that self-identification processes on the most profound level happen through the voice. I know because I have lived through it.

Throughout the 2010's and into this decade, transgender visibility has increased dramatically in popular culture. Television shows like *Orange Is the New Black, Euphoria,* and, to a lesser extent, *Sex Education* all feature at least (or precisely?) one prominent and explicitly transgender character and/or actor.[2] Caitlyn Jenner is now a household name and was declared "woman of the year" by TIME magazine. Well-known actor Elliot Page significantly impacted the public debate about trans issues when he publicly came out as a trans man.[3] Following a

[2] Season 2 of *Euphoria* even featured the track "Haunted," by Laura Les, underlining her mainstream relevance in popular culture.

[3] While also celebrating a moment of joy and liberation, Elliot also used his platform and the coming out post as an opportunity to draw more attention to the high rates of suicide and harassment transgender folks face in our society. He wrote: "*In 2020 alone it has been reported that at least 40 transgender people have been murdered, the majority of which were Black and Latinx trans women. To the political leaders who work to criminalize trans health care and*

tradition that is as long as popular music itself, there are plenty contemporary artists from LGBTQ+ communities pushing the boundaries of gender performance in music. The increased popularity of 'queer hip hop' comes to mind as a particularly salient example, [4] as well as prominent trans and gender nonconforming artists in other genres such as Christine and the Queens, Anohni, and Sam Smith. More broadly, influential artists like Lil Nas X, Orville Peck, and Janelle Monáe, amongst others, subvert gender roles, expectations, and expressions, using queering strategies in pop music. Given that popular music "reconstructs, reaffirms, and challenges fixed notions of gender" (Hawkins 2016, 2), there is a continuous need for new studies into the complexities of these processes.

In this thesis, I add to scholarship on popular music and gender by focusing specifically on the genre hyperpop. This genre represents a (sub-)cultural environment that has significantly increased the broader cultural visibility of transgender and gender nonconforming people in the twenty-first century. This is a fairly recent cultural development, which speaks to the need for critical investigation. The connection between trans people and hyperpop has already been noted in the media discourse surrounding the genre:

> Hyperpop creates a space where trans people can explore what music means to them. With more and more people learning about trans identities, more and more people are exploring their gender and finding new ways to connect or disconnect with gender. And as more people connect with their gender, they will want to find or make music to express those feelings. (Lynch, 2021)

There is not much written about hyperpop in academia to my knowledge, and therefore many of my citations will be from journalism. Examples such as the one above, point to emerging cultural associations between trans identities and the hyperpop genre specifically – which speaks to a broader point about how we as audiences tend to draw up connections between musical characteristics and social categories. Trying to draw clear, distinct lines between musical genres is a near impossible task that I will not be attempting in this text. While underlining its sociopolitical significance, Kai Arne Hansen states the difficulty of defining musical genre through sonic characteristics alone (2022a, p. 28).[5] In the context of this research, *hyperpop is*

deny our right to exist and to all of those with a massive platform who continue to spew hostility towards the trans community: you have blood on your hands. You unleash a fury of vile and demeaning rage that lands on the shoulders of the trans community, a community in which 40% of trans adults report attempting suicide. I am one of those people and we won't be silent in the face of your attacks." (LA Times, 2020).

[4] For further reading on 'queer hip hop' see Smalls (2018) and Hansen & Gamble (2022).

[5] See also Brackett (2016).

simply the music people tend to call hyperpop. This still holds true even though, aesthetically, hyperpop covers a broad spectrum.[6] Hyperpop as a genre, and as cultural phenomena, is intrinsically linked to the rapid developments of digital technology in the 21st century. This is, of course, not something unique to hyperpop. For example, hip hop famously developed in tandem with, and through creative use of, sampling technology (Williams, 2013). As with lofi hip hop, the sound and visual image of hyperpop is connected with the aesthetic qualities afforded by its mediation. Undoubtedly, the rapid and profound developments of technologies relating to music, social media, visuals, and so on, have shaped hyperpop both as a genre and as a cultural phenomenon. Oftentimes, the grittier hyperpop pop tracks could be described as expressing a sort of *digital timbre*, reflecting its origin as mainly an Internet phenomenon. This perceived digital quality makes itself most apparent in the *voices* of hyperpop artists.

I would argue that there is a strong connection in hyperpop between the voice, technologies, and gender identity that makes the genre particularly interesting to investigate, and I am fascinated by the interconnectedness that constitutes it. Hyperpop is in many ways about satirizing and parodying tropes in popular music and culture, as well as being categorized by a willingness to breach the socially constructed boundaries in our society. This can be seen as the chaotic force that energizes the genre and constitutes the potential to challenge heteronormativity. The sonic and visual aesthetic can often border on the fantastical and camp, arguably expressing a sense of unrestrained potential to become. The voice, being understood as the human element in the music, and therefore also synonymous with the subject, has a powerful symbolic value in displaying agency in regards to gender identity. This is the great intersection that intrigues me, and the main reason why I have chosen hyperpop as the base of my research. The genre appears as a bizarre realm of limitless potentiality, with distorted mercury voices shifting and morphing character at will, belonging to, and yet also created by, these sonic wizards of supreme gender agency.

Hyperpop emerges alongside new musical and practical possibilities afforded by digital technologies in the new millennium. Not only do more amateur musicians use digital audio workstations (where audio manipulation is extremely flexible), but aesthetically, auto-tuned and pitch-shifted vocals have become quite mainstream. These ubiquitous digital means of music

[6] For those interested in genre taxonomy and hyperpop's genesis, adjacent labels such as "night-core", "digi-core", "glitch-core", PC-music", has all been loosely used in online discourses surrounding hyperpop (see Horowitz 2021; Battan 2021; Johnson 2020).

production have not only flavored pop music aesthetics, they have fostered a myriad of new possibilities of music making and consumption, and perhaps most interestingly, birthed new cultural practices with different sets of social implications. As Hansen and Gamble (2022) points out in their case study of Brockhampton, the hip hop group's creative uses of digital technology in music production and fan engagement arguably open up new possibilities and implications for sociomusical relations and culture. Amongst the plethora of trending aesthetics in contemporary popular music, *auto-tune* might be the most recognizable effect, at least as far as vocal processing is concerned.

In my research, I make a clear distinction between opaque and transparent auto-tune.[7] The former is what interests me, when the effect is meant to be distinctly audible, constituting an aesthetic feature more than anything else. We have the famous pioneers of this technological "misuse" by Cher, "Believe", released in the late 90's, and T-Pain's notorious use of hard-tuned pitch correction. I will not go into the extensive history and reception of these artists – that has been done – what interests me lies in the contemporary merging and influence between transgender artists and vocal processing in the hyperpop genre.[8] As I will demonstrate through my analyses in this thesis, there is a range of different uses of vocal processing, all with different intentions, receptions, and implications on identity, agency, and perceived authenticity.

In light of this context, I present my primary research question:

How is vocal processing technology being used by transgender and gender nonconforming artists to create and express gender in hyperpop?

It would be reasonable to wonder why I have chosen to include 'creation/expression' as an infused word in the title of my thesis. The reason I have done this is to underline that, in my view, gender is not wholly something that resides in the essence of a person. Neither is it something constructed purely socially. I argue that the *creation* of gender in vocality, through such things as technological processing, must also be understood as the *expression* of it, in so far as there could be nothing, no perceived essence, to even express had it not been created in the first place. Therefore, the creation and expression of gender must be understood as simultaneous

[7] This is in line with Brøvig-Hanssen "[...] notions of "opaque" and "transparent" mediation, which imply that we experience some forms of mediation as exposed and others as discreet [...]." (Brøvig-Hanssen, 2013, p. 9).
[8] For readings on Cher and T-Pain's influential use of auto-tune, see Åkervall (2021); Schaffer (2019).

processes, and this is why I have chosen to utilize ‘creation/expression’ as a merged word. This view is, of course, not something entirely new. Judith Butler has famously written on the performativity of gender, arguing that gender is not something we express as a result of a fixed essence, but, rather, something made to appear real through performative actions and language (see Butler, 1999). Going back further, Simon de Beauvoir influentially postulated that: “[o]ne is not born, but rather becomes, woman.” (2011, p. 330). This expresses a view, which I mostly agree with, that the lion’s share of the defining aspects of one's gender identity is constructed socially. There is no female essence that exists prior to social influence and conditioning, and that is why one *becomes* a woman, rather than simply *being* one prior to socialization.

De Beauvoir additionally wrote about two major aspects that in her view constitutes the human subject; immanence and transcendence. Immanence is passive, maintaining, and encapsulated by *being*. Transcendence is the ability to reach and aspire to grow, learn new skills, create, it is *becoming*. Both are important to a person's understanding of themselves, their existence in the world, and neither should be favored too heavily over the other. The citation below illustrates how transcendence is dependent on immanence, and shows how women are often confined in a state of being, discouraged from transcendence and growing:

> Woman is not a fixed reality but a becoming; she has to be compared with man in her becoming; that is, her *possibilities* have to be defined: what skews the issues so much is that *she is being reduced to what she was, to what she is today* [emphasis added], while the question concerns her capacities; the fact is that her capacities manifest themselves clearly only when they have been realized: but the fact is also that when one considers a being who is transcendence and surpassing, it is never possible to close the books (de Beauvoir, 2011, p. 68)

This mutually reciprocal dialectic is mirrored in my understanding and phrasing of gender as ‘creation/expression.’ Dialectic in the sense that they build upon and influence each other. These symbiotic relations are at the core of my research, and my approach is hermeneutical in the way that I aim to explore these phenomena through analyzing two rich cases, Laura Les and Dorian Electra, that elucidate my topic.

I will explore how the transgender woman, Laura Les of 100 Gecs, has used pitch shifting to battle her vocal dysphoria and as a way of “coming into her voice,” and as a technology of self discovery and identification (Schaffer, 2019). Also, I am going to analyze the genderfluid maverick known as Dorian Electra and their creative and ambiguous use of vocal processing, and show how it must be understood in relation to their subversion and play with

gender roles and expectations. The case studies are in part intended to be an entry point for exploring the concept of *identificatory distance*, which I am developing as a tool for investigating the different ways queer artists use vocal processing technology to modulate the gendered perception of their voices. With this thesis, I hope to gain a deeper understanding of the interconnectedness of vocal performance, music technology, queer gender identity and expression in the emergent genre of hyperpop.

Terminology

Because the language I will be using in this research is not all that common in everyday speech, a rudimentary explanation is needed. Note that the definitions I will be ascribing to the different concepts are in no way comprehensive, they will be elaborated on as necessary throughout the text, and this overview is simply meant to cover some of the basic terminology of my writing.

Transgender (or, simply shortened to 'trans'): 'Someone who does not identify with the gender that was assigned to them at birth,' is a common, and therefore also simplistic, description.[9] The degree to which the person feels an incongruence to their assigned gender may vary. I prefer the term transgender over transsexual as it underlines the difference between sex (which is biological) and gender (which is socially constructed).[10] Genderfluid and non-binary people are sometimes also described as being under the transgender umbrella, since they do not fully identify with their assigned gender at birth, but it must be respected that not all of these people themselves identify as transgender.[11] Moving away from gender dysphoria being the main delineator for someone being transgender is a deliberate political strategy on my part. It goes far as to fight the pathologization transgender people have been subjected to throughout the years.

[9] This definition is congruent with the one found in the Merriam-Webster dictionary that defines transgender as "…a person whose gender identity differs from the sex the person had or was identified as having at birth." (2022).
[10] For an elaboration on the importance of distinguishing between sex and gender in critical musicology, see Maus (2011).
[11] I believe this to be an important point in all concerns of sexual and gender identity; there are some common behaviors and experiences associated with different identity labels (even though far from all agree on what they are), but *self identification* trumps all factors, in my opinion. For instance, the ancient Greeks did not have similar words as us when it comes to labeling homo- and bisexuality, and to argue that the individuals that took part in activities we would describe as such today, by our standards, as homo- or bisexuals, is quite pointless and inconsiderate of their lived realities and the language they used to construct it. In *The History of Sexuality* (1976), Michelle Foucault famously pointed out that the conceptual shift from viewing sexuality as a matter of *identity*, rather than as one relating to *action*, is a relatively recent turn in modern history.

Not to mention the persecution that LGBTQ+ folk face today in many parts of the world, some of which are sanctioned by the local authorities.[12] Being transgender is not a mental illness, and I will not treat it as such in my research.[13]

Cis-gender: This describes an individual that is not trans. This is a person that identifies with the gender they were assigned at birth.

Gender dysphoria: In the broadest terms, gender dysphoria relates to a feeling of distress an individual experiences as a result of a "mismatch" or conflict between how one perceives their gender and the gender they were assigned at birth.[14] There are multiple sub-categories of gender dysphoria and specific words that are utilized and created by transgender communities that relate to different incongruities and stress experienced in relation to gender. Some examples are; voice ('voice/vocal dysphoria'), hair ('hair dysphoria'), genitals ('bottom dysphoria'), height ('height dysphoria'), to name a few. An individual does not have to have gender dysphoria to be trans, but many people that identify as trans do experience gender dysphoria to varying degrees.[15]

Gender euphoria: This is the antithesis to gender dysphoria and denotes positive, affirming emotions experienced as a result of congruent relationships between gender identity and the social and personal environment.

[12] See Human Dignity Trust (2023) for a map over the countries in the world that criminalize LGBTQ+ people https://www.humandignitytrust.org/lgbt-the-law/map-of-criminalisation/

[13] The 11th edition of the international Statistical Classification of Diseases and Related Health Problems (ICD-11) "...has redefined gender identity-related health, replacing diagnostic categories like ICD-10's "transsexualism" and "gender identity disorder of children" with "gender incongruence of adolescence and adulthood" and "gender incongruence of childhood", respectively." They also state that this decision "...reflects current knowledge that *trans-related and gender diverse identities are not conditions of mental ill health, and classifying them as such can cause enormous stigma* [emphasis added]." (World Health Organization, 2023).

[14] 'Assigned gender at birth', sometimes shortened to 'AGAB' ('assigned gender at birth'), 'AFAB' ('assigned female at birth'), or 'AMAB' ('assigned male at birth'), refers to the gender written on an individual's birth certificate.

[15] "Gender dysphoria is a term that describes a sense of unease that a person *may* have because of a mismatch between their biological sex and their gender identity [emphasis added]." (NHS, 2020, "Gender Dysphoria").

Queer: Colloquially, 'queer' is often used as an umbrella term for people that belong to LGBTQ+ communities.[16] In queer musicology, however, 'queer' has different functions in music analysis, and is often used as a verb (for example, as 'queering'). By expanding the functions of this word, scholars in queer musicology research the ways in which musicians challenge societies naturalized conceptions of gender and sexuality (see Hawkins, 2016). In *Queer Voices*, Jarman refers to a useful citation by Annamarie Jagose that elucidates the technical use and potential of the word 'queer':

> Broadly speaking, queer describes those gestures or analytical models which dramatise incoherencies in the allegedly stable relations between chromosomal sex, gender and sexual desire. Resisting that model of stability—which claims heterosexuality as its origin, when it is more properly its effect—*queer focuses on mismatches between sex, gender and desire* [emphasis added] [...] (Jarman, 2011, pp. 16-17)

They then applies this technical use of the term in her formulation of the 'the queer potential of the voice.' I will elaborate and build on this formulation in the coming chapter, "Theoretical and Methodological Foundations."

Heteronormativity: Is the prevalent ideology that views and upholds same-sex attraction as the most natural, valuable, and even ethical, form of sexual and romantic attraction. Heteronormativity is also predicated upon a gender binary and can express itself, at worst, as *queerphobia*.[17] The APA Dictionary of Psychology defines the heteronormativity as

> [...] the assumption that heterosexuality is the standard for defining normal sexual behavior and that male–female differences and gender roles are the natural and immutable essentials in normal human relations. According to some social theorists, this assumption is fundamentally embedded in, and legitimizes, social and legal institutions that devalue, marginalize, and discriminate against people who deviate from its normative principle (e.g., gay men, lesbians, bisexuals, transgendered persons). (APA, 2023a)

The Chaos-Trans voice: Max Schaffer's (2019) concept of the chaos-trans voice enables us to better understand and analyze the multitude of ways in which the technologically mediated trans

[16] It must be noted that not all people that identify as, for example, transgender, gay, lesbian, or intersex, are comfortable being described as 'queer.' One reason is the fact that it is widely used as a slur in multiple English speaking communities.

[17] 'Queerphobia' is a recent term that encompasses bigotry and hostility against an unspecified multitude of LGBTQ+ identities (see also 'heterosexism,' a closely related term that describes a "[...] prejudice against any nonheterosexual form of behavior, relationship, or community, particularly the denigration of lesbians, gay men, and those who are bisexual or transgender (APA, 2023b).

voice can affect the listener, as well as the raw, disruptive force of its sonic and social presence. In personal communication with Mx. Schaffer, they told me they were "trying to come up with something that really captured the feeling of the vocals I was making & hearing (or the "affect" as many would say *in fancy terms*)." In my own understanding, it is a term that touches on both the phenomenology of the technologically opaque mediated trans voice - what it inspires directly in emotional terms for the listener - as well as the volatile disruption of the supposed stability of the naturalized construction of the gender binary.

Auto-tune: Technically, all vocal processing that shifts the vocal signal to the closest pitch in a given scale, or other tonal selections, classifies as auto-tune. As I briefly mentioned earlier in the text, auto-tune can either be opaque or transparent. In other words, we have auto-tune that can be noticeable by the untrained ear, somewhat noticeable, and hardly recognizable at all, even for a skilled vocal processing technician. The latter case can be employed in various productions to simply "fix" off-key singing. There is another, useful, term called *hard-tuned* vocals that unambiguously refers to noticeable and high-speed pitch correction. In my writing, I will never use the term, auto-tune, to refer to subtle, transparent pitch correction, unless explicitly stated.

Formant-shifting: 'Formants' describes harmonic frequencies that constitute the human voice. The formants affect how the timbre and the degree of masculinity and femininity, and, therefore, the gender or sex, that is perceived in a sounding voice.[18] Formant-shifting technologies alter the formants in the voice and do not affect the overall pitch.

Identificatory distance: Originally inspired by terminology used in video-game research on immersion, *identificatory distance* is a term I am developing as a way of conceptualizing the degree to which an individual is able, or willing, to identify with their sounding voice in relation to their gender identity.[19] As I hope to demonstrate, this concept can be utilized in analyzing

[18] As previously mentioned, the difference between sex and gender is a highly important distinction in the study of critical musicology. That being said, in the phenomenology of the automatic gendering of voices that we hear in music, the distinction between the two are highly diffuse.

[19] In my search for other academic uses of the same phrasing, 'identificatory distance,' I have found an insignificant number of uses in the field of psychology (see Terradas & Antoine (2021); Parker (2019). In sociology (see Frost et al. (2017). Interestingly, I found one case where identificatory distance was used in the context of gender incongruens in Jay Prosser's (1995) literary analysis of Leslie Feinberg's novel, *Stone Butch Blues*.

vocal processing technology, voice training, and other strategies, as tools used in decreasing identificatory distance. Factors that determine identificatory distance are highly subjective and constitute themselves in relation to cultural understandings, norms, and ideals around gender. Some of the most apparent dimensions that affect identificatory distance are pitch, formants and resonance, intonation, and vocal gesturing.

Case studies

The bulk of my research will be structured around two cases; Laura Les and Dorian Electra. They are both highly influential and prolific stars in the world of hyperpop, and I believe there is much to be learnt from analyzing their use of vocal processing technologies, their creation/expression of gender, their visual presence, and queering strategies.

Laura Les: For this artist, I want to show her transition, both as an artist and as a transgender woman. Her musical and personal history are strongly linked and must be understood in relation to each other. From her early releases on SoundCloud with corny, yet endearing, chipmunk vocals under the moniker, Osno1, to the awesome chaos-trans voices featured in her solo work and 100 gec's productions, and finally to her (temporary?) rejection of auto-tune in "mememe".[20] In the last case, the presence of Les' voice sans auto-tune is quite profound. It has many implications on her confidence with her voice and her gender expression. Also, it can be viewed as a comment on the genre's stylistic use of hard-tuning, counterintuitively shocking the audience by *not* using auto-tune, and it can be appreciated simply as a masterful showcase of her voice feminization training.[21]

Dorian Electra: As a self identified gender-fluid person, the case of Dorian Electra offers a different range of implications, perspectives on gender identity, and strategies of queering gender roles, musical genres, and even historical representation of masculinity.[22] As a gender-

[20] See "How To Dress As Human" https://www.youtube.com/watch?v=meSHvah0AA4, "money machine" https://www.youtube.com/watch?v=z97qLNXeAMQ, and "mememe" https://www.youtube.com/watch?v=1Bw2dTY3SsQ. In an interview with Pitchfork in 2021, Laura Les talks about voice training and tracking vocals without auto-tune https://pitchfork.com/features/cover-story/100-gecs-interview-new-album-10000-gecs/

[21] For research on the psychosocial impact of self perceived voice and vocal feminization see Park et al. (2021).

[22] The queering of historical masculinities is especially apparent in their music videos for "Flamboyant" https://www.youtube.com/watch?v=BDb1oTfcmCI, "Live By The Sword" https://www.youtube.com/watch?v=wpetK7aGGjo, and "Gentleman / M'lady" https://www.youtube.com/watch?v=JM1Of_OBUjw

fluid artist, the gendered expressions are naturally more ambiguous in appearance, and can often be experienced as chaotic, perhaps even disturbing. The latter benefiting the extent to which Dorian is able to challenge heteronormativity through shock and aesthetic excess.

I hope that studying these two different artists alongside each other will bring new insight into the contemporary queer uses of technology and voice production in hyperpop. Because Laura Les and Dorian Electra differ in significant ways as artists – most notably in the technologies used and the audiovisual expressions – I believe they will offer distinct and valuable entry points for developing the concept of identificatory distance and investigating the technologically mediated creation/expression of gender in hyperpop.

Political intent

I hope my research can contribute to queer empowerment and awareness of social and political struggles in regard to gender identity and music technologies. In my text, every phrasing and choice of words are, in some sense or another, with political intent. Some of the words, for example the title of the previously cited article by Schaffer, which includes the spelling, 'hxstorical', might seem strange, forced and unacademic, but they all serve a purpose and will be explained throughout my writing.[23] Writing your pronouns after your name on the titular page of your master's work is not typical, might not be necessary in a practical sense, but I do this to position myself, or rather to show where *I am* situated in my field of research.[24] This is in line with the hermeneutical approach to music analysis and interpretation that I adopt (see Kramer 2011, p. 4ff). To be precise, I am taking part in the growing field of queer musicology, studying cultural phenomena in music and analysing to what extent, and in what ways, they inevitably reinforce or subvert normative notions around, sex, gender, sexuality, race, class, and so on.

I aim to contribute to the research on music technologies and gender identity with a deeper understanding of the ways in which the former enhances the agency of LGBTQ+ communities and individuals. There has been written a fair amount on the central role of the

[23] The use of the letter, 'X', in this word is a deliberate decision that shows awareness of the contemporary and historical supremacy of White, Western, cis-gendered men. This written trend has mainly been adopted by LGBTQ+ and progressive voices in American discourse, but has not been without criticism (see Hughes 2019).
[24] The habit of writing and presenting your preferred pronouns by trans *and* cis-folks alike, additionally helps to normalize it, making it so that trans-folks don't run the risk of 'outing' themselves by it's inclusion. 'Outing' is a term that refers to a LGBTQ+ persons identity being exposed at a time or a place that is inconvenient or even dangerous for the individual.

voice in pop music in regards to gender identity (notably, Hawkins 2016; Jarman 2011) which I will explore and discuss in greater detail in the next chapter, but I would argue that my project fills a gap in the field, focusing explicitly on the interconnectedness between vocal processing technology and queer gender identities in the hyperpop genre. It is also my intent to show how marginalized gender minorities, as transgender and non-binary folks undoubtedly are, utilize music technologies that have been historically held from us, in ways that queer pop music, fashion, visual aesthetics, and body politics.[25] The significance of seeing someone like yourself showing strength and pride in media that have, if not totally ignored your existence and participation, portrayed you in stigmatizing and grotesque ways, cannot be overstated.[26] It really can change lives. This is at the core of my research, the individual in the masses, how it affects them at a deep and personal level, increasing their agency through the medium of killer pop music and brain-melting visuals.

I have presented my motivations, some preliminary terminology, and the chosen case studies for this thesis, Laura Les and Dorian Electra. Additionally, I have argued that the heterology between the two cases, their dissimilar use of vocal processing and aesthetics, will prove fruitful for tackling my research question. Before I begin this interpretative work, I would like to present the theoretical and methodological foundations, as it is the basis of my thesis.

[25] More accurately, trans and non-binary folks have always participated in the use of music technologies and the developments of different audio-visual expressions in music and art, but the *explicit* visibility of our identities as LGBTQ+ has, for sociopolitical reasons, often been hidden from the public.
[26] Villains in horror movies, most notably Buffalo Bill in *The Silence of The Lambs* (1991), and as the butt of the joke in countless comedies, have done much to Other trans and gender nonconforming people through media representation.

Chapter II: Decrypting://_ Theoretical and Methodological Foundations

In this chapter, I will argue for my chosen theories and methods. They are integrally connected to my views on musicology, what I believe can reasonably be said about music, and the possibilities and limitations of the tradition of sociologically inclined music research that I situate myself within. As mentioned in the introductory chapter, my research constructs itself in the alive-and-growing field of queer musicology. That being so, my writing centers around how the term, 'queer,' is being used in queer academia.[27] I am most interested in how queer artists use music, more specifically, the voice and associated technologies, to subvert heteronormative notions around sex, gender, sexuality, et cetera (see Hansen & Gamble 2022; Hawkins 2016; Jarman 2011). I believe that currents and developments in the world of music are interlinked with virtually everything "outside" of music, and in turn inspires sociopolitical change in society. Furthermore, I would argue that aesthetic developments in music serves as a mirror cosmos of the real-life anxieties, hopes, repulsions, and pleasures that emerge in our cultures and communities. Or, rather, I am skeptical of the false dichotomy of the world of music and the "real" world being two separate realms. This is in line with Robert Walser's influential argument that "[y]ou only have the problem of connecting music and society if you've separated them in the first place." (2003, p. 27). The reason I want to underline this point is to make it clear that I have no intention of studying music as isolated phenomena, existing outside of body politics, struggles for autonomy, minority stress, and a desire to create meaning in a seemingly disenchanted neoliberal world. As Hansen eloquently puts it; "[t]o study the social politics of pop music is therefore to study the dialectics of dominance and resistance, the shifting relations of power, and the ebb and flow of continuity and change" (2022a, p. 37). That is why I believe queer musicology is so important, it is about survival. Behind the often humorous, and always outrageous, audiovisual expressions of the artists I study in this thesis, there is real personal pain that stems from minority oppression, both generational and contemporary. They champion the right, not only to exist, but to thrive in an often queerphobic world.

[27] In the previous chapter, I explained how the term, 'queer,' is being used as a technical term in queer academy to analyze ways in which, for example, musicians challenge societal expectations around gender, sexuality, sex, gender roles, et cetera, and the illusory stability in which their relations are conceptualized.

The interdisciplinary approaches found in critical musicology, popular musicology, and queer musicology offer opportunities for illuminating what my case studies can reveal about broader questions concerning pop music and gender politics. To make it clear and avoid unnecessary confusion, I must add that I view critical musicology, popular musicology, and queer musicology as highly interlinked. I do not view them hierarchically, nor do I find it useful to draw strict borders between these sympathetic musicological communities and disciplines. In other words, each of these branches will have their own segments in this chapter, but in the broader context of my text, I will treat them as fairly interchangeable terms, and I will make clear distinctions between them only when necessary.[28]

Critical musicology

Social and technological developments have always been important in the study of critical musicology.[29] *Critical Musicological Reflections*, an anthology celebrating the highly influential critical musicologist, Derek B. Scott, sheds light on some of the most prominent features of critical musicology. Amongst other things, one of the most salient point of the critical musicologist, is that the *meaning (note: singular)*, which is traditionally far too often essentialized in the context of all branches of analysis, in my opinion, not only in the case of music, lies not in the text itself, but is primarily negotiated in the context of the production and reception of the text, the environment, cultivating a sense of belonging (necessarily also through Othering), dynamically harboring evanescent *meanings (note: plural)*:

> Wary of the arbitrary nature of the musical sign, Scott, in line with other critical musicologists, has been concerned with social and cultural semiotics extending beyond 'the music itself'. Grounded in close readings of remarkable historical rigor, his studies have meticulously tried and tested the workings of ideology in music reception and interpretation. *Music, Scott has repeatedly claimed, is never isolated in its own structural construction and formal features; rather, it is constructed upon the signifying practices that directly impinge on those spaces and places where we feel we belong* [emphasis added]. (Hawkins, 2012, p. 7)

[28] As I will argue and outline through the following theoretical historiography, popular- and queer musicology is built upon the back of new- and, or critical musicology. Because of this, I feel comfortable referring to popular musicology, for example, simply as critical musicology when a hyper specific distinction between them is not necessary.

[29] In fact, one of the original seven tenets outlined in a meeting at Sheffield University, UK, that aimed to stake out possible directions in the new field of critical musicology, underlined the significance of studying music in relation to new technological developments. They sketched out "[...] a critical musicology that might engage with [...] explorations of the multiplicity of music's contemporary functions and meanings, with particular emphasis on the evolution of new technologies within late twentieth-century post-capitalist cultures." (Hawkins, 2012, pp. 5-6).

The way I see it, critical musicology is most interested in uncovering the ideologies and implicit values that constitute individuals' illusory sense of objective truth in music, and subsequently how the western musical histories are canonized. This is, of course, emblematic of the more general idea and practice of Derrida's deconstructionism of the mid twentieth century that strives to deconstruct notions of positivist science, and to unveil how the authoritative ideological paradigms of a given time, in other words, hegemonic ideology, construct appearances of absolute truth in the form of language, simultaneously confiscating its own genesis in the process.[30]

I consider my research in agreement with the general approaches and aims of critical musicology. To understand the contemporary position of critical musicology, and, followingly, queer musicology, it is necessary to be aware of the departure it has had from more traditional, positivist musicology. Hawkins outlines some of the origins of critical musicology and how it differentiates itself from the traditional musicology, pointing to prominent musicologist, Allan Moore:

> [T]he term 'critical musicology' not only designated directions in musicology that could accommodate neglected areas, but also referred to new ways of thinking that confronted the practice of music analysis and its positivistic status. In a bid to consider new ways of analysing popular music, Allan Moore claimed that both 'new musicology' and 'critical musicology' were 'marked not only by the dissatisfaction with the methods (including conventional analysis) employed to undertake such a study, but also by dissatisfactions with the exclusive divisions into which musicology falls' [...] (Hawkins, 2012, p. 4)[31]

In this quote, three main characteristics of new musicology and critical musicology are outlined.[32] Firstly, it carries with it a focus on including research areas that have historically been neglected. As someone who studies gender and especially trans identity in relation to music technology, I am also engrossed in a field that is relatively untouched academically, as far as I am aware. The second point underlines a move away from positivist analysis in music, the belief that analyzing harmony, melodic structure and form in the music itself, can tell us something definitive, hence,

[30] For further reading on Derrida's views on deconstructivism see Caputo (1997).
[31] Hawkins quotes Moore's (2003, p. 4) introduction to an anthology containing contributions from different authors writing on methodologies and possible aims of studying popular music in the context of social and cultural phenomena.
[32] Note that Lawrence Kramer has suggested that the "[b]est name for what has been called (used to be called?) 'the new musicology' is the term [...] *critical musicology* [original emphasis]." (2011, p. 64). See Ibid. for further elucidation on the differences between these adjacent subdisciplines.

positivism, about the meaning of the musical text. Lastly, the third point about the "[...] dissatisfactions with the exclusive divisions into which musicology falls' (Moore, 2003, p. 4)," I believe is intrinsically connected with the first point, researching historically neglected areas of music phenomena. I would argue these are connected on a fundamental level in so far as they both represent the hierarchical structures in musicological academia which have heavily favored White, male, Western classical music at the cost of virtually all other forms of music and contributions from other cultures, social classes, ethnic groups and gender- and sexual minorities.[33] Relatedly, Hawkins underlines the mercurial quality of meanings in music viewed through a critical musicological lens:

> And with this we return to the central concept of critical musicology: that social, political, and cultural contexts in music performance and composition are never fixed. Put differently, the musical environments we encounter abound with multiple meanings and variable mediations." (Hawkins, 2012, p. 13)

Instead of searching for absolute truths in music, critical musicology focuses on the importance and value of different interpretations and opinions that musicological study generates.
The focus on *interpretation* over analysis, is not accidental on my part as I consider my work as a musicologist to be of the former. Interpretation implies a multitude of possible meanings to a much stronger degree than the word, 'analysis,' which, I would argue, bears with it connotations of "discovering" fixed meaning and value.[34]

Indeed, I am interested in studying music through a more sociologically inclined lens, and subsequently my research does not rely heavily on positivistic analysis. As I previously mentioned, there are but a very few scholars that have written about transgender musicians, underlining that it is, in fact, a neglected area in musicology. Furthermore, I believe all music is worth studying, and I reject the notion of "high art music," with its implication of a dichotomy

[33] For an in-depth criticism of the field of ethnomusicology, whose problematic history cannot be denied, see Stephen Amico's (2020) "We Are All Musicologists Now"; or, the End of Ethnomusicology. See also Danielle Brown's "An Open Letter on Racism in Music Studies: Especially Ethnomusicology and Music Education," for further reading on white supremacy, colonialism, and "epistemic violence against against BIPOC" that still dominates universities researching music (Brown, 2020).

[34] The haunting memory of *Schenkerian analysis* comes to mind. In this method, put simply, the aim is to measure to what degree a piece of tonal music relates to a primordial structure Heinrich Schenker dubbed the *Ursatz* (from German, meaning "Fundamental structure). See Narmour (1977) for a thorough critique of Schenkerian analysis. Additionally, the etymology of "analysis" (from the Ancient Greek word, 'ἀνάλυσις,' translating to "breaking up," or "loosening") implies studying smaller segments without necessarily interpreting or saying anything about the object of study as a whole (Harper, 2022).

between it and *low art* music, and would argue that popular music is especially important to study in our 21st century realities that are undoubtedly saturated with audio and visuals that are all deeply commodified and mass distributed, yet also highly personal and, seemingly for the individual, far beyond the mundane.[35] The intention to challenge the Western music canon, as I mentioned earlier, has been postulated as the "main agenda of critical musicology" by Hawkins, and with it, of course, uncovering the biases that have naturalized its exclusionary formation and the study and reverence of it (ibid., p. 3). Susan McClary exhibits a more inclusive collection of musical contributions that she finds relevant to her understanding of Western music history than one would expect from traditional musicology, undermining the notion of a binary divide between music that is worthy and unworthy of serious research.[36] She writes:

> My history of Western music contains Bach, Mozart, and Beethoven, but it also includes Stradella and the Swan Silvertones, Bessie Smith and Eric Clapton, k. d. lang, Philip Glass, and Public Enemy. And it treats all of them as artists who have negotiated with available conventions and in particular historical circumstances to produce musical artifacts of exceptional power and cultural resonance. ... I can no longer privilege any one tradition … (McClary, 2001, pp. 30–31)

It is also my intention to show how the field that I am a part of has developed, the main features that we associate with queer musicology, rough outlines of its genesis and contemporary state, and, not least, show how I am situated within it. I have begun by mapping out what I deem to be some of the most important contributions, both in terms of theories and influential theorists in critical musicology. Being a relatively young branch of musicology, crystallizing as a distinct musicological movement in the 1980s, I also find it useful to show how it departed, and was in

[35] This finds resonance in the fourth of the aforementioned tenets of critical musicology outlined at the Sheffield University in 1993: "[...] a critical musicology that might engage with [...] problematics of canonicity, universality, aesthetic hierarchy and textual immanence, with reference to the binary divide between the classical and the popular [...]" (Hawkins, 2012, p. 5).

[36] Although I recognize and appreciate McClary's contribution to the study of queerness in music, I feel obligated to criticize the unthoughtful and offensive way she has postulated the historical practice of castrati singers as "*transgendering* technology." In Hansen (2020), she writes: "Think about it: for nearly two hundred years, Italian opera – the reigning genre at the time – relied upon *transgendering technologies* [emphasis added]. Producing the men who could provide the sound demanded by audiences required radical surgery performed on boys before their voices changed." (Ibid., p. 52). If this is, as McClary states, "transgendering" technology, what exactly are these AMAB's transitioning to? Despite labeling the practice as trans-related, she calls these individuals who have had, often non-consensual, orchiectomy performed *on* them, as men in the next sentence. These castrati practices had nothing to do with self-perceived gender identity, bodily autonomy, and the power/right to define yourself, which is paramount to the trans and queer movement. With this crude employment of pseudo terminology from transgender vocabulary, McClary actually manages to invert everything that transgender people are fighting for. She makes it so that self perception of gender is unimportant, that traumatic and non-consensual genital surgery can *make* you transgender, and, this last one must be the most impressive, that these castrati singers are *still men!*

many ways a reaction to traditional, positivistic musicology. I believe this is useful as it elucidates some of the core assumptions that have shaped not only queer musicology but also popular musicology as a whole. It seems reasonable to suggest that the terms critical musicology and popular musicology have both been in use longer, and appear more often, than the term, queer musicology. The multimodal nature of the latter, inherited from the broader range of studies that fall under the umbrella of queer academia, finds kinship in the closely related fields of critical and popular musicology. Therefore, I believe, an outline of their respective developments and theoretical and methodological diversity is necessary to understand the academic angle I use in my musicological interpretations and in my broader research project. Having already outlined some key critical musicological considerations, I now turn toward a discussion of the musicological study of popular music more specifically.

Popular musicology

A young academic entering the field of musicology today might be surprised that the history of studying popular music is a fairly recent endeavor in the broader time-span of musicology. Unsurprisingly, the reason for this is – at least partly – the result of a long tradition of classism and sexism. T. W. Adorno is one of the more cited thinkers that have written on popular music. He is famous for postulating pop music as pretty much brain dead, commercial noise that forces uniqueness into conformity. On the sentimental quality of commercial music, he writes that it

> [...] has become the image of the mother who says, 'Come and weep, my child.' It is catharsis for the masses, but catharsis which keeps them all the more firmly in line. One who weeps does not resist any more than one who marches. Music that permits its listeners the confession of their unhappiness reconciles them, by means of this 'release', to their *social dependence* [emphasis added]. (Adorno, 1998, p. 208)

Adorno's position is clear; there is a fundamental, and very serious, difference between what he would count as art music and what he would condemn as popular music. The dichotomy of this binary postulation quite clearly implies that *not only is pop music not art, it is the opposite*. Art music expands the mind of the listener, fosters individuality, and makes one resilient to conformity. Pop music, on the other hand, ideologically corrupts its victims, and almost hypnotically bends their will to accept illegitimate hegemony, capitalism and consumerist values. The great divide between music that is authentic, and music that is inauthentic. In my ears, this sounds a lot like the teenage boys from my middle school revering rock music of the '60s, '70s,

and '80s as "real" (authentic) music whilst condemning contemporary pop music (ignoring the fact that rock music was very much a dominant form of popular music in the previous *and* contemporary millenia) as feminized and "fake" (inauthentic).[37,38] As Nealon points out in *I'm not like everybody Else* (2018), the highly influential and dichotomizing framing of pop music as something inherently different, frankly, as the opposite, than art music that Adorno and Benjamin wrote about in the 1930's, are still very much alive in our discourse today. Indeed, popular musicology is a very new and fresh subfield that has had to spend a considerable amount of its focus simply on justifying that popular music is even worth academic attention in the first place! One of the more interesting arguments that have been made as to why popular music is not only exciting, but also highly valuable in a more sociomusicological sense, is that studying popular music is political, with it, we are studying society and its developments. In the introductory chapter of *Popular Musicology and Identity*, Hansen, Askerøi, and Jarman write that:

> [t]he scholarly study of popular music and identity is a political one. Acknowledging this is the first step towards problematising the gendered, sexualised, and racialised representations that abound in popular culture, and drawing attention to the historical circumstances and developments that engender the discursive structures governing pop performance. (2020, pp. 1-2)

As argued in the citation above, not only do we learn about society when we are studying popular musicology, we uncover the ideological developments that dictate societies conceptualization of not only music, but popular culture at large. And, with it the different societal mechanisms that foster oppression, domination, resilience, subversion, et cetera.

I believe there is a connection between the misconceptions and, oftentimes, stigmatization that pop music performers, their content, and even the fans of pop music themselves, are subject to in the contemporary discourses. Pop music has always symbolically been conceptualized as inherently more technologically mediated than other, "higher" forms of music, even though all music, from the intricate mechanics of a piano to the biotechnically mediated products of acapella (singing/song traditions), cannot be meaningfully separated from the uses, and misuses, of

[37] To make the distinction clear, when I write "popular music," this includes all mainstream, rhythmical genres such as rock, pop, metal, rap, hip hop, et cetera. When I simply write "pop music," I am referring to the loosely perceived genre colloquially called "pop" or "pop music."

[38] For further reading on the construction of masculinity in pop music, see Hansen (2021; 2022a; 2022b). On the broader topic of authenticity (focusing especially on rock and folk genres) see Moore (2002). See also Frith (1986) for a discussion on the discourse surrounding the perceived threat to masculinity and authenticity that resulted from the Crooners early uses of microphone technology in the popular music of the mid 20th century.

technologies.[39] Because of pop music's specific imagined marriage with technology, specifically with *new*, cutting edge technology, it has been framed as artificial, fake and without skill or emotion. With all this cultural and academic disdain for popular music, it would be reasonable to ask, "how did popular musicology gain a foothold in the world of music research?"

The 1980s saw the first dedicated establishments that researched popular music. The International Association for the Study of Popular Music (IASPM) was founded at the same time as the premier journal, *Popular Music*, in 1981 (Hansen et al, 2020, p. 2). Subsequently, the UK gave rise to the first institutes researching popular music, namely the Institute of Popular Music (IPM) in 1988, and the Department of Media, Performance, and Music at the University of Salford, Manchester, in 1990. As Hansen et al. notes on the initial emergence of popular music scholarship of the earlier decades (Hamm 1979; Mellers 1973; Oliver 1969; Tagg 1982) and the founding of these new institutions, it is possible to view them as emblematic of a larger paradigm shift in musicology, in the way that focusing on the "[...]popular can be understood as a turn more generally in music studies towards the cultural and the social." (Ibid.). It would take more than a decade after the founding of *Popular Music* before the journal, *Popular Musicology*, would be released. This journal was founded by Scott and Hawkins in large part because they were dissatisfied with the absence of musicological research into popular music in the early '90s, research that would engage with and study "[...] music associated with commerce, entertainment and leisure activities" (Scott, 2009, pp. 1-2). Undoubtedly, one of the most important features of the emerging popular musicology of the '90s, is the increased focus on intersectionality, mainly that of gender politics and its associated aesthetic dimensions. The latter of which Hansen et al. has noted as previously overlooked by other dominant disciplines in musicology, and that its relevance and importance will continue "[...] as new concerns regarding the connections between music and identity emerge alongside changes in social and cultural norms and trends." (2020, pp. 3-4). Other developments and movements in popular musicology throughout the last decades include; increased hermeneutic approaches to music research (which I will elaborate on later in this chapter, see segment "Methodology"), ecomusicology, phonomusicology, intersectional

[39] For an interesting read on how music technologies have shaped the way in which music is written, performed and listened to see Katz (2010).

musicology focusing on identity (of which queer musicology falls under), and audiovisual, media oriented musicology.[40]

Queer musicology?

It seemed quite unproblematic to consider myself a part of a scholarly movement called, "queer musicology," when I began writing my master's thesis. When I started reading up on my phenomena of interest, I was surprised to learn that research into queerness in music was not as established as a distinct and separate direction in musicology as I had previously believed. Even though the phrasing of "queer musicology" has not been commonly used as the name for a distinct musicological discipline, it has long been associated with research that investigates gender and sexuality in various musical phenomena.[41,42] It must also be mentioned that there exists older research that might now have been dubbed "queer musicology" that did not use this label at the time.[43] The last decades has seen a significant increase and diversification in popular musicology that focuses on gender and queerness. Whiteley and Rycenga's (2006) collection of essays that investigates sex and sexuality in the scope of popular music, through the discursive use of queering, comes to mind. Hawkins' extensive list of seminal writings on the phenomenon of queering in popular music videos (2016), popular music and gender (2017; 1997), and more recently, queer production aesthetics (2022), is a monumental contribution to the field. Hansen's contemporary work on gender, masculinity and authenticity in popular music (2022a; 2022b; 2022c; 2018) is also noteworthy, and Välimäki's publication that centers around transgender themes (2019; 2017) is emblematic of the diversification in the field of queer musicology. The interdisciplinary field of queer studies, as a broad term, is very much flourishing in academia.

[40] For reading on ecomusicology see Allen & Dawe (2016) and Mark (2014, 2016). For reading on phonomusicology see Cottrell (2010). For intersectional musicology research focusing on the interplay between sonic expression and race, gender, and ethnicity see Eidsheim (2019), Mahon (2011), McCracken (2015), Stoever (2016). Notable audiovisual research investigating the sociopolitical aspects and implications of music video include, but is not limited to, Arnold et al. (2017), Burns & Hawkins (2019), Gardner (2015), Hawkins (2013; 2014; 2016), and Railton & Watson (2011).

[41] Some examples of this include Lewis (2009) "What's Queer About Musicology Now?," Mackinlay, Collins & Owens (2005) *Aesthetics and Experience in Music Performance* (which includes a dedicated segment on queer musicology) and Fransen (2020) "'Onward to the end of the nineteenth century': Edward Prime-Stevenson's queer musicological nostalgia," to mention a few.

[42] Notably, "queer musicology" is used to denote a distinct discipline in Hawkins' (2016) book, "Queerness in Pop Music: Aesthetics, Gender Norms, and Temporality."

[43] Taylor (2012) *Playing it Queer*, much of Hawkins' and Jarman's preceding work, and Phillip Brett's early writings on "gay musicology," comes to mind.

Similarly, the music research that I find most enticing, is characterized by multimodal approaches. Indeed, I am in great agreement with Scott in his postulating of popular musicology as an inherently "post-disciplinary field in the breadth of its theoretical formulations and its objects of study" (Scott, 2009, p. 2). As a matter of fact, the quality of being post-disciplinary seeps down to the core of my approach and informs, rather intuitively, my methods.

Methodology

My methods are critical and analytical, meaning I analyze musical cases directly and uncover and argue for the meanings and implications they have for my research question. Instead of gathering data or conducting interviews, I reject the notion of *objective* truth in musicology and opt for an hermeneutic approach, stressing the importance and value of subjective interpretation in the highly social field of queer musicology. My methodological approach is in agreement with Hansen in the way that it "[...] accommodates the view that meaning is not inherent in any specific text, and emphasizes that meaning should be understood as excavated through the act of interpretation." (2017, p. 15) My method is intertextual, meaning I am also concerned with everything surrounding the texts (sonic, visual, interviews, audiovisual, social media presence, et cetera), that opens up for interpreting the music and the musicians. Additionally, as Hansen points out, an intertextual method is vital to the success of interdisciplinary employment of theory (Ibid.). In my interpretation of transgender artists' use of vocal processing technology, and its subsequent effects on the creation/expression of gender, I am much more interested, and find it much more useful, to engage in intertextual study rather than focusing on the text itself. In short it means that I am more inclined to study all that happens *around* the musical text (such as interviews, fanboards, liveclips, et cetera). Relatedly, one might reasonably ask, "what *is* the pop text?" I would like to point at a quote from Hawkins that tackles this very question:

> Indeed, the positioning of the pop text by the artist is a major point for reflection. For the issue of authorship is, in principal, an issue of formal and generic concern: the pop artist possesses a most varied form for transmitting messages within new living contexts and creative spaces. Crucially, the conditions of musical expression are dependent on every form of mediation that links the performer to the audience in performance situations. To be sure, communicative possibilities have distinct aesthetic implications as the musician reaches out to the audience. (Hawkins, 2001)

I believe it is fitting for my project to be more focused on the reception of the music by the relevant subcultures and to investigate the personal and creative lives and developments of the

artists themselves, precisely because the creation/expression of gender can never be something that exists in a vacuum. My point is that rigorously analysing the musical text on itself, expecting to *find* meaning *in it*, is rather hopeless and folly. But, it is of course paramount for my project that I strive for a healthy balance between hermeneutics and analysis. As Tagg (cited in Hansen, 2017, p. 18), has pointed out, if you embrace hermeneutics and use it as your only source, it becomes guesswork, but if you do not have any hermeneutics, your research will only result in "sterile formalism." As pointed out by Bracket (1995, p. 18), the musical text is only partially autonomous, and because it is often distributed and consumed in concert with multimedia, the meaning emerges through its engagement with various adjacent media. Building on Eidsheim's (2019, p. 24) argument that "[...] listening is never neutral, but rather always actively produces meaning, it is a political act [...]," Hansen (2022a, pp. 36-37) extends this view beyond the primary focus on race and musical detail to all forms of musical experience, a view I adopt in my own writing. Withstanding the fact that I am very much studying phenomena in music that I am myself part of, I recognize that the lens I view and interpret my research material in is contingent on my own age, gender, social class, race, sexuality, music genre familiarity, et cetera. This finds resonance in Richardson's reflections on the importance of maintaining self awareness (in terms of one's own biases), whilst at the same time also being able to write from experience when engaged in interpretative, critical research. He argues that:

> [...] critical methods require the ability to write from experience, to apply knowledge of cultural codes to primary research materials, and to extrapolate from theory when undertaking interpretations. Finally, critical writing in the hermeneutical sense requires the writer to reflect on taken-for-granted assumptions and to interrogate them when necessary (often through applications of critical theory; this is where critical theory and criticism overlap most significantly). (2012, p. 11)

With this in mind, I will consider my own first-hand experience of transgender issues, vocal processing technology, and music production not as epistime on its own, but, rather, utilize it as a springboard for my own curiosity in researching these phenomena. Whilst I recognize they are first and foremost *my own*, I would argue that my lived experience as transgender artist offers some valuable insight into the motivations and challenges faced by the artists I have chosen as my case studies, and the invaluable significance it can hold for the recipients of their art.

Conclusion

To draw together the most important reflections and foundations of my chosen theory and method, I must stress the importance of striving for a healthy balance between hermeneutics and analysis. As previously mentioned, analysis on its own does not necessarily say something holistically meaningful, in the sense that is particular in nature, on the other hand, superficial interpretation adds up to little more than pure speculation if left unpaired with constructive analysis. Writing from the emergent field of queer musicology, my approach is faithfully unfaithful to a single discipline. Indeed, my research is multimodal in the way that I analyze and interpret a range of different phenomena related to how transgender and gender nonconforming artists of hyperpop use vocal processing technologies to create/express gender. This ranges from music videos, interviews, lyrical analysis and interpretation, comment sections on streaming services, official user manuals of contemporary vocal processing units, and more. Because I believe in the importance of viewing music research through a social lens, I stress the relevance of focusing more on how the music is received and how it affects audiences, generating multiple different meanings, rather than the isolated text itself. Relatedly, the importance of media and how it shapes the creation and consumption of music is paramount, and I strive to consider the mutual effect that media and the musical text have on each other. My analysis and interpretations can only constitute a selection of the innumerable findings and meanings possible to uncover in engagement with my particular research question. And, importantly, I am highly aware that listening cannot be meaningfully separated from politics, and that my own identities, privileges, and biases inevitably direct my academic interest and undoubtedly have an influence on my interpretations. Because my musicological approach and method is critical and hermeneutic, I must always take my own subjectivity in consideration, and not mistake the construction of meaning as the discovery of it.

Chapter III: Rendering the voice://_ Vocal Processing Technologies and Identificatory Distance

In this chapter, I intend to write a short historiography of vocal processing technologies (VPTs) that I find relevant to the creation/expression of gender, how they have been used by *gen(re)der* bending artists, their reception, and theoretician by musicologists and media theorists. This is necessary groundwork for situating my own concept, *identificatory distance* (ID), in the broader context of research on music technology and queer gender identities. Because I am concerned with VPTs that directly influence gender identity expression and exploration, I will not spend pages writing on other effects such as reverberation, echo, stereo panning, et cetera, that I believe are less relevant for my research question. Of course, what I deem relevant tools for constructing and expressing gender through the voice in music production, will not be identical to other researchers, nor do I intend to write an extensive list of possible effects that can relate to gender identity in music. This chapter is intended to be a short history of VPT's and a rudimentary map of contemporary software that transgender artists use in the illusive genre of hyperpop. I will use this writing as a springboard for postulating identificatory distance as a useful term in investigating different technologies that transgender artists use to sonically inhabit spaces that are more congruent with their gender. Additionally, this chapter is a necessary prerequisite for understanding and interpreting the modern-day cases, Laura Les and Dorian Electra, that I will be engaging with in the two next chapters of this thesis. That is, the core of my research, studying in what ways these artists use VPT's to create/express gender in hyperpop.

Synthesizing voice: The Vocoder and The Talk Box

The vocoder marks one of the first instances where the voice is pulled apart and reconfigured through technological means. This had huge implications for individuals' agency over the voice and opened up new possibilities for self-determining our sonic expressions and identities in music. But, like many other music technologies of the post war era, the vocoder was not originally designed with musical expression in mind (Weiner, 2017). Before I continue with the vocoder's conception and early history, it can be useful with a short description and some links to examples where the vocoder is easily audible for those who might not be familiar with this

particular technology.[44] Some of the earliest and most iconic tracks featuring vocoding include "Autobahn" by Kraftwerk, and "Mr. Blue Sky" by Electric Light Orchestra.[45] The particular sound I am referring to in these seminal works are, of course, the robotic-sounding, vocoded voice. More contemporary examples of vocoding can be heard in, for example, "Get Lucky" by Daft Punk feat. Pharrell Williams and Nile Rodgers.[46] The iconic vocoding effect is easily heard at the bridge of the song (timestamp 2:20-2:52). The keen listener might note that this track, "Get Lucky," leans heavily on retro aesthetics. The inclusion of vocoding to this production is not accidental given that vocoded voices are strongly dated in the public consciousness. Indeed, for many, vocoding conjures notions of *retrofuturism*, a word that might seem like an oxymoron at first, but one that has excellent utility in this context, relating to *how we remember the past imagining the future*.[47] As Sophie Weiner (2017) notes in "Cryptography and Cyborg Speech: The Strange Journey of The Vocoder," the effect "first and foremost brings to mind a specific time and space: electronic and funk music of the late '70s," just precisely the vibe radiating from "Get Lucky." Even though musical vocoding carries with it distinct retro connotations, the technology finds many different, contemporary uses, as I will elaborate on later in this chapter. But how did this ubiquitous technology come to be? And how did it pave the way for contemporary trans artists using VPTs to create/express gender?

Interestingly, vocoding was first developed in the field of communication technology as a way to decrease the data amount required to transmit voices through telephone wires. In the 1920's, telephones were becoming increasingly popular, and when the construction of a transatlantic undersea cable between North America and Europe was under development, there were huge incentives to find an effective way to "fit as many phone calls as possible into the smallest broadband space" to maximize the efficiency of this new infrastructure (Ibid.). Homer Dudley, who worked at the Bell Telephone Laboratories in Murray Hill, New Jersey, developed the original vocoder (from "voice coder") in 1936. In short, the fundamental workings of a

[44] Even though I would be confident to bet that virtually all modern consumers of pop music have heard a whole range of different tracks featuring vocoder, not all will know what the effect, or instrument, is called, and fewer will know how it actually works.
[45] *Autobahn* (2009 Remaster) by Kraftwerk: https://www.youtube.com/watch?v=vkOZNJYAZ7c (timestamp 0:20-0:48), and "Mr. Blue Sky" by Electric Light Orchestra: https://www.youtube.com/watch?v=aQUlA8Hcv4s (timestamp 2:38-2:53).
[46] Daft Punk - Get Lucky (Official Audio) ft. Pharrell Williams, Nile Rodgers: https://www.youtube.com/watch?v=5NV6Rdv1a3I
[47] See Hansen & Gamble (2021) for a discussion around retrofuturistic production aesthetics and queerness in hip hop.

vocoder are that it receives audio input, codes the input into binary bits, and subsequently reconfigures the code back into audio. For an elaborate explanation of the vocoder's design, I refer to Grove Music Online:

> Speech, music or other sound is analysed by a set of filters, each covering a different band of frequencies, that subdivide the entire audio spectrum; the fundamental frequency of the input is used as the 'programme' in a [m]odulation process to control the frequency of an audio oscillator (which supplies 'buzz') and a noise generator ('hiss'). The resulting signal is then passed through a second set of filters, each of which is 'tuned' by the amount of electrical information received by their counterparts in the first set, recreating the original signal electronically. A telephone line may intervene between the analysis and synthesis sections. (Davis, 2001)

The musical utility of this technology was not immediately apparent in the time of its first conception, and the first vocoders were extremely costly, and not very user-friendly. As we move into the '60s and '70s, manufacturers including Siemens, Moog, Korg, Eventide, and Roland were starting to produce *cheaper*, more accessible vocoders, something that would shape and influence the history of music and VPTs, continuing to this day (Ibid.). It must be noted that these units were still very costly and not economically viable options for the innovative non-major-label Black musicians of the '70s and '80s. The Sennheiser Vocoder, for example, was priced at a staggering $10,000 (roughly equating $45,000 in today's economy), and because of this, the sound of the vocoder first made its presence in hip hop through sampling (notably from Herbie Hancock and Moroder records), and influential artists like Sly Stone, Peter Frampton and Roger Troutman of Zapp of the '70s, opted for *the Talk Box* (Weiner, 2017).

The Talk Box works in a completely different way than the vocoder. In its most basic form, the Talk Box works by sending an amplified sound signal, for example, a guitar, through a surgical tube into the oral cavity of the performer, whereas they can mouth words and otherwise control the resonance of the sound source (Acker, 2016). Lastly, the Talk Box output would then be picked up by a microphone near the performer's mouth.[48] Even though there are distinct technical differences between the vocoder and the Talk Box, their influence and conceptualization in the public consciousness is muddled, as Weiner (2017) notes: "Like the vocoder, the talkbox allowed performers to alter their voices, shaping any sound played through

[48] For a video demonstration of the Talk Box, see Stevie Wonder covering The Carpenters' "Close To You" and The Jackson 5's "Never Can Say Goodbye" live on The David Frost Show 1972: https://www.youtube.com/watch?v=D6Avlbe6TT0

the talkbox by simply mouthing words. To listeners, it's difficult to tell the difference between the vocoder and the talkbox, so the instruments' influence is intermingled."

The vocoder also had early influences on gender perception, mainly in the way it was often perceived as sounding androgynous and robotic. In reflections around the work of transgender synthesizer pioneer, Wendy Carlos, musicologist Judith A. Peraino notes on the estranging effect of Carlos' vocoder work on the soundtrack of Stanly Kubrick's iconic film, "A Clockwork Orange," released in 1971. She eerily notes that: "[t]he result is an electronic sound that resembles the human voice, *but with its humanity removed* [emphasis added]." (2014, p. 304). Although the general public was initially skeptical music that included synthesizers, deeming it as fake, inhuman, and non-music, Wendy Carlos and her collaborators can be credited for much of the work of opening up the public's receptivity to the musicality and potential of the synthesizer (this includes the vocoder).[49] This was achieved through the release of her highly popular *Switched-On*-records where she would recreate classical and baroque music with synthesizers. Pinch & Trocco notes on the fortunate bridging of new and familiar achieved by her iconic album, *Switched-On Bach*, released in 1968: "Indeed, this is part of the achievement of the record: the timbres sound familiar, yet they are clearly new and different electronic timbres." (2002, p. 141). Around the same time as Carlos' most influential work was released, Kraftwerk also pioneered the use of vocoder and synthesizer technology, yet was received drastically differently by the public. Sandra Schoonhoven argues that the reason the public's reception of the group differed so much from that of Carlos was in large part due to transmisogyny and gendered notions of technology and power. She writes that:

> Anxiety over new biotechnologies, such as the ability for a Trans person to medically transition, lines up with anxiety over other growing technologies, like Kraftwerk's performing mannequins. Yet for Kraftwerk, their masculine dominance over the synthesizer and its sounds seems to have left a more positive mark on their legacy, or for that matter, little mention of a gendered legacy at all. Peraino describes the voices on the track "Autobahn" as "ineptly human, but absolutely emotionless," which implies a certain underlying humanity that is permanent and irrevocable; this humanity was in no way granted to Carlos after she came out. Kraftwerk's ability to remain human despite actual robots being used, when contrasted with Carlos's unending fight to be treated as any other human, gives the reader and listener a glimpse at the anxiety surrounding gender and technology even today. (2017, p. 35)

[49] The impact and concern garnered by the emergence of synthesizers in the world of record labels and artists cannot be overstated. The American Federation of Musicians (AFM) feared that the synthesizers were going to *replace musicians*, and even managed to place a ban on the use of Moog synthesizers in commercial use. "This restriction first surfaced in a contract negotiated between the American Federation of Musicians (AFM) and advertising agencies and producers in New York City in 1969." (Pinch & Trocco, 2002, p. 148).

This is just one of many examples that illustrates the conceptual interconnectedness of voice, technology, gender, and power.[50] These themes sustain their relevance as we shift our focus to the turn of the 21st century and digital vocal processing technology.

From opaque to transparent, pitch perfection and back again: Auto-tune

We are quickly moving into the '90s and the extremely influential technology known as auto-tune. VPTs are becoming more widespread and commonplace in mainstream music in subtle, and sometimes *not* so subtle, ways than with the previous technologies of the past decades, the vocoder and the Talk Box. In stark contrast to these older effects, auto-tune, if used moderately to "fix" pitch, is not necessarily audible for the untrained ear, something that is very important in the reception of this technology. It holds great significance because auto-tune has historically often generated anxiety for the listener in the way that has, and still is, often perceived as "cheating." Musicologist Catherine Provenzano notes the ambiguous feelings induced by the technology:

> If Auto-Tune is an uncomfortable hybrid of skilled and automated labor that upsets the way we expect to experience the human through singing and if, as I argue, Auto-Tune's pitch-correction function places the listener in an anxiety-ridden position, critical efforts to confront Auto-Tune and make sense of it serve to mitigate some of this anxiety in ways that restore human agency and, more narrowly, artistic skill. (2018, p. 175)

As mentioned in the introductory chapter, I make a clear distinction between opaque and transparent auto-tune. In other words, easily recognizable auto-tune, and discrete, subtly pitch-corrected auto-tune, respectively. Interestingly enough, and similarly to the vocoder, the technology that would make auto-tune possible, was not intended for musical purposes. In fact, the man credited with developing the now ubiquitous technology, former oil engineer, Dr. Andy Hildebrand, originally developed the technology that would birth auto-tune as a tool for collecting seismic data (Crockett, 2016). In 1998, Cher famously released the hit single, "Believe," which holds the place in public consciousness as the first mainstream hit song

[50] It must be noted, if only for the fun of it, that the earlier prototypes of the vocoder technologies used by the leaders of WWII had the unintentional effect of feminizing their voices through the encryption and decryption process. It could be seen as a threat to their masculinity, making them "sound girly." For further reading on the history of the vocoder in WWII see Tompkins (2010).

featuring clearly audible pitch-correction. It was so influential, in fact, that "[i]n the manual accompanying Auto-Tune's fifth-release version, the zero speed setting is described as "the Cher Effect." (Frere-Jones, 2008). Cher's "Believe" was a pivotal moment in the history of voice modulation because it showed that auto-tune could be used in a more subtle way, *alongside* the voice of the artist, instead of reconfiguring it completely, as with the aforementioned VPT's of the past decades, namely the vocoder and the Talk Box (Schaffer, 2019). Yes, the result of Cher's vocals processed through the zero speed auto-tune setting is a distinct and iconic effect, but the intonations of her vocals and much of her natural timbre still resides in the end product, it sounded artificial and highly produced to many, but it was not as dehumanizing as, for example, the vocoder effects of Carlos or Kraftwerk of the past decades.

Throughout the turn of the millennium, auto-tune became more ubiquitous in pop music, albeit mainly as a pitch corrector, not as a deliberate vocal effect. Hildebrand notes on the *speed* of the pitch correction, a crucial technical variable that determines if the output results in unnoticeable pitch correction, found in Britney Spears, Cascada, and Spice Girls, or the unmistakable auto-tune effect pioneered by Cher, and later on, T-Pain. He explains that:

> [w]hen a song is slower, like a ballad, the notes are long, and the pitch needs to shift slowly. For faster songs, the notes are short, the pitch needs to be changed quickly. I built in a dial where you could adjust the speed from 1 (fastest) to 10 (slowest). Just for kicks, I put a "zero" setting, which changed the pitch the exact moment it received the signal. And what that created was the 'Auto-Tune' effect. (Crockett, 2016)

Schaffer postulates that the shift in production praxis of the '00s, trying to hide the audibility of the pitch correction used in pop music, can be seen as an effort to "[...] re-establish "the female voice" as a pristine sound [...]," and that it represents a move away "[...] from the androgynous robot voice back to this clear goal of creating the "perfect" female voice." (Schaffer, 2019). Although it would take roughly 10 more years before the various artists collectively known today under the umbrella term, hyperpop, would emerge through the more obscure corners of the Internet, I would argue that the signature hard-tuned vocal productions of T-Pain laid out the groundwork for the next turn - towards the "artificial - in vocal production that would eventually lead to the voices heard in hyperpop today.[51]

[51] Hear "Good Life" by Kanye West feat. T-Pain for reference: https://www.youtube.com/watch?v=FEKEjpTzB0Q

Contemporary vocal processing technologies and The Chaos-Trans Voice

This period, spanning from the 2000s to our present day, is characterized by an increase and proliferation of numerous VPTs that have a direct influence on the perceived gender and authenticity of the performer. Undoubtedly, hip hop and RnB have constituted the musical spheres where much of this evolution took place initially. The "Chipmunk soul" production style comes to mind as especially relevant, where producers, notably Just Blaze, The Heatmakerz, and Kanye West, sampled old soul tracks and, oftentimes, sped up the sample resulting in artificially high pitched "chipmunk-sounding" vocals.[52] Arguably, this set the stage for further vocal modulation, in the way that mainstream audiences were starting to get more familiar with human voices that sounded unambiguously processed.[53] Throughout the 2010s, numerous artists from different genres experimented further with the limits of vocal processing. The decade saw a high increase in the popularity of EDM artists that used vocal samples more like instruments through melodic pitch-shifting, creating completely new melodies.[54] The significance for this trend in the larger scope of my research lies more in the further normalization of the manipulation of the voice, more so than the specific timbres of the EDM vocals. We must keep in mind that vocals have, and still do to a large extent, hold a very unique and "privileged" place in the conceptualization of music, and this is precisely why VPTs, as Provenzano notes specifically on the case of auto-tune, "[...] strikes a nerve because it alters the voice, the paradigmatic sonic site of communicated intimacy, the "natural" sound that allows listeners direct access to an imaginary human body. It is the primary site of musical authenticity[...]" (2018, p. 176). As we move into the latter part of the 2010s, trap artists increasingly utilize auto-tune and harmonizer effects in their vocal production because "it lends itself so well to the mumble rap style," and this in turn influenced other parts of mainstream music scenes and artists such as Charlie XCX to break "[...] away from the "effortless" polished sound they'd been told they needed to succeed in the pop world, and embrace this inhuman tech-sound." (Schaffer, 2019). At the same time, some

[52] For further reading on chipmunk soul see Brimmers (2018).
[53] Achieving high pitched vocals through the banal technique of speeding up an audio sample is also practiced in the contemporary - and hyperpop adjacent - sub genre known as "nightcore." Hear "Meg & Dia - Monster (Nightcore Dubstep Remix)" for nightcore vocals reference: https://www.youtube.com/watch?v=DYS_qFWx7-M Additionally, this is similar to the ongoing trend of speeding up the music on tik tok videos.
[54] For reference listen to the manipulated vocals on the intro of "Scary Monsters and Nice Sprites" by Skrillex: https://www.youtube.com/watch?v=WSeNSzJ2-Jw (timestamp: 0:27 0:39).

proliferant male hip hop artists start pitching up their vocals, diffusing the dichotomy of masculinity/femininity, authenticity/inauthenticity.[55]

In our present time, digital VPTs are rapidly becoming more available both in terms of affordability and ease of use.[56] This technological development (and the online knowledge sharing of techniques and competence on how to use these them), coupled with the aesthetic developments in vocal production listed above, set the stage for the trans artists and their use of VPTs that initially inspired my research. The following segment is concerned with one of these technologies, the TC-Helicon Voicelive Play, and how the interface design tells us something about contemporary notions of the voice, sex and gender.

Technologies speaks to us(e)

Below is a screenshot from the TC-Helicon Voicelive Play unit that I use myself for live vocal processing (see Fig. 1: Effects - HardTune). Technologies have functions that are inscribed with values and preconceptions of the world. They tell us something about the people that have designed and named the features, and reveal preconceptions about the imagined user of the technology.[57] For example, I find it quite telling that the parameter controlling formant-shifting is simply called "Gender." Indeed, our ears are so conditioned to gendering voices we hear based on frequencies that surround the mean pitch (i.e. formants), that the designers of this effects unit could get away with naming this parameter, "Gender." Additionally, out of the seven styles of hard-tune available, we queerly find that one of them is called "GENDER BENDER."[58]

[55] For reference hear "Nikes" by Frank Ocean: https://www.youtube.com/watch?v=diIFhc_Kzng&feature=youtu.be (timestamp 0:27-2:59).
[56] Vocaloid technology also comes to mind, where one can synthesize vocals from scratch. This phenomenon is gradually gaining attention in the West through the increasing popularity of the Japanese virtual pop star, Hatsune Miku. For reference listen to "levan Polkka" (2016) (arrangement by Otomania): https://www.youtube.com/watch?v=widZEAJc0QM.
[57] As Oudshoorn & Pinch notes on the ways in which normative notions of gender are inscribed in the design of certain technologies: "Existing or even stereotyped images of projected gender identities are transformed into design specifications that are in accordance with cultural symbols of masculinity or femininity." (2003, p. 195).
[58] 'Hard-tune' is a precise word for the high speed pitch correction that even the untrained listener could recognize as auto-tune (as heard in the vocals of T-Pain).

Effects - HardTune

▶ Hardtune

Ah Hardtune… some call it the Cher effect and others refer to it as Auto-Tune. Whatever you name it, if you're looking for that radio-pop tuned sound, this is your effect. It has 3 parameters:

Shift – Takes the input note you are singing and shifts it up or down by a semi-tone. You can shift up or down 12 semi-tones, which is equal to an octave in each direction.

Gender – Manipulates the timbre of your voice to sound more male or more female in nature. Extreme settings for this parameter will sound very un-natural, but that may be just the effect you're looking for.

Style – Determines the accuracy, speed and aggressiveness of the tuning effect.

There are 7 styles to choose from:

1. POP
2. COUNTRY GLISS
3. ROBOT
4. CORRECT NATURAL
5. CORRECT CHROMATIC
6. DRONE
7. GENDER BENDER

Figure 1. Effects - HardTune. TC-Helicon Voicelive Play manual.

Why this is so humorous, is hardly surprising given the fact that the term 'gender bender' refers to a person that dresses or acts in a way that is typically considered appropriate for the "opposite" gender. Lastly, I want to point to another telling feature of this VPT's design, namely that the way in which the artist (consumer) engages with the gender parameter, is graphically illustrated on the liquid-crystal display (LCD) as effecting a *number line*, with negative numbers on the left and positive numbers on the right side. The more you "turn up" the gender and gain positive numbers on the number line, the less transients are present in the vocal signal. Why is this important? This user interface (UI) design, regardless of it being unconscious or not, is built upon and arguably reinforces the misogynist notion that women are more gendered than men. That men are simply "default" humans, and women, on the other hand, must put on makeup, dress

womanly, *act* feminine, in other words, that we must actualize our constructed gender through mannerism, aesthetics, and language.

Note also that the feature is called "gender" and not, "sex," which suggests that vocal timbre is socially constructed, not a biological truth (as would be implied if the feature was simply called "sex"). Of course, it might also be that gender is so often confused with the concept of sex that the designers, and artists (consumers), would not even consider the difference as relevant, or even recognize a difference to begin with. There is also something to be said about the manufacturer's description of the "Gender" parameter's function; it "[m]anipulates the timbre of your voice to sound more male or female in *nature* [emphasis added]. Extreme settings for this parameter will sound very *un-natural* [emphasis added], but that may be just the effect that you're looking for." (TC Helicon, v2.1 manual). Notice that the words, 'nature' and 'un-natural,' both appear in the description. The tension between what is natural and un-natural, the latter harboring some undeniably unfavorable connotations, is already inscribed in the technology itself, underlying the ubiquitous conceptualization of the voice as already in danger of pollution, of being *made* inauthentic or "un-natural." Provenzano argues that, even though discussions of auto-tune (which is only the most polemic of several other VPTs, including formant-shifting) harbors "[...] a preoccupation with and commitment to the sovereignty of the voice as unassailable stronghold of the self [...], she challenges this naturalized status of the voice, arguing that "[...] the voice was never stable or sovereign; to maintain its privileged place, aligned with the privileged status of the human and the complex historical ways this status is granted along raced, gendered, and classed lines, it has undergone—and continues to undergo—constant reworking (2018, p. 176). Although it is beyond the scope of this thesis, it must be noted and critiqued that the "octave down" function of the TC-Helicon unit's harmoniser is visually illustrated by a man with a large, round afro and goatee, wearing a chelsea collar that was popular in the 1960s and 1970s (see Fig. 2: Harmony - Octave Down). This is problematic because it builds on racialized notions of vocal performance, and could, at worst, be seen as a sort of techno mediated sonic black face.

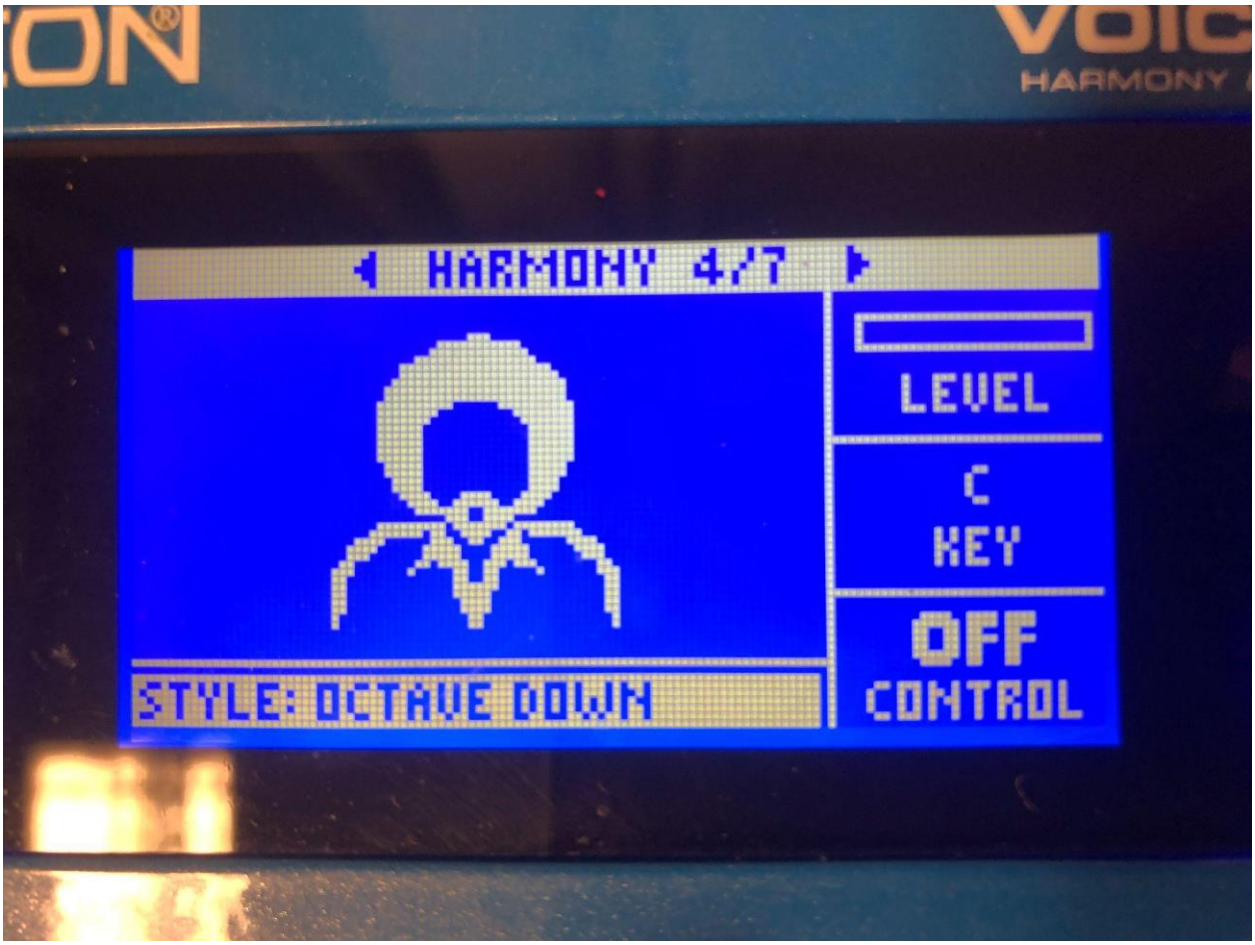


Figure 2. Harmony - Octave Down. Oslo 24/4/2023.

Identificatory Distance

In this segment, I will start developing the concept *identificatory distance*. I will show how it can be utilized in queer musicological research and what distinguishes it from connected terms, and I will schematically illustrate its workings. As briefly mentioned in the introductory chapter, I was first inspired to develop this concept through learning about *aesthetic distance*. I first heard about aesthetic distance when I attended the PhD defense of Zachary Bresler. In his dissertation, Bresler researches music immersion and new media and technology in music, and aesthetic distance, a concept he referenced in his doctoral defense, is a term that relates to immersion in the context of video game research, mainly related to the effectiveness of different technologies employed to immerse the player in the game.[59] In other words, a video game with intriguing

[59] I have been in correspondence with Bresler, but I have sadly not been able to find the original source.

graphics, non-intrusive HUD ("heads-up display," relaying relevant in-game statistics to the player), engaging music, and intuitive control layout, would be a product with less aesthetic distance than a game lacking these elements. For the player, simply an "immersive game." This concept analyzes the ways in which technologies enable, or hinder, meaningful connection between the user and an aesthetic, multimedia experience. Whilst learning about this, the conceptual similarities between a player's engagement with video game technologies and the queer artist utilizing vocal processing technology in their own musical endeavors, became apparent to me. Both search for immersion, the former in a digital world, the latter immersing themselves sonically *in this world*. One strives to place themselves in a different reality, one searches, through technology, for their real selves, and brings it to light in the material world through music.

To put it simply, identificatory distance (ID) is a concept I utilize in analysing the ways in which different technologies – digital, biomechanical, et cetera – are used by trans and queer artists to decrease the *distance* between their sounding voice and their gender. Indeed, these are highly subjective metrics, meaning there is no objective way a male, female, androgynous, or agender voice needs to sound, nor are there static, dogmatic ways in which trans and queer artists use different technologies to decrease ID.[60] What is considered feminine or masculine – including everything in between and outside of – is highly contingent upon, not only the specific culture of an individual, but also their own notions of sex, gender, and politics. As with all areas of gender transitioning, the voice included, what their transitional needs are, what gives them gender euphoria and reversibly, gender dysphoria, will differ for each person. Because of this, one trans woman might not have an issue with her darker pitched voice and will not experience it as necessary to adjust it in any way. I want to point this out to underline that my findings in the interconnectedness between gender and voice processing technologies in music are not meant to be regarded as definite techniques employed universally be all trans musicians, they are simply my interpretation of unique cases of musicians that I believe exemplify trends, negotiations, artistry, and technological mastery of the craft, of their own music, and, ultimately, their lives.

The reason for the proliferation of VPT usage in the trans community, I believe can be at least partly understood through investigating *vocal dysphoria*. As I outlined in the introductory

[60] The techniques and goals of the various VPTs used by trans artists in hyperpop extends far beyond simply the singular goal of *decreasing* ID. As I will elaborate on in the chapter regarding Dorian Electra, VPTs are also employed in non-static, ambiguous ways as part of a more subversive strategy.

chapter, vocal dysphoria is a type of dysphoria that relates to an unpleasant incongruence between a person's voice and their gender.[61] Clearly, there is a strong connection between vocal dysphoria and identificatory distance, and, yet, they are distinctly different in important ways. Because of the diversity of notions surrounding gender and the highly individual and specific transition needs for each trans person, we can observe that vocal dysphoria and ID can interact and influence each other in interesting, diverse ways. Let me explain some of the fascinating expressions of their interconnectedness. Vocal dysphoria describes a discomfort by the sound of one's voice, and the ID describes the degree to which the individual is able to *identify* with their voice. To illustrate their heterology, a person might perceive their sounding voice as aesthetically pleasing without being able, or wanting, to identify with it. Similarly, a person might perceive their sounding voice as jarring and unpleasant (as many trans *and* cis folks do), but still identify with that voice.[62] Preliminarily, it must be noted that I do not deny that a theoretical concept, such as the one I am developing, is necessarily always to a varying degree reductionistic and generalizing when applied to complex real-life phenomena. I will elaborate on this point towards the end of this chapter. With that in mind, I would like to present an outline of some of the fundamental ways in which ID and vocal dysphoria influence each other.

Identificatory Distance and Vocal Dysphoria

A high level of vocal dysphoria usually denotes a *larger* identificatory distance between the true gender and the sounding voice.[63] A low level of vocal dysphoria, or a sense of vocal euphoria, usually indicates a *shorter, or non-existent,* identificatory distance between the true gender and the sounding voice. In the last case, if the identificatory distance is small enough (or, non-existent), the sounding voice is the true voice. In the figure below, I have illustrated in a linear manner some fictitious cases of people with varying degrees of both ID and vocal dysphoria (see Fig. 3: Identificatory Distance and Vocal Dysphoria). The purpose of this is to better illustrate

[61] When I simply write 'gender,' this refers to gender identity, not sex. I consider it Othering that cis people are most often seen to simply *have* a gender, and that trans people are seen to have a gender *identity*.
[62] I would like to underline that, even though there are arguments to be made that cis people have experiences that *could* be described with the same terminology that is used to describe trans experiences (as with the aforementioned vocal dysphoria), utilizing this vocabulary, which undeniably carries with it specific connotations to gender queerness, dilutes and confuscates the discursive function of this language. Indeed, constructing a language that functions to elucidate LGBT-spesific struggles and pleasures, are paramount to our liberation.
[63] In this context, I am using the term, 'true gender,' to describe self identified gender. The same applies to the term, 'true voice.' I am not using the word, 'true,' as a reference to biology, but rather as one that concerns self identification.

what real life effects different configurations of these parameters could result in. **Scenario 1** represents an individual that both struggles with vocal dysphoria and is encumbered by a large ID between their sounding voice and their gender. **Scenario 2** represents an individual with low, but still present, vocal dysphoria and ID. This might be a person that feels a certain incongruence and slight negative feelings towards their voice without necessarily being hindered in day to day life by this fact. Their ID is on the lower side, indicating that this person doesn't have overbearing issues with identifying with their voice. **Scenario 3** with a higher level of vocal dysphoria and a lower level of Identificatory Distance, this represents a somewhat more unconventional case of an individual that experiences high levels of discomfort and gendered incongruence in regards to their voice (i.e. high level of vocal dysphoria), whilst exhibiting an adequate ability to identify with their voice nonetheless. **Scenario 4** is the mirror image of "Scenario 3," constituting a person with lower levels of vocal dysphoria and higher levels of ID. With this particular configuration, this individual might not find their voice unpleasant. Quite the contrary, they might enjoy the sound, or at least find it aesthetically pleasant in an impersonal sense, and, yet, their higher levels of ID results in a difficulty in identifying with it. I think this scenario effectively illustrates how vocal dysphoria and ID are not homologous with simply how attractive the individual finds their own voice, it is more interconnected and is affected by much more than aesthetics.

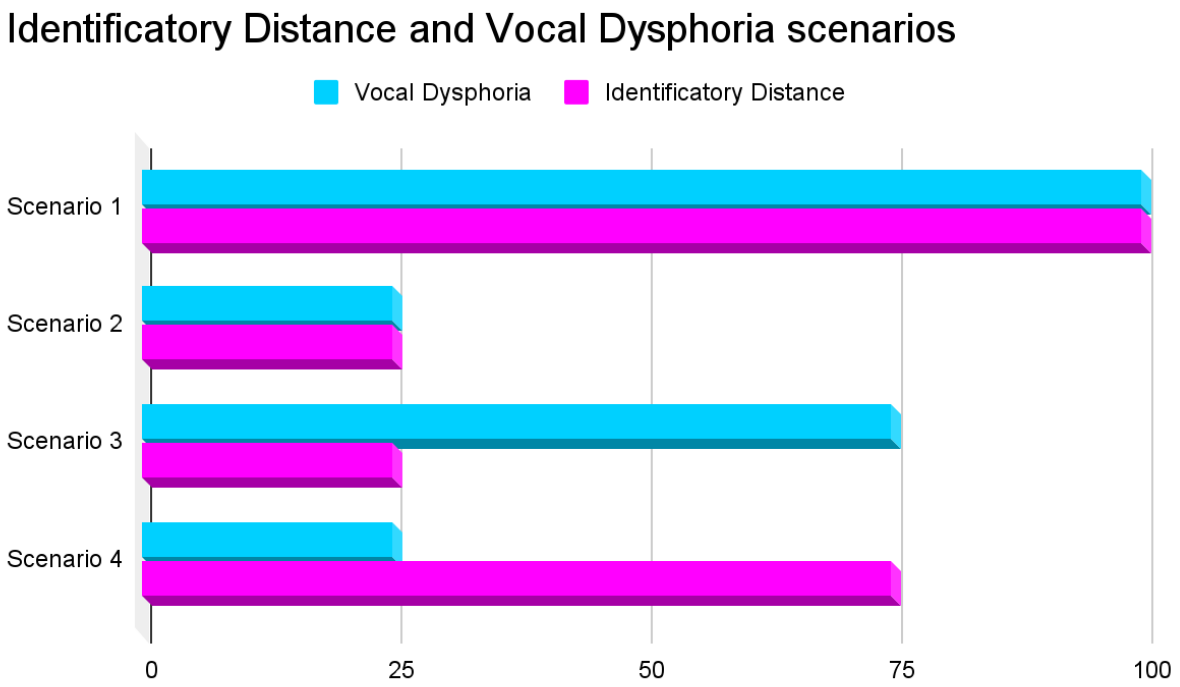


Fig 3: Table showing some different scenarios, or, rather, different individual's possible composition and degrees of vocal dysphoria and level of ID.[64]

Strange as the configuration in "Scenario 4" might seem, this is actually how I experience and relate to my own voice in the context of my own music. For me, being a transgender woman, my singing voice strangely enough doesn't make me uncomfortable in a way that might be expected given that the timbre and general feeling of my voice is what is typically considered a masculine, albeit with a boyish, pop-punk characteristic. I believe this is symptomatic of my low levels of vocal dysphoria (perhaps "singing voice dysphoria" would be a more suitable term in this context?), and, at the same time, I hardly *identify* with this singing voice. It doesn't make me uncomfortable, I quite like it, to be honest, but when I hear it played back to me, I don't recognize myself in it. This puts me in a strange, almost reversed-ventriloquistic position, where the musician part of my subjectivity "throws" a foreign voice into the "dummy" (my body), constituting a queer, and very ambiguously gendered, amalgamation of "inconsistencies"

[64] The reason for the scale moving on a numeric axis from 0 to 100 is not to metrically represent an objective, measurable point- based amount of ID or vocal dysphoria. Rather, it is simply meant to show varying degrees, or the severity, of each and use each scenario as references for discussion and reflection.

between my gender, appearance and expression, and vocality.[65] I put quotation marks around "inconsistencies"' to underline that, of course, there is nothing inherently dissonant or wrong about a woman with masculine sounding voice, or a man with a feminine voice, at least ideally, but there are societal expectations to conform to the gendered ideals of not just appearance and behaviors, but also vocality.[66] Similarly, in the case of my own person and voice, there is nothing discordant and unnatural with the totality of my being, it is simply who I am, how I exist. And, yet, in contact with the environment I am a part of, my configuration is queer in the way that I don't exhibit features and traits that coalign with the culturally dominant ideas of gendered normalcy. As I briefly touched on in the start of this segment, all this is in relation to my voice in the context of music and singing, when I use my speaking voice, on the other hand, different emotions and processes of identification (and the lack thereof) are at play. Identificatory distance and the speaking voice would be an interesting topic of research, but it sadly surpasses the scope of this thesis. I can, for the sake of contrasting it to the reflections around my singing voice, briefly mention that in the context of speaking, my voice makes me uncomfortable and I experience it as an obstacle in being perceived by strangers as the gender I am. This greater gender flexibility that I experience in singing might be resultant of music constituting an explorative arena for, often, contradictory expressions of identity and multifaceted constructions of personae.[67]

Before we reach the conclusionary segment of this chapter, I believe a final statement on the scope and limitations of ID is in order. Identificatory distance is not meant to be an all encompassing system that maps out the vast complexity and subtle nuances of each individual trans artist's use of technology and how they identify with their voice. That is not possible considering the non-static quality of identity and the often obscure nature of artistic endeavor. What I do intend for ID, what I believe it can contribute in the research of queer vocal performance and music technology, is to construct a theoretical tool for conceptualizing processes of technological and artistic praxis that seeks to consolidate identity and gender with the outer sonics of physical reality, specifically in the scope of trans and genderqueer artists.

[65] Colloquially, the word 'throw' is used when referring to the ventriloquists act of creating the illusion that their voice is originating from a source external to themselves.
[66] For further reading on voice perception and quality of life of transgender people see Hancock et al. (2011).
[67] For further reading on the complex construction of personae through interconnected media and the contradictory representations of identities in contemporary pop artists see Hansen (2019; 2021).

Conclusion

I have tried to illustrate a loose timeline of continuous aesthetic and technological development that I find relevant for my research topic in regards to VPTs, their use in music and, subsequently, the reception of the audiences. The voice holds a very special and privileged place in the public's conception of music, as the narrator, the "I," the human element. This partly explains why VPTs often have, and still do, induce anxiety in many listeners and within musical communities. The purity of the voice is challenged by these altering technologies that threaten to desecrate the sanctity and authenticity of the voice. It is not always given that the process is perceived as fully "human" anymore, and the possibility of assessing musical skill in vocal performance is challenged, especially in the case of auto-tune. Drawing a rudimentary history of the technologies that hold relevance for my research topic, I argue that VPTs have always been a concern of gender, authenticity, power, and humanity, something that at least in part explains their oftentimes visceral effects on listeners. In our present time, the pioneering trans artists of hyperpop create subversive vocalities that could only come to be through decades of technological advancement, as well as a sort of priming of the audience in regards to "strange" vocals that have seen an exponential increase since the turn of the 21st century. These technologies, as with the people utilizing them, are not free from inherited preconceptions surrounding gender, nature, authenticity, and musical integrity. In fact, as I have illustrated through the manual of the TC-Helicon Voicelive Play, ideology is inscribed in these technologies. I have intended this chapter to be a primer for introducing the concept that I am developing, identificatory distance. In short, ID denotes the degree to which a trans person identifies with their sounding voice, free from the assumption that all trans people need or want to have a "passing" voice, or that transition needs in themselves are static. Related to agency and gender expression, I argue for the utility of ID in investigating the various musical and technological praxis employed by trans artists in creating/expressing gender in hyperpop. As mentioned, ID is not thought to be an all-encompassing system, rather, it constitutes a conceptual springboard for studying queer vocal production and performance in relation to technology.

Chapter IV: Bridging the Identificatory Distance://_ Laura Les

In this chapter, I investigate the curious case of Laura Les and explore the different ways in which she has used a multitude of different VPTs in her journey as a musician and human being. The chapter is segmented into four main parts each connected to a specific release, representing different stages of her continual development and widespread influence in the flourishing genre that is hyperpop. The reason for this fourfold divide relates to how each of these tracks showcase distinctly different ways Les utilizes music technologies to decrease the identificatory distance between her sounding voice and her gender. I believe these cases, which collectively constitute a profound musical development of artistry and personal liberation through artistic endeavor, is symptomatic not only in the case of Les, but many other artists that submerge their personal lives in the muddy waters of musical pursuit. From humble beginnings with bedroom recordings trying to work through "...intense feelings that [she] did not know how to deal with [...]," like she sings in "how to dress as human," to genre-defining hyperpop heroine, Laura Les stands out as one of the most fitting artists to investigate the creation/expression of gender through vocal processing technology.[68] The songs and music videos picked for this chapter appear in chronological order based on their release date, something that elucidates the morphology of Les' musical career. Through investigating these productions mainly through the lens of identificatory distance, audiovisual and lyrical analysis, I hope to bring to light how this artist has evolved throughout the last decade in mutual influence and creative engagement with her use of VPTs. Each song represents different sets of challenges and triumphs, and all, I would argue, are necessary departures from previous states of dysphoric incongruence or genre conventions, each part of a larger journey through identity, voice, queerness, musical self-expression, and technological mastery.

Voice dysphoria and solace through technology: "how to dress as human"

We begin our hermeneutic pursuit into the career of Les with the independently released track, "how to dress as human." This song was made public through Les' own Bandcamp page in 2017 when hyperpop was only in its early infancy. Although Les released this song under her own

[68] "How to Dress as Human" https://www.youtube.com/watch?v=meSHvah0AA4.

name and alias, osno1, 100 Gecs was already formed and had begun producing songs since 2015, but they would not garner much attention before their release of *1000 Gecs* in 2019. I have retrieved the lyrics from Les' Bandcamp page and have decided to keep the all lower case formatting to honor the low key, shy, introverted aesthetic intent I believe is deliberately expressed through this choice (Les, 2017).

how to dress as human
what like a skirt and.. like some heels?
now i look stupid...
is this how every human feels?
better go with vans
im never gonna pass
i should stay home
why did i make plans?
drunk in the bathroom
messing with my skirt
ive got hair in my tights and
nothing in my shirt
if i paint on some lips
will they come off with a kiss
and tell?

While the lyrics of "how to dress as human" deal directly with heavy themes relating to anxieties surrounding "passing," clothing, isolation, depression, body dysphoria, and anxiety, themes that are all too familiar to many trans individuals, the *sound* of the vocals themselves adds something deeper to the narrative of gender dysphoria and negative feelings related body and clothing (see Fig. 4: now i look stupid…). The voice, which represents the "I" of the song, sounds highly artificial and digital, but also genuine and human at the same time. The lyrical themes are all about feelings of hopelessness in the pursuit of being oneself in the early stages of transitioning. The vocals themselves are also a sonic testament to the desperate, but necessary, effort of trying to become one with yourself. While the lyrical themes of the song goes far as to suggest that the vocal processing utilized in the production was employed to achieve a more female sounding voice, it is far away from "passing" in the traditional sense.[69] Yes, an unaware listener would most likely register this voice as female in so far as it definitely does not sound traditionally masculine, which is often read as male, but the voice undoubtedly comes off as unnatural, quirky,

[69] Although the ideal of passing is highly subjective and problematic in itself – in the way that it often reinforces unrealistic, racialized (White), upper class, cisnormative beauty standards – it is still sought after by many trans people and sustains relevance in intra-trans discourse (exemplified by its usage in this song).

and highly manipulated. I believe this is what makes this production, and Les' use of VPTs, so beautiful and profound; the pain, hope, and resilience is not only *told* in the lyrics, it is *emitted* sonically through her voice. The sound of her voice itself *is* the meaning of the song. In this way, "how to dress as human" is a portrait of an artist early in her transition, resourcefully utilizing digital tools to not only bridge, but also to *highlight* the identificatory distance between herself and her gender. In other words, the conspicuous use of VPTs both feminizes the voice and calls attention to the artificiality of this process. The sound of the voice is arguably childlike, something that was most likely achieved by the totality of the frequency spectrum of the voice being raised. This specific technique raises the mean pitch (what we normally refer to as the "note height"), and also the surrounding frequencies (formants), which, in turn, creates the impression in the listener's mind that the sound is emanating from a smaller source/body. Another subtle feature of the VPT usage in this song, is the dynamic oscillation between a "cleaner" voice in the intro/verses and a slightly more distorted, auto-tuned, vocal timbre found in the choruses (timestamp 0:21-0:33). These changes in vocal quality mirror the overall production and aesthetic shift that differentiates these segments; the former being stripped down and acoustic, and the latter leaning more into RnB and electronic with trap drums clearly delineating the different song parts from each other.

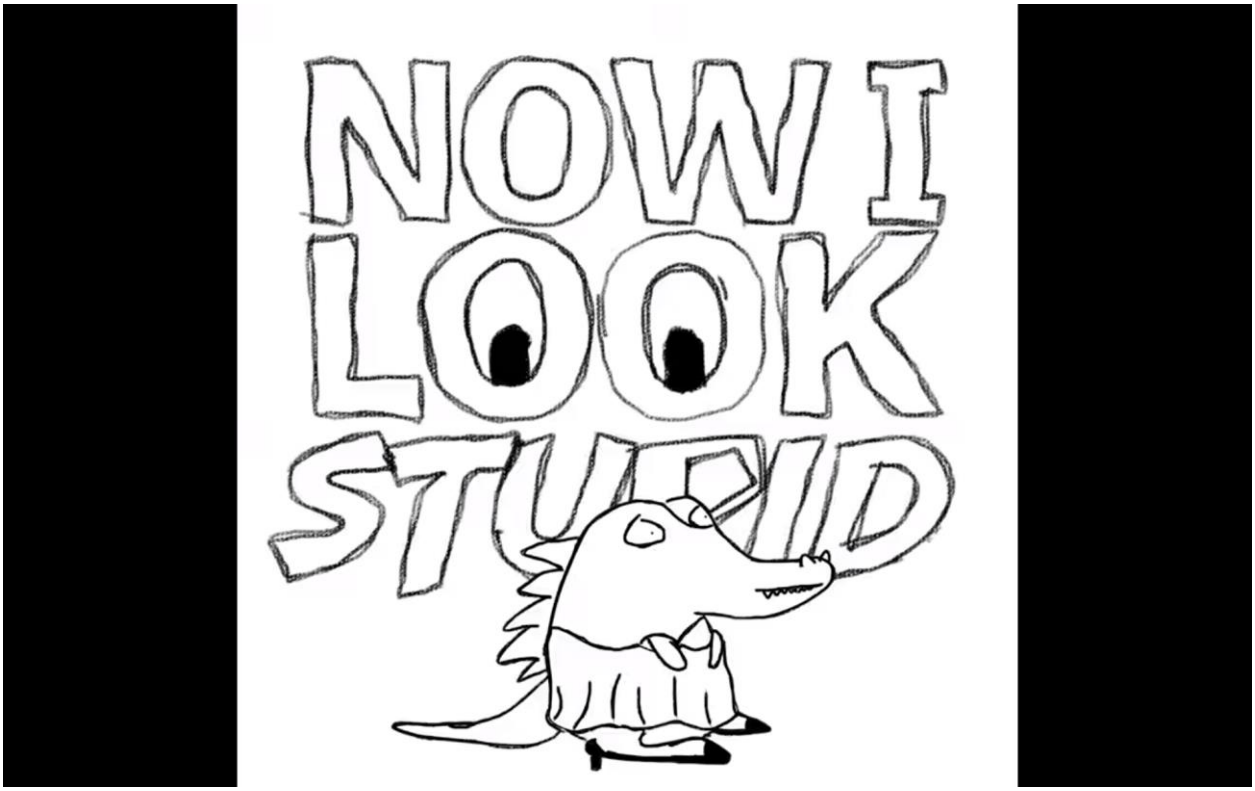


Fig. 4: now I look stupid… Screenshot (0:41) from Chris Barnes' (2019) unofficial animated lyric video.

The artificially feminine, and perhaps even childish, timbre found in "how to dress as human," is not a bug, but a feature of subgenres preceding what we now call hyperpop. In the aforementioned *Them* interview, Les recalls her initial contact with the genre known as *nightcore* and how it shaped the course of her musical career: "I knew that I liked nightcore vocals. From the first time I tried it, it sounded amazing to me. I was like, 'I'm never doing anything else.'" (Les, 2020). Additionally, she further elaborated that: "[i]t's the only way that I can record, I can't listen to my regular voice, usually [...]" (Ibid.). Stating that one "can't listen to their own recorded voice played back to them" is a shared sentiment amongst a wide array of people, cis and trans. But, as anyone familiar with trans related issues and voice are aware of, having a passable voice can even be a safety concern for some people, and the discomfort of hearing your non-passing voice played back to you often comes with a whole other set of anxieties, discomfort, and concerns. This issue harkens back to Freya Jarman reflections on the intrinsic discomfort felt when trying to consolidate unconsolable perceptions of yourself:

> Indeed, there is arguably a certain repulsion generated in any attempt to force together the two perceptions of what we see of ourselves and what others see. The photograph, for instance, forces a confrontation with a version of oneself very different from one's mental image of oneself, and it lacks the physicality of the mirror. The video image is, perhaps, even closer to what others see of us, and yet—or maybe therefore—is often even more repulsive to us; whereas I have direct control over my mirror image (it moves when I move), the thing on the screen (impostor!) moves without me, and presents an even greater discomfort in this mismatch between movement and physicality. (2011, p. 34)

Using visual analogues, Jarman effectively demonstrates how and why many, especially trans people, feel such intense discomfort when their voice is played back to them. How can one consolidate appearances seen in mirrors, voice recordings, and photographs that are incongruent with how we conceive of ourselves? Most of the time, a great deal of people take it as a truism that two (seemingly) unsimilar aspects cannot be the same. If we experience an uncomfortable dissonance and a stark heterology between our experience of ourselves and the way we are perceived by others, surely, one of these images must be illusory, right? Is it really as simple as the cliché that trans people are "born in the *wrong* bodies"? Does the *want* to be perceived, heard or seen a certain way simply *indicate* that we are "X," or, does the act of *wanting* to be "X" constitute the inception of being "X" in that moment, sustained as long as the want persists? Although these questions unfortunately will remain in the realm of speculation, they still serve a purpose as they help us reflect on the ontology of being a non-static individual in a, often, static world, or at least in a world that *believes* it is static. Indeed, it is very difficult to find any sense or reason for the fact that we as people continuously change, and that we contain and emit contradictory appearances in the world, but this is the lived reality for so many, especially genderqueer, individuals.

I would argue that "how to dress as human" lyrically not only illustrates themes of anxiety and discomfort around clothing, passing, isolation, and despair, but also *hope*, expressing conflicting visual and auditory appearances in early gender transitioning. The vocality, on the other hand, is not only suggesting vocal dysphoria, it is, by the very features of its sonics and the knowledge of the studio-technical production involved, symbolizing resistance, effort and identificatory *travel* of the self towards itself.

Finding her voice: "money machine"

This era in Laura Les' career is the one that catapulted her, and 100 Gecs, into hyperpop superstardom. In fact, many people might cite "money machine" as the most iconic track of the

genre.[70] In my own view, "money machine" also represents a pivotal moment in Les' musical career where she managed to solidify herself as a master voice manipulator, inspiring countless aspiring artists to mimic her signature vocals. In fact, this vocal production and performance was so defining for the genre stepping into the mainstream pop consciousness in 2019 that many amateur artists have come to equate the vocals of Laura Les, and 100 Gecs more broadly, as "hyperpop vocals." One cursory YouTube search for "how to get hyperpop vocals," will generate countless videos advertising that they can teach you how to produce said vocals. It is not unusual for these uploads to name drop 100 Gecs in the videos' descriptions, underlining the huge influence Les and Dylan Brady, the other member of 100 Gecs, have had on the hyperpop scene (see fig. 5: how to get hyperpop vocals).

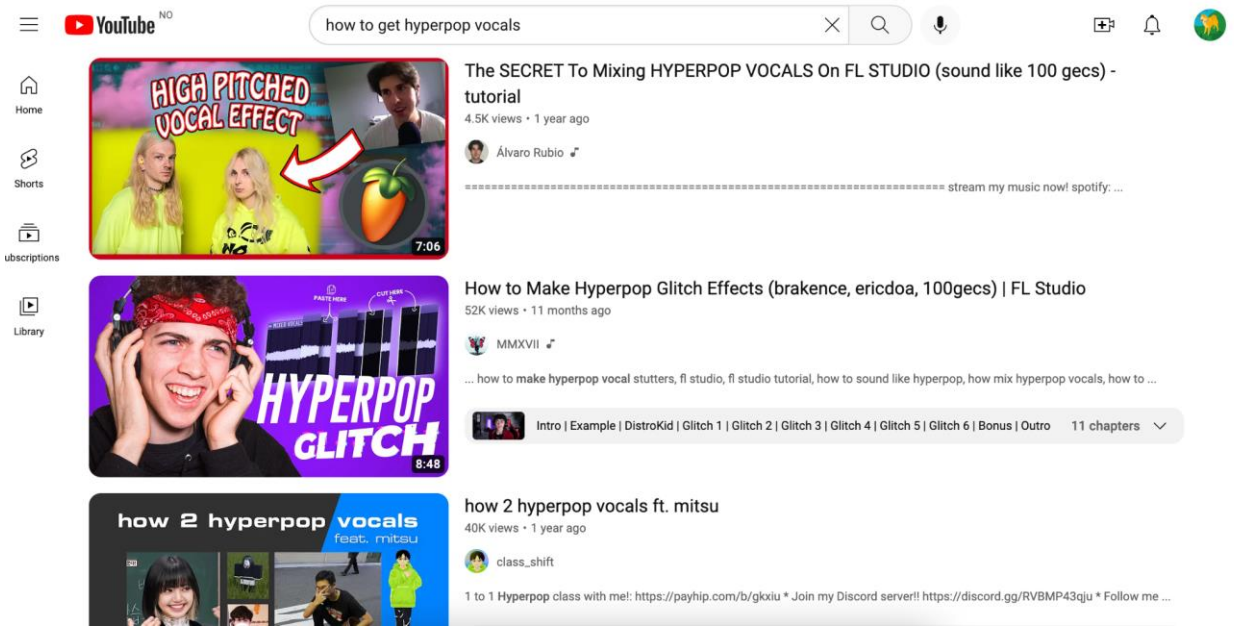


Fig. 5: how to get hyperpop vocals. Screenshot of YouTube search.

The music video for "money machine" features both Les and Brady thrashing their long, acid bleached hair in what appears to be a parking lot, often in front of a huge, almost monster-truck-esque, vehicle. This grotesque truck is undoubtedly a direct reference to the third and fifth strophe of the chorus; "Big boys coming with the big trucks." (100 Gecs, 2019, "money machine"). This type of hyper materialistic posturing is reminiscent of macho hip hop/rap music

[70] "Money machine" https://www.youtube.com/watch?v=z97qLNXeAMQ

video clichés made famous in the 1990s, and I believe serves both to satirize 100 Gecs' own multilayered and comedic approach to musical authenticity, as well as to underline their rejection of traditional macho masculinity by deliberately displaying the out-off-placeness of their own attempt at claiming an ultra-masculine posture (see Fig. 6 and 7: money machine).[71]

Fig. 6: money machine. Screenshot (1:32) from the official music video.

[71] There is also something to be said about the racial dimensions of this music video. The aesthetics of 100 Gecs very much engages with markers of Whiteness, specifically what is seen by some as "Whitetrash" (i.e. their DIY bleached hair, Monster Energy drinks, emo-aesthetics (exemplified by the iconic red and black long sleeve seen in fig. 6), "unstylish" mountain boots, et cetera). Coupled with the fact that they parody what are essentially Black hip hop music video tropes in "money machine," one could argue that their camp engagement with these aesthetics serves to signal a self-awareness of the tensions that their music video harbors in terms of genre authenticity. Further muddying the waters of genre delineation, is the fact that "big trucks" is also a prevalent symbol found in White country music, and is in part associated with White conservative masculinity (big trucks, guns, beer, et cetera).

Fig. 7: money machine. Screenshot (0:31) from the official music video.

There is also a distinct sense of self-aware irony in the way that Les' lyrics from the intro of the song, being very standoffish, is contrasted by the high pitched, almost cartoony voice they are delivered in. She snarls through a seemingly digitally distorted, hard-tuned and formant-shifted voice:

Hey you lil' piss baby, you think you're so fucking cool?
Huh?
You think you're so fucking tough?
You talk a lotta big game for someone with such a small truck
Aw, look at those arms
Your arms look so fucking cute
They look like lil' cigarettes
I bet I could smoke you
I could roast you
And then you'd love it and you'd text me "I love you" and then I'd fucking ghost you"
(100 Gecs, 2019, "money machine")

Although it might seem counterintuitive that Les would manipulate her voice in this possibly non-threatening manner – specifically, the high pitch and the juvenile insults (i.e. "piss baby") – whilst delivering lyrics with an attitude that seems more like a rap diss track than anything else, I believe it makes perfect sense within its own logic of coming into her queer voice. For many

trans artists, becoming comfortable and feeling a sense of ownership over our own voices is a quest in itself, and in the intro vocals of "money machine," I see both an artist claiming their own voice as fierce and powerful, and a person recognizing and satirizing normative ideas and expectations around masculinity, femininity, and authenticity. Les' vocals are processed with a heavy distortion that has a glass like quality in the way that it cuts through the production (this is most clearly audible in the falsettos of the chorus; "[...] feel so clean like a money machine, yeah [...]" (timestamp 0:21-0:38).

The influence of 100 Gecs' release of *1000 Gecs*, the record featuring "money machine," and their vocal production, especially Les', cannot be understated. From the aforementioned article by Schaffer, they reflect on the enthralling quality of Les' vocals, and the ways in which it has affected audiences:

> I've tried to understand why Laura Les, of all people, stands out so significantly to me—and the core reason is in her ability to synthesize, alongside Dylan Brady, such a long and complex hxstory of vocal modulation into the thesis of gendered performance that is 100 gecs. And moreso, it's in her apparent ability to surpass vocally "passing" and achieve something far more expansive & evolved than a human voice. Her success in this is proven by the sheer amount of pitched-down versions of her songs that people have uploaded out of sheer confusion, desperately trying to get a handle on what exactly she even *is* [original emphasis]. (Schaffer, 2019)

This is not the first time the gender or sexuality of a pop star has been put under scrutiny and subjected to disrespectful skepticism and wild speculation. I vividly remember a time, late 2000s/early 2010s, when it was rumored that the massively popular popstar, Lady Gaga, was a "hermaphrodite," having both a penis and a vagina. In an interview with *60 Minutes Overtime* from 2011, Gaga was once again confronted with the inappropriate inquiry about her genitals by the host, Anderson Cooper. Instead of denying the claim about her having a "male appendage," she showed her support of the queer/trans communities and underlined how ridiculous this question was by unflinchingly replying; "Maybe I do. Would it be so terrible?" and, elaborating further; "Why the hell am I going to waste my time and give a press release about whether or not I have a penis? *My fans don't care and neither do I* [emphasis added]." (Gaga in Lasic, 2020). This interview is from over 10 years ago, and of course, the early 2010s was a sociopolitical climate that was very different with regard to queer and trans issues, not to mention the public's perception of feminism, which was also radically different from our present time. The former is underlined by the fact that Gaga was even asked this question in a professional television

network (CBS) in the first place - just imagine Taylor Swift or Adele being asked the same today - and the latter is demonstrated by the fact that Lady Gaga herself stated that she is *not* a feminist: "I'm not a feminist - I, I hail men, I love men. I celebrate American male culture, and beer, and bars and muscle cars..." (Stein, 2009). If anything, this illustrates the developments in public opinion about gender, sexuality, and feminism. Gaga would not call herself a feminist in 2009, most likely because feminism was more associated with man hating, bra burning, radical feminists, than it is today. The fact that it would seem strange for many in our present time to learn that Lady Gaga explicitly stated that she wasn't a feminist, taking in account her unapologetic and outrageous self-expression and her support of queer communities, only further underlines the point.[72]

All throughout the video, the viewer is bombarded with far-out visual effects that look like a combination of movie type psychedelic flair effects mixed with a sort of digital degeneracy that fits only too well as the visual counterpart to the addictive glitchbanger that is "money machine." If there is one word that could describe both the visuals and sonics of the hit single alone, it might very well be "glitching." Poetically, it is as if Les and Brady open up an unpredictable and unstable universe that serves as an invitation to challenge and distort, to burn the borders and arbitrary dichotomies between man and woman, human and machine, authentic and inauthentic, art and trash. In the disconfiguring maelstrom that is "money machine," bug-ridden and counterfeit software is used mercilessly to corrupt the CPU of cisheteronormative society, distributing anyone with the freeware to become one with themselves. If not the very reins of agency, how can we understand the tools that are utilized so viscerally in this genre? The theme of glitching and malfunctioning software, in that it represents not only dysfunction, but also necessary reconfigurations and possibility, brings to mind sentiments from Judith Butler's

[72] It must not be overlooked that there are still existing tensions between large parts of mainstream feminism and queer liberation. Even within queer communities, support for trans rights is not guaranteed. Unsurprisingly, transphobia is often rooted in fear of the unknown, a claim that is supported by new research conducted by Just Like Us, a LGBT+ young people's charity. The study, which will be included in the full Positive Futures Report (due to be released 1. June 2023), showed that simply knowing a real life trans person doubles the likelihood of this person being an ally, and that "[t]hree quarters (74%) of those who say they are not supportive of trans people *don't even know a trans person in real life* [emphasis added]," additionally, the study weakens the lesbophobic sentiment that lesbians are transphobic, stating that: "[...] lesbians are the most likely of the whole LGBTQ+ community to be supportive of trans people. Lesbians are the most likely to say they know a trans person (92%), and also the most likely to say they are "supportive" or "very supportive" of trans people (96%). That's compared to 89% of LGBTQ+ people overall, and just 69% of non-LGBTQ+ people." (Ashenden, 2023).

most influential work. In *Gender Trouble*, they reflect on the ways in which the idea of "woman" is configured and born out of the heterosexual matrix, opposing feminist aims:

> Is the construction of the category of women as a coherent and stable subject an unwitting regulation and reification of gender relations? And is not such a reification precisely contrary to feminist aims? To what extent does the category of women achieve stability and coherence only in the context of the heterosexual matrix?6 If a stable notion of gender no longer proves to be the foundational premise of feminist politics, perhaps a new sort of feminist politics is now desirable to contest the very reifications of gender and identity, one that will take the variable construction of identity as both a methodological and normative prerequisite, if not a political goal. (Butler, 1999, pp. 8-9)

Notions of the "variable construction of identity," I believe finds resonance in the erratic feel of 100 Gecs approach to masculinity, femininity, and musical eclecticism. Withstanding the fact that Les was pursuing medical and social transitioning, so that her gender expression, aesthetically and biologically, would be more in line with her gender, it is also clear that she is not reproducing the limiting mold of "woman" created by the heterosexual matrix that Butler is concerned with in the quote above. Of course, there is no way to *prove* whether or not someone is or is not expressing their "true self" and gender free from the toxic restraints of the patriarchy. Many would argue that such a feat could never be possible as long as we live in cisheterosexist patriarchal societies. My point is that the audiovisual symbolism of "money machine" disrupts notions of stability and causation between chromosomal sex and gender, opening up a space for the audience to redefine categories, boundaries, and, ultimately, themselves. I would argue that one of the ways in which this is achieved by the duo is through humor and satire, something I briefly touched upon in regards to their masculine posturing in front of the oversized black truck (see Fig. 6). Hawkins writes about the connection and interrelatedness between humor and agency in pop music:

> I am particularly drawn to the idea that queer pop expression is inscribed by a crisis in the 'naturality of signs' induced by developments in technology. To be sure, the appeal of pop lies in playfulness and diversity, and how this is manufactured technologically is a major determinant of musical aesthetics. *Further, because of humorous intent (and any resulting sensibilities of difference), pop music helps throw a special light on human agency* [emphasis added]. (Hawkins, 2016, p. 14)

I believe "money machine," especially when it is accompanied by the music video, is a very clear example of the points made in the citation above. Through playful engagement with (and against) markers of femininity/masculinity, authenticity/inauthenticity, and seriousness/satire, I would argue that the arbitrariness of these dichotomies are brought to the surface, and by going *against*

the expectations and demands society places upon us in contact with them, the duo, by being examples of transgression and transcendence themselves through their art, undoubtedly "sheds light on human agency" (Ibid.).

In the broader scope of transformative disruption that emanates from this track, Les posted a tweet reflecting half jokingly on her medical transitioning since the release of the "money machine" music video (see Fig. 8: Laura Les tweet).

Fig. 8: Laura Les tweet. Posted 28/2/2020.

I believe this sentiment, feeling a sense of disassociation from your appearance in the process and span of transformation, plays into a larger picture of shedding the layers of false self so that the external is a truer reflection of the internal. When one begins to change, visually, sonically, socially or otherwise, former appearances lose their familiarity and become alien. Similarly, the voice, through rigorous training, digital processing and various alterations, is recognized as truer to the self when it no longer resonates dissonantly. Identificatory distance, when bridged, can turn superseded features identificatory *distant* to the individual. Indeed, one could ask, purely in a philosophically speculative way, if a changed feature of the body is the same part only altered and evolved, or if the former must be understood to be completely exhausted, metabolized in the

birth of the new. Conjuring an image of the body as a sort of Ship of Theseus,[73] one could also begin to wonder if we only have one single voice through our lives, or if voices can be shed like the outgrown skin of a reptile. And, maybe, ecdysis must be endured many times before the self settles in homeostasis. As with the personal and artistic endeavors of Laura Les, searching for your true self necessarily entails a sense of abandon *by and of* various parts of the self. Journeying through the vast plains of personal transformation must include sifting through these false selves, a joyful disillusionment of previous identities.

In her quest to shorten the identificatory distance between her sounding voice and her gender, the mediation of the voice, searing with distortion and radiating artificially with a digital timbre, her voice itself becomes the message once again. The out-of-breath like quality of Les' vocal performance in the choruses of the song, is framed poetically in the almost overbearing sea of vocal processing. The erratic sonics of her voice blend seamlessly with the rest of the production, and the borders between digital software instruments and human voice are diffused. As with many other seminal works of music, one could easily enjoy "money machine" without any knowledge of Les' development as a musician, how she struggled with voice dysphoria and subsequently recording her own voice, how she found solace in the art of nightcore vocals. Undoubtedly, the added knowledge of these facts only strengthens the message of resilience and deepens the layers of interpretation that this song, artist, and duo has to offer.

Shedding the sonic prosthesis: "mememe"

Moving on to one of the newer releases in the discography of Laura Les, namely the single, "mememe," released in November 2021. Following a longer hiatus, 100 Gecs released this track and showed their audience that they were still active and capable of bending the genres of pop music, even subverting the expectations of their own, zealous fanbase, something the group playfully insinuates in the choruses of the song (100 Gecs, 2021):

> And you'll never really know, know-know-know, know-know-know
> Anything about me, me-me-me, me-me-me
> No, you'll never really know, know-know-know, know-know-know
> Anything about me, me-me-me, me-me-me-me-me

[73] The Ship of Theseus is an ontological thought experiment that deals with identity and changeable parts. In the thought experiment, one part of the ship is changed after the other, and the reader is asked to assess at which point, if ever, it stopped being the original ship (Britannica, 2023).

What is the most unexpected element of this single lies not in arrangement, instrumentation or even the somewhat unconventional genre blending of ska, glitchcore, and power pop. What is the most striking feature of this track, for those that have followed the career of 100 Gecs, lies in Les' vocals. The vocals are in fact presented *without* her signature formant-shifted, hard-pitched auto-tune effect.[74] Her voice sounds clean, without much distortion, and the lack of prominent reverb creates a sense of closeness to the listener. Not only is this quite remarkable considering Les' own discography and history, struggling with voice dysphoria and fashioning a coherent, eclectic aesthetic signature built on the use of prominent vocal effects, it is, in my opinion, a very deliberate gesture signaling the duo's unwillingness to stagnate into genre conventions and aesthetic dogmatism. Indisputably being auteurs in hyperpop and its adjacent genres, this would actually be a viable option for the group. They have a sonic and visual brand, one that is highly successful, and they could easily ride this wave out if they wanted to. Nonetheless, the most profound message residing in "mememe" is that Les has managed to fight, and quite possibly subdued to a large degree, the negative feelings of dysphoria miraculously *through the same* source of her discomfort, her voice. Voice training is also possible, and quite necessary, to consider in the broader perspective of technologies that can be employed in attempts to shorten identificatory distance between an individual and their voice. Famously, this has not historically been the route Les has chosen in her musical endeavors. For many, she holds icon status exactly because of her mastery of formant-shifted, hard-tuned, and distorted vocals, and she has mentioned in an interview from 2021 that she started to train her voice and sought out lessons during the making of the unreleased album that "mememe" is promoting, *10,000 Gecs*. This quote is from the aforementioned interview, where the interviewer and Les touch upon the wider implications of the decision to nakedly exhibit her voice sans auto-tune:

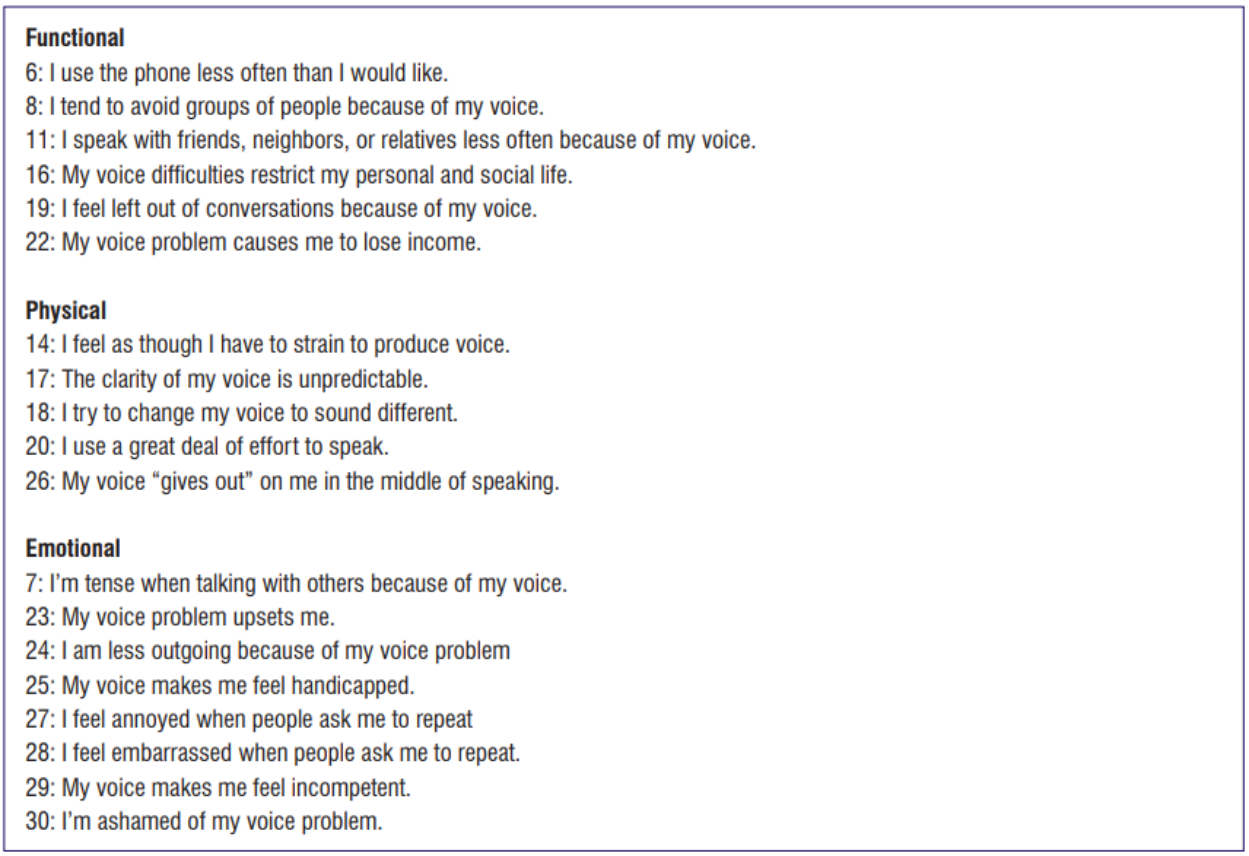
> The choice plays into a larger reexamination that comes with transitioning genders, where disguising and modulating vocals can function as a way to conceal one's identity. "As I've been exploring my voice more, I'm like, 'I can do this,'" Les says, adding that she started taking vocal lessons on a whim during the making of the album. "And also I'm sick of worrying about it. *If I don't just fucking do it, then I'm just a scaredy cat. And I don't want to be a scaredy cat* [emphasis added]." (Horowitz, 2021)

[74] This can be heard on the second verse of the song (0:15-1:42): https://www.youtube.com/watch?v=1Bw2dTY3SsQ

Indeed, for anyone familiar with Les' history, this song is a pivotal and courageous moment in her musical career and quite possibly her personal life as well. The lyrics of the song show a very lucid awareness of the significance of the track and makes references to the broader issues and interrelatedness of identity, voice, passing, and queerness. In the second verse of the song, when we can hear Les' vocals sans auto-tune for the first time, she opens with:

> Do I sound like a joke when I'm talking to you?
> I take it back quick and I nod like "true" (100 Gecs, 2021)

For transfeminine individuals especially, our voices can be a source of ridicule, cause great personal distress, and lead to social rejection and even physical violence in the worst cases. I say transfeminine individuals *especially* because, as it is true that many transmasculine people also struggle with voice dysphoria and face discrimination on the account of how their voices do not necessarily match society's expectations, feminizing hormone treatment does little to nothing to reverse the effect that a testosterone-heavy puberty has on the vocal cords (Neumann & Welzel, 2004, p. 154). Conversely, because of the testosterone, masculinizing hormone treatment lengthens the vocal cords and, in most cases, deepens the voice to a sufficient degree that it aligns with societal expectations of what a man "should" sound like. There have been some empirical studies into trans women's voices, how we perceive our own voices, how they are perceived by others, issues related to voice et cetera. One study, conducted by Schmidt et al in 2018 and published in *Revista CEFAC: Speech, Language, Hearing Sciences and Educational Journal*, investigated a group of trans women's self-perceived "voice handicap" compared to a blindfolded, naïve test group that were asked to determine the gender (male, female, undetermined) of the collected voice data (Ibid.). In the study, the trans women participants were asked to fill out a Voice Handicap Index (VHI) that was modified slightly by specialists to be more suitable for the purpose of the study (see Fig. 9: Voice Handicap Index). The following figure, gathered from the study, I believe mirrors sentiments expressed in the lyrics of "mememe," and is symptomatic of the broader functional, physical, and, especially, emotional difficulties related to transgender people and voice dysphoria.



Functional
6: I use the phone less often than I would like.
8: I tend to avoid groups of people because of my voice.
11: I speak with friends, neighbors, or relatives less often because of my voice.
16: My voice difficulties restrict my personal and social life.
19: I feel left out of conversations because of my voice.
22: My voice problem causes me to lose income.

Physical
14: I feel as though I have to strain to produce voice.
17: The clarity of my voice is unpredictable.
18: I try to change my voice to sound different.
20: I use a great deal of effort to speak.
26: My voice "gives out" on me in the middle of speaking.

Emotional
7: I'm tense when talking with others because of my voice.
23: My voice problem upsets me.
24: I am less outgoing because of my voice problem
25: My voice makes me feel handicapped.
27: I feel annoyed when people ask me to repeat
28: I feel embarrassed when people ask me to repeat.
29: My voice makes me feel incompetent.
30: I'm ashamed of my voice problem.

Fig. 9: Voice Handicap Index. Schmidt et al. 2018. p. 81.

Given the myriad of potential voice issues listed above in the VHI, it is not surprising that for transgender musicians, VPTs can serve as a great liberator, relieving some of the distress associated with having a voice that makes you feel incomplete, tired, restricts your personal and social life (potentially leading to self-imposed isolation), makes you feel handicapped and ashamed, and may even lead to losing income (as seen in the figure above). I would argue that the technologies employed in shortening the identificatory distance between oneself and one's gender, is not limited only to the realm of music production and art of which it is synthesized. The incentive and determination certainly did not start in digital audio workstation, and neither does it end with the finalized track. The voices created by Les, and other professional and amateur trans artists expanding the sonic possibilities of their voices, serve as metaphorical light houses, beckoning them to come home, proving, by its very existence, that "home" even exists. For many of us that refuse or simply *cannot* meet the expectations placed upon us by cisheteronormative society, believing that we can find home in ourselves, is not a given. In this sense, for many genderqueer people, the experience of personal discovery and acceptance entails

both losing *and* finding yourself. The latter poetically sonified in the clean vocals of "mememe." With this in mind, the significance of Les' vocals without conspicuous processing cannot be overstated. As is often the case with great artists, the art cannot be separated from the personal life of the artist. This song in itself represents personal growth, an increased congruence between Les' physicality and her identity. Although I would not undermine the aesthetic value and significance of her earlier vocal productions (opaquely processed "hyperpop vocals"), it could be argued that the tools employed served as sonic prostheses, shortening the identificatory distance between herself and her voice. Withstanding the fact that these prostheses sustains aesthetic relevance in the music of Laura Les and 100 Gecs, exemplified by its sustained usage in later releases, it still holds immense gravity that Les does not "need" these technologies anymore, that she has traversed the distance separating her identity and her voice, now finally through her corporeality alone.

The chaos-trans voice shrieks like a banshee: "Haunted"

Even though the three tracks, "how to dress as human," "money machine," and "mememe," constitute the main elements of my interpretation and study of Laura Les' use of VPTs in her creation/expression of gender in hyperpop, there is also one last production that I believe is worth exploring before we leave this chapter. The song is called "Haunted" and was released in 2021 under Laura Les' name alone, independently from 100 Gecs.[75] This, as I mentioned in the introductory chapter, is the same song that was featured in a chase scene in the second season of the hit TV-show, *Euphoria*. This is not insignificant given that *Euphoria* has won multiple awards and has had a massive reach and impact on young viewers around the world.[76] What I believe is particularly interesting about this production, is that the voice of Les is thrust into the extreme, as if the very civil and intelligible elements are seared away, leaving only a flurry of wild screams, echoing and bleeding into each other, expressing a raw sense of hurt and power. These vocals can be heard in the choruses of the song (timestamp 0:10-0:33 and 1:07-1:31). They are starkly contrasted to the vocal delivery of the verses, which are "clean" (in the sense that they are not screamed) with words that are intelligible and appear to be produced in the signature

[75] "Haunted" https://www.youtube.com/watch?v=879ysA4h9r4
[76] For a list of awards received by the creators and actors of *Euphoria* see https://www.imdb.com/title/tt8772296/awards/

Laura Les vocal style that she is known for in the hyperpop sphere. There is a distinct difference in pitch between the verse and chorus vocals, the former being in a significantly lower register. The lower register and limited melodic movement arguably create a detached, almost apathetic affect. They can be described as cute, with lyrics playfully hinting at a more sinister undertone (perhaps strengthened by the monotonous intonation), referencing sleep deprivation, bug ridden carpets, and paranoia (Les, 2021):

Yeah, do you think it's cute that
I'm so fucking stupid
Tell me that it is, 'cause I'm tired of being useless
Yeah, I've been up for three days
Everything is haunted
Everybody's evil and there's bugs inside the carpet
Do you think I'm frightening? Organ chords and lightning
If I show my fangs, will you tell me that they're cool?
Mirrors shatter when I'm passing, broken glass and crashing
Little blurry stars scattered all across my room

The chorus, showcasing the maelstrom of Les' visceral, chaotic shrieks, is perhaps the best example I could find that embodies what I believe Schaffer (2019) means by their term, "chaos-trans voice," that I briefly touched on earlier in this thesis. In their article, they employ the term to investigate artists that create vocalities which viscerally affect the listener by the sheer force of the digital, hyper-processed and overdriven timbre they emit. Of course, there is also a direct reference to gender and transness given that the term is called chaos-*trans* voice, and not simply something along the lines of "chaotic hyperpop vocals." The erratic, desperate, and deeply confusing vocals found in the choruses, is aptly mirrored in the visuals of the accompanying music video. The whole production appears as if it was filmed on an old digital camcorder from the mid 00's, effectively rendering the sub-par digital quality of the camera visible, which fits neatly as a visual counterpart to the audible glitch quality of the vocals. The props used, including a large sheet of white fabric with the top part of a halloween-style skull, resembling a haunting ghost, plays on the lyrical themes of "organ chords and lightning," which are unambiguous references to vintage horror film aesthetics (see Fig. 9: Haunted).

Fig. 9: Haunted. Screenshot (0:11) from the official music video.

I would argue that the refrain vocals of "Haunted" echoes sentiments found in Donna Haraway's seminal essay titled, "A Cyborg Manifesto." This work, which was highly influential for the development of gender studies and has a sustained relevance in the field, was published in 1985. In the essay, Haraway rejects strict boundaries and dichotomies between man/machine, woman/man, human/animal, idealism/materialism etc. through the mythical imagery and symbolism of the cyborg. The work is a critique of the prevalent tendency in feminist circles to focus on identity politics and argues instead for a "unity through affinity." Haraway writes:

> Cyborg politics are the struggle for language and the struggle against perfect communication, against the one code that translates all meaning perfectly, the central dogma of phallogocentrism. That is why cyborg politics insist on noise and advocate pollution, rejoicing in the illegitimate fusions of animal and machine. These are the couplings that make Man and Woman so problematic, subverting the structure of desire, the force imagined to generate language and gender, and so subverting the structure and modes of reproduction of "Western" identity, of nature and culture, of mirror and eye, slave and master, body and mind. "We" did not originally choose to be cyborgs, but choice grounds a liberal politics and epistemology that imagine the reproduction of individuals before the wider replications of "texts." (1985, pp. 57-58)

I believe there is a striking kinship between the vocals of "Haunted" and Haraway's conception of cyborg feminism. Firstly, as stated at the start of the citation, the lyrics in the song are hardly audible, and the phallogocentric aim of clear communication is instead rejected in favor of,

arguably, what appears precisely as “noise” and “pollution” (Ibid.). Poetic lucidness is traded in for sonic viscerality, not unlike the harrowing vocal styles found in extreme metal. There is also a stark diffusing of the dichotomy and borders between animal and machine in the robotic, yet human, screams. What sonics would remain if we stripped away the manipulation? The inception of this music, would it ever manifest in any way similar to how the finalized track turned out had she not utilized digital tools symbiotically in the production of it? Withstanding the fact that “Haunted,” specifically the choruses, contains messages of diffusion, change, and duality instead of dichotomy simply through the very sound of its impactful vocals, an interpretation of the actual lyrics could be insightful:

Am I going insane?
Running, running through the back alley
Blood all over and you know I've had enough
Insane, running, running through the back alley
Blood all over
You know I've had enough
Am I going insane?
Running, running through the back alley
Blood all over and you know I've had enough
Insane, running, running through the back alley
Blood all over
You know I've had- (Les, 2021)

More than anything else, these lyrics inspire a sense of distress and a panic induced flight through a shifty environment that feels less than safe. Additionally, the repetitive quality of the lyrics poetically mirrors the kind of thought looping that is commonplace in people experiencing psychotic episodes. I believe this song, with its gritty aesthetics and unnerving vocals, paired and contrasted with the playful, innocently intonated halloween-style verse lyrics, functions as a safe place where Laura and her audience can engage with serious topics such as mental health issues, isolation, dissociation, fear, and anger. Most are aware that queer, especially trans, people are statistically at a much higher risk of physical and mental abuse from our environments, and mental health issues, suicide and addiction are much more common than in the general population.[77] That being so, “Haunted” is multifunctional in the sense that it both serves as a

[77] For further reading on violence against transgender people in the USA see Stotzer (2009). Additionally, recent “[d]ata indicate that 82% of transgender individuals have considered killing themselves and 40% have attempted suicide, with suicidality highest among transgender youth.” (Austin et al. 2020). See also Dhejne et al. (2015) for a meta analysis of studies on comorbid mental health issues in the transgender population.

dark, yet catchy, pop single that can also be interpreted as a snapshot of a sociopolitical climate where loneliness, despair, and anger are all too common experiences for marginalized genders and sexualities. Because the voice is oftentimes understood as the "I" in a music production, the effect created by Les' digital shrieks are a powerful symbol of a deep and personal sense of erratic discombobulation. Before we turn to the conclusionary segment of this chapter, there is one last citation from Haraway's cyborg manifesto that I believe brilliantly captures the spirit and impact of Les' more monstrous vocals, and the chaos-trans voice of other artists from within and outside the genre of hyperpop:

> I would suggest that cyborgs have more to do with regeneration and are suspicious of the reproductive matrix and of most birthing. For salamanders, regeneration after injury, such as the loss of a limb, involves regrowth of structure and restoration of function with the constant possibility of twinning or other odd topographical productions at the site of former injury. *The regrown limb can be monstrous, duplicated, potent. We have all been injured, profoundly. We require regeneration, not rebirth, and the possibilities for our reconstitution include the utopian dream of the hope for a monstrous world without gender* [emphasis added]. (1985, p. 67)

Indeed, the generational trauma suffered by queer people cannot be erased, and a purifying rebirth is not possible. There is no hope for a problem free assimilation into societies that contain people that would rather have us vanish, and systems of belief that our very existence is an offensive defiance to their axiom. But, as Haraway suggests through the myth of the cyborg, there is a possibility of eclectic evolution. In place of reductive identity politics, we can instead strive to become more, celebrating dualities of seemingly incompatible forces, synthesizing cyborg identities that are more spacious, flexible, unapologetic, and powerful.

Conclusion

In this chapter, I wanted to investigate the multitude of ways Laura Les utilizes VPTs in her musical pursuit, creating/expressing gender in hyperpop. I have applied the concept of identificatory distance where I have found it useful in this chapter. Additionally, it has been important to me throughout this study to highlight the development and sonic metamorphoses that have taken place, continuing to this day, in both her musical endeavors and her personal life. I would argue that the most important point of the first segment that focused on "how to dress as human," is the dualistic quality of both inauthenticity and sincere emotion, and courageous effort in face of difficult circumstances. I argued this possible interpretation and effect based on a

hermeneutic reading of the song's lyrics that deal with anxieties related to clothing, passing, isolation, and self acceptance, paired with an understanding of the significance and history that the sonics of the voice itself offers up to the listener in the way that they are an audible attempt at digital voice manipulation to better align her voice with her gender (i.e., shortening the identificatory distance). I have argued that the *sound* of the voice itself is the message.

The 2019 release "money machine," represents one of many leaps in Les' career, constituting the mastery of her digital voice manipulation, and the visual, sonic and lyrical themes that play with and satirize notions of gender and authenticity. Being the era when Les and 100 Gecs first experienced widespread attention and recognition from the hyperpop communities, I also pointed out that Les' vocals, arguably being the first mainstream exposure of this specific type of vocal production, garnered unwanted and inappropriate scrutiny of her personal life and being by certain people online. This is, as mentioned, a typical response that can be elicited in communities when artists play with, or simply defy, normative expectations around gender and sexuality, as exemplified with the proliferant rumor that Lady Gaga had a penis, that she was a hermaphrodite. Most importantly, I have argued in the analysis of "money machine" that this track constitutes a sonic testament to Les' ability to employ VPTs as deeply transformative tools, bridging the identificatory distance between herself and her voice, claiming her authentic gender through playful engagement with artificially sounding aesthetic markers, and an unapologetic approach to authenticity and humor in music.

I argue that "mememe" represents a pivotal point in 100 Gecs', especially Laura Les', career, given that it displays her vocals without the opaque digital voice modulation she and the duo is so famous for. This choice is not only remarkable in the context of genre expectations, serving as a testament to the duo's unwillingness to stagnate into dogmatic aesthetics, it stands as a milestone in Les' musical career and, much likely, also her personal life. The lyrical themes of the track touches on topics of insecurity and embarrassment over one's own voice, and because of this, engages in conversation with the history and sonics of Les' unusually "clean" voice in "mememe." I have argued that this song finds significant resonance especially in transfeminine listeners, given that we are at a higher risk of facing discrimination because of voices that might be perceived as incongruent with our gender. Underlining this point, I referenced a study by Schmidt et al. (2018) that suggested that a significant portion of the transwomen selected for their study had functional, physical, and emotional difficulties related to their voices, something that is

echoed in the lyrics of "mememe." Most importantly, the song exemplifies through Les' resilience, a remarkable and perhaps unlikely consolidation of the sounding voice and the self, bridging the identificatory distance.

Les' most recently released track, "Haunted," is emblematic of the boundary pushing vocalities created by the prominent trans artists of hyperpop, and manages, especially through the chorus vocals, to conjure unsettling, visceral effects, echoing sentiments from Donna Haraway's *A Cyborg Manifesto*, mainly that of noise, pollution, and a rejoice in duality (the embodiment of seemingly opposing forces), rejecting dichotomies and strict boundaries. I have found that these vocals, which only appear more striking in contrast to the cutesy, nonchalant vocal performance of the verses, is an excellent example of Schaffer's term, "chaos-trans voice," that they develop to investigate hyper-processed, often distorted, voices created by trans artists in hyperpop that go beyond traditional pop vocal performance, generating spaces where trans and gender queer artists claim their voices and subvert cisnormative notions of gender vocality.

The threefold case study of Laura Les' shows the interconnectedness between music technology, artistic and personal development. In a way, finding her voice in nightcore vocal production and hyperpop is analogous to her own journey of self acceptance and queer gender expression. The various tools she initially *needed* to record her voice, because of crippling voice dysphoria, created a seminal aesthetic vocal signature. As she invested more time in training her voice, she was able to record her voice without the technological prosthesis she had become known for in the hyperpop scene. Les' decision to release new music both with and without these effects (as demonstrated in "mememe"), speaks to the ambiguity of music technologies and how we use them; sometimes they are employed to "fix" certain perceived flaws (in this case, an overbearing degree of ID), and sometimes, as seen in the development of this threefold case, they can morph into stylistic production conventions that have aesthetic value in and of themselves.

Chapter V: Voice Fluidity and The Aesthetics of Ambiguity://_ Dorian Electra

This chapter presents the second half of my interpretative work in this thesis, and I would like to draw our attention towards another mesmerizingly ambiguous and provocative artist, Dorian Electra. Because Electra is a much more gender ambiguous character compared to Laura Les, this means that the latter will have a seemingly more "clear cut" way of utilizing VPTs in battling the identificatory distance between her voice and her gender. Electra, on the other hand, deliberately embodies more chaos, poses more questions than answers, and potentially undermines much more of the fabric that constructs society's gender matrix in their art. Electra's music and multifaceted persona affords new and interesting ways of investigating the interconnectedness between vocal processing technologies and gender. Relatedly, this chapter will focus mostly on the interplay between ambiguous gender expression, non-binary identity, and the affordances of VPTs. As with the previous chapter, I intend to interpret the brilliant artistic work of this hyperpop monarch through direct engagement with their music videos, lyrics, visual expressions, and everything else I find useful in my research. The keen reader might pose the question, "for a non-binary artist like Dorian Electra, who cannot be understood in binary terms like man/woman or transfeminine/transmasculine, is it even reasonable to utilize the Identificatory distance model in understanding their use of VPTs?" This is a valid question that I wish to explore throughout this chapter.

Mercurial voices, suits and pencil skirts: "Career Boy"

The first track, and subsequent music video, that I would like to interpret from Electra's discography, is the single, "Career Boy," from the self-released album, *Flamboyant*, from 2019.[78] The reason I find this song so interesting is because it is an example where we can vividly and clearly hear Electra *play* with the formants in their voice, altering how it is being perceived and gendered by the listener. Throughout the choruses of the song, Dorian oscillates between a deeper, more hollow sounding, masculine timbre, and a brighter, higher, and more effeminate

[78] "Career Boy" https://www.youtube.com/watch?v=MDDukLyXY-M

sounding voice.[79] The latter can most easily be heard on the "yeah" and "oh, yeah"-s of the refrain. The gradual shifting towards the former, masculine timbre is audible especially on the words, "that it's lonely at the top," also in the choruses. This vocal playfulness that Dorian engages with harkens back to Hawkins' (2016, pp. 2ff) conception of *genderplay* in the way that their ever-shifting vocal quality challenges cisheteronormative society's expectations of rigid and static gender presentation.

Interestingly enough for my research, it is unclear in many cases if Electra and the producers they work with generate these formant-shifting effects through music technology software, or if Electra simply produce them through their own vocal mastery, *biomechanically*. I was made aware of this while reading the aforementioned article from 2019, *Modulation & The Chaos-Trans,* where Schaffer points out that a producer that worked on *Flamboyant* with Electra, Umru Rothenberg, has stated that much of the genderbending sonics of Electra's voice, is simply made with changing the shape of their mouth, oral cavity et cetera. They note, citing Umru Rothenberg, that "...their [Dorian Electra] 'formant shift'' sounding vocals are just their mouth." Of course, as I mentioned earlier in the chapter introducing the utilities and conception of identificatory distance, the range of means that processes and modulates the voice in regards to gender and identification that I am interested in studying, is not limited to digital or analog studio equipment. As I've noted, the body can also be considered a technology in a Foucouldian sense, and it is precisely in this way that Mx. Electra employs their physicality to express something beyond the body.[80]

In interpreting this peculiar case, I would like to contrast my understanding of Dorian Electra to a quote from Derek B. Scott (2009) that I, in more typical phenomena than the case of Electra, agree with to a large extent. He notes that "[p]erformativity is performance repeated over and over, so that it appears natural; it is not a performance in which you are consciously acting out a role. It is not a matter of 'I am X, so I do Y', but of 'I do Y, so I am X." As queer people, I believe we are often especially conscious of the fact that we are either reinforcing a gender role with our actions, or, conversely, that we are subverting the expectations of our society through gender nonconforming actions and expressions. There are of course also many straight people that are hyper aware of the expectations of our society, when they are playing with or against

[79] See Jarman's (2011, p. 18) discussion on the gendered logic of pitch.
[80] For further reflection on the difference between external and internal technologies, with the voice regards as biotechnology, see Jarman (2011).

them, but there is a reason why we call it cisheteronormative society; when you are the norm, behavior and gendered aesthetics that are constructed socially, confuscates themselves, appearing in the guise of nature. Indeed, Dorian Electra knows exactly what they are doing with their musical project and artistic expression, they know in what ways they can utilize their body and voice to confuse the boundaries between gender and sex, beauty and ugliness, lust and disgust. Circling back to the philosophical question of the nature of identificatory distance and Electra's use of VPTs, I would like to argue based on the aforementioned quote that there is not a question of: "I am X but my voice is Y and I therefore use these technologies to decrease the identificatory distance," but, rather; "because I experience that I fluidly move between and outside of X, Y, and Z, in what ways can I use VPTs to express this?" Indeed, I believe Electra *is* conscious of what they are doing and they are not expressing a single fixed being or gendered essence in their art. This sentiment does in fact resonate with Scott's claim that the ways in which gendered dimensions of music, both in terms of production and aesthetics more generally, should not be understood as being *expressive*, but must be understood as deliberate and multifaceted collections of signs that connote notions of masculinity, femininity, and, especially in the case of gender bending artist like Dorian Electra, Bowie, Prince, and Marilyn Manson, unlimited variations that playfully exists in, or outside of, the spectrum spanning this dichotomy (Scott, 2009, p. 15). In this way it is clear that we should not mistakenly interpret Electra's singing as a causal expression of a supercultural gendered essence, instead, we must recognize that they employ a vast array of music technologies, both biomechanical and digital, to conjure a vocality that connote notions of a multifaceted non-binary identity.

If we compare the case of Dorian Electra to that of Laura Les in regards to identificatory distance, we can see that there are distinct differences, and, yet, certain commonalities between them can also be found. Firstly, withstanding the fact that we as fans of these artist are not entitled to knowing every personal thought and reflection they have about themselves and their identities, we can at least note that their outwards projections differentiates in that Les appears to understand herself as binary trans, whilst Electra has stated that they are genderfluid and non-binary.[81] Focusing on the incongruence and identificatory distance between their voices and their

[81] In an interview with Dazed magazine, Electra identifies themself as non-binary and genderfluid: "I see a really cool opportunity in pop right now where it's a lot more open for queer and non-binary artists like me to be visible, and not just destined to be super underground." and, also in the same interview: "I think that's why the styling is so important to me as a genderfluid person[...]" (O'Flynn, 2019). I have not been able to find a source that explicitly

gender, surely, there must be a clearer discrepancy between Les' sounding voice pre her musical endeavors and her binary gender than that of Electra? Because Electra is genderfluid, then their "target" is perhaps always moving and, therefore, their identificatory distance must be mercurial in nature? I would argue that; to be non-static, or to deviate from a gendered mold, necessarily requires that the subverted norm is clearly inputted in the mind of the audience. In the music video for "Career Boy," Electra provokes the image of the "working *man*." Masculinity, which is a central theme in much of Electra's music, is both celebrated and critiqued through the lens of work and class. As Hansen notes in an analysis of Justin Bieber's *Holy* video, the music video as a medium has the ability to "[...] direct attention to work as an activity that is intricately connected with intersecting notions of class and gender." (Hansen, 2021, p. 116). There is a distinct sense of playfulness and ironic detachment throughout "Career Boy." A cursory glance at the music video leaves a lot of room for humorous reflections around gender norms, gendered aesthetics, clothing, and the constructedness of masculinity and femininity. Indeed, the systems of coherent, immutable gender identities and the naturalized behaviors attributed to man and woman are satirized through Electra's hyperbole display of the character that is the macho businessman of the mid twentieth century. They achieve this through oscillating between shots where the virtues of the business man (power/dominance, stoicism, sexual vigor, industriousness) is contrasted to the masochistic degeneracy that follows an obsessive commitment to work, prestige and a negligence of attending to one's own physical and emotional well being, all common tropes associated with traditional macho identity. The former, glamourising image of the businessman as a tireless, sexually dominant, physically and professionally successful, can be seen in the segment from (timestamp 1:20 to 1:50), where Electra is shot through a steamy office building window, confidently walking towards the camera whilst holding a white towel draped around their sweaty neck, conjuring images of athleticism and masculine vigor (see Fig. 10: Macho businessman).

states that Les understands her gender as binary, and I humbly make the assumption that she is because there is no evidence against it.

Figure 10: Macho businessman. Screenshot (1:27) from the official music video.

The latter can be seen in multiple different shots where Electra is framed as exhausted in front of their computer, sitting at cluttered office desks, and, perhaps most notably, the shot where they are jarringly smiling, bordering maniacally whilst pouring piping hot coffee into their cup. The backdrop flashes with erratic strobes, conjuring images of horror film aesthetics, suggesting an unhealthy addiction to work and a suppression of emotion (see Fig. 11: Coffee addict). The (mis)use of coffee is in fact a central theme in "Career Boy," to the point of absurdity when the protagonist is literally *brought back to life* via intravenously injecting hot black coffee straight into the bloodstream (timestamp 2:54-3:04). This symbolic dependency of coffee, seemingly being the sole thing sustaining the protagonist's impossible lifestyle, can be read as more broadly relating to the rampant substance dependency in contemporary USA. The lead character, played by Electra themself, is clearly suffering because of unreasonable work dedication and pressure to succeed, to be the breadwinner and provider for their inferred nuclear family. These themes are echoed in the lyrics of the song, all throughout the verses and choruses (Electra, 2019):

Verse 1.

Cheap office coffee

Stays pumping through my veins (pumping through my veins now)

I work for the man, yeah

But you know I love the chains (I love the chains)

I can never fight the feeling, I stay up all night

Workin' so hard after hours 'til I see the sunlight

Stuck up in the office tower, you know it's pure joy

And that's my superpower, I'm a career boy

Chorus 1.

Career boy

You know they got me working overtime, yeah

Career boy

And you know I got that one track mind, oh-yeah

Even after I get what I want, I can see, baby-baby

That it's lonely at the top, yeah

Career boy

Nothing is ever gonna make me stop

This duality of conflicting pleasurable ambition; "... that's my superpower, I'm a career boy," and "... Nothing is ever gonna make me stop," against the messages of exhaustion, isolation and loneliness; "... You know they got me working overtime, yeah," and "... Even after I get what I want , I can see, baby-baby / That it's lonely at the top, yeah," is mirrored in Electra's creative use of vocal technique, largening and making smaller their oral cavity, modulating the frequency spectrum of their voice. The mercurial vocal timbres of "Career Boy" can be interpreted as expressive, or perhaps more precisely, constructive, of their genderfluid, non-binary identity. Through biomechanical means, Electra shifts, often seamlessly in a glissando fashion, between bright (feminine), middle/mix (neutral/androgynous), and dark (masculine) vocal formant profiles. As mentioned in the previous chapter, formants are the additional frequencies surrounding the perceived pitch in sound data that affect color and timbre, and is an especially important factor when it comes to voice-gender perception in humans. The inclusion of the specific word, 'fluid,' in 'genderfluid,' relates metaphorically to movement between two or

several genders. It does not specify how often or how fast the changes occur, but the adjective of fluidity undeniably entails a quality of being non-static.

Figure 11: Coffee addict. Screenshot (1:18) from the official music video.

The Cambridge thesaurus names “dynamic” as one of the synonyms, and, in the metaphorical context not related to physical states such as solid, liquid, or gas, defines the word as “always becoming different.” (2023). Viewing the body as technology, in the spirit of Foucault, it can be argued that Electra shortens the identificatory distance between their voice and their non-binary gender through biomechanical means, playfully modulating the gendered quality of their voice, displaying nonconforming and non-static gender through musical expression. I believe this inconsistency between body and identity (“inconsistent,” viewed through the lens of the cissexist patriarchy) distorts traditionalist notions of the naturality of gender. This quote, where Butler engages with Foucault in relation to how the duality between male/female and feminine/masculine norms is constructed, finds humorous resonance when read through the audiovisual art of Electra:

> The notion that there might be a “truth” of sex, as Foucault ironically terms it, is produced precisely through the regulatory practices that generate coherent identities through the matrix of coherent gender norms. The

> heterosexualization of desire requires and institutes the production of discrete and asymmetrical oppositions between "feminine" and "masculine," where these are understood as expressive attributes of "male" and "female." (Butler, 1999, p. 23)

The "truth" of sex that Butler references through Foucault; how is it engaged with and negotiated in the voice and visuals of Electra? The citation above talks about the perceived "asymmetrical oppositions between "feminine" and "masculine" [...]," yet, in both the sonics and visual expressions of Electra in the music video for "Career Boy," these believed "expressive attributes" are muddled confusingly with each other through the audiovisual expression of a single agent. Even the aforementioned "heterosexualization of desire," is rendered ambiguous at best when considered in the context of non-binary peoples existence. Indeed, the categories we use to describe sexual attraction does not really line up neatly at all with an understanding of gender beyond the binary. The terms, *homo*sexual and *hetero*sexual, are linguistically intentioned to denote that a person is either attracted to what is similar (from the greek word prefix, ὁμο (homo), meaning "the same") or that the person is attracted to what is dissimilar (derived from the greek word, ἕτερος (hetero), meaning "other, different" et cetera (Wiktionary, 2023a; 2023b). In this system, person "X" could be sexually and romantically attracted to women, but this would not be sufficient information to delineate their sexuality within this particular taxonomy. Is this person a woman herself, she would be described as homosexual, because she is attracted to what is similar. Conversely, if person "X" was a man, he would be described as heterosexual, because he is attracted to people that are different from his own gender. When applied to genders that are outside of the strict binary gender matrix, these sexual descriptions are not as *straight*forward. Indeed, they are much queerer, and the naturalized dichotomies of gender, sex, and the heterosexualization of desire are undermined. For example, if person "X" is agender (having no gender), that would make them heterosexual in all sexual and romantic encounters *except* in the rare instances where they are involved with another agender individual. This follows the formal logic of our contemporary system of describing the sexuality of individuals through their own gender. But, I would argue, the colloquial and unexamined understanding of sexual ontontology is not congruent with this logic, and "heterosexual" is very unlikely the label the agender person "X" would choose for themselves.[82] Consider another example of this system's insufficiency; person "X" is a gay cis man, but he falls in love with a non-binary AMAB individual. Would it

[82] Of course, I cannot prove this, but this is what I have observed anecdotally.

be reasonable to argue that person "X" would now need to consider himself heterosexual because he is in love with a person that is not the same gender as himself? Are bisexual and pansexual the only people that ever experience romantic and sexual attraction to genderfluid people? Or, can gay and straight people also experience this, but only when the genderfluid person identifies or presents either similarly or dissimilarly to their gender? Of course, these questions have no "right" answers, and they intentionally border on the absurd. My point is to illustrate that the mere existence of non-binary people, their gendered expressions and experiences are in themselves subversive and incongruent with the dominant conceptualization of sexuality in the way that this system demands a causal and static relation between a person's gender and their attraction. Not only does this outdated system demand a gender binary, it can only really logically support a binary of sexuality, that is, gay and straight, where bisexuality, in its linguistic construction, denotes a sexuality that is both hetero- and homosexual, or one that is attracted to two or more genders.

Relatedly, in terms of ambiguous gender identity and expressions, there is something to be said about the different studio-technical and aesthetic choices that were made in the production of Electra's different voices throughout "Career Boy." I want to bring our attention towards the back-up vocals, or harmonies of the track. These vocals are often heard repeating, echoing the words of the main vocals, and they sound distinctly more produced. This echoing can be heard clearly in the choruses of the song on the words, "[w]orking overtime, yeah," (timestamp 1:58-2:00). There are a selection of possible vocal production techniques that might have been employed in differentiating these vocals sonically from the lead voice, and all might influence how the voice is gendered by the listener. What stands out the most, is that these back-up vocals are run through an audible and opaque auto-tune effect. This distinct effect, which is also known as 'hard-tune,' is not a signature production technique in the music of Electra, in stark contrast to much of Laura Les' music examined in the previous chapter. In addition to rendering the vocals pitch perfect, the hard-tune effect can have a profound impact on the perceived authenticity and gender of the imagined originator of the voice. I want to bring our attention to a citation by Hawkins concerning the centrality of the voice in the image construction that occurs when we mentally process voices in music: "All in all, then, it is the voice that enacts gender; an image is provoked in the mind, in some form or other, every time we make sense of vocality." (Hawkins, 2017, p. 6). Indeed, there is a vast array, perhaps endless, variations of

effects that studio-technical decisions have on what image is provoked in the mind of the listener when it comes to voice. As mentioned, hard-tune can have a drastic effect on the perceived authenticity of the singer precisely because it is still considered artificial-sounding by many, withstanding the fact that these kinds of vocal styles are increasingly common in mainstream commercial pop music, as previously mentioned in chapter III, "Vocal Processing Technologies and Identificatory Distance." This sentiment, that technologically mediated vocals are less authentic and real than perceived "clean" vocals, is very much alive in the collective consciousness of our present time and can be traced back to the early uses of microphone technology. Simon Frith writes about how the crooners of the early and mid twentieth century were in part negatively perceived by critics because their vocal style, which were lower in volume, softer and smoother than the former, operatic style that was dominant before them, were made possible through dynamic microphone technology.[83] He writes that the:

> '[l]egitimate' music hall or opera singers reached their concert hall audience with the power of their voice alone, the sound of the crooners, by contrast, was artificial. Microphones enabled intimate sounds to take on a pseudo-public presence, and, for the crooners' critics, technical dishonesty meant emotional dishonesty. (1986, p. 264)

In the case of Electra's "Career Boy", I would argue that the ambiguous gender expression of the song's vocal delivery is strengthened by the fact it is only the back-up vocals that are processed with this explicit auto-tune effect. The lead vocals, which are also framed as the masculine protagonist of the production, do not share this opaque vocal processing, and are the same when Electra modulate their oral cavity and larynx position, dropping down to a darker, puffier and more traditionally viewed masculine vocal quality. The studio-technical decision to only hard-tune the back-up vocals and not the lead voice, could be read as intentionally making the gendered distance between the different voices larger.

We can also see a similar pattern played out in the costumes and expressive movements of Electra throughout the narrative of the video. As with the vocals, the visual appearance of the protagonist is very much written to be read as traditionally macho, Wolf-of-Wall-Street-esque "office-man-archetype" that conjures images of Patrick Bateman and Gordon Gecko, but with certain gestures, poses, and clothing choices that create discord with the overall masculine image

[83] For further reading on the discourse of the early crooners and the conceptual interplay between technology, gender, and sexuality see also Allison McCracken (2015).

presented.[84] Both in the vocals, costumes, and choreography, an image of the "Career Boy" is constructed, and we are purposely, through humorous aesthetics and vocal modulation, shown the inconsistencies, vulnerability, masochism, and obfuscated femininity that this modern archetype harbors. Compare, for example, the macho, dominant pose shown in Fig. 10 with the more submissive and traditionally framed feminine posture of Fig. 12: Business and pleasure. The shot is shown only for a brief 1,5 second (not unlike the brittle sounding, "girly" exclamations heard on the refrains "yeah-" and "oh, yeah-s"), but serves as a subversion of the masculine ideal of the romantic and sexual conqueror. This career boy, on the other hand, also invites you to pursue and conquer them, showing vulnerability and perhaps sexual submissiveness.

Figure 12: Business and pleasure. Screenshot (1:58) from the official music video.

These elements put together, the different vocals, costumes, bodily gestures, and symbolism through acting out a modern archetype, creates holistic, always changing expressions of non-

[84] *Wolf of Wall Street* (2013) follows the protagonist, Jordan Belfort, and his rise to wealth as a highly successful stock-brocker, and his financial corruption, drug addiction, and inevitable downfall. *American Psycho* (2000) centers around a young and prestigious investment banking executive, Patrick Bateman, who hides his double life as a serial killer, storing severed heads and other various body parts in his affluent New York City apartment. The character of Gordon Gekko, known from *Wall Street* (1987) and *Wall Street: Money Never Sleeps* (2010), is a stockbroker that is not afraid of doing whatever it takes to increase his wealth, including illegal insider trading.

binary identity. It can be argued that the archetype of the "businessman" (in this case, the "career boy") is especially effective in humorously playing with gender precisely *because* it is a character that we rarely expect to be fluid in any way when it comes to their gender expression and sexuality. The businessman persona is expected to be collected, calm and cool, with a voice that emanates confident masculinity. In fact, this trait of rigor and self disciplined control over emotion and expression is shared with many modern notions of masculine ideals. Electra, on the other hand, makes a point out of constructing these ultra masculine characters in their songs and music videos, only to have them stray from the accepted societal expectations around gender norms and conventions.

Bodily denial and queer anachronism

"Adam & Steve," also off of the album, *Flamboyant*, is interesting because Electra conjures archetypal characters that represent specific cultural notions of gender and sexuality, only to highlight their inconsistencies, internal contradictions and tensions. But, instead of queering the archetype of the workaholic businessman, "Adam & Steve" turns our attention to the middle ages and the very mythic foundations of Christianity. The video, which utilizes religious iconography and symbolism from christianity, both lyrically and visually, plays on the common anti-gay sentiment, "God created Adam and Eve, not Adam and Steve" (Clarke, 2001, p. 558). Complete with painted glass, esoteric scriptures, lit wax candles and a priestly robe, Electra conjures the image of the devoted monk (see Fig. 13: Devoted monk).

Figure 13: Devoted monk. Screenshot (0:11) from the official music video.

As the video advances, the tension of the songs builds up and releases into an eclectic mix of hard rock and brostep. In these shots, the priestly character is stripped off their robe, performing acts of self-flagellation with a short hand whip. The character is clearly suffering, enduring what is known in christian theology as "mortification of the flesh." Such acts are a part of a larger ascetic tradition of Christianity, most prominent in the high and late Middle Ages in Europe, and are intended to bring a person closer to God through imitating the sufferings of Christ and killing off (*mortification*) bodily desires and lust, purifying the soul in the process.[85] Indeed, there is an extended history of self-inflicted punishment by devoted believers in the history of Christianity, although such practices extend far beyond Christianity alone. Oftentimes they were practiced to suppress sexual urges, especially those that would fall under *sodomy* (this would encompass far more than non-heterosexuality, it would denote any sexual acts which where not intended for procreation (ACLU, 2023a). With this pungent history of self-inflicted suffering and bodily denial as a backdrop, Electra orchestrates a resignationification of ascetic practices, framing modern day persecution and internalized queerphobia as a continuum. In the chorus of the song, the video introduces another character appearing as a sort of BDSM overlord, all dressed up in

[85] For further reading on western ascetic practices of the middle ages see "Asceticism" JRank (2023).

studded black leather, bound up in countless chains and belts, complete with a cane and whip, white latex pants wrapped in bondage straps, and a wide brimmed, buckled black hat reminiscent of the iconic capotain worn by the English Pilgrims of the 17th Century (see Fig. 14: BDSM overlord). Similarly as to what I have interpreted in "Career Boy," I would argue that Electra cleverly questions masculine ideals and gender norms through first embodying macho personaes and secondly showing inconsistencies, contradictions, and inherent hypocrisy within these gender constructions.

Figure 14: BDSM overlord. Screenshot (1:32) from the official music video.

In the case of the music video in question, "Adam & Steve," it is possible to interpret the art as pointing at a kinship between the self-flagellating monk and the dark, sadomasochistic character of the chorus. I believe that the ascetic, self denying, and spiritually cleansing act of mortifying the flesh is shown to be, at least in symbolic ways, not that dissimilar to the extreme bodily punishments and assertion of control and submission that are iconic of fringe queer BDSM communities. As mentioned earlier, one of the main reasons that devotees sought out and practiced mortification of the flesh was to rid or numb the body of its carnal lust and desires. To decidedly prove that monks and nuns engaged in self inflicted bodily punishment to feel a sense

of control over their queer urges, and, perhaps even more so, to feel a sense of atonement for their sinful nature, is besides the point of my argument and investigation. What I would like to purpose, on the other hand, is that Electra engages in historical queer resignification in their play with these religious symbolisms and themes. I want to bring our attention to a quote from Hawkins' seminal work, *Queerness in Popular Music*, that I believe touches on precisely these phenomena:

> Throughout pop history, artists have entered and exited arenas of infinite possibilities that ease the past into the present and even the future. This involves a 'blurring of time' that alludes to utopian and dystopian desires. Musical performances can represent a re-envisaging of the world that goes well beyond the norms of value and propriety, offering up an impression of 'different' spaces and temporalities. Ideas of queer futurity therefore need to be positioned alongside the dystopic proponents of temporality. (Hawkins, 2016, p. 9)

Indeed, alongside aesthetic sonic markers such as cembalo, flute, and samples of clashing swords, Electra's music has been described as both hyper futuristic and antique: "[Electra's] music blends together a masterful assortment of genres, including *hardcore, metal, medieval, epic baroque, dubstep, and pop* [emphasis added] [...]" (Eclectic Artists, 2023). These genre names have distinctly separate notions of temporality, respectively looking back and forwards in time, and this is aptly shown in both the visual presentations of Electra as well as in their music production.[86] In the "Adam & Steve" music video, which on surface level is thematically linked to a reimagined medieval time, there are subtle, yet distinct futuristic elements in the costuming and set of the production. Take for example the image where Electra is situated as one half of the image of Adam and Eve, iconically holding hands with their partner with the Garden of Eden as their backdrop. Immediately, multiple anachronisms stand out to the viewer, even though the iconic image is unmistakably familiar nonetheless. Their bodies are covered in tattoos depicting themes related to The Fall of Sin and the mythology of Christianity as a whole; snakes, what appears to be The Archangel Michael battling The Devil, wrapped barbed wire (which, yet modern, is very similar to crown of thorns worn by The Suffering Christ), and white, stand-alone wings, perhaps the wings of an angel or the white dove from Noa's Arc (see Fig. 15: Adam & (St)eve). Additionally, Electra's body is covered in a synthetic and semi-transparent white skin

[86] For further reading on queer temporality and theoretization on the *transgender gaze* see Halberstam (2005). Muñoz (2009) also writes about queer futurity and the necessity of moving beyond the all consuming focus on contemporary queer issues.

that conjures images of sci-fi movies and cyborg bodies. Through this playful merging (and twisting) of the mythology and historical past of Western society with unknown futures of posthumanism and transcendence, I believe Electra not only resurrects an erased queer past, but that they question the very myth of a continual sexual liberation that Western societies pride themselves with, insinuating that we might not be as far away from the systemic suppression of queerness, and the following self inflicted persecution and punishment, of our pre-modern past than we would like to think.

Figure 15: Adam & (St)eve. Screenshot (1:02) from the official music video.

Conclusion

Throughout this chapter, I have investigated the ways in which the prolific artist, Dorian Electra, uses vocal modulation, costumes, symbolism, and bodily gestures, to create and express gender in hyperpop. I have interpreted that Electra mainly engages in gender and sexual subversion through a distinct and visceral method, by embodying characters that manifest our societies idealized notions of masculinity, and then, often through satire, expressing the ways in which the internal logic of these archetypes are inconsistent, hypocritical, and fragile. In regards to Electra's use of vocals, there is similar play with timbre and intonation as with the visuals, sporadically

bending off into feminized, opaquely produced back-up vocals and interjections. Indeed, differentiating from the historical reliance that Laura Les had on vocal processing technologies, especially in her early work, Electra instead creates ambiguous gendered expressions through biomechanical means, modulating their oral cavity and deliberately altering their vocal gesturing. Gender fluidity and non-binary identity is emitted sonically through the ever-shifting quality of their many voices, and this heterogeneity is enhanced through studio-technical means, mainly through certain voices being hard-tuned, distortion, and reverberation, while others are not. The creative enhancement of gendered differentiation between these voices is made possible because audiences have come to view technology as somewhat artificial, dishonest and therefore more feminine than musical expressions that are not viewed as overproduced.

Investigating the case of Dorian Electra plays into a larger examination of the potential ways in which transgender artists use VPTs to decrease the identificatory distance between their gender and their sounding voice. One of the original questions posed at the start of this chapter was related to the relevance of utilizing the concept of identificatory distance to understand gender ambiguous and non-binary artists, like Electra, because there is not always a clear and static gender expression that is sought to be achieved. It might require a reconsideration and a dissolvement of the supposed linear path of vocal transitioning. In many cases, such as the one previously examined, the identificatory distance might not be a matter of tackling the discrepancy between "X" and "Y," but, perhaps rather, to ensure *movement* between identities and gendered norms and embodiments, rendering them more fragile and questionable than what cisheteronormative society demands, simply *through* the processes of existing in a non-static, non-essentialist way of artistic endeavor and personal life. In the conclusionary chapter, I want to reflect on the most important finding of this thesis, and discuss the benefits of having investigated the two, highly diverse, cases of Laura Les and Dorian Electra. Additionally, the conclusion will reflect on the broader scope of queer gender agency through technology, and the utility the concept of identificatory distance has offered me while working with this thesis.

Chapter VI: Download Incomplete (99%) [requesting further analysis]://_ Conclusion

My work in this thesis first and foremost represents an attempt to answer the research question, "how is vocal processing technology being used by transgender and gender nonconforming artists to create and express gender in hyperpop?" I sincerely believe that the most important finding of my research is that these musical tools are tools of survival for trans people. These technologies are used by trans and gender queer artists to express themselves, to *become*, and this must not be overlooked as any other lighthearted creative endeavor. Feeling a disconnect between your outward expression and your inner sense of self is inherently uncomfortable for anyone, not only gender queer people. Without the opportunity or means to be understood as yourself, one can quickly delve into isolation, self-loathing and, ultimately, annihilation. It can literally mean life or death. That is why artists like Laura Les and Dorian Electra matter so much for the trans and gender queer communities across the world. I know this from first hand experience.

When I first enrolled in my musicology degree, I didn't even know I was trans. The only thing I knew for certain was that I wanted to write about the trans hyperpop artists pushing the envelope of electronic music and the possibilities of vocal performance. As I wrote in the introduction of this thesis, I was drawn towards these creators, but I did not know why. Discovering their music coincided with the discovering of my own gender and queerness, and they made me believe that, not only was it OK for me to be myself, it could actually be something good – something to be proud of. The significance of this was immense for me having lived a life where the sparse representation of trans people I had been exposed to rarely amounted to something else than monstrous villain characters from film, as deviant perverts in comedy, and as mentally ill recluses of society. The creative use of vocal processing technologies represents the resilience of these queer artists, and the mutual influence between technological innovation and music. Through these various praxis, the artists that I have investigated have created space for themselves to exist authentically, and through their examples have undoubtedly inspired countless queer people to do the same.

Looking back, we can see that Laura Les started her musical journey producing and releasing songs to cope with emotions and feelings that she didn't know how to deal with. She found solace in nightcore vocals and pursued the aesthetic and studio techniques that made it

possible for her to record vocals, something she normally wasn't able to because of voice dysphoria. Conversely, Dorian Electra employs various different audiovisual aesthetics, references and symbols to express gender ambiguity and a non-binary identity in their music. In both cases, I have investigated these artists and their practices through the concept I am developing, identificatory distance (ID). In the larger scope of trans voice production and performance, I believe ID has utility in the way that it provides a conceptual framework for understanding the interplay between gender identity/identities, the sounding voice, and the multitude of VPTs that are used to regulate the distance between the two. As seen in the case of Electra, what is sought out to be achieved by gender queer and trans artists should not be reduced to a simplistic model of conforming the voice to fit society's expectations of voice and gender. On the contrary, Electra modulates their voice in a mercurial fashion, oscillating between different gendered timbres, something that could be interpreted as part of a non-binary, genderfluid aesthetic. ID must therefore be seen as non-static and relative, meaning that the degree to which an individual might experience it will, most likely, change over time and is highly contingent upon surrounding factors such as immediate environment, musical genre conventions, speaking vs. singing voice, et cetera.

Exemplified through the case study of Laura Les, I have argued a significant shift in her usage and relation to VPTs through a selection of milestone releases from her career. Battling with voice dysphoria initially led Les to create a voice with digital manipulation that was more congruent with her gender, which in turn fueled the popularity of the aesthetics of these vocal productions within the genre of hyperpop. Although she has not rejected this initial sonic prosthesis, something that is further underlined with the heavily processed vocal productions featured on the *10.000 Gecs* record (which was released 17. March, just a shy one and a half month before the submission deadline for this thesis), her voice featured without formant-shifting has a colossal significance in the scope of her relation with VPTs, agency in terms of gender and personal development. As is oftentimes the case with musical endeavor, the personal life of the artist cannot be meaningfully separated from the art they produce. This is the case with both of the artists that I have focused on in my thesis. Exemplified in Les with her continual development with voice productions, and Electra with their serious and parodic engagement with masculine archetypes and gendered aesthetics.

The extensive history of VPTs, from the vocoder of WWII to vocaloid software (where one can synthesize voice from scratch), has set the stage for the developments and primed audiences for the queer voice productions that we hear today, the phenomena that is at the core of my research. As voice processing software becomes more accessible, both in terms of cost and ease of use, it will be interesting to see the developments of voice modulation in the coming years and how it intersects with the creation and expression of queer identity.

Throughout this thesis, I have strived to always take my own biases into consideration, to be mindful of the necessarily subjective nature of meaning that results from hermeneutic method. Relatedly, I have stressed the importance of holistic interpretation in favor of isolated analysis. To understand the ways in which trans artists utilize VPTs in the creation and expression of gender in hyperpop, must entail perspectives that encompass body politics, critique of the gendering of technology, the importance of media, intertextuality, et cetera. As referenced to Eidsheim, I strongly believe that listening is always political, and writing this thesis, with a specific focus on queer and trans issues, is undeniably political. The degree to which this research is important, is directly parallel to the importance of the real-life phenomena that it points at. The field of queer musicology is exceedingly interdisciplinary, and I am grateful for the fact that it has allowed me to interchangeably write about issues of gender, sexuality, technology, agency, and queer issues, all in the same breadth of research. The usage of vocal processing as tools of gender expression cannot be understood as isolated phenomena. Relatedly, I believe all musical practices, productions, distribution, and consumption are always social, a view that I am unsure I have adopted from critical musicology, or if this presupposition led me to study the field in the first place.

Reaching the end of this research into trans vocal processing, it has been highly valuable to interpret two artists as different from each other as Laura Les and Dorian Electra. Aside from the rare interviews where Les and Electra talk about what they want to achieve with their music, rarer even when the interconnectedness of vocal modulation and gender is directly referenced, their deep personal motivations must to some extent remain obscure, perhaps even for themselves. It is, after all, artistic production, an arena where meaning is constantly created, oftentimes through processes that the artist is without conscious access to. Relatedly, the design of music technologies has the tendency to harbor unconscious biases about sex, gender, race, authenticity, and artifice, exemplified through the TC-Helicon Voicelive Play unit from chapter

III. As seen with the encrypting technology of the vocoder from WWII, and the technology that would become auto-tune originating as a means of collecting seismic data, some of the most influential VPTs were not originally intended to be used in music at all. Regardless of the original intention, musical pioneers slowly brought them to the mainstream, and subsequently, these technologies shape aesthetic development, birth entire musical genres and ways of creating music. I am not suggesting that the history of music should be viewed as continually "improving," aided by technological developments; this would make it hard to account for acoustic oriented music that aims to preserve traditional musical performance, as seen in various traditional folk music communities around the world. Rather, I want to underline the unpredictable nature and mutual influence – if they can ever be meaningfully separated – between technology and music. My research takes part in the growing body of work concerning issues of queerness, gender, music, and technology, a field I suspect will garner more musicological attention throughout this decade.

Although the visceral aesthetics of my cases often border on the parodic and camp, I believe there is stark seriousness at the core of their musical expressions. They are, after all, carving out a space for themselves to exist and thrive in a world that in large part does not accept them for who they are. Perhaps this playfulness, which could be seen as a rejection of seriousness, is exactly what is needed in a sociopolitical climate where we experience an increase in queer- and transphobic sentiments in the general public.[87] 'Needed,' in the sense that laughter and joy is at least a more activating and constructive emotion than bleak despair. I believe that the ways in which the trans artists of hyperpop create and express gender through vocal processing is just one of many examples of the resilience and creativity that characterize queer communities. I am not claiming these flattering characteristics to be essential and intrinsic to our being, but I do believe that this is what is brought forth through *necessity* in a world that often leaves little room for difference in sexuality and queer gender expressions.

[87] As of April 2023, ACLU is tracking 469 anti-LGBTQ bills in the U.S. that target the rights of LGBTQ people, especially transgender youth (2023b). At the Conservative Political Action Conference that was held at the start of March this year, Michael Knowles stated: "For the good of society… transgenderism must be eradicated from public life entirely — the whole preposterous ideology, at every level [...]", a statement that has been registered by many as genocidal towards trans people (Hawkinson, 2023). In England, Scotland and Wales, a proposed change to the 2010 Equality Act is being pursued that aims to redefine legal sex to strictly relate to assigned gender at birth, something: "[t]hat would be designed to make it legal for those who are transgender to be banned from single-sex spaces and events, such as book groups and hospital wards." (Allegretti, 2023).

References

Literature

Acker, A. B. (2016, 25th of May). Talk box. In *Grove Music Online*. https://doi.org/10.1093/gmo/9781561592630.article.L2294861

Adorno, T. W. (1998). On Popular Music. In Storey, J. (Ed.), *Cultural Theory and Practice: A Reader*. The University of Georgia Press.

Allegretti, A. (2023). What would changing the Equality Act mean for trans people and single-sex spaces? *The Guardian*. https://www.theguardian.com/law/2023/apr/05/what-would-changing-the-equality-act-mean-for-trans-people-and-single-sex-spaces

Allen, A. S. & Dawe, K. (2016). *Current Directions in Ecomusicology: Music, Culture, Nature*. Routledge.

American Civil Liberties Union (ACLU). (2023a). *Why Sodomy Laws Matter*. aclu. https://www.aclu.org/other/why-sodomy-laws-matter

American Civil Liberties Union (ACLU). (2023b, 25th of April). *Mapping Attacks on LGBTQ Rights in U.S. State Legislatures*. aclu. https://www.aclu.org/legislative-attacks-on-lgbtq-rights

American Psychological Association. (2023a). *heteronormativity*. In *APA Dictionary of Psychology*. https://dictionary.apa.org/heteronormativity

American Psychological Association. (2023b). *heterosexism*. In *APA Dictionary of Psychology*: https://dictionary.apa.org/heterosexism

Amico, S. (2020). “We Are All Ethnomusicologists Now”; or; the End of Ethnomusicology.

Journal of Musicology Vol.37(1), pp. 1-32. https://www.researchgate.net/publication/339236086_We_Are_All_Musicologists_Now_or_the_End_of_Ethnomusicology

Ashenden, A. (2023, 31st of March). 'Lesbians being anti-trans is a lesbophobic trope'. *Gay Times*. https://www.gaytimes.co.uk/originals/lesbians-are-not-anti-trans/

Austin, A., Craig, S. L., D'Souza, S. & McInroy, L. B. (2020). Suicidality Among Transgender Youth: Elucidating the Role of Interpersonal Risk Factors. *Journal of Interpersonal Violence Vol.37*(5-6). https://pubmed.ncbi.nlm.nih.gov/32345113/

Battan, C. (2021, 9th of August). How online playlists took hyperpop from subculture to pop culture. *The New Yorker*. https://www.proquest.com/docview/2559693784

Beauvoir, S. de. (2011). *The Second Sex*. Vintage Books. https://files.libcom.org/files/1949_simone-de-beauvoir-the-second-sex.pdf

Blistein, J. (2019, 20th of December). 100 Gecs and the Art of Not Taking Things Too Seriously: How Limewire, the 'Hampster Dance,' 'Minecraft' and NSFW Yoda video explain 2019's most adventurous band. *Rolling Stone*. https://www.rollingstone.com/music/music-news/100-gecs-artist-you-need-to-know-926422/

Brackett, D. (1995). *Interpreting Popular Music*. Cambridge University Press.

Brackett, D. (2016). *Categorizing Sound: Genre and Twentieth Century Popular Music*. University of California Press.

Brimmers, J. (2018, 10th of August). What Was Chipmunk soul? *Red Bull Music Academy*. https://daily.redbullmusicacademy.com/2018/08/chipmunk-soul

Britannica. ship of Theseus: philosophy. (2023, 30th of March). In *Encyclopædia Britannica*. https://www.britannica.com/topic/ship-of-Theseus-philosophy

Brown, D. (2020). An Open Letter To Racism in Music Studies: Especially Ethnomusicology and Music Education. *My People Tell Stories*. https://www.mypeopletellstories.com/blog/open-letter

Brøvig-Hanssen, R. (2013). *Music in Bits and Bits of Music: Signatures of Digital Mediation in Popular Music Recordings* [Doctoral dissertation, University of Oslo]. https://www.duo.uio.no/handle/10852/59962

Burns, L. & Hawkins, S. (Eds.). (2019). *The Bloomsbury Handbook of Popular Music Video Analysis*. Bloomsbury Academic.

Butler, J. (1999). *Gender Trouble: Feminism and the Subversion of Identity*. Routledge. https://selforganizedseminar.files.wordpress.com/2011/07/butler-gender_trouble.pdf

Cambridge University Press & Assessment. (2023). *Fluid*. In *Cambridge Dictionary*. https://dictionary.cambridge.org/dictionary/english/fluid

Caputo, J. D. (1997). *Deconstruction in a nutshell: a conversation with Jacques Derrida*. Fordham University Press.

Carras, C. (2020, 1st of December). 'Umbrella Academy' star Elliot Page announces he is transgender in powerful statement. *Los Angeles Times*. https://www.latimes.com/entertainment-arts/story/2020-12-01/elliot-page-transgender-coming-out-post

Clarke, V. (2001). What about the children? arguments against lesbian and gay parenting. *Women's Studies International Forum Vol.24*(5), pp. 555-570. https://doi.org/10.1016/S0277-5395(01)00193-5

Crockett, Z. (2016, 26th of September). The Mathematical Genius of Auto-Tune. *Priceonomics*. https://priceonomics.com/the-inventor-of-auto-tune/

Davies, H. (2001). Vocoder. In *Grove Music Online*. https://doi.org/10.1093/gmo/9781561592630.article.47646

DeNora, T. (2000). *Music in Everyday Life*. Cambridge University Press.

Dhejne, C., Vlerken, R. V., Heylens, G. & Arcelus, J. (2015). Mental health and gender dysphoria: A review of the literature. *International Review of Psychiatry Vol.28*(1), pp. 44-57. https://www.tandfonline.com/doi/full/10.3109/09540261.2015.1115753

Eclectic Artists. (2023). About the artist: Dorian Electra. *Eclectic Artists*. https://eclecticartists.com/dorian-electra/

Eidsheim, N. S. (2019). *The Race Of Sound: Listening, Timbre, and Vocality in African American Music*. Duke University Press.

Electra, D. (2019). Lyrics for "Career Boy" retrieved from *Genius*. https://genius.com/Dorian-electra-career-boy-lyrics

Franseen, K. M. (2020). 'Onward to the end of the nineteenth century': Edward Prime-Stevenson's queer musicological nostalgia. *Music & Letters Vol.101*(2), pp. 300-320. https://doi.org/10.1093/ml/gcz108

Frere-Jones, S. (2008, 9th of June). The Gerbil's Revenge: Auto-tune corrects the singer's pitch. It also distorts–a grand tradition in pop. *The New Yorker*. https://archive.ph/20120906081628/http://www.newyorker.com/arts/critics/musical/2008/06/09/080609crmu_music_frerejones?currentPage=1#selection-687.435-687.548

Frith, S. (1986). Art versus technology: the strange case of popular music. *Media, Culture & Society Vol.8*(3), pp. 263-269. https://doi.org/10.1177/016344386008003002

Gardner, A. (2015). *PJ Harvey and Music Video Performance*. Ashgate.

Halberstam, J. (2005). *In a Queer Time and Place: Transgender Bodies, Subcultural Lives*. New York University Press.

Hamm, C. (1979). *Yesterdays: Popular Song in America*. Norton.

Hancock, A. B., Krissinger, J. & Owen, K. (2011). Voice Perceptions and Quality of Life of Transgender People. *Journal of Voice Vol.25*(5), pp. 553-558. https://www.sciencedirect.com/science/article/pii/S0892199710001360

Hansen, Askerøi, E. & Jarman, F. (2020). Introduction: A musicology of popular music and identity. In Hansen, K. A., Askerøi, E. & Jarman, F. (Eds.), *Popular Musicology and Identity: Essays in Honour of Stan Hawkins*. Taylor and Francis.

Hansen, K. A. (2017). *Fashioning Pop Personae: Gender, Personal Narrativity, and Converging Media in 21st Pop Music* [Doctoral dissertation, University of Oslo]. DUO Research Archive. https://www.duo.uio.no/bitstream/handle/10852/88558/PhD-Hansen.pdf?sequence=1

Hansen, K. A. (2018). Fashioning a Post Boy Band Masculinity: On the Seductive Dreamscape of Zayn's Pillowtalk. *Popular Music and Society Vol.41*(2), pp. 194-212. https://doi.org/10.1080/03007766.2016.1242994

Hansen, K. A. (2019). (Re)Reading Pop Personae: A Transmedial Approach to Studying the Multiple Construction of Artist Identities. *Twentieth-Century Music Vol.16*(3), pp. 1-29. http://dx.doi.org/10.1017/S1478572219000276

Hansen, K. A. & Gamble, S. (2022). Saturation Season: Inclusivity, Queerness, and Aesthetics in the New Media Practices of Brockhampton. *Popular Music and Society*, *45*(1), pp. 13-30. https://doi-org.ezproxy.uio.no/10.1080/03007766.2021.1984019

Hansen, K. A. (2022a). *Pop Masculinities: The Politics of Gender in Twenty-First Century Popular Music*. Oxford University Press.

Hansen, K. A. (2022b). Staging a "Real" Masculinity in a "Fake" World: Creativity, (In)Authenticity, and the Gendering of Musical Labour. *Cultural Studies Vol.36*(5), pp. 713-731. https://doi.org/10.1080/09502386.2021.2011932

Hansen, K. A. (2022c). The ambiguity of 'new' masculinities: Zayn Malik and disordered eating. *Celebrity Studies Vol.13*(3), pp. 470-474. https://doi.org/10.1080/19392397.2019.1639975

Harper, D. (2023). *analysis*. In *Online Etymology Dictionary*. https://www.etymonline.com/word/analysis

Hawkins, S. (1997). The Pet Shop Boys: Musicology, masculinity and banality. In Whiteley, S. (Ed.), *Sexing the Groove: Popular Music and Gender*. Routledge.

Hawkins, S. (2001). Musicological Quagmires in Popular Music: Seeds of Detailed Conflict. *Popular Musicology Online* (1). http://www.popular-musicology-online.com/issues/01/hawkins.html

Hawkins, S. (2012). *Critical Musicological Reflections: Essays in Honor of Derek B. Scott*. Routledge.

Hawkins, S. (2013). Aesthetics and Hyperembodiment in Pop Videos: Rihanna's "Umbrella". In Richardson, J., Gorbman, C., and Vernallis, C. (Eds.), *The Oxford Handbook of New Audiovisual Aesthetics*. Oxford University Press.

Hawkins, S. (2014). “I’ll Bring you Down, Down, Down”: Lady GaGa’s Performance in “Judas”. In Iddon, M. & Marshall, M. L. (Eds.), *Lady Gaga and Popular Music: Performing Gender, Fashion, and Culture*. Routledge.

Hawkins, S. (2016). *Queerness in Pop Music: Aesthetics, Gender Norms, and Temporality*. Routledge.

Hawkins, S. (2017). Introduction: Sensing gender in popular music. In Hawkins, S. (Ed.), *The Routledge Research Companion to Popular Music and Gender*. Routledge.

Horowitz, S. J. (2021, 7th of September). This Is Your Brain on 100 gecs: In the studio with the hyperpop renegades as they toil on their new album, *1000 gecs*. *Pitchfork*. https://pitchfork.com/features/cover-story/100-gecs-interview-new-album-10000-gecs/

Hughes, G. (2019, 18th of November). There is no “X” in History. *The Global Citizen*. https://www.the-globalcitizen.org/blog/there-is-no-x-in-history

Human Dignity Trust. (2023). *Map of Countries that Criminalise LGBTQ People*. Human Dignity Trust. https://www.humandignitytrust.org/lgbt-the-law/map-of-criminalisation/

Internet Movie Database. (2023). *Awards (Euphoria)*. imdb. https://www.imdb.com/title/tt8772296/awards/

Jarman, F. (2011). *Queer Voices: Technologies, Vocalities, and the Musical Flaw*. Palgrave Macmillan.

Johnson, N. (2020, 13th of August). How Hyperpop Gives Trans Artists a Voice. *Ringtone Mag*. https://www.ringtonemag.com/2020/08/how-hyperpop-gives-trans-artists-voice_13.html

Katz, M. (2010). *Capturing sound: How Technology has Changed Music*. (Revised Edition). University of California Press.

Kim, H. M. (2020, 16th of January). Meet 100 gecs, the Absurdist Pop Duo Inspired By Everything on the Internet: How Warped Tour, *King of the Hill*, viral prank calls, and gender dysphoria all factored into making one of the best albums of 2019. *them.* https://www.them.us/story/100-gecs-interview-dylan-brady-laura-les

Kramer, L. (2011). *Interpreting Music*. University Of California Press.

Lasic, G. (2020, 14th of April). LGBTQ+ fans thanked Lady Gaga for her response to 'penis rumors' in resurfaced interview. *POP!*. https://pop.inquirer.net/91478/lgbtq-fans-commend-lady-gaga-penis-rumor-hermaphrodite-interview

Les, L. (2017). Lyrics for "how to dress as human" retrieved from bandcamp page of Laura Les. https://osno1.bandcamp.com/track/how-to-dress-as-human

Les, L. [xxlaura_lesxx]. (2020, 28th of February). *the money machine vid looks so bizarre to me now because I look 10.000% more cute since we shot that* [...] [tweet]. Twitter. https://twitter.com/xxlaura_lesxx/status/1233229168227356672?lang=en

Les, L. (2021). Lyrics for "Haunted" retrieved from *LyricsTranslate*. https://lyricstranslate.com/en/laura-les-haunted-lyrics.html

Les, L & Brady, D. (2019). Lyrics for "money machine" retrieved from *Genius*. https://www.azlyrics.com/lyrics/100gecs/moneymachine.html

Les, L & Brady, D. (2021). Lyrics for "mememe" retrieved from *Genius*. https://genius.com/100-gecs-mememe-lyrics

Lewis, R. (2009). What's Queer about Musicology Now? *Women and Music: A Journal of Gender and Culture Vol.13*. https://muse.jhu.edu/article/363870

Lynch, B. (2021, 29th of April). Hyperpop Transness. *The Cooper Point Journal*. https://www.cooperpointjournal.com/2021/04/29/hyperpop-transness/

Mackinlay, E., Collins, D. & Owens, S. (Eds.). (2005). *Aesthetics and Experience in Music Performance*. Cambridge Scholars Publishing.

Mahon, M. (2011). Listening for Willie Mae "Big Mama" Thornton's Voice: The Sound of Race and Gender Transgressions in Rock and Roll. *Women and Music: A Journal of Gender and Culture Vol.15*, pp. 1-17. https://doi.org/10.1353/wam.2011.0005

Mark, A. (2014). Refining *Uranium*: Bob Wiseman's Ecomusicological Puppetry. *Environmental Humanities Vol.4*(1), pp. 69-93. https://doi.org/10.1215/22011919-3614935

Mark, A. (2016). Don't Organize, Mourn: Environmental Loss and Musicking. *Ethics & the Environment Vol.21*(2), pp. 51-77. https://doi.org/10.2979/ethicsenviro.21.2.03

Maus, F. E. (2011). Music, Gender, and Sexuality. In Clayton, M., Herbert, T. & Middleton, R. (Eds.), *The Cultural Study of Music: A Critical Introduction*. Routledge.

McClary, S. (2001). *Conventional Wisdom: The Content of Musical Form*. University of California Press.

McCracken, A. (2015). *Real men don't sing: crooning in American culture*. Duke University Press.

Mellers, W. (1973). *Twilight of the Gods: The Music of the Beatles*. Viking Press.

Merriam-Webster. (2023). *transgender*. In *Merriam-Webster Dictionary*. https://www.merriam-webster.com/dictionary/transgender

Moore, A. F. (2002). Authenticity as authentication. *Popular Music Vol.21*(2), pp. 209-223. https://doi.org/10.1017/S0261143002002131

Moore, A. F. (2003). *Analysing Popular Music*. Cambridge University Press.

Narmour, E. (1977). *Beyond Schenkerism: The Need for Alternatives in Music Analysis*. University of Chicago Press.

Nealon, J. T. (2018). *I'm Not Like Everybody Else*. University of Nebraska Press.

Neumann, K. & Welzel, C. (2004). The Importance of the Voice in Male-to-Female Transsexualism. *Journal of Voice Vol.18*(1), pp. 153-167. https://www.sciencedirect.com/science/article/pii/S0892199703000845

O'Flynn, B. (2019, 25th of April). Get to know Dorian Electra, the Liberace of fantasy pop music. *Dazed*. https://www.dazeddigital.com/music/article/44167/1/dorian-electra-new-song-video-flamboyant-interview

Olivier, P. (1969). *The Story of the Blues*. The Cresset Press.

Oudshoorn, N. & Pinch, T. J. (2003). *How users matter: the co-construction of users and technologies*. The MIT Press.

Park, C., Brown, S. & Courey, M. (2021). Trans Woman Voice Questionnaire Scores Highlight Specific Benefits of Adjunctive Glottoplasty With Voice Therapy in Treating Voice Feminization. *Journal of Voice*. https://doi.org/10.1016/j.jvoice.2021.07.017

Pinch, T. J. & Trocco, F. (2002). *Analog Days: The Invention and Impact of the Moog Synthesizer*. Harvard University Press.

Prosser, J. (1995). No Place Like Home: The Transgendered Narrative of Leslie Feinberg's *Stone Butch Blues. MFS Modern Fiction Studies, 41*(3-4), pp. 483-514.https://doi.org/10.1353/mfs.1995.0120

Provenzano, C. (2018). Auto-Tune, Labor, and the Pop-Music Voice. In Fink, R., Latour, M., & Wallmark, Z. (Eds.), *The Relentless Pursuit of Tone: Timbre in Popular Music*. Oxford University Press.

Railton, D. & Watson, P. (2011). *Music Video and the Politics of Representation*. Edinburgh University Press.

Richardson, J. (2012). *An Eye for Music: Popular Music and the Audiovisual Surreal*. Oxford University Press.

Schaffer, M. (2019, 9th of December). Modulation & the Chaos-Trans Voice: Investigating methods of transformative vocalization & the hxstorical roots of modern trans performance. *Max Made That*. https://maxmadethat.com/publishing/transvocalmodulation

Schmidt, J. G., Goulart, B. N. G. de., Dorfman, M. E. K. Y., Kuhl, G. & Paniagua, L. M. (2018). Voice challenge in transgender women: trans women self-perception of voice handicap as compared to gender perception of naïve listeners. *Rev. CEFAC Vol.20*(1). https://doi.org/10.1590/1982-021620182011217

Schoonhoven, S. (2017). *Gender, Timbre, and Metaphor in the Music of Wendy Carlos* [Master's thesis]. The University of Texas at Austin.

Scott, D. B. (2009). Introduction. In Scott, D. B. (Ed.), *The Ashgate Research Companion to*

Popular Musicology. Ashgate.

Smalls, S. Queer Hip Hop: A Brief Historiography. In Maus, F. E. & Whiteley, S. (Eds.), *The Oxford Handbook of Music and Queerness*. Oxford University Press.

Stein, S. (2009). Lady Gaga "Very Obsessed With Monsters And Playgirls," Not Feminism. *Jezebel*. https://jezebel.com/lady-gaga-very-obsessed-with-monsters-and-playgirls-5329960

Stoever, J. L. (2016). The Sonic Color Line: Race and the Cultural Politics of Listening. New York University Press.

Stotzer, R. L. (2009). Violence against transgender people: A review of United States data. *Aggression and Violent Behavior Vol.14*(3), pp. 170-179. https://doi.org/10.1016/j.avb.2009.01.006

Tagg, P. (1982). Analysing Popular Music: Theory, Method and Practice. *Popular Music Vol.2*, pp. 37-67. https://www.jstor.org/stable/852975?sid=primo

Taylor, J. (2012). *Playing it Queer: Popular Music, Identity and Queer World-Making*. Peter Lang Press.

TC Helicon. (2023). *TC-Helicon VoiceLive Play* [user's manual v2.1]. https://mediadl.musictribe.com/media/PLM/data/docs/P0DEH/VOICELIVE%20PLAY_M_EN.pdf

The National Health Service (NHS). (2020, 28th of May). *Overview: Gender Dysphoria*. nhs. https://www.nhs.uk/conditions/gender-dysphoria/

Tompkins, D. (2010). *How to Wreck a Nice Beach: The Vocoder from World War II to Hip-Hop*. Melville House.

Välimäki, S. (2017). Confronting the gender trouble for real: Mina Caputo, metal truth and transgender power. In S. Hawkins (Ed.), *The Routledge Research Companion to Popular Music and Gender*. Routledge.

Välimäki, S. (2019). Transgender Hearing and Healing: The Musical Processing of Trauma in Boys Don't Cry and The Brandon Teena Story. *Radical Musicology Vol.7*, pp. 1-51. http://www.radical-musicology.org.uk/2019/Valimaki.htm

Wade, P. & Reis, P. (6/3/2023, 6th of March). CPAC Speaker Calls for Eradication of 'Transgenderism' – and Somehow Claims He's Not Calling for Elimination of Transgender People. *Rolling Stone*. https://www.rollingstone.com/politics/politics-news/cpac-speaker-transgender-people-eradicated-1234690924/

Walser, R. (2003). Popular Music Analysis: Ten Apothegms and Four Instances. In Moore, A. F. (Ed.), *Analyzing Popular Music*. Cambridge University Press.

Weiner, S. (2017, 27th of November). Cryptography and Cyborg Speech: The Strange Journey of The Vocoder. *Red Bull Music Academy*. https://daily.redbullmusicacademy.com/2017/11/vocoder-instrumental-instruments

Whiteley, S. & Rycenga, J. (2006). *Queering the Popular Pitch*. Routledge.

Wiktionary. (2023a). *hetero-*. In *Wiktionary: The free dictionary*. https://en.wiktionary.org/wiki/hetero-

Wiktionary. (2023b). *homo*. In *Wiktionary: The free dictionary*. https://en.wiktionary.org/wiki/homo

Williams, J. A. (2013). *Rhymin' and Stealin': Musical Borrowing in Hip-Hop*. University of Michigan Press.

World Health Organization. (2023). *Gender incongruence and transgender health in the ICD*. WHO. https://www.who.int/standards/classifications/frequently-asked-questions/gender-incongruence-and-transgender-health-in-the-icd

Åkervall, L. (2021). The Auto-Tuned Self: Modulating Voice and Gender in Digital Media Ecologies. *Camera Obscura, 63*(2), pp. 65-97. https://doi.org/10.1215/02705346-9052802

Audiovisual

Demme, J. (Director) & Tally, T., Harris, T. (Writers). (1991). *The Silence of the Lambs* [film]. Strong Heart Productions.

Electra, D. (Writer) & Vaughan, W. (Producer, Writer). (2018, 1st of June). *Dorian Electra - Career Boy (Official Video)* [Music Video]. YouTube. Dorian Electra [Label]. https://www.youtube.com/watch?v=MDDukLyXY-M

Electra, D., Brady, D., Rothenberg (Writers) & Umru, Brady, D. & ABSRDST (Producers). (2019, 1st of November). *Dorian Electra - Adam & Steve (Official Video)* [Music Video]. YouTube. Dorian Electra [Label]. https://www.youtube.com/watch?v=mViZtUHqDg8

Harron, M. (Director, Writer) & Ellis, B. E., Turner, G. (Writers). (2000). *American Psycho* [film]. Am Psycho Films.

Hütter, R. & Schneider, F. (Writers, Producers) [Kraftwerk]. (2017, 18th of January). *Autobahn (2009 Remaster)* [Auto-generated by YouTube]. YouTube. Parlophone Records Ltd. https://www.youtube.com/watch?v=vkOZNJYAZ7c

Les, L. (Writer, Producer). (2019, 15th of February). *How to Dress as Human - Osno1 / Laura Les (Unofficial Video)* [Animated Lyric Video]. YouTube. Animation by Chris Barnes. https://www.youtube.com/watch?v=meSHvah0AA4

Les, L. (Writer, Producer). (2021, 12th of March). *laura les - Haunted {OFFICIAL MUSIC VIDEO}* [Music Video]. YouTube. Dog Show Records. https://www.youtube.com/watch?v=879ysA4h9r4&t=11s

Les, L. & Brady, D. (Writers, Producers). (2019, 14th of June). *100 gecs - money machine (Official Music Video)* [Music Video]. YouTube. Dog Show Records. https://www.youtube.com/watch?v=z97qLNXeAMQ

Les, L. & Brady, D. (Writers, Producers). (2021, 19th of November). *100 gecs - mememe {OFFICIAL MUSIC VIDEO}* [Music Video]. YouTube. Dog Show Records. https://www.youtube.com/watch?v=1Bw2dTY3SsQ

Lynn, J. (Writer, Producer). (2015, 4th of December). *Electric Light Orchestra - Mr. Blue Sky (Official Video)* [Music Video]. Jet Records. https://www.youtube.com/watch?v=aQUlA8Hcv4s

Ocean, F., Ho, M., Keith, M. (Producers) & Breaux, C. (Writer). (2017, 27th of June). *Frank Ocean - Nikes* [Audio and Cover Art]. YouTube. Boys Don't Cry [Label]. https://www.youtube.com/watch?v=diIFhc_Kzng&feature=youtu.be

Otomania (Arrangement). (2016, 17th of March). *Miku levan Polkka* [YouTube video uploaded by Sundae MMD]. YouTube. https://www.youtube.com/watch?v=widZEAJc0QM

Scorsese, M. (Director) & Winter, T., Belfort J. (Writers). (2013). *The Wolf of Wall Street* [film]. Red Granite Pictures.

Skrillex (Writer, Producer). (2010, 24th of October). *Skrillex - Scary Monsters And Nice Sprites (Official Audio)* [Audio and Cover Art]. YouTube. mau5trap & Big Beat [Labels]. https://www.youtube.com/watch?v=WSeNSzJ2-Jw

Stone, O. (Director, Writer) & Weiser, S. (Writer). (1987). *Wall Street* [film]. Twentieth Century Fox.

Stone, O. (Director) & Loeb, A., Schiff, S., Weiser, S. (Writers). (2010). *Wall Street: Money Never Sleeps* [film]. Twentieth Century Fox.

West, K. (Writer, Producer) & Davis, A., Najm, F., Ingram, J., Jones, Q. (Writers). (2009, 17th of June). *Kanye West - Good Life ft. T-Pain* [Music Video]. YouTube. Roc-A-Fella Records. https://www.youtube.com/watch?v=FEKEjpTzB0Q

Wonder, S. (2021, 24th of August) *Stevie Wonder performs "Close To You" and "Never Can Say Goodbye" on The David Frost Show* [Live Clip]. YouTube. https://www.youtube.com/watch?v=D6Avlbe6TT0